وزارة التعليم العالي والبحث العلمي
جهاز الإشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي
قسم الاعتماد

# دليل وصف البرنامج الأكاديمي والمقرر الدراسي

**2024**

المقدمة:

يُعد البرنامج التعليمي بمثابة حزمة منسقة ومنظمة من المقررات الدراسية التي تشتمل على إجراءات وخبرات تنظم بشكل مفردات دراسية الغرض الأساس منها بناء وصقل مهارات الخريجين مما يجعلهم مؤهلين لتلبية متطلبات سوق العمل يتم مراجعته وتقييمه سنوياً عبر إجراءات وبرامج التدقيق الداخلي أو الخارجي مثل برنامج الممتحن الخارجي.

يقدم وصف البرنامج الأكاديمي ملخص موجز للسمات الرئيسة للبرنامج ومقرراته مبيناً المهارات التي يتم العمل على اكسابها للطلبة مبنية على وفق اهداف البرنامج الأكاديمي وتتجلى أهمية هذا الوصف لكونه يمثل الحجر الأساس في الحصول على الاعتماد البرامجي ويشترك في كتابته الملاكات التدريسية بإشراف اللجان العلمية في الأقسام العلمية.

ويتضمن هذا الدليل بنسخته الثانية وصفاً للبرنامج الأكاديمي بعد تحديث مفردات وفقرات الدليل السابق في ضوء مستجدات وتطورات النظام التعليمي في العراق والذي تضمن وصف البرنامج الأكاديمي بشكلها التقليدي نظام (سنوي، فصلي) فضلاً عن اعتماد وصف البرنامج الأكاديمي المعمم بموجب كتاب دائرة الدراسات ت م2906/3 في 2023/5/3 فيما يخص البرامج التي تعتمد مسار بولونيا أساساً لعملها.

وفي هذا المجال لا يسعنا إلا أن نؤكد على أهمية كتابة وصف البرامج الاكاديمية والمقررات الدراسية لضمان حسن سير العملية التعليمية.

مفاهيم ومصطلحات:

وصف البرنامج الأكاديمي: يوفر وصف البرنامج الأكاديمي ايجازاً مقتضباً لرؤيته ورسالته وأهدافه متضمناً وصفاً دقيقاً لمخرجات التعلم المستهدفة على وفق استراتيجيات تعلم محددة.

وصف المقرر: يوفر إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ويكون مشتق من وصف البرنامج.

رؤية البرنامج: صورة طموحة لمستقبل البرنامج الأكاديمي ليكون برنامجاً متطوراً وملهماً ومحفزاً وواقعياً وقابلاً للتطبيق.

رسالة البرنامج: توضح الأهداف والأنشطة اللازمة لتحقيقها بشكل موجز كما يحدد مسارات تطور البرنامج واتجاهاته.

اهداف البرنامج: هي عبارات تصف ما ينوي البرنامج الأكاديمي تحقيقه خلال فترة زمنية محددة وتكون قابلة للقياس والملاحظة.

هيكلية المنهج: كافة المقررات الدراسية / المواد الدراسية التي يتضمنها البرنامج الأكاديمي على وفق نظام التعلم المعتمد (فصلي، سنوي، مسار بولونيا) سواء كانت متطلب (وزارة، جامعة، كلية وقسم علمي) مع عدد الوحدات الدراسية.

مخرجات التعلم: مجموعة متوافقة من المعارف والمهارات والقيم التي اكتسبها الطالب بعد انتهاء البرنامج الأكاديمي بنجاح ويجب أن يُحدد مخرجات التعلم لكل مقرر بالشكل الذي يحقق اهداف البرنامج.

استراتيجيات التعليم والتعلم: بأنها الاستراتيجيات المستخدمة من قبل عضو هيئة التدريس لتطوير تعليم وتعلم الطالب وهي خطط يتم إتباعها للوصول إلى أهداف التعلم. أي تصف جميع الأنشطة الصفية واللاصفية لتحقيق نتائج التعلم للبرنامج.

# نموذج وصف البرنامج الأكاديمي

اسم الجامعة: جامعة .... كلية الهادي الجامعة

الكلية/ المعهد: كلية ....كلية الهادي الجامعه .....

القسم العلمي: قسم .....هندسة تقنيات الاجهزه الطبية

اسم البرنامج الأكاديمي او المهني: هندسة تقنيات الاجهزه الطبية

اسم الشهادة النهائية: بكالوريوس بكالوريوس هندسه تقنيات الأجهزة الطبية.....

النظام الدراسي: سنوي

تاريخ اعداد الوصف: **7/3/2024**

تاريخ ملء الملف: **7/3/2024**

معاون العميد للشؤون العلمية

التوقيع :

اسم المعاون العلمي : أ.م.د مجيد محمود عبد علي :

التاريخ : **2024/4/28**

كلية الهادي الجامعة
قسم هندسة تقنيات الاجهزة الطبية

**التوقيع**

**اسم رئيس القسم : أ.م.د حسام عبد علي العبيدي**

**التاريخ:** 2024/4/28

كلية الهادي الجامعة
قسم هندسة تقنيات الاجهزة الطبية

رئيس اللجنة العلمية
2024 / 4/28



Scanned with CamScanner

3

دقق الملف قليه قلالهادي الجامعة

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي: أ.د محمد جويد علوان

التاريخ 2024/4/28

التوقيع

2024 4-28

مصادقة السيد العميد

أ.د عبد المحسن ناجي المحيسن العجيلي



Scanned with CamScanner

| 1. رؤية البرنامج |
| --- |
| ان قسم هندسة الاجهزة الطبية يمثل الوسيلة الفعالة لتلبية حاجة المجتمع من الكادر المتخصصة في دعم المؤسسات الصحية والبحثية والتعليمية المختلفة، اضافة الى استثمار طاقات التدريسيين والطلبة في الأبحاث والدراسات العلمية النظرية والتطبيقية الأولية والعليا وكذلك التدريب والتوعية والتعبئة الصحية والعلمية وضمن اسس مستقبلية تتماشى مع التطورات الحديثة من خلال اكتساب الخبرات التقنية والمهنية العالية وتسخيرها علميا وأكاديميا وفق منظور منهجي متطور. |

| 2. رسالة البرنامج |
| --- |
| تخرج كوادر هندسية ذات كفاءة وقابلية ممتازة لنصب وتشغيل وصيانة الاجهزة الطبية بمختلف انواعها و تقديم تعليم مميز وإنتاج بحوث إبداعية تخدم المجتمع، وتسهم في بناء اقتصاد المعرفة من خلال إيجاد بيئة محفزة للتعلم والإبداع الفكري والتوظيف الأمثل للتقنية والشراكة المحلية والعالمية الفاعلة. |

| 3. اهداف البرنامج |
| --- |
| 1.اعداد مهندسين تطبيقين في مجال الاعمال الهندسية التقنية الطبية الكهربائية والالكترونية. |
| 2.تدريب وتطوير الكوادرالهندسية والفنية على صيانة ونصب وتشغيل الاجهزة الطبية المختلفة. |
| 3. اعداد البحوث والدراسات لتحسين وتطوير عمل و اداء الاجهزة الطبية. |
| 4.تخريج طلبة لهم القدرة على الالمام باجزاء الاجهزة الطبية وتقنياتها و مواكبة التطور الذي يحصل فيها. |
| 5. اكساب الطلبة مهارة علمية وعملية تمكنهم تشخيص الاعطال الناتجة في الاجهزة الطبية. |

| |
|---|
| 6. وضع المقترحات والحلول و البدائل للاجهزة الطبية |

| 4. الاعتماد البرامجي – |
|---|
| لا يوجد |

| 5. المؤثرات الخارجية الأخرى |
|---|
| لا يوجد |

| 6. هيكلية البرنامج | | | | |
|---|---|---|---|---|
| هيكل البرنامج | عدد المقررات | وحدة دراسية | النسبة المئوية | ملاحظات * |
| متطلبات المؤسسة | 38 | 192 | | مقرر اساسي |
| متطلبات الكلية | نعم | | | |
| متطلبات القسم | نعم | | | |
| التدريب الصيفي | يوجد في مرحلة الثانية | | | |
| أخرى | | | | |

* ممكن ان تتضمن الملاحظات فيما اذا كان المقرر أساسي او اختياري .

## 7. وصف البرنامج

| السنة / المستوى | رمز المقرر أو المساق | اسم المقرر أو المساق | الساعات المعتمدة |
|---|---|---|---|

# المرحله الأولى مسار بولونيا

Republic of Iraq - Ministry of Higher Education and Scientific Research
Middle Technical University
Bachelor's degree in Medical Instrumentation Engineering Techniques (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
الجامعة التقنية الوسطى
بكالوريوس في هندسة تقنيات الاجهزة الطبية (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = 25 ساعة
المنهاج الدراسي للعام ٢٠٢٣-٢٠٢٤

| Level | Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UGI | One | 1 | MIET1101 | Fundamentals of Electrical Engineering (DC) | مبادئ الهندسة الكهربائية (DC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | |
| | | 2 | MTU1004 | Computer Priciples | اساسيات الحاسوب | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | B | |
| | | 3 | MIET1103 | Differential Mathematics | الرياضيات التفاضلية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | |
| | | 4 | EETC102 | Engineering Drawing | الرسم الهندسي | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | | 5 | MTU1006 | Democracy and Human Rights | الديمقراطية و حقوق الانسان | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 6 | MTU1002 | English Language I | اللغة الانكليزية I | English | 1 | 1 | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 7 | MIET1107 | Medical Chemistry | الكيمياء الطبية | English | 3 | | 2 | | 1 | | 4 | 94 | 81 | 175 | 7.00 | S | |
| | | | | | | Total | 12 | 1 | 10 | 0 | 4 | 0 | 24 | 429 | 321 | 750 | 30.00 | | |

| Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Two | 1 | MIET1201 | Fundamentals of Electrical Engineering (AC) | مبادئ الهندسة الكهربائية (AC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | MIET1101 |
| | 2 | MIET1202 | Medical Physics | الفيزياء الطبية | English | 2 | | 2 | | | | 4 | 64 | 61 | 125 | 5.00 | S | |
| | 3 | MIET1203 | Mechanics | الميكانيك | English | 2 | | | | 1 | | 3 | 48 | 52 | 100 | 4.00 | S | |
| | 4 | MIET1204 | Integral Mathematics | الرياضيات التكاملية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | MIET1103 |
| | 5 | EETC101 | Engineering Workshops | الورش الهندسية | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | 6 | MIET1206 | Computer Programming and Applications I | برمجة الحاسوب وتطبيقاته I | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | S | |
| | 7 | MTU1001 | Arabic Language | اللغة العربية | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | | | | Total | 12 | 0 | 10 | 0 | 4 | 0 | 24 | 414 | 336 | 750 | 30.00 | | |

Note: The student should complete 4 weeks of Summer Internships to fulfil the requirements of the Bachelor's degree

| Structured SWL (hr/w) type | | |
|---|---|---|
| CL | Class Lecture | |
| Lab | Laboratory | |
| Pr | Practical Training | |
| Tut | Tutorial | |
| Lect | Online lecture | |
| Semn | Seminar | |

| Module type | |
|---|---|
| B | Basic learning activities |
| C | Core learning activity |
| S | Support or related learning activity |
| E | Elective learning activity |

| | |
|---|---|
| SWL: | Student Workload |
| SSWL: | Structured SWL |
| USSWL: | Unstructured SWL |

Note: Columns O, Q and R are programmed, protected and should not be edited

| | | | | |
|---|---|---|---|---|
| 2023–2024/ الثانية | MIE201<br>MIE202<br>MIE203<br>MIE204<br>MIE205<br>MIE206<br>MIE207<br>MIE208<br>MIE209<br>MIE210 | **جرائم جزب البعث**<br>**تقنيات رقمية,**<br>**رياضيات/2**<br>**تشريح وفسلجة,**<br>**اجهزة الكيمياء السريرية,**<br>**مكونات ودوائر الكترونية,**<br>**قياسات ومحولات طبية,**<br>**اجهزة طبية/1 ,**<br>**تطبيقات الحاسبة ,**<br>**التدريب المنهجي** | 17 | 17 |
| 2023–2024/ الثالثة | MIE301<br>MIE302<br>MIE303<br>MIE304<br>MIE305<br>MIE306<br>MIE307<br>MIE308<br>MIE309<br>MIE310 | **نظم الكترونية طبية ,**<br>**معالج اشارة رقمية,**<br>**نظم اتصالات طبية ,**<br>**معالج وحاسبة دقيقة ,**<br>**تطبيقات الحاسبة,**<br>**الكترونيات القدرة,**<br>**تكنولوجيا الكهرباء ,**<br>**اجهزة طبية/2,**<br>**التدريب المنهجي** | 16 | 17 |
| 2023–2024/الرابعة | MIE401<br>MIE402<br>MIE403<br>MIE404<br>MIE405<br>MIE406<br>MIE407<br>MIE408<br>MIE409 | **اخلاقيات المهنة**<br>**ادارة المشاريع ,**<br>**المشروع**<br>**نظم سيطرة ,**<br>**اجهزة طبية/3 ,**<br>**هندسة اجهزة الاشعاع ,**<br>**نظم الليزر الطبية ,**<br>**تصميم رقمي متقدم ,**<br>**تطبيقات الحاسبة ,** | 14 | 19 |

| 8. مخرجات التعلم المتوقعة للبرنامج | |
|---|---|
| المعرفة | |
| ـ أ-ا الاهداف المعرفية .<br>أ1- وضع الخطط وبرامج العمل الخاصة في صيانة الاجهزة الطبية.<br>أ2- الاشراف الموقعي على تنفيذ الاعمال.<br>أ3- اعداد البحوث والدراسات لتحسين وتطوير عمل الاجهزة الطبية. | |

| | |
|---|---|
| أ4- المشاركة باللجان ذات العلاقة بنشاطات الاجهزة الطبية.<br>أ5- المشاركة في تحليل العطاءات الخاصة بالاجهزة الطبية واختيار البدائل. | |
| المهارات | |
| ب -الاهداف المهاراتية الخاصة بالبرنامج :<br>ب 1 – تدريب المهندسين على صيانة ونصب الاجهزة الطبية.<br>ب 2 – نصب وتشغيل الاجهزة الطبية اشرافا وتنفيذا. | |
| | |
| القيم | |
| تقديم الاستشارة في مجال الاجهزة الطبية.<br>المشاركة في تحليل العطاءات الخاصة بالاجهزة الطبية واختيار البدائل. | |
| | |

| 9. استراتيجيات التعليم والتعلم |
|---|
| محاضرات – مختبرات – وسائل الايضاح (data show) - ورش عمل – ندوات – معارض علمية |

| 10. طرائق التقييم |
|---|
| تقييم يومي (quiz) – تقييم فصلي – تقييم عملي – تقييم نهائي – عرض تقدمي – تقارير– واجبات بيتية – حضور يومي – نشاطات صفية |

## 11. الهيئة التدريسية

### أعضاء هيئة التدريس

| الرتبة العلمية | التخصص | | المتطلبات/المهارات الخاصة (ان وجدت ) | | اعداد الهيئة التدريسية | |
|---|---|---|---|---|---|---|
| | عام | خاص | | | ملاك | محاضر |
| أ.م.د حسام عبد علي | اتصالات | الهندسة الكهربائية والالكترونية | | | ملاك | |
| م.م عبد الوهاب حسين محمد | علوم الجو | | | | ملاك | |
| د. عدنان فاضل عباس شهاب | هندسه كهرباء | هندسة كهرباء | | | ملاك | |
| م.م فوزية محمود عواد | علوم حياة | | | | ملاك | |
| م.م عامر علي عبد | هندسة القدرة الكهربائية | هندسة القدرة الكهربائية | | | ملاك | |
| م.م عياض عبد الحميد | الهندسه الميكانيكة | الهندسه الميكانيكة | | | ملاك | |
| م.م وسام حسام قاسم | هندسة الكهرباء | همدسة الكترونيك | | | ملاك | |
| م.م محمد الباقر عدنان | هندسه الكهرباء | هندسه الكهرباء | | | ملاك | |
| د. جمال عبد علي | هندسة الكهرباء | هندسة الكهرباء | | | | محاضر |
| د.عمر كنعان | هندسة الكهرباء | هندسة الكهرباء | | | | محاضر |
| د.مروان جواد | علوم احياء المجهرية | | | | | محاضر |

| | | | | | | |
|---|---|---|---|---|---|---|
| د.الاء بدر | كيمياء | | | | | محاضر |
| م.م حسام حامد | هندسه اتصالات | هندسه الكترونيك | | | | محاضر |
| م.م مصطفى صفاء | هندسة الكهرباء | هندسه تقنيات القدرة الكهربائية | | | | محاضر |
| م.م مروان لطفي | علوم الليزر | | | | | محاضر |
| م.م شيلان خضر | هندسة أجهزة الطبية | هندسة أجهزة الطبية | | | | محاضر |
| م.م حسن ثابت ناجي | هندسة الميكانيك | | | | | محاضر |
| | | | | | | |

| التطوير المهني |
|---|
| توجيه أعضاء هيئة التدريس الجدد |
| |
| التطوير المهني لأعضاء هيئة التدريس |
| |

| 12. معيار القبول |
|---|
| **قبول مركزي عن طريق نافذة الكترونية من قبل وزارة التعليم العالي.** |
| **1- خريج سادس اعدادي/فرع علمي** |
| **2- خريج الاوائل لاعدادية الصناعة / فرع الاجهزة الطبية** |
| **خريج اوائل المعاهد الطبية التقنية.** |

| 13. أهم مصادر المعلومات عن البرنامج |
| --- |
| **المكتبة , الانترنت , المواقع الالكترونية الرسمية.** |

| 14. خطة تطوير البرنامج |
| --- |
| 1-استخدام المفاهيم الجديدة في مجال الهندسة الأجهزة الطبية واستخدام الاجهزة الالكترونية والكهربائية ل |

| | | | | مخرجات التعلم المطلوبة من البرنامج | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | الاهداف المعرفية | | | | الاهداف المهاراتية الخاصة بالبرنامج | | | | الاهداف الوجدانية والقيمية | | | | المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي) | | | | | | | |
| السنة / المستوى | رمز المادة | اسم المادة | تخصصية أم مساعدة | أ1 | أ2 | أ3 | أ4 | ب1 | ب2 | ب3 | ب4 | ج1 | ج2 | ج3 | ج4 | د1 | د2 | د3 | د4 | | | | |
| الأولى كورس الأول | MIE1002 | اللغة الانكليزية | مساعدة | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | | | | |
| | MIE1004 | تطبيقات الحاسبة/1 | مساعدة | | | | | | | | | | | | | | | | | | | | |
| | MTUI1006 | الديمقراطية وحقوق الانسان | عامة | | | | | | | | | | | | | | | | | | | | |
| | MIET1101 | مباديء الهندسة الكهربائية,dc | تخصصية | | | | | | | | | | | | | | | | | | | | |
| | MIET1103 | الرياضيات/1, | مساعدة | | | | | | | | | | | | | | | | | | | | |
| | MIET1107 | الكيمياء الطبية, | مساعدة | | | | | | | | | | | | | | | | | | | | |
| | EETC102 | الرسم الهندسي, | مساعدة | | | | | | | | | | | | | | | | | | | | |
| | MIE108 | المعامل | تخصصية | | | | | | | | | | | | | | | | | | | | |
| | | مبادئ الهندسة الكهربائيه AC | تخصصيه | | | | | | | | | | | | | | | | | | | | |
| | MIE110 | الميكانيك | مساعدة | | | | | | | | | | | | | | | | | | | | |
| | MIE105 | الفيزياء الطبية, | مساعده | | | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MIET1204 | رياضيات التكامليه | تخصصيه | | | | | | | | | | | | | | | | |
| | MIET1206 | برمجه الحاسوب وتطبيقاته | مساعده | | | | | | | | | | | | | | | | |
| | MTU1001 | اللغه العربيه | مساعده | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| الثانية | MIE201 | جرائم حزب البعث | مساعدة | | | | | | | | | | | | | | | | |
| | MIE202 | تقنيات رقمية, | تخصصية | | | | | | | | | | | | | | | | |
| | MIE203 | رياضيات/2 | مساعدة | | | | | | | | | | | | | | | | |
| | MIE204 | تشريح وفسلجة, | مساعدة | | | | | | | | | | | | | | | | |
| | MIE205 | اجهزة الكيمياء السريرية, | تخصصية | | | | | | | | | | | | | | | | |
| | MIE206 | مكونات ودوائر الكترونية, | تخصصيية | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MIE207 | قياسات ومحولات طبية, | تخصصية | | | | | | | | | | | | | | | | |
| | MIE208 | اجهزة طبية/**1** , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE209 | تطبيقات الحاسبة , | مساعدة | | | | | | | | | | | | | | | | |
| | MIE110 | التدريب المنهجي | تخصصي | | | | | | | | | | | | | | | | |
| **الثالثة** | MIE301 | | | | | | | | | | | | | | | | | | |
| | MIE302 | نظم الكترونية طبية , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE303 | معالج اشارة رقمية , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE304 | نظم اتصالات طبية , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE305 | معالج وحاسبة دقيقة , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE306 | تطبيقات الحاسبة, | مساعدة | | | | | | | | | | | | | | | | |
| | MIE307 | الكترونيات القدرة, | تخصصية | | | | | | | | | | | | | | | | |
| | MIE308 | تكنولوجيا الكهرباء , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE309 | اجهزة طبية/**2,** | تخصصية | | | | | | | | | | | | | | | | |
| | MIE110 | التدريب المنهجي | تخصصية | | | | | | | | | | | | | | | | |
| **الرابعة** | MIE401 | اخلاقيات المهنة | مساعده | | | | | | | | | | | | | | | | |
| | MIE402 | ادارة المشاريع , | عامة | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MIE403 | المشروع | تخصصية | | | | | | | | | | | | | | | | |
| | MIE404 | نظم سيطرة , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE405 | اجهزة طبية/**3** , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE406 | هندسة اجهزة الاشعاع , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE407 | نظم الليزر الطبية , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE408 | تصميم رقمي متقدم , | تخصصية | | | | | | | | | | | | | | | | |
| | MIE409 | تطبيقات الحاسبة , | مساعدة | | | | | | | | | | | | | | | | |

Republic of Iraq - Ministry of Higher Education and Scientific Research
Middle Technical University
Bachelor's degree in Medical Instrumentation Engineering Techniques (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
الجامعة التقنية الوسطى
بكالوريوس في هندسة تقنيات الاجهزة الطبية (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = 25 ساعة
المنهاج الدراسي للعام ٢٠٢٣-٢٠٢٤

| Level | Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UGI | One | 1 | MIET1101 | Fundamentals of Electrical Engineering (DC) | مبادئ الهندسة الكهربائية (DC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | |
| | | 2 | MTU1004 | Computer Priciples | اساسيات الحاسوب | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | B | |
| | | 3 | MIET1103 | Differential Mathematics | الرياضيات التفاضلية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | |
| | | 4 | EETC102 | Engineering Drawing | الرسم الهندسي | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | | 5 | MTU1006 | Democracy and Human Rights | الديمقراطية و حقوق الانسان | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 6 | MTU1002 | English Language I | اللغة الانكليزية I | English | 1 | 1 | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 7 | MIET1107 | Medical Chemistry | الكيمياء الطبية | English | 3 | | 2 | | 1 | | 4 | 94 | 81 | 175 | 7.00 | S | |
| | | | | | | Total | 12 | 1 | 10 | 0 | 4 | 0 | 24 | 429 | 321 | 750 | 30.00 | | |

| Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Two | 1 | MIET1201 | Fundamentals of Electrical Engineering (AC) | مبادئ الهندسة الكهربائية (AC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | MIET1101 |
| | 2 | MIET1202 | Medical Physics | الفزياء الطبية | English | 2 | | 2 | | | | 4 | 64 | 61 | 125 | 5.00 | S | |
| | 3 | MIET1203 | Mechanics | الميكانيك | English | 2 | | | | 1 | | 3 | 48 | 52 | 100 | 4.00 | S | |
| | 4 | MIET1204 | Integral Mathematics | الرياضيات التكاملية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | MIET1103 |
| | 5 | EETC101 | Engineering Workshops | الورش الهندسية | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | 6 | MIET1206 | Computer Programming and Applications I | برمجة الحاسوب وتطبيقاته I | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | S | |
| | 7 | MTU1001 | Arabic Language | اللغة العربية | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | | | | Total | 12 | 0 | 10 | 0 | 4 | 0 | 24 | 414 | 336 | 750 | 30.00 | | |

Note: The student should complete 4 weeks of Summer Internships to fulfill the requirements of the Bachelor's degree

Structured SWL (hr/w) type:
CL Class Lecture
Lab Laboratory
Pr Practical Training
Tut Tutorial
Lect Online lecture
Semn Seminar

Module type:
B Basic learning activities
C Core learning activity
S Support or related learning activity
E Elective learning activity

SWL: Student Workload
SSWL: Structured SWL
USSWL: Unstructured SWL

Note: Columns O, Q and R are progrmaed, protected and should not be edited

| | | | | |
|---|---|---|---|---|
| الثانية | MIE201<br>MIE202<br>MIE203<br>MIE204<br>MIE205<br>MIE206<br>MIE207<br>MIE208<br>MIE209<br>MIE210 | جرائم جزب البعث<br>تقنيات رقمية,<br>رياضيات/2<br>تشريح وفسلجة,<br>اجهزة الكيمياء السريرية,<br>مكونات ودوائر الكترونية,<br>قياسات ومحولات طبية,<br>اجهزة طبية/1 ,<br>تطبيقات الحاسبة ,<br>التدريب المنهجي | 17 | 17 |
| الثالثة | MIE301<br>MIE302<br>MIE303<br>MIE304<br>MIE305<br>MIE306 | نظم الكترونية طبية ,<br>معالج اشارة رقمية,<br>نظم اتصالات طبية ,<br>معالج وحاسبة دقيقة ,<br>تطبيقات الحاسبة, | 16 | 17 |

| | | | | |
|---|---|---|---|---|
| | MIE307<br>MIE308<br>MIE309<br>MIE310 | **الكترونيات القدرة,**<br>**تكنولوجيا الكهرباء ,**<br>**اجهزة طبية/2,**<br>**التدريب المنهجي** | | |
| الرابعة | MIE401<br>MIE402<br>MIE403<br>MIE404<br>MIE405<br>MIE406<br>MIE407<br>MIE408<br>MIE409 | **اخلاقيات المهنة**<br>**ادارة المشاريع ,**<br>**المشروع**<br>**نظم سيطرة ,**<br>**اجهزة طبية/3 ,**<br>**هندسة اجهزة الاشعاع ,**<br>**نظم الليزر الطبية ,**<br>**تصميم رقمي متقدم ,**<br>**تطبيقات الحاسبة ,** | 14 | 19 |

| 1. التخطيط للتطور الشخصي |
|---|
| **زيارات ميدانية , سفرات علمية , ندوات تثقيفية ( خارج نطاق الخطة الدراسية )** |
| 2. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد) |
| **قبول مركزي عن طريق نافذة الكترونية من قبل وزارة التعليم العالي.**<br>**3- خريج سادس اعدادي/فرع علمي**<br>**4- خريج الاوائل لاعدادية الصناعة / فرع الاجهزة الطبية**<br>**5- خريج اوائل المعاهد الطبية التقنية.** |
| 3. أهم مصادر المعلومات عن البرنامج |
| **المكتبة , الانترنت , المواقع الالكترونية الرسمية.** |

وصف المقرر الدراسي

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Fundamentals of Electrical Engineering (DC)** | | | **Module Delivery** | |
| **Module Type** | **Core** | | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1101** | | | | |
| **ECTS Credits** | **6** | | | | |
| **SWL (hr/sem)** | **150** | | | | |
| **Module Level** | | UGI | **Semester of Delivery** | | 1 |
| **Administering Department** | | MIET | **College** | | HUC |
| **Module Leader** | Jamal Abdali | | **e-mail** | | |
| **Module Leader's Acad. Title** | | Lecturer | **Module Leader's Qualification** | | Ph.D. |
| **Module Tutor** | Salah Hassan Abbas | | e-mail | | |
| **Peer Reviewer Name** | | Assist. Prof. Dr. Hussam Abdali | **e-mail** | | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | | 8/11/2023 | **Version Number** | | 1.0 |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1. To develop knowledge on standard units of electricity and understanding of DC circuit theorems.<br>2. To understand voltage, current and power of DC circuits.<br>3. To learn the basic concept of DC electrical circuits connections.<br>4. To explain the DC electrical circuits.<br>5. To understand basic laws of electricity.<br>6. To perform DC-network theorem.<br>7. To perform DC-circuit analysis methods.<br>8. To understand independent sources and dependent sources. |
| **Module Learning Outcomes**<br>التعلم للمادة الدراسية مخرجات | 1-Recognize how electricity works in electrical circuits.<br>2-List the various terms associated with electrical circuits.<br>3-Summarize what is meant by a basic electric circuit.<br>4-Describe electrical power, voltage, and current.<br>5-Define Ohm's law and define the relation between voltage, resistance, and current.<br>6-Identify the basic circuit elements and their applications.<br>7-Discuss the operations of power and energy in electric circuit.<br>8-Discuss the various properties of resistors connections.<br>9-Explain the two Kirchhoff's laws used in circuit analysis.<br>10-Identify the implementation of resistor circuit's connection.<br>11-Learn measurements of voltage ad current.<br>12-Practical Identification of resistance based on color code. |

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| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following.<br>DC circuits – Current and voltage definitions, and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law, Network reduction, Introduction to mesh and nodal analysis. [20 hrs]<br>Conversion of delta – connected resistance into an equivalent Wye connection & Vic versa. [10 hrs]<br>Fundamentals of the Power sources connected in parallel, Thevenin and Norton equivalent circuits, current and voltage division, Loop current method, Super position method ,maximum power transfer, Non- linear direct current circuit [20 hrs] Independent sources and dependent sources [10 hrs] source transformation [5 hrs] Revision problem classes [5 hrs] |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 79 | **Structured SWL (h/w)**<br>الحمل الدرا سي المنتظم للطالب أسبوعيا | 5 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 71 | **Unstructured SWL (h/w)**<br>الحمل الدرا سي غير المنتظم للطالب أسبوعيا | 5 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 150 | | |

| Evaluation Module<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/ Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5, 10 | LO #1, 2, LO# 10 and 11 |
| | **Online Assignments** | 2 | 10% (10) | 2, 12 | LO # 3, 4, LO# 6, 7 |
| | **Projects** | 1 | 6% (6) | Continuous | LO# 1-12 |
| | **lab** | 10 | 10% (10) | Continuous | LO# 1-12 |
| | **Report** | 1 | 4% (4) | 13 | LO # 5, 8, 9, 12 |
| **Summative assessment** | **Midterm Exam** | 3 hr | 10% (10) | 7 | LO # 1-7 |
| | **Final Exam** | 4hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Symbols and abbreviations, Units, Electric circuits, and its elements. |
| **Week 2** | The direct–current network (Ohm's law, Kirchhoff's voltage and current laws & their use in network). |
| **Week 3**<br>**Week 4** | Series elements and Voltage Division<br>Parallel elements and Current Division |
| **Week 5** | Power sources are connected in parallel, |
| **Week 6**<br>**Week 7** | Circuit analysis methods:<br>1- Node voltage method.<br>2- Loop current method. |
| **Week 8** | Mid-term exam |
| **Week 9** | Conversion of delta–connected resistance into an equivalent Wye connection &<br>Vic versa |

| | |
|---|---|
| **Weeks 10-13** | Circuit analysis Theorems:<br>1. Superposition<br>2. Thevenin<br>3. Norton<br>4. Maximum power |
| **Weeks 14-15** | Independent sources and Dependent sources, source transformation and preparation for final exam |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to electrical elements, sources, and measuring devices related to electrical circuits. |
| **Week 2** | Resistance measurement based on AVO meter readings and color code identification. |
| **Week 3** | Verification of Ohm's Law |
| **Weeks 4-5** | Verification of KVL and KCL |
| **Weeks 6-7** | Verification of Thevenin's and Norton's theorems |
| **Weeks 8-9** | Verification of the superposition theorem |
| **Week 10** | Verification of the maximum power transfer theorem |

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|---|---|
| **Week 11** | Verification of the Nodal Voltage Theorem |
| **Week 12** | Verification of the Mesh Theorem |
| **Weeks 13-14** | practical implementation of Independent sources and Dependent sources |
| **Week 15** | Preparation for Final exam |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Fundamentals of Electric Circuits, C.K. Alexander and M.N.O<br>Sadiku, McGraw-Hill Education | Yes |
| **Recommended Texts** | Electric Circuits Seventh Edition, Schaum's Outline Series | No |
| **Websites** | https://www.youtube.com/watch?v=SfKw8bHk7-o (for practical implementation of<br>Independent sources and Dependent sources, **Weeks 13-14**) | |

| **Grading Scheme**<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جي د | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |

| | | | | |
|---|---|---|---|---|
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| **Module Information**<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Computer Applications (IC3)** | | | **Module Delivery** | |
| **Module Type** | **Basic** | | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1102** | | | | |
| **ECTS Credits** | **3** | | | | |
| **SWL (hr/sem)** | **75** | | | | |
| **Module Level** | | UGI | **Semester of Delivery** | | 1 |
| **Administering Department** | | MIET | **College** | HUC | |
| **Module Leader** | Wissam Hussam Qassem | | **e-mail** | | |
| **Module Leader's Acad. Title** | | Assistant Lecturer | **Module Leader's Qualification** | | M.Sc. |
| **Module Tutor** | | | **e-mail** | E-mail | |

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| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>العلاقة مع المواد الدراسية الأخر ى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| **Module Aims, Learning Outcomes and Indicative Contents**<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Objectives** أهداف المادة الدراسية | 1. To understand operating system, be familiar with its types.<br>2. To be familiar with the desktop.<br>3. To be familiar and manage files and folders.<br>4. To be familiar with the basic concepts of hardware components of the computer.<br>5. To be able to use the basic functions in control panel.<br>6. To recognize software types.<br>7. To be able to understand the basic similarities and differences among (MS Office) applications.<br>8. To be able to use MS Word program.<br>9. To be able to use MS Excel program.<br>10. To be able to use MS PowerPoint program.<br>11. To be able to use MS Outlook.<br>12. To be familiar with search engines and the World Wide Web.<br>13. To be able to use Google apps.<br>14. To be introduced to AI tools. |

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| **Module Learning Outcomes**<br><br>مخرجات التعلم للمادة الدراسية | 1. Demonstrate understanding of operating systems, including their types.<br>2. Navigate and utilize the desktop effectively.<br>3. Manage files and folders proficiently.<br>4. Identify hardware components of a computer system.<br>5. Utilize the control panel efficiently.<br>6. Differentiate software types and their applications.<br>7. Effectively utilize essential applications such as MS Office.<br>8. Demonstrate proficiency in using the MS Word program.<br>9. Demonstrate proficiency in using the MS Excel program.<br>10. Demonstrate proficiency in using the MS PowerPoint program.<br>11. Utilize MS Outlook for email and scheduling purposes.<br>12. Navigate search engines and utilize the World Wide Web effectively.<br>13. Utilize Google apps for various tasks.<br>14. Basic Use of AI tools. |

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| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following.<br>Introduction to Operating Systems: Definition, functions, and capabilities of an operating system. Types of operating systems (e.g., Windows, macOS, Linux) with examples. Differences between operating systems and software applications. Power options: computer power on/off and power settings. (3 hrs)<br>Exploring the Desktop: Navigating the desktop environment. Using the start button and working with applications. Understanding the relationship between software and hardware, their differences, importance, and influence on each other. Introduction to software updates. Exploring the taskbar. (6 hrs)<br>Files and Folders: Understanding the typical window and file management.<br>Introduction to the Recycle Bin. Understanding file names and common extensions. |
| | (6 hrs)<br>Computer Hardware: Identifying various computer types . Exploring components inside a computer, such as the microprocessor, system memory, and storage systems. Recognizing input/output devices and their interaction. (6 hrs)<br>Familiarity with the control panel and its categories and usage. (6 hrs)<br>Software Overview: Understanding software requirements and their implications for hardware. Introduction to different types of application software + Dealing with viruses and malwares (2 hrs)<br>Main Screen Features: Common features found in word processing, spreadsheet, and presentation software. Understanding the ribbon, tabs, and status bar, and their specific functions in each application. (3 hrs)<br>MS Office Basics: Definitions and key concepts in MS Office applications and Usage.<br>(9 hrs)<br>Google apps and Gmail ( 3hrs)<br>Digital Citizenship: Identifying ethical issues in the digital realm, including intellectual property, copyright, and licensing. Protecting data and computers from software threats and understanding viruses. Ensuring online privacy and security. And basic understanding and usage for AI tools (3 hrs) |

| Learning and Teaching Strategies اسرتاتيجيات<br>التعلم والتعليم | |
|---|---|
| **Strategies** | Incorporate a mix of theoretical study, hands-on practice, experimentation, and realworld applications to reinforce understanding and proficiency in each of the desired learning outcomes. Seek feedback, engage in discussions, and actively participate in exercises to enhance learning and address any gaps in knowledge. |

| Student Workload (SWL) الحمل<br>الدراسي للطالب محسوب لـ **15** اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 49 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب اسبوعياً | 3 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 26 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب اسبوعياً | 2 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 75 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5 and 9 | LO #1, #2, #3 and #6, #7 |

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|---|---|---|---|---|---|
| | **Assignments** | 2 | 10% (10) | 4 and 6 | LO #4 ,#8, #12 and #5, #12 |
| | **Projects / Lab.** | 5 | 15% (15) | 10,11,12, 13 and 14, | LO #7, #12, #13 and #8 , #12, #13 and #9, #12, #13 and #10, #12, #13 and #11, #12, #13 |
| | **Report** | 1 | 5% (5) | 6 | LO #12, #7, #8 and #12 |
| **Summative assessment** | **Midterm Exam** | 3hr | 10% (10) | 8 | LO #1 - #6 |
| | **Final Exam** | 4hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)**<br>المنهاج الاسبو عي النظر ي | |
|---|---|
| | **Material Covered** |

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|---|---|
| **Week 1** | Introduction to operating system and its types, the differences between operating systems and software applications; Common operating system features. |
| **Week 2** | Looking and navigation of the desktop; start button components; Understanding Taskbar ,Software and hardware relationship. |
| **Week 3** | Software updates+, Files and folders looking at typical window.+ Understanding files and folders+ Libraries |
| **Week 4** | understanding Recycle bin; understanding file name and common extensions. View options + Computer hardware identifying computers |
| **Week 5** | Looking inside a computer (microprocessor, system memory, storage systems)+ recognizing input/ output devices + understanding how it works together. |
| **Week 6** | Understanding control panel categories + Understanding Ease of access + Understanding User account rights |
| **Week 7** | What is software , application software + Avoiding and dealing Viruses and malwares |
| **Week 8** | **Mid Term** |
| **Week 9** | MS office common features and differences |
| **Week 10** | Basic concepts and Usage of MS Word + Basic concepts and Usage of MS Power Point |
| **Week 11** | Basic concepts and Usage of MS Excell + Basic concepts and Usage of MS Outlook |
| **Week 12** | Introduction to Google apps |
| **Week 13** | Digital citizenship identifying ethical issues; protecting your data or computer |
| **Week 14** | Basic understanding and usage for AI tools |
| **Week 15** | **Preparatory week before the final Exam** |

| Delivery Plan (Weekly Lab. Syllabus)<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: Getting to know computer hardware + turn on and shut down options +looking at the desktop<br>+ using mouse (Menu, pointing, selecting, dragging, scrolling and execution)+ using start button |
| **Week 2** | Lab 2: Create a folder (and file) , Rename, Copy, Cut, find, shortcut +Recycle bin ; using task bar |
| **Week 3** | Lab 3: looking at a typical window +control buttons + move, resize a window+ view options+ select files + file options +using taskbar. |
| **Week 4** | Lab 4: Install, open, close, and(control panel- Programs) uninstall applications(internet and other sources); Control Panel (power options), Control Panel (add a device or printer), Control Panel ( Project) |
| **Week 5** | Lab 5: Personalization (background and color) +(User Account (create a standard account, change password , picture and name)<br>Control Panel- Clock and region (change date, time , and region) + Ease of Access ( Narrator, Magnifier, on screen keyboard)). |
| **Week 6** | Lab 6: MS Office (word, Excel, Power point, outlook) Starting each program and identify the main screen in details as title bar, main ribbons, etc. |
| **Week 7** | Lab 7: MS Word (Home Tab, Insert Tab, Layout Tab, View Tab + Watermark, Page boarder and Page color). |
| **Week 8** | Lab 8:**Mid Term** |
| **Week 9** | Lab 9: MS Excel (Home Tab, Insert, Page layout, Formula, Data). |
| **Week 10** | Lab 10: MS Power Point (Home Tab, Insert, Design, Transition, Animation). |
| **Week 11** | Lab 11: MS outlook (Home Tab, send and receive) + Calendar |

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|---|---|
| **Week 12** | Lab 12: **Google apps Vs MS office.** |
| **Week 13** | Lab 13: Creating Gmail+ basic e-mail functions+ using google class.Using internet (Google scholar + fining courses and materials, Khan academy and finding resources). |
| **Week 14** | Lab 14: Using AI tools |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Internet and Computing Core Certification | No |
| **Recommended Texts** | | |
| **Websites** | https://alison.com/tag/microsoft<br>Share and Discover Knowledge on SlideShare<br>https://support.microsoft.com/en-us/training<br>https://support.google.com/a/users<br>https://edu.gcfglobal.org/en/topics/googleapps/#<br>https://edu.gcfglobal.org/en/subjects/office/#<br>https://chat.openai.com | |

| **Grading Scheme**<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C -** Good | جي د | 70 - 79 | Sound work with notable errors |

| | | | | |
|---|---|---|---|---|
| | **D -** Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

# نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | Differential Mathematics | | | **Module Delivery** | |
| **Module Type** | Support | | | ☒ **Theory**<br>☐**Lecture**<br>☐ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | MIET1103 | | | | |
| **ECTS Credits** | 5 | | | | |
| **SWL (hr/sem)** | 125 | | | | |
| **Module Level** | | UGI | **Semester of Delivery** | | 1 |
| **Administering Department** | | MIET | **College** | HUC | |
| **Module Leader** | Ayadh Abdul Hamid Abdul Rahman | | **e-mail** | Ayadh73@huc.edu.iq | |
| **Module Leader's Acad. Title** | | Lecturer Assistant | **Module Leader's Qualification** | | MSc. |
| **Module Tutor** | | | **e-mail** | | |
| **Peer Reviewer Name** | | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq | |
| **Scientific Committee Approval Date** | | 8/11/2023 | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخر ى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Objectives**<br>أهداف المادة الدراسية | 1. To develop problem solving skills and understanding of Differential calculus through a broad range of Differentiation techniques.<br>2. To understand limits and theory of derivative and apply it on various types of functions.<br>3. This is the basic subject for all engineering fields.<br>4. Demonstrate basic knowledge and understanding of a core of plane analytical geometry, algebra and applied mathematics.<br>5. Introduce students to Derivatives of trigonometric functions and their inverses. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | Recall basic concepts of calculus: functions, variables, limits, and continuity.<br>Use the limit laws to evaluate the limit of a function.<br>Discuss continuity at a point and continuity over an interval.<br>Understand transcendental functions and how a function and its inverse are related. 5. Define Plane analytical geometry and identify how conic sections are formed in addition to define both in words and in algebraic formulae, a circle and its center and radius, and an ellipse and its foci.<br>Learn how to convert rectangular coordinates to polar coordinates and vice versa, as well as plot points using polar coordinates.<br>Differentiate algebraic and transcendental functions<br>Midterm<br>Discuss Chain rules and applications of the derivatives.<br>Define determinants and understand their relation to matrices · Also explain the methodology for finding a determinant. 10. Learn how to solve Linear equations by Cramer's rule. |

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|---|---|
| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following.<br><br>1-Limits and Continuity, Trigonometric functions, and their inverses. Hyperbolic and inverse hyperbolic functions, Exponential function and logarithmic function. Plane analytical geometry, parabola & ellipse, hyperbola. [25 hrs.]<br><br>2-Polar coordinates, Theory and rules of derivatives, Implicit Differentiation and Chain rules, Derivatives of trigonometric functions and their inverses. Derivatives of Transcendental functions and their inverses. [33 hrs.]<br><br>3-Properties of determinants, Solution of Linear equations by Cramer's rule. [10 hrs.]<br><br>4- Revision problem classes [5 hrs.] |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | The major approach used to offer this module will be to promote student engagement in the exercises while also enhancing and broadening their critical thinking abilities. Classes and interactive lessons will be used to achieve this. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 78 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 5 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 47 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 3 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | **125** | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 6 and 10 | LO #2, #7, #9, and #10 |
| | **Online assignments** | 2 | 10% (10) | 4 and 12 | LO #1 - #5 and #6 - #10 |
| | **Report** | 1 | 10% (10) | 14 | LO #1 - #8 |
| | **OnSite assignments** | 2 | 10% (10) | 2 and 5 | LO #1 - #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #7 |
| | **Final Exam** | 3hr | 50% (50) | 16 | LO #1 - #10 |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظر ي | |
|---|---|
| | **Material Covered** |
| **Week 1** | Limits and Continuity |
| **Week 2** | Transcendental functions- trigonometric functions, and their inverses. |
| **Week 3** | Transcendental functions-Hyperbolic and inverse hyperbolic functions |
| **Week 4** | Transcendental functions-Exponential function and logarithmic function. |
| **Week 5** | Plane analytical geometry, parabola & ellipse, hyperbola. |
| **Week 6** | Polar coordinates. |
| **Week 7** | Mid-term Exam |
| **Week 8** | Theory and rules of derivatives |
| **Week 9** | Implicit Differentiation and Chain rules. |
| **Week 10** | Derivatives of trigonometric functions<br>Derivatives of inverse trigonometric functions. |
| **Week 11** | Derivatives of the exponential and natural logarithms functions. |
| **Week 12** | Derivatives of Hyperbolic and inverse hyperbolic functions. |
| **Week 13** | Applications of the derivatives. |
| **Week 14** | Determinants and properties of determinants. |
| **Week 15** | Solution of Linear equations by Cramer's rule. + Preparatory week before the final Exam |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Engineering Mathematics I (**pdf**) | No |
| **Recommended Texts** | Thomas ' Calculus (**pdf**)<br>Fouteenth edition<br>Based on the original work by GEORGE B. THOMAS, JR. | No |

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| **Websites** | https://elearningatria.files.wordpress.com/2013/10/differential-calculus-1-23.pdf<br>http://dl.konkur.in/post/Book/Paye/Thomas-Calculus-14th-Edition-%5Bkonkur.in%5D.pdf |

| **Grading Scheme**<br>مخطط الدرجا ت | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جد ا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | متوس ط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Engineering Drawing** | | | **Module Delivery** | |
| **Module Type** | **Support** | | | ☐ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1104** | | | | |
| **ECTS Credits** | **5** | | | | |
| **SWL (hr/sem)** | **125** | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | 1 | |
| **Administering Department** | MIET | | **College** | HUC | |
| **Module Leader** | Ahmed Satar Jaber | | **e-mail** | AhmedJaber@huc.edu.iq | |
| **Module Leader's Acad. Title** | Assistant Lecturer | | **Module Leader's Qualification** | M.Sc. | |
| **Module Tutor** | Ahmed Hassan Ali | | **e-mail** | | |

| | | | |
|---|---|---|---|
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| **Module Aims, Learning Outcomes and Indicative Contents**<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims** | The module aims for the Basics of Engineering Drawing courseware is to teach the student the basic commands necessary for professional 2D drawing, design, and drafting using AutoCAD. Upon completion of the course, the student will:<br>• Become familiar with the AutoCAD user interface.<br>• Understand the fundamental concepts and features of AutoCAD.<br>• Use the precision drafting tools in AutoCAD to develop accurate technical drawings.<br>• Present drawings in a detailed and visually impressive manner.<br>• Develop a level of comfort and confidence with AutoCAD through hands-on experience. |

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| **Module Learning Outcomes** | Upon completion of the course, students should be able to:<br>1. The student will describe key terms and concepts associated with drafting and the drafting profession.<br>• Identifying software drafting tools (e.g. AutoCAD, Micro station, SolidWorks, and Google Sketch Up).<br>2. The student will identify elements of the AutoCAD software interface.<br>• Starting the AutoCAD program from the start menu.<br>• Using existing AutoCAD templates to create drawing documents.<br>• Identifying file extensions (such as.dwg, dxf, dwt, and .bak) and file locations.<br>• Creating, formatting, editing and saving an Auto CAD drawing.<br>3. The student will demonstrate an understanding of the skills necessary to create basic 2D AutoCAD drawings.<br>• Drawing lines, curves, circles, ellipses, rectangles, polygons, and donuts.<br>• Modifying a drawing using the Erase tool.<br>• Identifying and using the various types of Object Snaps and Auto tracking.<br>• Using the offset tool, drawing points, construction lines and rays.<br>4. The student will demonstrate the ability to modify an AutoCAD drawing.<br>• Creating and managing multiple layers that define line color, line width, line type, etc.<br>• Identifying and using object editing tools (such as fillet, chamfer, break, join, trim, extend, lengthen, and scale).<br>• Arranging and patterning objects with move, copy, mirror, rotate, align, and array.<br>5. The student will demonstrate an understanding How to assign: Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space.<br>6. The student will demonstrate an understanding Dealing with: Text, Style, M text, Scale text, Spell,<br>7. The student will demonstrate the Object viewing.<br>• Zooming techniques<br>• Panning techniques |

| | |
|---|---|
| | 8. The student will demonstrate the ability to output drawings in AutoCAD.<br>9. Drawing 3d modeling.<br>10. Drawing the Exercises. |

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|---|---|
| **Indicative Contents** | Indicative content includes the following.<br>**Basic Drawing & Editing Commands**<br>• Drawing Lines<br>• Erasing Objects<br>• Drawing Lines with Polar Tracking<br>• Drawing Rectangles<br>• Drawing Circles<br>• Undo and Redo Actions [20 hrs.]<br>**Making Changes in Your Drawing**<br>• Selecting Objects for Editing<br>• Moving Objects<br>• Copying Objects<br>• Rotating Objects<br>• Scaling Objects<br>• Mirroring Objects<br>• Editing with Grips [4 hrs.]<br>**Display Control**<br>• Zoom<br>• Pan<br>• Redraw<br>• Clean Screen.<br>[4 hrs.]<br>**Adding Dimensions**<br>•Dimensioning Concepts<br>•Adding Linear Dimensions<br>•Adding Radial and Angular Dimensions<br>•Editing Dimensions<br>[4 hrs.]<br>**Hatching**<br>•Hatching<br>•Editing<br>Hatches<br>[4hrs]<br>**Printing Your Drawing**<br>•Printing Layouts<br>• Print and Plot Settings [4 hrs.] |

| | |
|---|---|
| | **3D MODELLING, Convert** 2D to 3D, Solid Editing [19 hrs.] |

## Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

| | |
|---|---|
| **Strategies** | When it comes to learning and teaching engineering drawing using AutoCAD, there are several strategies that can be effective. Here are some recommendations:<br>Familiarize with the Software: Before diving into engineering drawing concepts, it's important to become familiar with the AutoCAD software. This includes understanding the user interface, basic tools, and commands. Start with introductory tutorials or online resources that cover the basics of AutoCAD.<br>Start with Fundamentals: Begin by teaching the fundamental concepts of engineering drawing, such as orthographic projection, isometric projection, dimensioning, and tolerancing. Explain the principles and techniques used in creating accurate and clear technical drawings.<br>Hands-on Practice: Engineering drawing is a practical skill, so provide ample opportunities for hands-on practice. Assign exercises and projects that require students to create different types of drawings using AutoCAD.<br>Encourage them to explore and experiment with various tools and commands.<br>Step-by-Step Instructions: Break down complex drawing tasks into smaller, manageable steps. Provide step-by-step instructions and demonstrations using AutoCAD, showing students how to execute each step effectively. This approach helps students understand the workflow and build their confidence.<br>Visual Aids and Examples: Utilize visual aids, such as slides, diagrams, and examples, to reinforce concepts. Show real-world engineering drawings and explain how they were created using AutoCAD. Visual representations can enhance understanding and make abstract concepts more tangible.<br>Group Activities and Collaboration: Promote collaboration among students by assigning group activities or projects. This allows them to work together, share knowledge, and learn from one another. Encourage students to discuss their approaches and problem-solving techniques related to engineering drawing in AutoCAD.<br>Provide Feedback: Regularly provide constructive feedback on students' drawings. Highlight areas for improvement, suggest alternative methods, and point out common mistakes. This feedback loop is crucial for students to refine their skills and develop a deeper understanding of engineering drawing principles.<br>Stay Updated with AutoCAD Features: AutoCAD is regularly updated with new features and enhancements. Stay up to date with these changes to ensure you're teaching the latest tools and workflows. Familiarize yourself with new capabilities that can improve efficiency and accuracy in engineering drawing.<br>Online Resources and Communities: Encourage students to explore online resources, tutorials, and communities dedicated to AutoCAD and engineering |

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| | drawing. There are numerous websites, forums, and YouTube channels that offer valuable content and support for learning AutoCAD.<br>Project-Based Learning: Incorporate project-based learning into the curriculum, where students can apply their engineering drawing skills to real-world scenarios. Assign projects that simulate industry-related tasks, such as creating architectural plans, mechanical assemblies, or electrical schematics using AutoCAD. |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب ل **15** اسبوع | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 63 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعي | 4 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 62 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعي | 4 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 125 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/ Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 20% (20) | 5, 12 | (LO #3,4) (LO #5,6) |
| | **Online Assignments** | 3 | 6% (6) | Continuous | (LO # 3-5) (LO # 6-10) |
| | **Projects** | 1 | 10% (10) | 13 | All |
| | **Onsite assignment** | 4 | 1% (1) | 4, 5, 10, 11 | LO # 3-9 |
| **Summative assessment** | **Midterm Exam** | 2 hr | 10% (10) | 7 | LO # 1-5 |
| | **Final Exam** | 3 hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Lab. Syllabus)<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Introduction to Autodesk AutoCAD**<br>Starting the Software<br>User Interface<br>Working with Commands<br>Cartesian Workspace<br>Opening an Existing Drawing File<br>Saving a Drawing File |
| **Week 2** | **Basic Drawing & Editing Commands**<br>Drawing Lines<br>Erasing Objects<br>Drawing Lines with Polar Tracking |
| | Drawing Rectangles<br>Drawing Circles<br>Undo and Redo Actions |
| **Week 3** | **Projects - Creating a Simple Drawing**<br>Create a Simple Drawing<br>Create Simple Shapes |
| **Week 4** | **Drawing Precision in AutoCAD**<br>Using Running Object Snaps<br>Using Object Snap Overrides<br>Polar Tracking at Angles<br>Object Snap Tracking<br>Drawing with Snap and Grid |

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|---|---|
| **Week 5** | **Making Changes in Your Drawing**<br>Selecting Objects for Editing<br>Moving Objects<br>Copying Objects<br>Rotating Objects<br>Scaling Objects<br>Mirroring Objects<br>Editing with Grips |
| **Week 6** | **Advanced Object Types**<br>Drawing Arcs<br>Drawing Polylines<br>Editing Polylines<br>Drawing Polygons<br>Drawing Ellipses |
| **Week 7** | **Advanced Editing Commands**<br>Trimming and Extending Objects<br>Stretching Objects<br>Creating Fillets and Chamfers<br>Offsetting Objects<br>Creating Arrays of Objects |
| **Week 8** | Mid-term exam |
| **Week 9** | **Adding Dimensions**<br>•Dimensioning Concepts<br>•Adding Linear Dimensions<br>•Adding Radial and Angular Dimensions |
| | •Editing Dimensions<br><br>**Text**<br>•Working with Annotations<br>•Adding Text in a Drawing<br>•Modifying Multiline Text<br>•Formatting Multiline Text<br>•Adding Notes with Leaders to Your Drawing |

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|---|---|
| **Week 10** | **Hatching**<br>•Hatching<br>•Editing Hatches |
| **Week 11** | 3D modeling |
| **Week 12** | Convert 2D To 3D. |
| **Week 13** | Exercises drawing |
| **Week 14** | **Printing Your Drawing**<br>•Printing Layouts<br>•Print and Plot Settings |
| **Week 15** | Preparatory week before the final Exam |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | D. A. Madsen, D. P. Madsen, and J. E. Briesacher, Engineering Drawing and Design, 5th ed., Clifton Park, NY: Delmar Cengage Learning, 2011. | Yes |
| **Recommended Texts** | F. E. Giesecke, A. Mitchell, H. C. Spencer, I. L. Hill, and J. T. Dygdon, Technical Drawing with Engineering Graphics, 15th ed., Upper Saddle River, NJ: Pearson, 2016. | No |
| **Websites** | https://www.coursera.org/browse/physical-science-and-engineering | |

| **Grading Scheme**<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | **التقدي ر** | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جد ا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |

| | | | | |
|---|---|---|---|---|
| | **D -** Satisfactory | متوس ط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| **Module Information**<br>معلومات المادة الدراسية | | | | |
|---|---|---|---|---|
| **Module Title** | **Democracy and Human Rights** | | **Module Delivery** | |
| **Module Type** | **Basic** | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1105** | | | |
| **ECTS Credits** | **2** | | | |
| **SWL (hr/sem)** | **50** | | | |
| **Module Level** | UGI | **Semester of Delivery** | 1 | |
| **Administering Department** | MIET | **College** | HUC | |

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| **Module Leader** | Ali Abdel Moneim Ahmed | **e-mail** | |
| **Module Leader's Acad. Title** | Assistant Lecturer | **Module Leader's Qualification** | M.Scs. |
| **Module Tutor** | | **e-mail** | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

## Relation with other Modules

العلاقة مع المواد الدراسية الأخر ى

| | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

## Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|---|---|
| **Module Aims**<br><br>أهداف المادة الدراسية | 1. التطور التاريخي لحقوق الإنسان:<br><br>دراسة التطور التاريخي لفهم حقوق الإنسان من الحضارات القديمة إلى العصور الحديثة.<br>2. حقوق الإنسان في الشرائع السماوية:<br><br>التركيز على حقوق الإنسان في الإسلام وكيف تم تضمينها في الشريعة الإسلامية.<br>3. اعتراف إقليمي بحقوق الإنسان:<br><br>فحص اعتراف الأقاليم الأوروبي، الأمريكي، الإفريقي، الإسلامي، والعربي بحقوق الإنسان.<br>4. دور المنظمات غير الحكومية:<br><br>دراسة دور المنظمات مثل اللجنة الدولية للصليب الأحمر ومنظمة العفو الدولية في حماية حقوق الإنسان.<br>5. الإطار القانوني الدولي والإقليمي:<br><br>التركيز على المواثيق الدولية والإقليمية، مثل الاعلان العالمي لحقوق الإنسان.<br>6. تحليل حقوق الإنسان في التشريعات الوطنية:<br><br>دراسة كيفية ترجمة حقوق الإنسان في التشريعات الوطنية، مع التركيز على الدستور العراقي.<br>7. تصنيف حقوق الإنسان وضماناتها:<br>فهم مختلف أشكال حقوق الإنسان والضمانات الدستورية والقضائية والسياسية لحمايتها. |
| **Module Learning Outcomes**<br><br>مخرجات التعلم للمادة الدراسي ة | 1.<br>2. القدرة على وصف وتحليل التطور التاريخي لحقوق الإنسان منذ الحضارات القديمة حتى العصور الحديثة.<br>3. القدرة على فحص حقوق الإنسان في حضارة وادي الرافدين وغيرها لفهم التأثير الثقافي على تطورها.<br>4. تفسير حقوق الإنسان في الإسلام وفهم كيف تم تضمينها في الشريعة الإسلامية.<br>5. القدرة على تحليل تطور حقوق الإنسان خلال العصور الوسطى والحديثة.<br>الفهم الشامل لاعتراف الأقاليم الأوروبي، الأمريكي، الإفريقي، الإسلامي، والعرب بحقوق الإنسان.<br>6. القدرة على تقييم دور منظمات مثل اللجنة الدولية للصليب الأحمر ومنظمة العفو الدولية في حماية حقوق الإنسان.<br>7. القدرة على دراسة وتحليل المواثيق الدولية والإقليمية، بما في ذلك الاعلان العالمي لحقوق الإنسان.<br>8. القدرة على فحص كيف تم ترجمة حقوق الإنسان في التشريعات الوطنية، مع التركيز على مثال الدستور العراقي. |

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| | 9. القدرة على تصنيف حقوق الإنسان إلى أشكال فردية وجماعية، وأجيال مثل الحقوق المدنية والسياسية والاقتصادية والاجتماعي ة.<br>10. القدرة على تحليل الضمانات الدستورية والقضائية والسياسية لحقوق الإنسان على الصعيدين الوطني والدولي والإقليمي. |
| **Indicative Contents**<br>المحتويات الإرشادية | فهم التاريخ التطوري لحقوق الإنسان (3 س<br>)تحليل حقوق الإنسان في الحضارات القديمة<br>( 3 س )فهم حقوق الإنسان في الشرائع<br>السماوية (3 س ) تحليل حقوق الإنسان في<br>العصور الوسطى والحديثة (3 س ) فهم<br>الاعتراف الإقليمي بحقوق الإنسان (3 س )<br>تقدير دور المنظمات غير الحكومية (3 س )<br>فهم الإطار القانوني لحقوق الإنسان<br>(3 س ) |
| | تحليل حقوق الإنسان في التشريعات الوطنية (3 س ) فهم أشكال وأجيال حقوق الإنسان (3 س<br>) تحليل ضمانات حقوق الإنسان (3 س ) |

## Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

| | |
|---|---|
| **Strategies** | تشجيع الطلاب على المشاركة في مناقشات تفاعلية حول تطور حقوق الإنسان عبر التاريخ.<br>مشروعات بحثية:<br>توجيه الطلاب في إعداد مشروعات بحثية تستكشف تطور حقوق الإنسان في فترات تاريخية محددة.<br>استخدام التكنولوجيا:<br>تضمين وسائل تكنولوجية لتعزيز تفاعل الطلاب وتقديم المعلومات بشكل أكثر تفاعلية.<br>ورش العمل والتمثيل العملي:<br>إجراء ورش عمل تفاعلية وأنشطة تمثيل لفهم أعمق لمفاهيم حقوق الإنسان.<br>تقديم تقييم مستمر:<br>تقديم تقييم مستمر لفحص تقدم الطلاب وفهمهم لتطور حقوق الإنسان على مر العصور. |

## Student Workload (SWL)
الحمل الدراسي للطالب

| | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 33 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 2 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 17 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 1 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 50 | | |

## Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 9 | LO #1, 2, 3, LO # 6, 7 |
| | Assignments | 2 | 10% (10) | 6, 13 | LO # 4 and LO#9 |
| | Seminar | 1 | 10% (10) | 12 | LO# 5, 6, 7, 8 |
| | Report | 1 | 10% (10) | 14 | LO# 8, 9, 10 |
| Summative assessment | Midterm Exam | 2hr | 10% (10) | 7 | LO # 1-7 |
| | Final Exam | 3hr | 50% (5)0 | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظر ي

| | |
|---|---|
| الأسبوع الأول | التطور التاريخي لحقوق الانسا ن حقوق الانسان في الحضارات القديمة )حضارة وادي الرافدين ،والحضارات القديمة الأخرى ( |
| الأسبوع الثـــــاني | حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الاسلام.<br>حقوق الانسان في العصور الوسطى والحديثة. |
| الاسبوع الثـــــالث | الاعتراف الاقليمي بحقوق الانسان على الصعيد الأوربي الأمريكي، الأفريقي، الإسلامي، العربي |
| الأسبوع الـــرابـع | المنظمات غير الحكومية ودورها في حقوق الانسان اللجنة الدولية للصليب الاحمر، منظمة العفو الدولية، منظمة مراقبة حقوق الانسان المنظمة العربية لحقوق الانسان ( |
| الأسبوع الخـــامس | حقوق الانسان في المواثيق الدولية والاقليمية والتشريعات الوطنية.<br>حقوق الانسان في المواثيق الدولية )الاعلان العالمي لحقوق الانسان العهدين الدوليين الخاصين بحقوق الانسان |

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|---|---|
| الأسبوع السـادس | حقوق الانسان في المواثيق الاقليمية ) الاتفاقية الأوربية لحقوق الانسان الاتفاقية الامريكية لحقوق الانسان الميثاق الأفريقي لحقوق الانسا ن الميثاق العربي لحقوق الانسا ن |
| الأسبوع السـابع | امتحان منتصف الفصل الدراسي |
| الأسبوع الثـامن | حقوق الانسان في التشريعات الوطنية (الدستور العراقي ) |
| الأسبوع التاسع | اشكال واجبال حقوق الانسان:<br>اشكال حقوق الانسان الحقوق الفردية، الحقوق الجماعية اجيال حقوق الانسان الجيل الاول الحقوق المدنية والسياسية(، )الجيل الثاني الحقوق الاقتصادية والاجتماعية(، )الجيل الثالث: حقوق الانسان الحديثة، الوعي الماني والبيتي |
| الأسبوع العاشر | ضمانات حقوق الانسان وحمايتها على الصعيد الوطني<br>الضمانات الدستورية والقضائية والسياسية |
| الاسبوع الحادي عشر | ضمانات حقوق الإنسان وحمايتها على الصعيدين الاقليمي والدولي (دور الامم المتحدة، دور المنظمات الاقليمية )جريمة الإبادة الجماعية. |
| الاسبوع الثاني عشر | تصنيف الحريات العامة الحريات الأساسية والفردية حرية الامن والشعور بالاطمئنان حرية الذهاب والاياب، الحرية الشخصية |
| الأسبوع الثالث عشر | الحريات الفكرية والثقافية حرية الرأي حرية المعتقد حرية التعليم<br>حرية الصحافة حرية التجمع حرية تشكيل الجمعيات |
| الأسبوع الرابـع عشر | الحريات الاقتصادية والاجتماعية حرية العمل، حرية التملك حرية التجارة والصناعة |
| الأسبوع الخامس عشر | الاستعداد للامتحان النهائي |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | 1 . "حقوق الانسان في العالم العربي : القضايا والتحديات"، تأليف: حجازي وجمال شعت.<br>الطبعة: الطبعة الثانية، العام: 2017.<br>2. "مبادئ حقوق الإنسان: المفاهيم والقضايا الحديثة"، تأليف: أحمد المجال وغسان حمدان.<br>الطبعة: الطبعة الاولى، العام: 2019. | Yes |

| | | |
|---|---|---|
| **Recommended Texts** | 1. ''حقوق الإنسان والديمقراطية''، تأليف: مصطفى كامل محمود<br>الطبعة: الطبعة الاولى، العام: 2015.<br>2 " " تأريخ حقوق الإنسان في العصور القديمة والوسطى "<br>التأليف : نبيل رزق.<br>الطبعة: الطبعة الثالثة، العام: 2012.<br>3 . "حقوق الإنسان في العراق: الواقع والتحديات"،<br>تأليف : سعد الله عباس<br>الطبعة: الطبعة الاولى، العام: 2014.<br>4 . "حقوق الإنسان في العراق: المفهوم والتطور"،<br>تأليف : عبدالكريم السامرائي<br>الطبعة: الطبعة الاولى، العام: 2018 .<br>5 . "حقوق الإنسان في العراق: بين التحديات والافاق"،<br>تأليف: محمد السامرائي و التواصل الحربي<br>الطبعة: الطبعة الاولى، العام:2018 . | No |
| **Websites** | The Collage E-Library | |

**Grading Scheme**

مخطط الدرجا ت

| Group | Grade | التقدير | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب (قيد المعالجة) | (45-)94 | More work required but credit awarded |
| | **F** – Fail | راسب | (0-)44 | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **English Language 1** | | | **Module Delivery** | |
| **Module Type** | **Basic** | | | ☒ **Theory**<br>☒ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1106** | | | | |
| **ECTS Credits** | **2** | | | | |
| **SWL (hr/sem)** | **50** | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | 1 | |
| **Administering Department** | MIET | | **College** | HUC | |
| **Module Leader** | Ameer Ali Abd | | **e-mail** | amer73@huc.edu.iq | |
| **Module Leader's Acad. Title** | Lecturer Assistant | | **Module Leader's Qualification** | MSc. | |
| **Module Tutor** | | | **e-mail** | | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | | **e-mail** | hussamuotg@huc.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents أهداف<br>المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |
|---|

| | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | The module aims of English Language (1) are designed to help learners at the beginner – pre-intermediate level develop their English language skills and achieve specific learning objectives, By the end of this course, students will:<br><br>1. Grammar Mastery: Develop a strong command of grammar rules, including possessive forms, question words, pronouns, prepositions, present simple, past simple, present continuous, past continuous, comparative and superlative adjectives, verb patterns, modal verbs (have/got to, should, must), time and conditional clauses, present perfect, past perfect, reported statements, and more.<br><br>2. Vocabulary Expansion: Expand their vocabulary in various contexts, covering numbers, family members, rooms and furniture, locations in and out of town, food and dining, parts of speech, synonyms, antonyms, and phrasal verbs.<br><br>3. Everyday English Proficiency: Develop practical language skills for everyday communication, including greetings, introductions, short answers, conversations, and expressions commonly used in daily life.<br><br>4. Reading Comprehension: Improve their reading comprehension skills through the analysis of diverse texts, including stories, articles, and informative content on a wide range of topics.<br><br>5. Writing Competence: Enhance their writing abilities by composing informal letters, using linking words, writing reviews of books or films, and crafting stories.<br><br>6. Critical Thinking and Analysis: Develop critical thinking skills by analyzing and discussing texts, comparing and contrasting information, and drawing conclusions from reading materials.<br><br>7. Cultural Awareness: Gain cultural insights through readings and discussions about various cultures and places around the world, fostering a broader worldview.<br><br>8. Effective Communication: Improve their ability to express ideas clearly and confidently in both spoken and written forms, making them effective communicators in English.<br><br>9. Language Assessment: Prepare for assessments, including a midterm exam, by reviewing and demonstrating their understanding of grammar, vocabulary, and reading comprehension. |

| | |
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| | 10. Independent Learning: Develop independent learning skills, enabling them to continue improving their English language proficiency beyond the course.<br><br>11. Language Fluency: Work towards achieving fluency in English, allowing them to engage in conversations, express thoughts, and write coherently with ease.<br><br>12. Cultural Competency: Build cultural competence and sensitivity through exposure to diverse texts and discussions about different cultures and lifestyles.<br><br>These course goals reflect the overarching objectives of the English class and provide a clear direction for student learning and language development throughout the 15-week course. |

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| **Module Learning Outcomes**<br><br>مخرجات التعلم للمادة الدراسية | The learning outcomes for English (1) 15-week English class syllabus:<br><br>1. Students will comprehend and discuss texts on different topics<br>2. Students will expand their vocabulary related to various topics 3. Students will acquire vocabulary related to Various topics<br>4. Students will be able to write letters , and reviews.<br>5. Students will be able to use possessive forms correctly in sentences, indicating ownership.<br>6. Students will master question words, pronouns, and prepositions.<br>7. Students will distinguish between present simple and past simple tenses.<br>8. Students will learn about the present continuous, present simple vs. continuous, and have & have got.<br>9. Students will study the past continuous and quantity and articles.<br>10. Students will understand comparative and superlative adjectives.<br>11. Students will focus on verb patterns, future intentions, and present perfect and past simple tenses.<br>12. Students will study modal verbs (have/got to, should, must).<br>13. Students will learn about time and conditional clauses.<br>14. Students will cover present perfect continuous, present perfect simple vs. continuous, past perfect for clarification, and reported statements. |

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| **Indicative Contents**<br>المحتويات الإرشادية | Beginners book :<br><br>**Grammar :** Possessive ( CH1,2,4)<br>**Vocabulary –** numbers –( CH1, 2, 5) -- the family (Ch4)<br>**Every day English-**all (Ch1,3)<br>**Reading-** where are they (Ch2) , The Chairty Walk, (Ch3) , My best Friend,(Ch4) …….. (2 hours)<br><br>**Grammar :** Question words ( CH 7) – Pronouns (Ch7) – Prepositions (Ch8) **Vocabulary –** Rooms and Furniture –( CH8) – in and out of Town (Ch4),<br>Saying Years (ch9)<br>**Every day English-**all (Ch 9)<br>**Reading-** A Postcard from San Fransisco (Ch7) , Vancouver , the best city in the world, (Ch8) , It is a Jacksin Pollock ,(Ch9) …….. (2 hours)<br><br>**Grammar :** Present Simple (Ch5,6)- Past Simple (Ch9,10)<br>**Vocabulary – shopping, food, in a restaurant** (ch12)<br>**Every day English-**all (Ch 14)<br>**Reading-** The internet (Ch11) , You are what you eat (Ch12) , This week is different (Ch13) , Life's big events (Ch14) …….. (2 hours)<br><br>Pre-intermediate book:<br>**Grammar :** - |

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| | **Vocabulary –** Parts of speech (ch1,3, 7)<br>**Every day English-**Social expressions (Ch 1)<br>**Reading-** People the great communicators (Ch1)<br>**Writing-** A letter to a pen friend (informal) (Ch1) …….. (2 hours)<br><br>**Grammar :** - Present continuous – Present simple vs. continuous-have &have got (ch2)<br>**Vocabulary –**<br>**Every day English-**Making conversation (Ch 2)<br>**Reading-** Living in the USA (Ch2)<br>**Writing-** Linking words (Ch2,3) …….. (2 hours)<br><br>**Grammar :** - Past continuous (ch3) – Quantity and Articles (Ch4)<br>**Vocabulary –**<br>**Every day English-**<br>**Reading-** The burglar's friend – The thief, his mother and 2 billion – Sherlock<br>Holmes the three students (Ch3)<br>**Writing-** …….. (2 hours)<br><br>**Grammar :** - comparative and superlative adj (ch6)<br>**Vocabulary –** synonyms and antonyms (ch6)<br>**Every day English-**<br>**Reading-** Markets around the world(Ch4)<br>**Writing-** …….. (2 hours)<br><br>**Grammar :**<br>**Vocabulary:**<br>**Every day English:**<br>**Reading-** Hollywood Kids (Ch5) – A tale of two millionaires (ch6) **Writing-** …….. (2 hours)<br><br>**Grammar :** Verb Patterns (Ch5) – Future intentions (Ch5)-Present Perfect and Past simple (ch7) **Vocabulary:**<br>**Every day English:**<br>**Reading:**<br>**Writing:** Relative clauses (ch6,7)…….. (2 hours)<br><br>**Grammar :** have (got)to, should, must (ch8)<br>**Vocabulary: -**<br>**Every day English:** Short Answers (ch7) – At the doctor's (ch8)<br>**Reading-** Celebrity interview from Hi (Ch7)<br>**Writing-** …….. (2 hours) |

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| | **Grammar :** Time and conditional clauses (ch9)<br>**Vocabulary: -**<br>**Every day English:** In a hotel (ch9)<br>**Reading-** Problem page (Ch8)<br>**Writing-** Formal letter (ch8) …….. (2 hours)<br><br>**Grammar:**<br>**Vocabulary: -**<br>**Every day English:** Exclamation (ch11) – saying goodbye (ch14)<br>**Reading-** The world's first megalopolis (Ch9)<br>**Writing-** writing a review of a book or a film (ch11)…….. (2 hours)<br><br>**Grammar :**<br>**Vocabulary:** Phrasal verbs (ch12)- word formation (ch3)<br>**Every day English:** Social expressions (ch12)<br>**Reading-** Super volcano (Ch12)<br>**Writing-** writing a story (ch14)…….. (2 hours)<br><br>**Grammar :** present perfect continuous (ch13) - Present perfect simple vs continuous (ch13)- Past perfect for clarification (ch14) – Reported statement (ch14)<br>**Vocabulary:**<br>**Every day English:**<br>**Reading-** A funny way to earn a living (Ch13)<br>**Writing-** …….. (2 hours) |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | The learning and teaching strategies for the English Language (Beginner) module may include:<br>1. Interactive Language Practice: Engage learners in communicative activities that promote active participation and language practice. This can include pair work, group discussions, role-plays, and language games.<br>2. Authentic Materials: Incorporate authentic materials such as videos, audio recordings, and reading texts that reflect real-life language use. This helps learners develop their listening, speaking, reading, and writing skills in authentic contexts.<br>3. Task-Based Learning: Design tasks and projects that require learners to use the target language to accomplish specific goals or solve problems. This promotes meaningful language use and encourages critical thinking and problem-solving skills.<br>4. Visual Aids and Multimedia: Utilize visual aids, charts, diagrams, and multimedia resources to support language learning and comprehension. Visuals can enhance understanding, aid in vocabulary acquisition, and provide context for language use.<br>5. Error Correction and Feedback: Provide timely and constructive feedback on learners' language production to help them identify and correct errors. Encourage self-correction and peer correction to foster a supportive learning environment. |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ 15 اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 33 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 2 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 17 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 1 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 50 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 3, 12 | LO #1-6 and 1,2,4,10-12 |
| | **Assignments** | 2 | 10% (10) | 4, 10 | LO # 1-7 and 1-11 |
| | **Discussion** | 2 | 10% (10) | continuous | 1-14 |
| | **Onsite assignment** | 5 | 10% (10) | continuous | 1-14 |
| **Summative assessment** | **Midterm Exam** | 2 hours | 10% (10) | 7 | LO # 1-9 |
| | **Final Exam** | 3 hours | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Grammar :** Possessive ( CH1,2,4)<br>**Vocabulary –** numbers –( CH1, 2, 5) -- the family (Ch4)<br>**Every day English-**all (Ch1,3)<br>**Reading-** where are they (Ch2) , The Chairty Walk, (Ch3) , My best Friend,(Ch4) |
| **Week 2** | **Grammar :** Question words ( CH 7) – Pronouns (Ch7) – Prepositions (Ch8)<br>**Vocabulary –** Rooms and Furniture –( CH8) – in and out of Town (Ch4), Saying Years (ch9) **Every day English-**all (Ch 9)<br>**Reading-** A Postcard from San Fransisco (Ch7) , Vancouver , the best city in the world (Ch8) , It is a Jacksin Pollock (Ch9) |
| **Week 3** | **Grammar :** Present Simple (Ch5,6)- Past Simple (Ch9,10)<br>**Vocabulary – shopping, food, in a restaurant** (ch12)<br>**Every day English-**all (Ch 14)<br>**Reading-** The internet (Ch11) , You are what you eat (Ch12) , This week is different (Ch13) |

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| | , Life's big events (Ch14) |
| **Week 4** | **Vocabulary –** Parts of speech (ch1,3, 7)<br>**Every day English-**all (Ch 1)<br>**Reading-** People the great communicators (Ch1)<br>**Writing-** A letter to a pen friend (informal) (Ch1) |
| **Week 5** | **Grammar :** - Present continuous – Present simple vs. continuous- have &have got (ch2)<br>**Every day English-**Making conversation (Ch 2)<br>**Reading-** Living in the USA (Ch2)<br>**Writing-** Linking words (Ch2,3) |
| **Week 6** | **Grammar :** - Past continuous (ch3) – Quantity and Articles (Ch4)<br>**Reading-** The burglar's friend – The thief, his mother and 2 billion – Sherlock Holmes the three students (Ch3) |
| **Week 7** | **Midterm** |
| **Week 8** | **Grammar:** - comparative and superlative adj (ch6)<br>**Vocabulary –** synonyms and antonyms (ch6)<br>**Reading-** Markets around the world(Ch4) |
| **Week 9** | **Reading-** Hollywood Kids (Ch5) – A tale of two millionaires (ch6) |
| **Week 10** | **Grammar :** Verb Patterns (Ch5) – Future intentions (Ch5)- Present Perfect and Past simple<br>(ch7)<br>**Writing:** Relative clauses (ch6,7) |
| **Week 11** | **Grammar :** have (got)to, should, must (ch8)<br>**Every day English:** Short Answers (ch7) – At the doctor's<br>(ch8) **Reading-** Celebrity interview from Hi (Ch7) |
| **Week 12** | **Grammar :** Time and conditional clauses (ch9)<br>**Every day English:** In a hotel (ch9)<br>**Reading-** Problem page (Ch8)<br>**Writing-** Formal letter (ch8) |
| **Week 13** | **Every day English:** Exclamation (ch11) – saying goodbye (ch14)<br>**Reading-** The world's first megalopolis (Ch9)<br>**Writing-** writing a review of a book or a film (ch11) |
| **Week 14** | **Vocabulary:** Phrasal verbs (ch12)- word formation (ch3)<br>**Every day English:** Social expressions (ch12)<br>**Reading-** Super volcano (Ch12)<br>**Writing-** writing a story (ch14) |
| **Week 15** | **Grammar :** present perfect continuous (ch13) - Present perfect simple vs continuous<br>(ch13)- Past perfect for clarification (ch14) – Reported statement<br>(ch14) **Reading-** A funny way to earn a living (Ch13) |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | • Soars, J., Soars, L. (2014). New Headway Plus: Beginner Student's Book. United Kingdom: Oxford University Press.<br>• Soars, J., Soars, L. (2006). New Headway Plus: Preintermediate. United Kingdom: Oxford University Press. | Yes |
| **Recommended Texts** | Audio CDs or Online Audio: Recordings of listening exercises, dialogues, and pronunciation practice.<br>Beginner workbook<br>Pre-intermediate Workbook | No |
| **Websites** | | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |

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|---|---|---|---|---|
| | **D -** Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| **Module Information**<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **MEDICAL CHEMISTRY** | | **Module Delivery** | | |
| **Module Type** | **Support** | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | | |
| **Module Code** | **MIET1107** | | | | |
| **ECTS Credits** | **7** | | | | |
| **SWL (hr/sem)** | **175** | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | 1 | |
| **Administering Department** | MIET | | **College** | HUC | |

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|---|---|---|---|
| **Module Leader** | A'laa Bader | **e-mail** | alaa.mohammed@kus.edu.iq |
| **Module Leader's Acad. Title** | Lecturer | **Module Leader's Qualification** | Ph.D. |
| **Module Tutor** | Safana Ali | **e-mail** | Safana1986@huc.edu.iq |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | - |
| **Co-requisites module** | None | **Semester** | - |

| **Module Aims, Learning Outcomes and Indicative Contents**<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1- To write and balance chemical equation which many calculations depend on.<br>2- To convert chemical formula to components composition percent or to conclude empirical formula depending upon composition percent.<br>3-To predict about the economic pathway for specific reaction to happen depending upon stoichiometric calculations of balanced chemical equations.<br>4-To Know how to prepare buffers with different ranges of pH using acids with suitable dissociation constant of acid.<br>5- To understand the effect of common ions on equilibrium of reversible reactions. |

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| | 6-To focus on theoretical working principles of spectrophotometric instruments.<br>7- to discuss the importance of isotopes in diseases treatment and diagnosis. |
| | At ending of course, the student will:<br>1- Able to give chemical compounds their systematic names and to write their chemical formulae.<br>2- Know how to calculate concentrations of chemicals and to express them in various concentration terms. In addition to convert one term to another.<br>3- Calculate the compound composition percent according to chemical formula or know empirical formula depending on compounds composition percent.<br>4- Write chemical equations of different reactions and balance them and predict the limiting reactant in addition to the expected weight of products.<br>5-Eestimate the reaction direction according to calculation of equilibrium constant of reversible reactions.<br>6-Know how to prepare buffers and how buffer work?<br>7- Understand importance and wide application of slightly soluble salts.<br>8- Perform the statistical treatment of analytical results and source of errors.<br>9- Recognize the importance of galvanic cells in current generation and role of electrolytic cells in metallic electroplating. |

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| | 9-Consider zero, 1st and 2nd laws of thermodynamic processes, and evaluate thermodynamic functions of work, enthalpy, heat, internal energy and giving judgment of spontaneous process or not by entropy and Gibbs free energy.<br><br>10-List the components of photometric determination techniques, in addition to principals of their works.<br><br>11- Identify the photometric instrumentations such as FIS, FT-IR spectrophotometer, and mass spectrophotometry.<br><br>12- Emphasize the vital role of isotopes in diagnosis and diseases treatment. |

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| **Indicative Contents**<br>المحتويات الإرشادية | Isotopes, Chemical formula, Units conversion (5 hr)<br>Normality, Formality, Molarity, Molality, Mole fraction, Mill equivalent, ppm, ppb, mass percent, mass/vol percent. (10 hr)<br>Stoichiometry (4 hr) Chemical equilibrium (4 hr) dissociation constant (5 hr) pH (4 hr) Buffers (5 hr) common ion (4 hr)<br>Solubility product constant (4 hr)<br>Statistical treatment, average, range, standard deviation, variance, Absolute error, relative error. (6 hr)<br>Redox reactions, Electrochemistry, electrolytes, Nernst equation, cell potential (6 hr). 1st law of thermodynamic, Reversible and irreversible process, Heat capacities, adiabatic process, Isothermal processes (6 hr).<br>2nd law of thermodynamic, entropy, Gibbs free energy (4 hr).<br>Photochemistry, electromagnetic spectrum, Beer Lambert law (6 hr).<br>IR Spectrophotometer, mass spectroscopy, FIS, FES (6 hr).<br>Potentiometer, conductive meter, pH-meter (5 hr). |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | Homework assignments, written exam, Quizzes, seminars, reports, practical tests and Online tests |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 94 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 6 |

| | | | |
|---|---|---|---|
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 81 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 5 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 175 | | |

**Module Evaluation**
تقييم المادة الدراسية

| | | Time/ Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Formative assessment** | **Quizzes** | 15min/ 2 times | 20% (20) | 5th , 12th | LO# 1st – 5th<br>LO# 10th – 12th |
| | **Online Assignments** | 5min/ 2 times | 10% (10) | 6th ,13th | LO# 1st<br>LO# 10th |
| | **Lab.** | Each lab/ 5 times | 5% (5) | 3rd , 4th , 5th , 6th , 7th | LO# 1st -2nd ,<br>LO# 3rd<br>LO# 4th<br>LO# 5th<br>LO# 6th – 7th |
| | **Seminar** | 10min/ One time | 5% (5) | 6th | LO# 2nd – 5th |
| **Summative assessment** | **Midterm Exam** | 180 min/ one time | 10% | 8th | LO# 1st – 10th |
| | **Final Exam** | 240min/ one time | 50% | 16th | |
| **Total assessment** | | | 100% | | |

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

| | Material Covered |
|---|---|
| Week 1 | Introduction, Units conversion, Isotopes, Chemical formula and chemical equation |
| Week 2 | Methods of expressing analytical concentrations: Normality, Formality, Molarity, Molality, Mole fraction, Mill equivalent, ppm, ppb, wt. and vol. percent ratio. |
| Week 3 | Stoichiometry |
| Week 4 | Chemical equilibrium |
| Week 5 | Acid-Base dissociation constant |
| Week 6 | pH-scale, buffer solution+ Solubility of precipitations, common ion effect |
| Week 7 | Mid-term Exam |
| Week 8 | Errors & statistical treatment of analytical data sources of errors, types of errors, average mode, range, average derivation, standard deviation, relative standard deviation, variance, method of expressing accuracy, Absolute error, relative error. |
| Week 9 | Redox reactions, balancing of redox equation |
| Week 10 | Electrochemistry: electrochemical cells, types of electrodes, electrolytes, Nernst equation, cell potential |
| Week 11 | Thermodynamic, Zero and first law of thermodynamic, Reversible and irreversible expansion, Heat capacities, adiabatic expansion, Isothermal processes. |
| Week 12 | Second law of thermodynamic: spontaneous processes, entropy and Gibbs free energy. |
| Week 13 | Photochemistry (spectrophotometer analysis), Regions of electromagnetic spectrum, Absorption and emission of electromagnetic spectrum, Beer Lambert law, instrumentations components of spectrophotometer. |

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| **Week 14** | **IR Spectrophotometer, mass spectroscopy, flame ionization spectrophotometry.** |
| **Week 15** | **Potentiometer, conductive meter, pH-meter and some other applications of chemical sensors+**<br>**Preparatory week before the final Exam** |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Principals of qualitative analysis. |
| **Week 2** | Qualitative analysis of cations of 1st and 2nd groups. |
| **Week 3** | Qualitative analysis of cations of 3rd and fifth groups. |
| **Week 4** | Introduction to Quantitative (volumetric) analysis and types of standard substance in titration, principles and calculations of titration. |
| **Week 5** | How to prepare solution of primary standard materials and to standardize secondary standard substance of HCl, (acid-base titration) |
| **Week 6** | Standardization secondary standard substance of NaOH and its application by determination of vinegar acidity. |
| **Week 7** | Determination of residual chloride in tape water by titration against silver nitrate (precipitation titration). |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس |
|---|

| | | |
|---|---|---|
| **Required Texts** | | |
| **Recommended Texts** | **1-ESSENTIALS OF GENERAL CHEMISTRY By EBBING GABBON RAGSDALE**<br>**2-CHEMICAL PRINCIPLES**<br>**By Steven S Zumdahl - 4th edition** | **No** |
| **Websites** | | |

| **Grading Scheme**<br>مخطط الدرجا ت | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 – 100 | Outstanding Performance |
| | **B -** Very Good | جيد جدا | 80 – 89 | Above average with some errors |
| | **C -** Good | جيد | 70 – 79 | Sound work with notable errors |
| | **D -** Satisfactory | متوسط | 60 – 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 – 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راس ب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# وصف المقرر الدراسي المرحله الأولى كورس الثاني

**MODULE DESCRIPTION FORM**

# نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Fundamentals of Electrical Engineering (AC)** | | | **Module Delivery** | |
| **Module Type** | **Core** | | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1201** | | | | |
| **ECTS Credits** | **6** | | | | |
| **SWL (hr/sem)** | **150** | | | | |
| **Module Level** | | UGI | **Semester of Delivery** | | 2 |
| **Administering Department** | | MIET | **College** | EETC | |
| **Module Leader** | Huda Farooq Jameel | | **e-mail** | Huda_baban@mtu.edu.iq | |
| **Module Leader's Acad. Title** | | Asst. Lecturer | **Module Leader's Qualification** | | M.Sc |
| **Module Tutor** | Salah Hassan Abbas | | e-mail | salah.shaw.84a@gmail.com | |
| **Peer Reviewer Name** | | Dr. Aws Alazawi | **e-mail** | aws_basil@mtu.edu.iq | |
| **Scientific Committee Approval Date** | | 8/11/2023 | **Version Number** | 1.0 | |

| Relation with other Modules<br>العالقة مع المواد الدراسية األلخرى | | | |
|---|---|---|---|
| **Prerequisite module** | Fundamentals of Electrical Engineering (DC) | **Semester** | 1 |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات إلرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1. To develop problem solving skills and understanding of circuit theory through the application of techniques.<br>2. To understand capacitance, inductance and resistance from an AC circuit.<br>3. To learn the basic concept of First-Order electrical circuits.<br>4. To explain the parallel and series circuits.<br>5. To understand Sinusoids and Phasors problems.<br>6. To perform AC- network theorem.<br>7. To perform AC Power Analysis.<br>8. To understand 3-phase system. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | 1. Recognize how electricity works in electrical circuits.<br>2. List the various terms associated with electrical circuits.<br>3. Summarize what is meant by a basic electric circuit.<br>4. Describe electrical capacitance, inductance and resistance.<br>5. Define First-Order electrical circuits' voltage, resistance, and current.<br>6. Identify the basic circuit elements and their applications.<br>7. Discuss the operations of sinusoids and phasors in an electric circuit.<br>8. Discuss the various properties of resistors, capacitors, and inductors.<br>9. Explain the parallel and series circuits.<br>10. Identify the capacitor and inductor phasor relationship with respect to voltage and current.<br>11. Learn the 3-Phase system, Wye connection and Delta connection.<br>12. Identify the power in balance phase circuit.<br>13. Describe the Magnetism and Magnetic Circuits |

| | |
|---|---|
| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following.<br>AC circuits I – Generation of alternating current, Sinusoidal current. The mean values of current and voltage. [15 hrs]<br>AC Circuits II - The effective values of current and voltage. The vector diagram, [10 hrs]<br>The instantaneous power and mean power of A.C , relative and apparent power .<br>. [10 hrs]<br>Revision problem classes [8 hrs]<br>3-Phase system, Wye connection, and Delta connection [10 hrs]<br>The power in balance phase circuit. [7 hrs]<br>Revision problem classes [5 hrs] |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students. |

| Student Workload (SWL)<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدرا سيالمنتظم للطالب خالل الفصل | 79 | **Structured SWL (h/w)**<br>الحمل الدرا سيالمنتظم للطالب أسبوعيا | 5 |
| **Unstructured SWL (h/sem)**<br>الحمل الدرا سيغ يالمنتظم للطالب خالل الفصل | 71 | **Unstructured SWL (h/w)**<br>الحمل الدرا سيغ يالمنتظم للطالب أسبوعيا | 5 |
| **Total SWL (h/sem)**<br>الحمل الدرا سيالك يالطالب خالل الفصل | 150 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 8% (8) | 5, 10 | LO #1-4, 6- 9 |
| | **Project** | 1 | 10% (10) | 12 | LO # 1-11 |
| | **OnSite assignment** | 2 | 6% (6) | 4, 11 | LO # 4, 11 |
| | **Report and presentation** | 1 | 6% (6) | 13 | LO # 6, 8, 10 |
| | **Lab** | 5 | 10% (10) | 3, 6, 9, 12, 15 | LO # 1-2, 4-5, 7-8, 10-11, 13-14 |

| | | | | | |
|---|---|---|---|---|---|
| **Summative assessment** | **Midterm Exam** | 2 hr | 10% (10) | 7 | LO # 1-7 |
| | **Final Exam** | 4hr | 50% (50) | 15 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)**<br>المنهاج االسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Generation of alternating current, Sinusoidal current |
| **Week 2** | Average and RMS values of current & voltage |
| **Week 3** | AC in resistive circuits<br>Current & voltage in an inductive circuit |
| **Weeks 4-6** | Current and voltage in an capacitive circuits<br>AC series and parallel circuit<br>RL, RC and RLC circuit analysis & phasor representation |
| **Week 7** | Mid-term exam |
| **Weeks 8-11** | Power in resistive circuits<br>Power in inductive and capacitive circuits<br>Power in circuit with resistance and reactance<br>Measurement of power in a single-phase AC circuit |
| **Week 12-15** | Basic concept & advantage of Three-phase circuit<br>Phasor representation of star & delta connection<br>Measurements of power & power factor in 3-phase system<br>Preparation for final exam |
| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج االسبوعي للمختبر | |
| | **Material Covered** |
| **Week 1** | Introduction to electrical elements, sources, and measuring devices related to electrical circuits. |
| **Week 2 + week3** | Generating AC Voltages and Measurement Frequency, Period, Amplitude, and Peak Value. |
| **Week 4** | Calculations and Verification of the Impedance of RL series circuits |
| **Weeks 5** | Calculations and Verification of the current of RL series circuits |
| **Week 6** | Calculations and Verification of Impedance RC series circuits + Calculations and Verification of Current RC series circuits |
| **Weeks 7** | Mid-term exam |

| | |
|---|---|
| **Week 8** | Calculations and verification of the impedance of RLC series circuits |
| **Week 9** | Calculations and verification of the current of RLC series circuits |

| | |
|---|---|
| **Week 10** | Calculations of Power in AC Circuits |
| **Week 11** | Calculations and verification of the impedance of RL and RC parallel circuits |
| **Week 12** | Calculations and verification of the current of RL and RC parallel circuits |
| **Week 13** | Calculations and verification of the impedance RLC parallel circuits |
| **Week 14** | Calculations and verification of the impedance current RLC parallel circuits |
| **Week 15** | Final exam |

## Learning and Teaching Resources
مصادر التعلم والتدريس

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education | Yes |
| **Recommended Texts** | Electric Circuits Seventh Editionو Schaum's Outline Series | No |
| **Websites** | | |

## Grading Scheme
مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب )قيد المعالجة( | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

# نموذج وصف المادة الدراسية

| **Module Information**<br>معلومات المادة الدراسية | | | | |
|---|---|---|---|---|
| **Module Title** | **Medical physics** | | **Module Delivery** | |
| **Module Type** | **Support** | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1202** | | | |
| **ECTS Credits** | **5** | | | |
| **SWL (hr/sem)** | **125** | | | |
| **Module Level** | UG1 | **Semester of Delivery** | 2 | |
| **Administering Department** | MIET | **College** | EETC | |
| **Module Leader** | Mayss alreem Nizar hammed | **e-mail** | Mayssalreem92@mtu.edu.iq | |
| **Module Leader's Acad. Title** | Assist. lecturer | **Module Leader's Qualification** | M.Sc. | |
| **Module Tutor** | | **e-mail** | | |
| **Peer Reviewer Name** | Prof Dr. Jinan Fadhil Mahdi | **e-mail** | Jinan.f@mtu.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | none | **Semester** | |
| **Co-requisites module** | none | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1- to recognize the influence of forces on the human body Identify how the skeleton works<br>2- to show how pressure affects the body's organs Recognize physical activity of the lungs and breathing<br>3- to demonstrate the physics of the cardiovascular system and the urinary system<br>4- to distinguishes the basic principles using the applications of electricity and magnetism in medicine<br>5- to shall be acquainted with respiratory, cardiovascular and cardiovascular equipment<br>6- to distinguishes the basic principles, using the sound waves in medicine and the use of x-rays in the diagnosis and identification of diseases |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | Upon completion of the course, students should be able to:<br>1- Understand the difference between the Forces.<br>2- Know the bone has at least six functions. What are the main components of the bone, and to study the methods of Measurement the minerals quantity in the bone<br>3- know methods of diathermy<br>4- understand how Energy change in the body<br>5- know pressures inside the body parts and measure it<br>6- understand how to work the lungs and How the blood and lungs interact<br>7- know nervous system and the neuron<br>8- know the graphing devices of the body organs<br>9- know the applications of Electricity and Magnetism in Medicine<br>10- know the application of sound in medicine, know sonar devices<br>11- know the application of light and laser in medicine<br>12- know Major components of the cardiovascular system<br>13- know physics of nuclear medicine<br>14- know the x- ray device |
| **Indicative Contents**<br>المحتويات الإرشادية | 1- Define the Forces , Frictional Forces , Dynamics (5hrs)<br>2- functions of the skeleton and Bone consists of quite different materials and how to measure mineral in the bones (5 hrs)<br>3- Types of thermometers , Heat therapy, Cryogenics (5 hrs)<br>4- Sphygmomanometer, blood pressure, bladder pressure , tonometer(4hrs)<br>5- Function of Lungs & Breathing, breath rate, airways, Dalton's law of partial pressures(3hrs)<br>6- The nervous system and the neuron, Electrocardiogram, Electro retion gram (ERG), The magneto cardiogram (MCG)(4hrs) |

| | |
|---|---|
| | 7- Magnetic signals from the heart –magneto cardiogram(3hrs)<br>8- Macro shock, Micro shock (3hrs)<br>9- General Properties of Sound, Acoustic Impedance, Absorption, A-mode Display, Doppler Ultrasound(5hrs)<br>10- Endoscope, cystoscopes, Emissive IR photography. (5hrs)<br>11- Laser, population inversion, X-ray (6hrs)<br>12- Physics of the cardiovascular system (5 hrs) |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | Daily assessment - weekly assessment - quarterly assessment - objective questions - general questions - practical tests. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 64 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 4 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 61 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 125 | | |

| **Module Evaluation**<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 4, 11 | LO # 1-3 and 8-10 |
| | **Online Assignments** | 2 | 6% (6) | 4, 7 | LO # 3 and 6 |
| | **Onsite Assignments** | 2 | 4% (4) | 9, 12 | LO # 8 and 11 |
| | **Lab** | 2 | 10% (10) | 8, 13 | LO # 1-6 and 7-11 |

| | | | | | |
|---|---|---|---|---|---|
| | **Report** | 5 | 10% (10) | 14 | LO # 1,2 and 3,4 and 5-6 and 7,8 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | and 9,10 |
| **Summative assessment** | **Midterm Exam** | 2 hr. | 10% (10) | 7 | LO # 1-7 |
| | **Final Exam** | 4 hr. | 50% (50) | 14 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)**<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Forces on and in the body. |
| **Week 2** | Physics of the skeleton. |
| **Week 3** | Heat & cold in medicine |
| **Week 4** | Energy, work and power of the body, Pressure in body organs |
| **Week 5** | Physics of the lungs and breathing. |
| **Week 6** | Physics of cardiovascular system |
| **Week 7** | **Mid Term Exam** |
| **Week 8** | Physics of urinary system. |
| **Week 9** | Electricity within the body. |
| **Week 10** | Sound in medicine and physics of hearing. |
| **Week 11** | Light in medicine and physics of vision. |
| **Week 12** | Diagnostic X-rays |
| **Week 13** | Physics of nuclear medicine (radioisotopes in medicine). |
| **Week 14** | Physics of radiation therapy+ Radiation protection |
| **Week 15** | **Preparatory week before the final exam** |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: Introduction to laboratory tools |
| **Week 2** | Lab 2: the simple pendulum |
| **Week 3** | Lab 3: hook's law |
| **Week 4** | Lab 4: the blood pressure |
| **Week 5** | Lab 5: the friction |

| | |
|---|---|
| **Week 6** | Lab 6: the speed of sound |

| | |
|---|---|
| **Week 7** | Lab 7: the laser |
| **Week 8** | Lab 8: viscosity of liquids |
| **Week 9** | Lab 9: The cylindrical body |
| **Week 10** | Lab 10: The convex lens |
| **Week 11** | Lab 11: the concave lens |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Recommended Texts** | Introductory Physics I Elementary Mechanics by Robert G. Brown | NO |
| **Websites** | https://webhome.phy.duke.edu/~rgb/Class/intro_physics_1/intro_physics_1.pdf | |

| **Grading Scheme**<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group** | **FX** – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |

| | | | | |
|---|---|---|---|---|
| **(0 – 49)** | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The Universityhas a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

# نموذج وصف المادة الدراسية

| **Module Information**<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Mechanics** | | | **Module Delivery** | |
| **Module Type** | **Support** | | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET 1203** | | | | |
| **ECTS Credits** | **4** | | | | |
| **SWL (hr/sem)** | **100** | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | | 2 |
| **Administering Department** | MIET | | **College** | EETC | |
| **Module Leader** | Abbas Sheyaa Alwan | | **e-mail** | Abbas_sheyaa@mtu.edu.iq | |
| **Module Leader's Acad. Title** | Professor | | **Module Leader's Qualification** | | Ph.D. |
| **Module Tutor** | Name (if available) | | **e-mail** | E-mail | |
| **Peer Reviewer Name** | Dr. Ghaidaa Abdulrahman Khalid | | **e-mail** | ghaidaakhalid@mtu.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | | **Version Number** | | 1.0 |

| Relation with other Modules<br>العالقة مع المواد الدراسية ألخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات االرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1. To understand mechanics theory through the application of motion.<br>2. To determine the forces, stress and strain under force effected.<br>3. To determine the reaction forces under load applied.<br>4. To understand the friction basic under mechanic applied<br>5. To understand the newton laws in motion.<br>6. To understand and solve problems in forces analysis.<br>7. To determine the materials properties and selective of materials. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | 1. Identifying the basic of forces results in applications of structures.<br>2. Identify the basics of Equilibrium force system.<br>3. Recognize how phenomena motion in mechanic's subject.<br>4. Summarize what is mean of forces reaction in beams.<br>5. Explain the analysis force in mechanics application.<br>6. Identify the basics of stress and strain in mechanical applications.<br>7. List the various parameters associated with mechanics theory.<br>8. Identify the basics of forces analysis and their applications.<br>9. Explain the Newton's laws used in mechanics application.<br>10. Identify the basics of friction forces in motion.<br>11. Identify the basics of welding and riveted joints in mechanical applications.<br>12. Explain the mechanical test to determine the mechanical properties.<br>13. Discuss the phenomena of moment of forces under different force moment. |
| **Indicative Contents**<br>المحتويات االرشادية | Indicative content includes the following.<br><u>Part A :</u><br>1- Introduction of forces, Analysis of Forces, Result of forces, Moment of forces, Equilibrium force system. [5 hrs]<br>2- Stress, Strain, stress – strain curve, Simple strain, Variable stress. [6 hrs]<br>3- Beams and bending, Analysis of structure. [5 hrs]<br>4- Friction, coefficient of friction, mechanism of friction. [5 hrs]<br><u>Part B:</u> |

| | |
|---|---|
| | 1- Materials properties, material selective, stress- strain diagram. [5 hrs]<br>2- Mechanical tensile test, compression test, impact test, hardness test. [5 hrs]<br>3- Mechanical joint, Rivet joint, welding connection. [5 hrs]<br>4- Beams and bending, Analysis of structure, Centroid, Second moment of area. [7 hrs] |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | Strategies in mechanical subject like:<br>The main strategy that will be adopted in delivering this module is to encourage students to participate in the exercises, while at the same time refining and expanding their mechanical subject thinking development skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. |

| Student Workload (SWL)<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SSWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خالل الفصل | 48 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 3 |
| **Unstructured USWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خالل الفصل | 52 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خالل الفصل | 100 | | |

## Module Evaluation
تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 2 | 10% (10) | 3, 12 | LO # 1-2 and 10-11 |
| | Online Assignments | 2 | 10% (10) | 5, 9 | LO # 3-4 and 6-7 |
| | Onsite Assignments | 2 | 10% (10) | 6, 10 | LO # 5-6 and 8-9 |
| | Report | 1 | 10% (10) | 14 | LO # 2-10 |
| Summative assessment | Midterm Exam | 2 hr | 10% (10) | 8 | LO # 1-7 |
| | Final Exam | 3hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

## Delivery Plan (Weekly Syllabus)
المنهاج االسبوعي النظري

| | Material Covered |
|---|---|
| Week 1: | • Introduction to Engineering Mechanics<br>• Basic Concepts and Definitions |
| Week 2: | **Introduction to Statics and Vectors (Part 1)**<br>• Course introduction, syllabus, and importance of Statics.<br>• Fundamentals of forces, types of forces.<br>• Scalars and vectors.<br>• Vector addition and subtraction.<br>• Vector components and unit vectors. |
| Week 3: | |
| Week 4: | **Introduction to Statics and Vectors (Part 2)**<br>• Resultant of force systems (graphical method).<br>• Resultant of force systems (analytical method).<br>• Moments of forces (torque).<br>• Conditions for equilibrium.<br>• Free-body diagrams and solving equilibrium problems. |
| Week 5: | |
| Week 6: | **Stress, Strain, and Material Properties (Part 1)**<br>• Stress and types of stress.<br>• Strain and types of strain.<br>• Hooke's Law and material properties.<br>• Stress-strain diagrams.<br>• Thermal stress and strain. |
| Week 7: | |
| Week 8: | **Mid-term Exam** |
| Week 9: | **Stress, Strain, and Material Properties (Part 2)**<br>• Simple strain and deformation.<br>• Stress and strain transformations.<br>• Shear and axial deformation.<br>• Review and applications of stress and strain.<br>• Assignment on stress and strain analysis. |
| Week 10: | |

| | |
|---|---|
| **Week 11:** | **Second Moment of Area and Structural Analysis (Part 1)**<br>• Geometric properties of shapes.<br>• Centroids and center of mass.<br>• Second moment of area (moment of inertia).<br>• Bending stress in beams.<br>• Shear stress in beams. |
| **Week 12:** | |
| **Week 13:** | **Second Moment of Area and Structural Analysis (Part 2)**<br>• Shear and moment diagrams.<br>• Introduction to beams and types of loads.<br>• Determining reactions in statically determinate structures.<br>• Truss analysis.<br>• Frame analysis. |
| **Week 14:** | **Friction**<br>• Friction coefficient<br>• Type of friction<br>• Mechanism of friction.<br>**Stress Concentration, Fatigue, and Special Topics**<br>• Review of special topics.<br>• Comprehensive review of the course material.<br>• Final exam or project presentations.<br>Course evaluation and feedback. |
| **Week 15:** | Preparatory week before the final Exam |

## Learning and Teaching Resources

مصادر التعلم والتدريس

| | **Text** | **Available in the Library?** |
|---|---|---|
| **Required Texts** | 1- Engineering Mechanic's Statics, 12th Edition by R. C. Nibbler, 1995. | Yes |
| **Recommended Texts** | 2- Engineering Mechanic's Statics, 7th Edition by James, L. Meriam, L. G Kraige, 1995. | No |
| **Websites** | | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب )قيد المعالجة( | (45-49) | More work required but credit awarded |
| | **F** – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

# مكوذج وصف الماده الدراسيه

| Module Information<br>معلومات الماده الدراسيه | | | |
|---|---|---|---|
| **Module Title** | Integral Mathematics | **Module Delivery** | |
| **Module Type** | Support | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** |
| **Module Code** | MIET1204 | | |
| **ECTS Credits** | 5 | | |
| **SWL (hr/sem)** | 125 | | |
| **Module Level** | UGI | **Semester of Delivery** | 2 |
| **Administering Department** | MITE | **College** | EETC |

| | | | |
|---|---|---|---|
| **Module Leader** | Awss Jabbar Majeed | **e-mail** | awss_alogaidi@mtu.edu.iq |
| **Module Leader's Acad. Title** | Lecturer | **Module Leader's Qualification** | Ph.D. |
| **Module Tutor** | | **e-mail** | |
| **Peer Reviewer Name** | Saleem Lateef Mohammed | **e-mail** | Saleem_lateef_mohammed@mtu.edu.iq |
| **Scientific Committee Approval Date** | 15/11/2023 | **Version Number** | 2.0 |

| **Relation with other Modules**<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | Differential Mathematics | **Semester** | 1 |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Objectives**<br>أهداف المادة الدراسية | 1. To develop problem solving skills and understanding of Integral calculus through a broad range of Integration techniques.<br>2. To understand theory and methods of integrations and apply it on various types of functions.<br>3. This is the basic subject for all engineering fields<br>4. Demonstrate basic knowledge and understanding of a core of linear algebra and applied mathematics.<br>5. Introduce student to integration of trigonometric functions and their inverses. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | 1. Identify the integration.<br>2. Interpret definite and indefinite integrals.<br>3. Integrate functions resulting in inverse trigonometric functions.<br>4. Integrate functions involving exponential and logarithmic functions.<br>5. Learn approximation techniques for integration.<br>6. Calculate the areas of curved regions by using integration methods.<br>7. Find the volume of a solid of revolution using various integration methods.<br>8. Learn how to find the length of a plane curve for a given function.<br>9.Teaching students how to calculate the inverses of matrices and how to identify them.<br>10. Teaching students how to find the solution of a homogeneous system of linear equations.<br>11. Teaching students how to find the eigenvalues of a matrix and the corresponding eigenvectors of a matrix.<br>12. Determine the diagonalizability of a given matrix. |
| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following.<br><br>Introduction to integration. Methods of integration and Basics of Definite and indefinite Integration, Integration of trigonometric and inverse functions.Integration of the exponential functions, Integration of logarithmic functions. Integration of Hyperbolic and inverse hyperbolic functions, numerical integration and applications of the definite integrals. [30 hrs]<br><br>Area of surface, Volume of revolution, Length of plane curve, Matrices and Inverse of matrix, Matrix DiagonalizationSolution of homogeneous systems, Eigenvalues, and Eigenvectors[40 hrs]<br><br>Revision problem classes [3 hrs] |

| Learning and Teaching Strategies<br>اس تايجيارتسا ملعتلاو ملعتلا | |
|---|---|
| **Strategies** | The major approach used to offer this module will be to promote student engagement in the exercises while also enhancing and broadening their critical thinking abilities. Classes and interactive lessons will be used to achieve this. |

| Student Workload (SWL)<br>ةعوبسأ ٥١ لالخ بلاطلل يسارد لمحلا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>لصفلا لالخ بلاطلل مظنملا يسارد لمحلا | 78 | **Structured SWL (h/w)**<br>ةعوبسأ بلاطلل مظنملا يسارد لمحلا | 5 |
| **Unstructured SWL (h/sem)**<br>لصفلا لالخ بلاطلل مظنملا تغير يسارد لمحلا | 47 | **Unstructured SWL (h/w)**<br>ةعوبسأ بلاطلل مظنملا تغير يسارد لمحلا | 3 |
| **Total SWL (h/sem)**<br>لصفلا لالخ بلاطلل يلكي يسارد لمحلا | 125 | | |

| Module Evaluation<br>ةيسارد ةدام ميقت | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5, 12 | LO # 1-4 and 6-12 |
| | **Online Assignments** | 2 | 10% (10) | 3, 13 | LO # 1-4 and 6-12 |
| | **Onsite Assignments** | 2 | 10% (10) | 5, 14 | LO # 1-5 and 7-11 |
| | **Report** | 1 | 10% (10) | 14 | LO # 1-5 and 8-11 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #5 |
| | **Final Exam** | 3hr | 50% (50) | 16 | LO #1- #12 |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to integration. |
| **Week 2** | Methods of integration and Basics of Definite and indefinite Integration. |
| **Week 3** | Integration of trigonometric and inverse functions. |
| **Week 4** | Integration of the exponential functions. |
| **Week 5** | Integration of logarithmic functions. |
| **Week 6** | Integration of Hyperbolic and inverse hyperbolic functions. |
| **Week 7** | **Mid-term Exam** + numerical integration and applications of the definite integrals. |
| **Week 8** | Area of surface. |
| **Week 9** | Volume of revolution. |
| **Week 10** | Length of plane curve. |
| **Week 11** | Matrices and Inverse of matrix. |
| **Week 12** | Matrix Diagonalization |
| **Week 13** | Solution of homogeneous systems |
| **Week 14** | Eigenvalues and Eigenvectors |
| **Week 15** | **Preparatory week before the final Exam** |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Notes on Calculus II Integral Calculus Miguel A. Lerma | No |
| **Recommended Texts** | Thomas ' Calculus (pdf)<br>Fouteenth edition<br>Based on the original work by GEORGE B. THOMAS, JR. | No |
| **Websites** | https://sites.math.northwestern.edu/~mlerma/courses/math214-2-02f/notes/c2-all.pdf<br>http://dl.konkur.in/post/Book/Paye/Thomas-Calculus-14th-Edition-%5Bkonkur.in%5D.pdf | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks %** | **Definition** |

| | | | | |
|---|---|---|---|---|
| **Success Group** | **A -** Excellent | امتیاز | 90 - 100 | Outstanding Performance |

| | | | | |
|---|---|---|---|---|
| **(50 - 100)** | **B -** Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

# نموذج وصف المادة الدراسية

| **Module Information**<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Engineering Workshops** | | | **Module Delivery** | |
| **Module Type** | **Support** | | | ☐ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **EETC101** | | | | |
| **ECTS Credits** | **5** | | | | |
| **-SWL (hr/sem)** | **125** | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | 2 | |
| **Administering Department** | MIET | | **College** | EETC | |
| **Module Leader** | Huda Farooq Jameel | | **e-mail** | huda_baban@mtu.edu.iq | |
| **Module Leader's Acad. Title** | Assist. lecturer | | **Module Leader's Qualification** | M.Sc. | |
| **Module Tutor** | Mayss alreem Nizar hammed | | **e-mail** | Mayssalreem92@mtu.edu.iq | |

| | | | |
|---|---|---|---|
| **Peer Reviewer Name** | Dr. Ghaidaa Abdulrahman Khalid | **e-mail** | ghaidaakhalid@mtu.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>العالقة مع المواد الدراسية ألخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | None |
| **Co-requisites module** | None | **Semester** | None |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات االرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1. To explain the lathe workshop: various measuring devices and how to use them. How to operate the lathe and use different tools and cutting tools.<br>2. To explain the welding and gas welding processes and familiarize yourself with the devices and equipment used. Point welding, familiarization with the devices and equipment used, and carrying out a simple exercise.<br>3. To understand the electrical transformers and their types: magnetic circuits; electrical circuits; measuring the wire diameters of the transformer.<br>4. To understand the drawing of a circuit for establishing (the lamp ladder) two roads using a two-way switch—a practical application of the circuit.<br>5. To learn how to use the different measuring devices in the workshop (such as a multimeter, oscilloscope, etc.).<br>6. To learn how to use caustics, soldering irons, and various printed electronic circuits, identify how to install them, and install various electronic components on them.<br>7. To understand different types of coils and methods of checking them. Different types of capacitors differ in terms of the type of insulator used between the capacitor plates and the methods of checking them. The different types of resistors, in terms of the material they are made of and the capacity they can withstand, How to read the values of the resistors in different ways Variable and special resistors: how to check them.<br>8. To understand the different types of switches used in electronic devices and their examination methods. Different types of fuses There are different types of resistors in terms of the material they are made of. Types of semiconductor diodes and transistors and finding the equivalents Semiconductor check, diode check, and transistor check.<br>9. To understand how to read the electronic map and how to track faults on the electronic map How to install and solder electronic components on the printed board Implementation of a simple electronic circuit on the printed board integrated electronic circuits: identify the types of these circuits. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | Upon completion of the course, students should be able to:<br>1. Recognize the methods of work on the lathe.<br>2. Cuts metals with a cutting and punching machine.<br>3. Install some simple structures.<br>4. Providing the student with manual experience and scientific proficiency in it.<br>5. Learn about electronic components.<br>6. Electronic components exchange is used to build and solder simple circuits.<br>7. Examine electronic circuits and their components. |

| | |
|---|---|
| | 8. Read the electronic map and learn how to track faults on the electronic map.<br>9. How to install and solder electronic components on the printed board.<br>10. Implementation of a simple electronic circuit on the printed board.<br>11. Removing solder from circuits for the purpose of lifting and replacing.<br>12. How to design electronic circuits on the printed board.<br>13. Methods of soldering integrated circuits. |
| **Indicative Contents**<br>المحتويات الإرشادية | Indicative content includes the following:<br>Lathe workshop, measuring devices, different tools, cutting tools, welding, gas welding, and point welding. [7 hrs.].<br>Electrical transformers, magnetic circuit, and electrical circuits. [6 hrs.].<br>Different measuring devices in the workshop (such as an ovometer, oscilloscope, power supply, etc.) [8 hrs.].<br>Soldering iron and printed electronic circuits [4 hrs.].<br>Coils, capacitors, and resistors [6 hrs.].<br>Switches and fuses [4 hrs.].<br>Semiconductor diode, and transistor [6 hrs.].<br>Electronic map, faults on the electronic map, and design electronic circuits on the printed board [8 hrs.].<br>Implemented a simple electronic circuit on the printed board [4 hrs.].<br>Integrated electronic circuits [4 hrs.]. |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | Daily assessment - weekly assessment - quarterly assessment - objective questions - general questions - practical tests. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خالل الفصل | 63 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 4 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خالل الفصل | 62 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |

| | |
|---|---|
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خالل الفصل | 125 |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 3, 8 | LO # 1-2 and 4-7 |
| | **Projects** | 1 | 5% (5) | 13 | LO # 1-12 |
| | **Lab** | 2 | 10% (10) | 7, 14 | LO # 1-6 and 8-13 |
| | **Onsite Assignments** | 2 | 10% (10) | 4, 12 | LO # 1-3 and 5-11 |
| | **Report** | 1 | 5% (5) | 11 | LO # 1-10 |
| **Summative assessment** | **Midterm Exam** | 2 hr. | 10% (10) | 8 | LO # 1-7 |
| | **Final Exam** | 3 hr. | 50% (50) | 15 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Lab. Syllabus)<br>المنهاج االسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: Lathe workshop: various measuring devices and how to use them. How to operate the lathe and use different tools and cutting tools |
| **Week 2** | Lab 2: Welding and gas welding, and familiarization with the devices and equipment used. Point welding, familiarization with the devices and equipment used, and carrying out a simple exercise. |
| **Week 3** | Lab 3: Electrical transformers: their types magnetic circuits; electrical circuits; opening transformers; taking information from the old transformer for primary and secondary coils measuring the wire diameters of the transformer; measuring the plastic coil template rewinding primary and secondary coils. |
| **Week 4** | Lab 4: Drawing a circuit for establishing two roads using a two-way switch is a practical application of the circuit. Identifying electrical collectors-their types, their use, thermal follow-ups, and time position. |
| **Week 5** | Lab 5: Training on making electrical installations (establishing inside tubes).Pipe cutting process: dental work, pipe bending, using drag springs. |
| **Week 6** | Lab 6: How to use the different measuring devices in the workshop (such as a multimeter, oscilloscope, etc.). |
| **Week 7** | Lab 7: How to use caustics: types of caustics used in the workshop; caustic welding training. |

| | |
|---|---|
| | Types of solder used: auxiliary materials for soldering; soldering some wires with each other and with some components. How to use a soldering iron and a soldering absorbent kit such as a solder sucker or solder remover, training on some electronic components, and lifting them from the printed plate. Various printed electronic circuits, identifying how to install them, and the installation of various electronic components on them.<br>Lab 8- Coil types, methods of checking them, electrical transformers, types, checking, auto-transformer, the difference between an auto-transformer and an ordinary transformer. The different types of capacitors in terms of the type of insulator used between the capacitor plates, the effort that the capacitor bears, and reading the values of the capacitors using the different methods used in coding How to check the amplifiers and how to switch them. Making connections of the capacitors in parallel, series, and mixed on the printed board with the examination. |
| **Week 8** | Midterm- Exam |
| **Week 9** | Lab 9: The different types of switches used in electronic devices and their examination methods, the current that each switch bears, and the use of each type.Types of fuses used in electronic circuits, types and diameters of wires used and diameters of wires used in fuses, the current that each type bears, and how to repair fuses |
| **Week 10** | Lab 10: The different types of resistors, in terms of the material they are made of and the capacity they can withstand, How to read the values of the resistors in different ways Variable and special resistors (VDR-PYC-NTC) how to check them. Make a circuit to connect the resistors in series, make a circuit to connect the resistors in parallel, make a circuit to connect the resistors in series and parallel, and check the circuit. |
| **Week 11** | Lab 11: Types of semiconductor diodes and transistors and finding the equivalents. Semiconductor check, diode check, transistor check |
| **Week 12** | Lab 12: How to read the electronic map and track faults on the electronic map.<br>Introduce the student to how to design electronic circuits on the printed board. |
| **Week 13** | Lab 13: How to install and solder electronic components on the printed board. Implementation of a simple electronic circuit on the printed board. |
| **Week 14** | Lab 14: Integrated electronic circuits: identify the types of these circuits. Cautery for soldering integrated circuits, the correct method of soldering integrated circuits, and removing solder from circuits for the purpose of lifting and replacing. |
| **Week 15** | **Final Exam** |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Recommended Texts** | 1- Encyclopedia of Electronic Components Volume 1 (Charles Platt).<br>2- Encyclopedia of Electronic Components Volume 2 (Charles Platt).<br>3- Encyclopedia of Electronic Components Volume 3 (Charles Platt).<br>4- Encyclopedia of Electronic Components Volume 4 (Charles Platt).<br>5- Encyclopedia of Electronic Components Volume 5 (Charles Platt). | NO |
| **Websites** | https://www.electricaltechnology.org/2013/03/how-to-remember-direction-of-pnp-and.html | |

| Grading Scheme<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F** – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original
marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

# نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Computer Programming and Applications I** | | **Module Delivery** | | |
| **Module Type** | **Support** | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | | |
| **Module Code** | **MIET1206** | | | | |
| **ECTS Credits** | **3** | | | | |
| **SWL (hr/sem)** | **75** | | | | |
| **Module Level** | UGII | | **Semester of Delivery** | 3 | |
| **Administering Department** | MIET | | **College** | EETC | |
| **Module Leader** | Luban Hamdy Hameed | | **e-mail** | Luban_alqudsi@mtu.edu.iq | |
| **Module Leader's Acad. Title** | Assistant Lecturer | | **Module Leader's Qualification** | M.Sc | |
| **Module Tutor** | | | **e-mail** | | |
| **Peer Reviewer Name** | Dr. Aws Alazawi | | **e-mail** | aws_basil@mtu.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |

| | | | |
|---|---|---|---|
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | 1. Understanding the fundamental concepts of MATLAB programming language environment.<br>2. The students will understand and learn how to use MATLAB as an effective programming language.<br>3. The students will be able to solve different mathematical and engineering problems as well as using plotting functions and design projects using codes or GUI.<br>4. Students will acquire the knowledge of basic MATLAB syntax such as: variables, input, output, vectors, matrices, functions, plotting, and GUI,<br>5. The students will gain the necessary skills to design and implements appropriate algorithms that solve problems dealing with different mathematical and engineering applications. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | 1. Understand the MATLAB environments and windows (Command Window, Workspace Window, Command History window, Help Window, Editor Window).<br>2. The students learn how to write first program and learn Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns.<br>3. Explain how to use variables and assignment statement, logical operator.<br>4. Practice on using Arrays, Built in functions, Basic Matrix Functions(sum, max, min, mean, magic, diag, length, size, median, prod, sort).<br>5. Learn how to perform basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits).<br>6. Understand arguments and return values, M-file, input-output statement.<br>7. Train on using control Statements (Conditional statements: If, Else, Elseif, switch case)<br>8. Identify the repetition statements: (While statement, For statement).<br>9. Learn how to use combination of conditional and repetition statements.<br>10. Understand the procedures and functions (a custom-made MATLAB function, define the name of the function, the input and the output variables, Calling Functions).<br>11. Learn how to handle graphics and user interface.<br>1. pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects.<br>12. Train of GUI Interface (Attaching buttons to actions, Getting Input, Setting Output). |
| **Indicative Contents**<br>المحتويات الإرشادية | 1. Window, Workspace Window, Command History window, Help Window, Editor Window. (3 hr)<br>2. Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns. (5 hr)<br>3. variables and assignment statement, logical operator. (5 hr) |

| | |
|---|---|
| | 4. sum, max, min, mean, magic, diag, length, size, median, prod, sort. (2 hr)<br>5. Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits. (2 hr)<br>6. M-file, input-output statement. (2 hr)<br>7. Conditional statements: If, Else, Elseif, switch case. (3 hr)<br>8. While statement, For statement. (4 hr)<br>9. conditional and repetition statements. (4 hr)<br>10. accustom-made MATLAB function. (4 hr)<br>11. GUI. (4 hr)<br>12. GUI attaching buttons to actions, Getting Input, Setting Output. (4 hr) |

| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. Moreover, motivate the creative side by posing various problems to students and urging them to find appropriate solutions.<br>Also forming work teams to assess the results of their work and change their structure periodically to develop the spirit of cooperation and development and motivate students to make intensive efforts to work different roles. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 49 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 3 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 26 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 2 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 75 | | |

## Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 10 | LO # 2-4 and 8-9 |
| | Online Assignments | 2 | 8% (8) | Continuous | LO # 1-12 |
| | Onsite Assignments | 4 | 12% (12) | Continuous | LO # 1-12 |
| | Report | 2 | 10% (10) | 6, 12 | LO # 4-5 and 9-11 |
| Summative assessment | Midterm Exam | 3hr | 10% (10) | 7 | LO # 1-7 |
| | Final Exam | 4hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

| | Material Covered |
|---|---|
| Week 1 | Introduction, MATLAB Environment, MATLAB Windows(Command Window, Workspace Window, Command History window, Help Window, Editor Window). |
| Week 2 | A First Program, Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns. |
| Week 3 | Variables and assignment statement, logical operator. |
| Week 4 | Arrays, Built in functions, Basic Matrix Functions (sum, max, min, mean, magic, diag, length, size, median, prod, sort). |
| Week 5 | Basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits). |
| Week 6 | Arguments and return values, M-file, input-output statement,+ + Control Statements (Conditional statements: If, Else, Elseif, switch case) |
| Week 7 | Mid-Exam |
| Week 8 | Repetition statements: (While statement, For statement) |
| Week 9 | Combination of conditional and repetition statements I |
| Week 10 | Combination of conditional and repetition statements II |
| Week 11 | Procedures and Functions (a custom-made MATLAB function, define the name of the function, the input and the output variables, Calling Functions) |

| | |
|---|---|
| **Week 12** | Handle graphics and user interface. 1.pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects |
| **Week 13** | GUI Interface (Attaching buttons to actions, Getting Input, Setting Output) I |
| **Week 14** | GUI Interface (Attaching buttons to actions, Getting Input, Setting Output) II |
| **Week 15** | **Preparatory week before the final exam** |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction, MATLAB Environment, MATLAB Windows (Command Window, Workspace Window, Command History window, Help Window, Editor Window). |
| **Week 2** | A First Program, Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns. |
| **Week 3** | Variables and assignment statement, logical operator. |
| **Week 4** | Arrays, Built in functions, Basic Matrix Functions (sum, max, min, mean, magic, diag, length, size, median, prod, sort). |
| **Week 5** | Basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits). |
| **Week 6** | Arguments and return values, M-file, input-output statement |
| **Week 7** | Control Statements (Conditional statements: If, Else, Elseif, switch case) |
| **Week 8** | Repetition statements: (While statement, For statement) |
| **Week 9** | Combination of conditional and repetition statements I |
| **Week 10** | Combination of conditional and repetition statements II |
| **Week 11** | Procedures and Functions(a custom-made Matlab function, define the name of the function, the input and the output variables, Calling Functions) |
| **Week 12** | Handle graphics and user interface. 1.Pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects |
| **Week 13** | GUI Interface ( Attaching buttons to actions, Getting Input, Setting Output) I |
| **Week 14** | GUI Interface ( Attaching buttons to actions, Getting Input, Setting Output) II |

## Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | Introduction to MATLAB for Engineers William J. Palm III | yes |
| **Recommended Texts** | INTRODUCTION TO MATLAB FOR ENGINEERING STUDENTS ,David Houcque | |
| **Websites** | | |

## Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F** – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOTto condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | أهداف المادة الدراسية هي اني يكون الطالب قادراً على أن :<br>1. يتعرف على أنواع الأخطاء اللغوية المشتركة وتوضيح أسبابها وكيفية تجنبها.<br>2. يتعلم القواعد المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة وكيفية كتابتها بشكل صحيح.<br>3. يتعلم قواعد كتابة الألف الممدودة والمقصورة واستخدام الحروف الشمسية والقمرية بشكل صحيح.<br>4. التعرف على الضاد والظاء ومعرفة كيفية التميز بينهما في الكتابة.<br>5. يتعلم طرق كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية.<br>6. التعرف على علامات الترقيم واستخدامها بشكل صحيح في النصوص.<br>7. يفهم الفروق بين الاسم والفعل والتميز بينهما في الجمل.<br>8. يفهم المفاعيل و كيفية استخدامها بشكل صحيح في النصوص.<br>9. يتعلم الأرقام والعدد واستخدامها في التعبير عن الكميات.<br>10. يتجنب الأخطاء اللغوية الشائعة في سياقات عملية لتعزيز فهم القواعد وتحسين المهارات اللغوية.<br>11. يدرس النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل.<br>12. يركز على الجوانب الشكلية للخطاب الإداري وكيفية كتابته بأسلوب صحيح ومناسب.<br>13. التعرف على لغة الخطاب الإداري وفهم استخدامها في التواصل الإداري.<br>14. يفهم نماذج من المراسلات الإدارية لتطبيق المفاهيم والمهارات المكتسبة في الخطاب الإداري. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | مخرجات التعلم للمادة الدراسية هي:<br>1. قدرة الطلاب على تحليل وتعريف الأخطاء اللغوية المشتركة وتطبيق القواعد الصحيحة لتجنبها.<br>2. القدرة على استخدام القواعد اللغوية المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة بشكل صحيح.<br>3. قدرة الطلاب على استخدام الألف الممدودة والمقصورة بشكل صحيح واستخدام الحروف الشمسية والقمرية بطريقة صحيحة.<br>4. تمكين الطلاب من التميز بين الضاد والظاء وتطبيق القواعد الصحيحة في الكتابة.<br>5. القدرة على كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية.<br>6. استخدام علامات الترقيم بشكل صحيح في النصوص المكتوبة.<br>7. فهم الطلاب للفروق بين الاسم والفعل وتمكينهم من استخدامهما بشكل صحيح في الجمل.<br>8. القدرة على استخدام المفاعيل بشكل صحيح في النصوص المكتوبة.<br>9. استخدام الأرقام والعدد بطريقة صحيحة للتعبير عن الكميات.<br>10. التمكن من تطبيق الأخطاء اللغوية الشائعة في سياقات عملية وتصحيحها بشكل مناسب.<br>11. فهم استخدام النون والتنوين ومعاني حروف الجر واستخدامها بشكل صحيح في الجمل.<br>12. القدرة على كتابة الخطاب الإداري بأسلوب صحيح ومناسب وفهم لغة الخطاب الإداري.<br>13. تطبيق المفاهيم والمهارات المكتسبة في كتابة المراسلات الإدارية بشكل صحيح وفعال. |
| **Indicative Contents**<br>المحتويات الإرشادية | المحتويات الإرشادية في مادة اللغة تشمل مجموعة من المفاهيم والمواضيع التي يتم تغطيتها خلال عملية التعلم. ومن بين المحتويات الإرشادية المهمة:<br>1. مقدمة عن الأخطاء اللغوية والتعريف بالتاء المربوطة والتاء المطوّلة والتاء المفتوحة. (3 ساعات)<br>2. قواعد كتابة الألف الممدودة والمقصورة والتعرف على الحروف الشمسية والقمرية. ( 3 ساعات)<br>3. دراسة الضاد والظاء وتعلم طرق كتابتهما بشكل صحيح. ( 3ساعات)<br>4. تعلم كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية. ( 3 ساعات)<br>5. دراسة علامات الترقيم وتعلم استخدامها بشكل صحيح في النصوص اللغوية. ( 3 ساعات)<br>6. التعرف على الاسم والفعل والتفريق بينهما وفهم القواعد المتعلقة بهما. ( 3 ساعات)<br>7. دراسة المفاعيل وتعلم استخدامها في الجمل اللغوية. ( 3 ساعات)<br>8. التعرف على الأعداد واستخدامها بشكل صحيح في العبارات والجمل. ( 3 ساعات)<br>9. دراسة الأخطاء اللغوية الشائعة وتطبيقاتها في النصوص اللغوية. ( 3 ساعات) |

| | |
|---|---|
| | 10. تعلم استخدام النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل. ( 2 ساعات)<br>11. التعرف على الجوانب الشكلية للخطاب الإداري وفهم لغته وقواعده. ( 2 ساعات)<br>12. دراسة نماذج من المراسلات الإدارية وتطبيقها في الكتابة. ( 2 ساعات)<br><br>توفر هذه المحتويات الإرشادية للطلاب فهمًا شاملاً للمفاهيم اللغوية وتعلم القواعد والتطبيقات العملية التي تساعدهم في تطوير مهاراتهم اللغوية. |
| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
| **Strategies** | استراتيجيات التعلم والتعليم المستخدمة في مادة اللغة تشمل مجموعة متنوعة من النهج والتقنيات التي تعزز عملية التعلم للطلاب. من بين هذه الاستراتيجيات:<br><br>1. التفاعل النشط: يتم تشجيع الطلاب على المشاركة والمشاركة الفعالة في الدروس من خلال المناقشات الجماعية والأنشطة التفاعلية.<br>2. التعلم التعاوني: يشجع التعاون والتعاون بين الطلاب من خلال العمل الجماعي والمشاريع الجماعية، حيث يتعاون الطلاب مع بعضهم البعض لتحقيق أهداف التعلم المحددة.<br>3. التطبيق العملي: يتم توفير فرص للطلاب لتطبيق المفاهيم والمهارات المكتسبة في سياقات عملية وواقعية، مما يعزز التفاعل الفعال مع المادة.<br>4. استخدام التقنيات الحديثة: يستفيد الطلاب من استخدام التكنولوجيا في عملية التعلم، مثل استخدام الحواسيب والإنترنت للبحث والتعلم الذاتي.<br>5. توفير ردود فعل فورية: يتم توفير ردود فعل فورية وتقييم مستمر للطلاب، سواء عن طريق التقييمات الشفهية أو الكتابية، مما يساعدهم على تحسين أدائهم وتطوير مهاراتهم.<br>6. التنويع في وسائل التواصل: يتم استخدام مجموعة متنوعة من وسائل التواصل والتعليم، مثل المحاضرات التوضيحية، والمناقشات الجماعية، والأنشطة العملية، والعروض التقديمية، لتلبية احتياجات وأساليب التعلم المختلفة للطلاب.<br>7. باستخدام هذه الاستراتيجيات، يتم تعزيز التفاعل والتعلم الفعال للطلاب، و<br>8. تحفيزهم على المشاركة واكتساب المعرفة والمهارات بشكل شامل وشيق. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 33 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 2 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 17 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 1 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 50 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 3, 6 | LO # 1-3 and 4-6 |
| | **Onsite Assignments** | 5 | 10% (10) | 4, 5 | LO # 8-9 and10-11 |
| | **Report** | 1 | 10% (10) | 13 | LO # 1-13 |
| | **Seminar** | 2 | 10% (10) | 10 , 11 | LO # 12 &13 |
| **Summative assessment** | **Midterm Exam** | 2 hours | 10% (10) | 7 | LO # 1-7 |
| | **Final Exam** | 3 hours | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | | |
|---|---|---|
| **1-8** | مقدمة عن الأخطاء اللغوية –التاء المربوطة والطويلة والتاء المفتوحة | الأسبوع الأول |
| **9-14** | قواعد كتابة الالف الممدودة والمقصورة – الحروف الشمسية والقمرية | الأسبوع الثـــاني |
| **15-19** | الضاد والظاء | الاسبوع الثـــالث |
| **20-30** | كتابة الهمزة | الأسبوع الـــرابـع |
| **31-36** | علامات الترقيم | الأسبوع الخـــامس |
| **37-44** | الاسم والفعل والتفريق بينهما | الأسبوع الســـادس |
| **45-50** | المفاعيل + العـــدد | الأسبوع الســـابع |
| **51-61** | امتحان منتصف الفصل الدراسي | الأسبوع الثـــامن |
| **62-69** | تطبيقات الأخطاء اللغوية الشائعة | الأسبوع التاسع والعاشر |
| **70-75** | النون والتنوين ـ معاني حروف الجر | الاسبوع الحادي عشر |
| **76-80** | الجوانب الشكلية للخطاب الإداري | الاسبوع الثاني عشر |
| **81-86** | لغة الخطاب الإداري +نماذج من المراسلات الإدارية | الأسبوع الثالث عشر والرابـــع عشر |
| | الاستعداد للأمتحان النهائي | الأسبوع الخامس عشر |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |

| | | |
|---|---|---|
| **Required Texts** | ١-اخطاء لغوية شائعة ،تأليف: خالد بن هلال بن ناصر العنبري ،مكتبة :الجيل الواعد الطبعة الاولى.<br>٢-قواعد الاملاء وعلامات الترقيم ، تأليف : عبد السلام هارون، تحقيق :نبيل عبد السلام هارون، دار الكتب العلمية ،الطبعة الاولى ،٢٠٠٥. | Yes |
| **Recommended Texts** | أقسام الكلام العربي من حيث الشكل والوظيفة، تأليف: الدكتور فاضل مصطفى الساق ، تقديم الاستاذ الدكتور: تمام حسان ،مكتبة الخانجي – القاهرة، طبعة ١٩٧٧م. | No |
| **Websites** | The Collage E-Library | |

**Grading Scheme**
مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A** - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C** - Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F** – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# المرحلة الثانية

**نموذج وصف المقرر**

**وصف المقرر**

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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|---|---|
| 1. المؤسسة التعليمية | كلية الهادي الجامعة |
| 2. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 3. اسم / رمز المادة | الاجهزة الطبية /MIE208 |
| 4. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 5. الفصل / السنة | 2024/2023 |
| 6. عدد الساعات الدراسية (الكلي) | 150 (60 نظري +90 عملي) |
| 7. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 8. أهداف المقرر | |
| **1-دراسة الجهاز الطبي كجهاز الكتروني بحت** | |
| **2- دراسة الجهاز كجهاز طبي واختلافه عن الالكترونية** | |
| **3-التدريب على كافة الدوائر الالكترونية في الاجهزة الطبية وطرق تشغيلها وصيانتها** | |
| **4-تأهيل الطالب لصيانة الاجهزة الطبية بصورة عامة** | |
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| 9. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |

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| أ- الاهداف المعرفية<br>أ1- يفهم المكونات الاساسية للجهاز الطبي<br>أ2-يدرس الاجهزة المختبرية وانواعها<br>أ3- يتعلم فائدة كل جهاز مختبري<br>أ4-يدرس اجهزة التعقيم<br>أ5- يدرس اجهزة القطع الطبية القديمة والحديثة<br>أ6- يدرس اجهزةالاشعة واجهزة العلاج الطبيعي<br>أ7-يدرس حاضنة الرضع والفائدة منها<br>أ8يتعلم فتح الجهازالطبي وصيانته في حالة وجود اعطا |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يفسر سبب اعطال الجهاز الطبي<br>ب2 – يستخدم الحاسوب لخزن مواصفات الجهاز الطبي<br>ب3 - يستخدم الحاسوب كوسيلة لمقارنة الحالات المرضية التي تؤخد من الجهاز الطبي مع بيانات لحالات طبيعية تحفظ في الحاسوب<br>ب4- يشخص نتائج الجهاز الطبي |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- ان يصغي الطالب بانتباه الى شرح الاستاذ<br>ج2-ان يحس الطالب بما يعانيه ضحايا التمييز العرقي<br>ج3-ان يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج4-ان يصف الطالب اهمية تعلم مادة الاجهزة الطبية |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- المكتبيه خارج الماده العلمية<br>2-قابلية الطالب على البحث العلمي<br>3-قابلية الطالب على المشاركة في النشاطات اللاصفية |

| 10. بنية المقرر | | | | | |
|---|---|---|---|---|---|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| الاول | 2ن+3ع | الطالب يفهم الدرس | Introduction to medical instruments | محاضرات نظرية وعملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني +الثالث | 4ن+6ع | الطالب يفهم الدرس | Electronic balance | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس | 4ن+6ع | الطالب يفهم الدرس | Thermal instruments | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس | 2ن+3ع | الطالب يفهم الدرس | Water baths | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع +الثامن | 4ن+6ع | الطالب يفهم الدرس | Ovens | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع + العاشر | 4ن+6ع | الطالب يفهم الدرس | Autoclave | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر | 4ن+6ع | الطالب يفهم الدرس | Incubators (lab.) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر +الرابع عشر | 4ن+6ع | الطالب يفهم الدرس | Water distiller | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر +السادس عشر | 4ن+6ع | الطالب يفهم الدرس | Cautery | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع عشر+ الثامن عشر | 4ن+4ع | الطالب يفهم الدرس | Other thermal instruments | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر+ العشرون | 4ن+6ع | الطالب يفهم الدرس | Centrifuge | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون + الثاني والعشرون + الثالث والعشرون | 6ن+9ع | الطالب يفهم الدرس | Microscopes(light dark field, flourcents, polarized, electro) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون + الخامس والعشرون | 4ن+6ع | الطالب يفهم الدرس | X-ray equipment's | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس والعشرون+ السابع والعشرون | 4ن+6ع | الطالب يفهم الدرس | Rehabilitation equipment | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثامن والعشرون | 4ن+6ع | الطالب يفهم الدرس | Medical gases system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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|---|---|---|---|---|---|
| الثلاثون | 2ن+3ع | الطالب يفهم الدرس | Infant incubators | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 11. البنية التحتية | |
|---|---|
| 1- الكتب المقررة المطلوبة | Biomedical Engineering Handbook _2000 J.D.Bronzino |
| 2- المراجع الرئيسية (المصادر) | Medical Instrumentation Application and Design |
| أ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| ب) المراجع الالكترونية ،مواقع الانترنيت ،..... | www.bme.ncku.edu.com |

| 12. خطة تطوير المقرر الدراسي |
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| 1- استخدام احدث الكتب والمناهج الموجود في الانترنت<br>2- استخدام الانترنت في البحث والتقارير<br>3- استخدام المختبرات الافتراضية الموجودة في اغلب الجامعات العالمية<br>4- عمل محاكاة للاجهزة المتوفرة |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 13. المؤسسة التعليمية | كلية الهادي الجامعة |
| 14. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 15. اسم / رمز المادة | جرائم حزب البعث / MIE201 |
| 16. أشكال الحضور المتاحة | اسبوعي (نظري) |
| 17. الفصل / السنة | 2024/2023 |
| 18. عدد الساعات الدراسية (الكلي) | 1 ساعة اسبوعيا |
| 19. تاريخ إعداد هذا الوصف | 2022/1/11 |
| 20. أهداف المقرر | |

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| **1–التركيز على جرائم حزب البعث والتي ارتكبها بحق طوائف الشعب العراقي المتعدده وتسليط الضوء اهم جرائيم والانتهاكات الصريحه للقانون الدولي الجنائي والوطني وكيفيبيه محاكمتهم وفق احكام المحكمة الجنائية العراقية لعام 2005** |
| **129– مخرجات المقرر وطرائق التعليم والتقيم**<br>**أ–الأهداف المعرفيه:**<br>**1–تعليم ابرز الجرائم وانتهاكات حزب البعث**<br>**2–اما بالجانب السلوكي فيجب ان تهدف المحاضرات على تركيز عدم انتهاك حقوق الانسان**<br>**3–والانماط السلوكيه الى عمل طويل الأمد وانشطه مستمره من اجل الدفاع عنها وفي الواقع وتعزيز الجهود لحل مشاكل هذه الانتهاكات**<br>**4–التركيز على اهم النصوص القانونية المنتهكه من قبل حزب البعث .** |
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| 21. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| **129– مخرجات المقرر وطرائق التعليم والتقيم**<br>**أ–الأهداف المعرفيه:**<br>**1–تعليم ابرز الجرائم وانتهاكات حزب البعث**<br>**2–اما بالجانب السلوكي فيجب ان تهدف المحاضرات على تركيز عدم انتهاك حقوق الانسان**<br>**3–والانماط السلوكيه الى عمل طويل الأمد وانشطه مستمره من اجل الدفاع عنها وفي الواقع وتعزيز الجهود لحل مشاكل هذه الانتهاكات**<br>**4–التركيز على اهم النصوص القانونية المنتهكه من قبل حزب البعث .** |

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| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – توزيع المهارات العلميه بصورة عادلة<br>ب2 – تشجيع على الضروره تقبل جميع الطوائف<br>ب3 – متقبل المذاهب الأخرى<br>ب4 – ضروره احترام القانون الوطني والقانون الدولي ومبادئ حقوق الانسان |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , الحوار بين الاستاذ والطالب , الحوار بين الطلبة نفسهم |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , واجبات يومية , تقييم يومي, اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- رفع مستوى الطلبة لغويا وترجميا<br>ج2- تشجيع الطلبة على التحاور وكسر الركور فيما بينهم |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , الحوار بين الاستاذ والطالب , الحوار بين الطلبة نفسهم |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , واجبات يومية , تقييم يومي , اسئلة سريعة |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- مهارة التحدث<br>د2- مهارة الكتابة<br>د3- مهارة معالجة المواقف على المستوى الشخصي<br>د4- تشجيع الطلبة على الالقاء السليم |

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| 22. خطة تطوير المقرر الدراسي |

1- العمل على تطويرمهارات الطالب في الاصغاء والتحدث والقراءة باستخدام الانترنت والاطلاع على احدث المصادروالمعلومات
2- العمل على تجديد المصادر وتنويعها

## نموذج وصف المقرر

### وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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|---|---|
| 23. المؤسسة التعليمية | كلية الهادي الجامعة |
| 24. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |

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| 25. اسم / رمز المادة | تشريح وفسلجة/ MIE204 |
| 26. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 27. الفصل / السنة | 2022/2021 |
| 28. عدد الساعات الدراسية (الكلي) | 120 ساعة (60 نظري+60 عملي) |
| 29. تاريخ إعداد هذا الوصف | 2022/1/11 |
| 30. أهداف المقرر | |
| **1-تحضير الطالب لدراسة وفهم الأجهزة الطبية و ذلك بتوضيح التغيرات الفسلجية وخاصة الكهربائية منها و التي تتم عند قيام الاعضاء المختلفة للجسم بوظيفتها وعلاقتها بالاجهزة التي تستعمل لقياس و تشخيص الظواهر والإمراض المختلفة .** | |
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| 31. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يحدد التركيب التشريحي للانسان<br>أ2- يحدد العلاقة بين تراكيب جسم الانسان<br>أ3- يفهم فسلجة جسم الانسان<br>أ4- يفهم الظواهر الكهربائية في الخلية والانسجة<br>أ5- يفهم وظائف الاجهزة والاعضاء في جسم الانسان |

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| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم تقنية الجهاز الطبي ومبدأ عمله غي التحليلات الطبية<br>ب2 – يقيس بعض العناصر الداخلة في تركيب جسم الانسان<br>ب3 –يتمكن من تحليل وقياس مكونات الدم<br>ب4 – تحليل وقياس الظواهر الكهربائية في جسم الانسان |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- ان يصغي الطالب بأنتباه الى شرح الاستاذ<br>ج2- ان يتعرف الطالب على اثرمادة الفسلجة والتشريح في الحياة<br>ج3- ان يصف الطالب اهمية تحليل العناصروالمواد الكيميائية في سوائل جسم الانسان<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- قابلية الطالب على البحث العلمي<br>2- قابلية الطالب على المشاركة في النشاطات اللاصفية<br>3- المهارا ت المكتبية وعبر الشبكة العنكبوتية الانترنت خارج المادة العلمية |

| 32. بنية المقرر | | | | | |
|---|---|---|---|---|---|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| الاول + الثاني | 4ن+4ع | الطالب يفهم الدرس | Cells & Tissues | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 2ن+2ع | الطالب يفهم الدرس | The integumentary system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع | 2ن+2ع | الطالب يفهم الدرس | The skeletal system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس+ السادس | 4ن+4ع | الطالب يفهم الدرس | Articulations | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع | 2ن+2ع | الطالب يفهم الدرس | The muscular system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن | 2ن+2ع | الطالب يفهم الدرس | Nervous tissue | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع | 2ن+2ع | الطالب يفهم الدرس | Central nervous system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر | 2ن+2ع | الطالب يفهم الدرس | Autonomic nervous system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر | 4ن+4ع | الطالب يفهم الدرس | Sensory , motor and integrative functions | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر | 2ن+2ع | الطالب يفهم الدرس | The endocrine system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر +الخامس عشر | 4ن+4ع | الطالب يفهم الدرس | The cardiovascular system : Blood | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر + السابع عشر | 4ن+4ع | الطالب يفهم الدرس | The cardiovascular system : the heart | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر+ التاسع عشر | 4ن+4ع | الطالب يفهم الدرس | The cardiovascular system : Blood vessels | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العشرون +الواحد والعشرون | 4ن+4ع | الطالب يفهم الدرس | The lymphatic system and immunity | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون + الثالث والعشرون | 4ن+4ع | الطالب يفهم الدرس | The respiratory system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| الرابع والعشرون + الخامس والعشرون | 4ن+4ع | الطالب يفهم الدرس | The digestive system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس والعشرون | 4ن+4غ | الطالب يفهم الدرس | Metabolism | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون | 2ن+2ع | الطالب يفهم الدرس | The urinary system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون | 2ن+2ع | الطالب يفهم الدرس | Fluid , electrolyte and Acid – Base balance | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثلاثون | 4ن+4ع | الطالب يفهم الدرس | The reproductive system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

33. البنية التحتية

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| 3- الكتب المقررة المطلوبة | 1 -محاضرات ملخصة للنظري والعملي<br>2-Frederic H Martini, Edwin F Bartholomew, William C. Ober, Claire W. Garrison, Kathleen Welch, & Ralf T Hutchings (2007), Essentials of Anatomy and Physiology, 14th edn, Pearson Education, San Francesco, USA. |
| 4- المراجع الرئيسية (المصادر) | Interactive physiology, Copyright © 2005 – Pearson Education, Inc. publishing as Benjamin |
| ت) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Human Anatomy text book Human Physiology text book |
| ث) المراجع الالكترونية ،مواقع الانترنيت ،..... | 1- Human Physiology Study Guide<br>2-Human Anatomy & Physiology: Help and review |

34. خطة تطوير المقرر الدراسي

1- اضافة مقدمة تعريفية في المفاهيم التشريحية والفسيولجية ليتسنى للطالب فهم المواضيع اللاحقة
2- - توفير بعض الدمى التوضيحية لجسم الانسان.
3- تحديث التجارب العملية لفهم الظواهر الفسيولجية في جسم الانسان.

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 35. المؤسسة التعليمية | كلية الهادي الجامعة |
| 36. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 37. اسم / رمز المادة | تطبيقات حاسبة/ MIE209 |
| 38. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 39. الفصل / السنة | 2022/2021 |
| 40. عدد الساعات الدراسية (الكلي) | 90ساعة ( 30 نظري+ 60 عملي) |
| 41. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 42. أهداف المقرر | |
| **1-التعرف على بيئة عمل البرنامج و المكونات المختلفة لشاشة** | |
| **2- معرفة واجهة البرنامج** | |

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| 3-التعرف على انواع الايعازات للبرمجية |
| 4-برمجة وتصميم واجهة تحكم بالبرنامج |
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| 43. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- معرفة البرنامج<br>أ2- فهم اهمية البرنامج<br>أ3- معرفة وفهم تطبيقات العملية للبرنامج<br>أ4- معرفة وفهم تعشيق البرنامج مع تطبيقات برمجية اخرى<br>أ5- معرفة وفهم التحكم بمختلف ادوات البرنامج الجاهزة<br>أ6- معرفة وفهم طرق اعداد العرض التقديمي |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – تصميم الواجهة للمستخدم<br>ب2 – يستخدم الطالب البرامج لبرمجة الفيجول بيسك<br>ب3 – يكتسب الطالب مهارات البرمجة بلغة VB<br>ب4- يكتب الطالب النتائج التي حصل عليها مختبريا |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم برمجة الفيجول بيسك<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |

**د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**

د1- انشطة رياضية

د2- انشطة فنية

د3- انشطة ادبية

44. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول | 1ن+2ع | الطالب يفهم الدرس | مفهوم الشبكات Networks و أنواعها ، مفهوم الانترنيت االنترنيت Internet تشغيله ، | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني | 1ن+2ع | الطالب يفهم الدرس | و صف الشاشة الرئيسية و مكوناتها ، كيفية الاتصال مع الشبكة العالمية (Web) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 1ن+2ع | الطالب يفهم الدرس | الاستفادة من محركات البحث المشهورة مثل , Yahoo Google, االتعرف على طرق البحث عن المعلومات و الوصول إليها. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس+ السادس | 3ن+6ع | الطالب يفهم الدرس | الخوارزميات و المخططات الانسيابية Flowcharts وأهميتها في البرمجة. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع | 1ن+2ع | الطالب يفهم الدرس | مدخل إلى لغة Visual Basic وبيئة البرنامج . ما هي لغة VB ، هيكل تطبيقات VB ، التعرف على شاشة البرنامج و مكوناتها ، خطوات إنشاء و تطبيق )مدخل إلى بيئة المستخدم خواص مفاتيح التحكم ، إضافة الشفرة المصدرية (Code). | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن+ التاسع + العاشر | 3ن+6ع | الطالب يفهم الدرس | التعابير الرياضية (Expressions in VB) *، /،>،<.....،الخ دوال VB . ABS , ASC , Chr , COs Date, Rnd , Sin , .....etc . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر | 1ن+2ع | الطالب يفهم الدرس | عبارة عن IF و استخداماتها وحالاتها المختلفة. if/ then , if then/end if if/then/else/end if , , Select case , Go. | محاضرات نظرية وعملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر | 1ن+2ع | الطالب يفهم الدرس | الحلقات التكرارية Looping Do while, Do until , Do/loop while , Do/loop until , for/next. | محاضرات نظرية وعملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| الثاني عشر + الثالث عشر+الرابع عشر +الخامس عشر | 4ن+8ع | الطالب يفهم الدرس | التعرف على الأدوات المختلفة (صندوق المهمات Tool box<br>A . From Message Box , Command Buttons , Label Bones, Text . Boxes<br>B . Check Boxes , Option Buttons , Control Arrays , Frames , List Boxes , . Combo Boxes<br>C . Scroll bars , Lone , Shape , Picture , Image , Drive List Box, Directory/file) list Box .<br>D . Common dialog , Box. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر | 1ن+2ع | الطالب يفهم الدرس | أنشاء تطبيق VB مستقل.<br>Creating a stand – Alone VB Application. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع عشر | 1ن+2ع | الطالب يفهم الدرس | إضافة قوائم الأوامر إلى تطبيق VB.<br>Adding Menus to an application<br>التعرف على استخدام محرر القوائم Menu editor . | محاضرات نظرية وعملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر | 1ن+2ع | الطالب يفهم الدرس | إنشاء تطبيقات VB تشغيلية<br>Creating VB executable file<br>تصميم الإيقونات Icons .<br>استخدام VB Package& Deployment Wizard. | محاضرلت نظرية وعملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر+ العشرون | 2ن+4ع | الطالب يفهم الدرس | التحكم بالأخطاء في البرنامج المصمم.<br>Error Handling<br>التعامل مع الملفات النصية (Text file)<br>Open/close file Read from file Vrite to file Print. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون + الثاني والعشرون + الثالث والعشرون | 3ن+6ع | الطالب يفهم الدرس | تقنيات الرسم باستخدام VB<br>Paste , Current X , Current Y , Line , Circle , CLS .<br>الطباعة باستخدام VB العمل . مع الألوان Colors | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| | | | التعرف على أحداث الفارة Mouse down , mouse up , mouse move , drop , drag أداء Drag . over<br>المؤقت Timer .<br>خواص الوقت<br>تقنيات الحركة<br>رقام العشوائية و مدخل إلى<br>تصميم الالعاب | | |
| الرابع والعشرون + الخامس والعشرون + السادس والعشرون | 3ن+6ع | الطالب يفهم الدرس | ملفات الصوت و الوسائط المتعددة & Sounds<br>التعرف على Multimedia<br>استخدام بعض المفاتيح المتقدمة Advanced) (Keys .<br>Mashed edit control<br>Chart controls<br>Rich text Box<br>Slider Tabbed Dialog<br>Multiple Forms | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون + الثامن والعشرون+ التاسع والعشرون + الثلاثون | 4ن+8ع | الطالب يفهم الدرس | أمثلة و برامج تطبيقية متنوعة . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 45. البنية التحتية | |
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| 5- الكتب المقررة المطلوبة | 1- Learn Visual Basic 6.0<br>2-Visual Basic Programming |
| 6- المراجع الرئيسية (المصادر) | Visual Basic step by step |
| ج) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| ح) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 46. خطة تطوير المقرر الدراسي |
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# نموذج وصف المقرر

## وصف المقرر

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| يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج. |

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| 47. المؤسسة التعليمية | كلية الهادي الجامعة |
| 48. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 49. اسم / رمز المادة | تقنيات رقمية /MIE202 |
| 50. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |

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| 51. الفصل / السنة | 2024/2023 |
| 52. عدد الساعات الدراسية (الكلي) | 120ساعة (60 ساعة نظري +60 ساعة عملي ) |
| 53. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 54. أهداف المقرر | |
| **1-تعليم الطلب على التعرف على الدوائر الالكترونية الرقمية وكيفية التمييز فيما بينها** | |
| **2- تعليم الطالب على تصميم الدوائر الالكترونية الرقمية** | |
| **3-التعرف على الدوائر الالكترونية الرقمية** | |
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| 55. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يعدد الطالب انواع الدوائر المتكاملة الرقمية<br>أ2- يميز الطالب الفرق بين الدوائر المتكاملة الرقمية<br>أ3- يتعرف الطالب على انواع االدوائر الرقمية الالكترونية القابلة للبرمجة |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب الدوائر الالكترونية الرقمية<br>ب2 – يكتب الطالب النتائج التي حصل عليها مختبريا<br>ب3 – يكتسب الطالب مهارات البرمجة |
| طرائق التعليم والتعلم |

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| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بأنتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة الالكترونيك الرقمي المتقدم<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- نشطة رياضية<br>د2-انشطة فنية<br>د3- انشطة ادبية<br>د4- |

56. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول + الثاني | 4ن+4ع | الطالب يفهم الدرس | Number system : Binary numbers , Octal numbers , Hexadecimal numbers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث+ الرابع | 4ن+4ع | الطالب يفهم الدرس | Binary codes | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس+ السادس | 4ن+4ع | الطالب يفهم الدرس | Logic gates | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع + الثامن | 4ن+4ع | الطالب يفهم الدرس | De Margan's theorems | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع + العاشر | 4ن+4ع | الطالب يفهم الدرس | Laws and theorem of Boolean algebra | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر | 4ن+4ع | الطالب يفهم الدرس | Arithmetic circuit | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر +الرابع عشر+الخامس عشر | 6ن+6ع | الطالب يفهم الدرس | Simplifying logic circuits : fundamentals products , sum of products , algebraic simplification | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر + السابع عشر+ الثامن عشر | 6ن+6ع | الطالب يفهم الدرس | Truth table to Karnaugh map | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر+ العشرون + الواحد والعشرون | 6ن+6ع | الطالب يفهم الدرس | Truth table to Karnaugh map | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون + الثالث والعشرون+ الرابع والعشرون | 6ن+6ع | الطالب يفهم الدرس | Counters | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس والعشرون + السادس والعشرون | 4ن+4ع | الطالب يفهم الدرس | Special counters and shift registers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون + الثامن والعشرون | 4ن+4ع | الطالب يفهم الدرس | Special counters and shift registers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثلاثون | 4ن+4ع | الطالب يفهم الدرس | Analogue to digital conversion | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

57. البنية التحتية

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| 7- الكتب المقررة المطلوبة | Digital |
| 8- المراجع الرئيسية (المصادر) | |
| خ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| د) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 58. خطة تطوير المقرر الدراسي |
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# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| .59 المؤسسة التعليمية | كلية الهادي الجامعة |
| .60 القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| .61 اسم / رمز المادة | رياضيات /MIE203 |
| .62 أشكال الحضور المتاحة | اسبوعي ( نظري ) |
| .63 الفصل / السنة | 2024/2023 |
| .64 عدد الساعات الدراسية (الكلي) | 90 ساعة |
| .65 تاريخ إعداد هذا الوصف | 2024/1/11 |
| .66 أهداف المقرر | |
| **1- مساعدة الطالب على تفهم القوانين والمسائل الرياضيه اللازمه لغرض حل الدوائر الكهربائيه البسيطه والمعقدوة** | |
| **2- الارتقاء بمستوى الطالب في ماده الرياضيات** | |
| **3- تنمية اساليب تفكير سليميه واطلاق الطاقات الكامنه عند الطالب وتطبيقها في المجال الهندسي** | |
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| 67. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| أ- الاهداف المعرفية<br>أ1- ان يذكر الطالب مثلا( نص مبرهنه كرين- تعريف المتجه.....)<br>أ2- ن يميز الطالب بين الضرب النقطي والضرب الاتجاهي<br>أ3- ان يستخدم الطالب اكثر من طريقه لحل المعادلات التفاضليه<br>أ4- ان يتعرف الطالب على انواع الاحداثيات<br>أ5- ان يفهم الطالب كيفيه ايجاد التكامل المتكرر<br>أ6- ان يحكم الطالب على صحه الاستنتاجات التي يصل اليها |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 حل بعض المشكلات الرياضيه وحل اسئله غير نمطيه تتطلب مهارات متعدده<br>ب2-الدقه والوضوح والانجاز في التعبير<br>ب3 – تنمبه القدرات على التفكير المنطقي المتسلسل<br>ب4- صياغه مشكله حياتيه صياغه رياضيه واستخدام اساليب رياضيه في حلها |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- ان يصغي الطالب بانتباه الى شرح الاستاذ<br>ج2-ان يهتم الطالب بهدوء وتظام الصف<br>ج3-ان يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج4- ان يصف الطالب اهميه تعلم الرياضيات مثلا |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- اكتساب الخريج مهارات تاسيسيه لماده الرياضيات من حيث اللغه والرموزوالمعلومات واساليب التفكير<br>د2- تنميه مهارات عقليه تمكن الخريج من الاستفاده من المعلومات التي يتعلمها والمهارات التي اكتسبها وتوظيفها في خدمه متطلباته كفرد وفي خدمه اهداف المجتمع من حيث التنميه الاجتماعيه والاقتصادية |

د3- اكتساب بعض المهارات العمليه مثل استخدام الادوات الهندسيه ومهارات القياس وتشغيل بعض الاجهزة والالات
د4- تنمية اساليب تفكيرسليمه واطلاق الطاقات الكامنه

| 68. بنية المقرر | | | | | |
|---|---|---|---|---|---|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| الاول | 3 | الطالب يفهم الدرس | Vector analysis | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني | 3 | الطالب يفهم الدرس | Vector field | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 3 | الطالب يفهم الدرس | Linear algebra | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع | 3 | الطالب يفهم الدرس | Vector calculs | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس | 3 | الطالب يفهم الدرس | Scalars and vector unit | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس | 3 | الطالب يفهم الدرس | Orthogonal vector | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع | 3 | الطالب يفهم الدرس | Dot product | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن | 3 | الطالب يفهم الدرس | cross product | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع | 3 | الطالب يفهم الدرس | Theory for vector field | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر | 3 | الطالب يفهم الدرس | Vector variable function | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر | 3 | الطالب يفهم الدرس | Polar coordinates –gradient in polar | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني عشر | 3 | الطالب يفهم الدرس | Spherical coordinates | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر | 3 | الطالب يفهم الدرس | Complex number | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر | 3 | الطالب يفهم الدرس | Polar form of complex number | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر | 3 | الطالب يفهم الدرس | Algebra for complex number | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| السادس عشر | 3 | الطالب يفهم الدرس | Algebra for Spherical coordinates | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع عشر | 3 | الطالب يفهم الدرس | Infinite series | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر | 3 | الطالب يفهم الدرس | Power series | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر | 3 | الطالب يفهم الدرس | Convergence and divergence series | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العشرون | 3 | الطالب يفهم الدرس | Number and Complex series | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون | 3 | الطالب يفهم الدرس | Complex variable | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون | 3 | الطالب يفهم الدرس | Cauchy –Riemann equations | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث والعشرون | 3 | الطالب يفهم الدرس | Differential equation | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون | 3 | الطالب يفهم الدرس | Differential equation of the first order | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس والعشرون | 3 | الطالب يفهم الدرس | Differential equation of n order | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس والعشرون | 3 | الطالب يفهم الدرس | Application | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون | 3 | الطالب يفهم الدرس | Multiple integrations | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون | 3 | الطالب يفهم الدرس | Surface area | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون | 3 | الطالب يفهم الدرس | Green theorem | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثلاثون | 3 | الطالب يفهم الدرس | Stokes theorem | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

69. البنية التحتية

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| 9- الكتب المقررة المطلوبة | Calculus II |
| 10- المراجع الرئيسية (المصادر) | الكتب – الانترنت |
| ذ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Calculus Thomas -13th edition<br>Schaum,s mathematic book Practice problem calculus II Topic s in a calculus II-wolfram mathworld |
| ر) المراجع الالكترونية ،مواقع الانترنيت ،..... | https://tutorial.math.lamar.edu/classes/calcii/PowerSeries.aspx<br><br>https://math24.net/linear-differential-equations-first-order.html |

| 70. خطة تطوير المقرر الدراسي |
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| 1-تحديث الكتب و المصادر<br>2- استخدام الانترنت والمواقع الالكترونية في البحث وزيادة المعرفة العلمية للطالب<br>3-اضافه تحويلات لابلاس لاستفادة منه في الدروس الهندسيه<br>4- استخدام اللغه البرمجيه في الرياضيات التطبيقيه |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 71. المؤسسة التعليمية | كلية الهادي الجامعة |
| 72. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 73. اسم / رمز المادة | قياسات ومحولات طبية/ MIE207 |
| 74. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 75. الفصل / السنة | 2024/2023 |
| 76. عدد الساعات الدراسية (الكلي) | 150 ساعة (60 نظري +90 عملي) |
| 77. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 78. أهداف المقرر | |

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| **1–معرفة المكونات الأساسية لأجهزة القياس و طرق استعمال الأجهزة في القياسات و التعرف على العوامل المؤثرة على دقة القراءة و كيفية اختيار الجهاز المناسب للاختبار و التعرف على معايرة أجهزة القياس** |
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| 79. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| أ- الاهداف المعرفية<br>أ1- يحدد المهارات االتعامل مع اجهزة القياس عند الطالب<br>أ2- يقارن انواع اجهزة القياس.<br>أ3- يتعلم المكونات الاساسيه لاجهزة القياس<br>أ4-يفهم مبدء تحديد دقة اجهزة القياس واسباب الاخطاء فيها |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يجيد استخدام اجهزة القياس<br>ب2 – تشخيص اخطاء القراءة في اجهزة القياس ويحلل اسبابها<br>ب3 – يحدد نوع الجهاز الواجب استخدامه.<br>ب4- يحصل على الدقة المطلوبه للقياس |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- ن يصغي الطالب بانتباه الى شرح الاستآذ<br>ج2-ان يحس الطالب بما يعانيه ضحايا التمييز العرقي<br>ج3-ان يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج4-ان يصف الطالب اهمية اجهزة القياس. |

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| ج5-ان يفهم الطالب خطر الاخطاء الناتجه عن عدم دقة القياس |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- المهارات المكتبيه خارج الماده العلمية<br>2-قابلية الطالب على البحث العلمي<br>3-قابلية الطالب على المشاركة في النشاطات اللاصفية |

| 80. بنية المقرر | | | | | |
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| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| الاول | 2ن+3ع | الطالب يفهم الدرس | Measurement and errors | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني | 2ن+3ع | الطالب يفهم الدرس | System of units of measurements | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 2ن+3ع | الطالب يفهم الدرس | Standard of measurement | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس | 4ن+6ع | الطالب يفهم الدرس | Measurement device and system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس+ السابع | 4ن+6ع | الطالب يفهم الدرس | D.C indicating instrument | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن+ التاسع | 4ن+6ع | الطالب يفهم الدرس | A.C indicating instrument | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر | 2ن+3ع | الطالب يفهم الدرس | Power transducers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر | 4ن+6ع | الطالب يفهم الدرس | Measurements of R, L and C | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر+الرابع عشر | 4ن+6ع | الطالب يفهم الدرس | Descriptive lectures | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر+ السادس عشر | 4ن+6ع | الطالب يفهم الدرس | Review of fundamentals of electrical measurements | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع عشر+ الثامن عشر | 4ن+6ع | الطالب يفهم الدرس | General theory of PMMC instrument | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر +العشرون | 4ن+6ع | الطالب يفهم الدرس | Various instrument | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون | 2ن+3ع | الطالب يفهم الدرس | Circuits for D.C measurements | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون | 2ن+3ع | الطالب يفهم الدرس | Fundamental of A.C measurements | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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|---|---|---|---|---|---|
| الثالث والعشرون +الرابع والعشرون | 4ن+6ع | الطالب يفهم الدرس | Electronic measuring instruments , oscilloscope. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس والعشرون | 2ن+3ع | الطالب يفهم الدرس | Frequency measurements. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس والعشرون | 2ن+3ع | الطالب يفهم الدرس | Magnetic instrument | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون | 2ن+3ع | الطالب يفهم الدرس | Concepts of cle | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون+ التاسع والعشرون | 4ن+6ع | الطالب يفهم الدرس | Types of medical transducers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثلاثون | 2ن+3ع | الطالب يفهم الدرس | Analogue and digital data acquisition systems | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

81. البنية التحتية

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|---|---|
| 11- الكتب المقررة المطلوبة | Electronic Instrumentation and Measurement Techniques. W.D.Cooper & A.D. Helfrick |
| 12- المراجع الرئيسية (المصادر) | Electronic Measurement and Instrumentation J.BGupta<br>اجهزة القياس الالكترونية وتقنيات القياس ترجمة: هاني عزيز، عبد الله محمد، وجبرائيل اليوشع |
| ز) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| س) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

82. خطة تطوير المقرر الدراسي

استحداث وتطوير مختبر اجهزة القياس بما يعزز من فهم الطالب.

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| .83 المؤسسة التعليمية | كلية الهادي الجامعة |
| .84 القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| .85 اسم / رمز المادة | اجهزة الكيمياء سريرية /MIE205 |
| .86 أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| .87 الفصل / السنة | 2024/2023 |
| .88 عدد الساعات الدراسية (الكلي) | 120 ساعة (60 نظري+60 عملي) |
| .89 تاريخ إعداد هذا الوصف | 11/1/2024 |
| .90 أهداف المقرر | |
| **1- يتعرف الطالب على مفاهيم الكيمياء السريريه والتفاعلات التي تحدث داخل جسم الانسان** | |

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| **2- يفهم تحليلات الكيمياء السريرية وطريقه الكشف عنها** |
| **3-يشرح تقنية الاجهزة الطبية المختبرية ومبدأ عملها** |
| **4- يفهم صيانة الاجهزة الطبية ويعرف الاعطال الكهربائية والميكانيكية** |
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| 91. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
|---|
| **أ- الاهداف المعرفية**<br>**أ1- يحدد التركيب الكيمياوي لدم الانسان**<br>**أ2- يعدد الاجهزة المختبرية الطبيه المستخدمة في التحليل**<br>**أ3- يفهم مواصفات الجهازالطبي**<br>**أ4- يشرح تقنية الجهازالطبي ومبدأ عمله**<br>**أ5- يعدد طرق الكشف والتحليل عن العناصر والمواد الكيميائية داخل جسم الانسان** |
| ب - **الاهداف المهاراتية الخاصة بالمقرر**<br>**ب1 – يستخدم تقنية الجهازالطبي ومبدأ عمله في التحليل**<br>**ب2 – يحضر المواد الكيميائية الخاصة بالتحليل**<br>**ب3 – يستخدم خطوات طريقة التحليل**<br>**ب4- يكتب نتائج التحليل المعروضة في الجهاز** |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |

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| ج- الاهداف الوجدانية والقيمية<br>ج1- ن يصغي الطالب بأنتباه الى شرح الاستاذ<br>ج2- ان يتعرف الطالب على اثر مادة الكيمياء السريرية في الحياة<br>ج3- ان يصف الطالب اهمية تحليل العناصروالمواد الكيميائية في سوائل جسم الانسان<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- ابلية الطالب على البحث العلمي<br>2- قابلية الطالب على المشاركة في النشاطات اللاصفية<br>د3-<br>د4- |

92. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول | 2ن+2ع | الطالب يفهم الدرس | Work security in laboratories | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني | 2ن+2ع | الطالب يفهم الدرس | Quality control | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 2ن+2ع | الطالب يفهم الدرس | Best laboratory use | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس | 4ن+4ع | الطالب يفهم الدرس | Spectrum instrument and uses | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس +السابع | 4ن+4ع | الطالب يفهم الدرس | Ion measurement instrument | محاضرة نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن+ التاسع | 4ن+4ع | الطالب يفهم الدرس | Salt measurement instrument and it uses | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر +الحادي عشر | 4ن+4ع | الطالب يفهم الدرس | Auto-Analysis instrument | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني عشر + الثالث عشر | 4ن+4ع | الطالب يفهم الدرس | Minerals measurement instrument | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر+ الخامس عشر | 4ن+4ع | الطالب يفهم الدرس | Elisa instrument and its uses | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر + السابع عشر | 4ن+4ع | الطالب يفهم الدرس | Electrical conduction | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر+ التاسع عشر | 4ن+4ع | الطالب يفهم الدرس | Osmotic conduction | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العشرون+ الواحد والعشرون | 4ن+4ع | الطالب يفهم الدرس | Enzymes and their measurements | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون + الثالث والعشرون | 4ن+4ع | الطالب يفهم الدرس | Protein and importance | محاضرة نظرية +مختبر عملي | امتحانات اسبوعية واسئلة قبلية وبعدية |

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|---|---|---|---|---|---|
| الرابع والعشرون + الخامس والعشرون | 4ن+4ع | الطالب يفهم الدرس | Fats and importance | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس والعشرون | 2ن+2ع | الطالب يفهم الدرس | Maemoglobin | محاضرة نظرية | متحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون + الثامن والعشرون | 4ن+4ع | الطالب يفهم الدرس | Minerals and neutrition | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثلاثون | 4ن+4ع | الطالب يفهم الدرس | Immunological | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

93. البنية التحتية

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|---|---|
| 13- الكتب المقررة المطلوبة | Fundamentals of clinical chemistry By carl A. Burtis pb.D. |
| 14- المراجع الرئيسية (المصادر) | |
| ش) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| ص) المراجع الالكترونية ،مواقع الانترنيت ،..... | Chemistry WWW.clinic |

94. خطة تطوير المقرر الدراسي

توفيرمختبركيمياء سرسرية يقوم بالتحليلات الكيميائية

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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|---|---|
| 95. المؤسسة التعليمية | كلية الهادي الجامعة |
| 96. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 97. اسم / رمز المادة | مكونات ودوائر الكترونية |
| 98. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 99. الفصل / السنة | 2024/2023 |
| 100. عدد الساعات الدراسية (الكلي) | 150 ساعة (60 نظري + 90 عملي) |
| 101. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 102. أهداف المقرر | |
| 1- الاطلاع على خصائص المواد الالكترونية وكيفية تصنيعها | |

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| 2- فهم ومعرفة التطبيقات العملية للدايود والترانسيتور |
| 3- فهم ومعرفة مكبرات أنواع الترانسيتورات ومبدا عمل كل واحد |
| 4- فهم ومعرفة مكبرات أنواع الترانسيتورات ومبدا عمل كل واحد |
| 5- التطبيقات العملية للمضخمات والدوائر الكهربائية االمستخدمة |
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| 103. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- التعرف على منحنى خصائص الاشارة الخارجة من الدايود والتطبيقات العملية التي يستخدم فيها<br>أ2- التعرف الى الترانسستور مبدا عمله وخصائص الإشارة الداخلة والخارجة منه وطرق ربطه في الدوائر الكترونية<br>أ3- أنواع الترانستورات ومبدا عمل كل واحدة من هذه الانواع<br>أ4- التعرفعلى الاستجابة الترددية لكل نوع من الترانستور وكيفية توظيف ذلك في تصميم الدوائر الكهربائية<br>أ5- التعرف على مضخمات الإشارة أنواعها والتطبيقات المستخدمة فيها بالإضافة الى الاستجابة الترددية لهذه المضخمات<br>أ6- - التعرف على الدوائر المتكاملة |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – حساب القيم الداخلة والخارجة من الدوائر الالكترونية التي تحتوي على الدايود او الترانسيستور<br>ب2 – كيفية تصميم دوائر كهربائية وفق قيم معينة<br>ب3 –<br>ب4 – |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |

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| ج- الاهداف الوجدانية والقيمية<br>ج1-زرع روح الابداع عند الطلبة والحرص على ايجادهم حلول مبتكرة للمشاكل المختلفة<br>ج2- تنمية قابلية الطلبة على العمل الجماعي كفرق فعالة تخرج بنتائج متميزة<br>ج3- تنمية الشعور بالمسؤولية لدى الطلبة والتهيئة النفسية لتحمل الأعباء الملقاة على عاتقهم<br>ج4- تنمية قيم الحرص والمثابرة على انجاز العمل للوصول الى نتائج مرضية |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- حساب القيم الداخلة والخارجة من الدوائر الالكترونية التي تحتوي على الدايود او الترانسيستور<br>د2- كيفية تصميم دوائر كهربائية وفق قيم معينة<br>د3- معرفة تحليل اي دائرة الكترونية معقدة<br>د4- |

104. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول + الثاني | 4ن+6ع | الطالب يفهم الدرس | أشباه الموصلات | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث+ الرابع | 4ن+6ع | الطالب يفهم الدرس | تطبيقات الدايود في ال DC | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس+ السادس | 4ن+6ع | الطالب يفهم الدرس | تطبيقات الدايود في ال AC | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع | 2ن+3ع | الطالب يفهم الدرس | الزينير دايود خصائصه وتطبيقاته | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن+ التاسع + العاشر | 6ن+9ع | الطالب يفهم الدرس | الترانسستورBJTخصائصه وطرق ربطه | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر + الثالث عشر | 4ن+6ع | الطالب يفهم الدرس | تحليل دوائر الترانسيستور في ال DC | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر+ الخامس عشر + السادس عشر + السابع عشر | 8ن+12ع | الطالب يفهم الدرس | تحليل دوائر الترانسيستورفي الAC والموديلات المستخدمة لحل هذه الدوائر | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر+ التاسع عشر+ العشرون+ الواحد والعشرون | 8ن+12ع | الطالب يفهم الدرس | الترانسيستور FET خصائصه و تطبيقاته | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون + الثالث والعشرون | 4ن+6ع | الطالب يفهم الدرس | الاستجابة الترددية للترانسيستورات بانواعها | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون + الخامس والعشرون + السادس والعشرون + السابع والعشرون | 8ن+12ع | الطالب يفهم الدرس | مضخمات الإشارة أنواعها وتطبيقا | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون+ التاسع والعشرون + الثلاثون | 6ن+9ع | الطالب يفهم الدرس | مكبر القدرة | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

105. البنية التحتية

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|---|---|
| 15- الكتب المقررة المطلوبة | Electronic device and circuit theory |
| 16- المراجع الرئيسية (المصادر) | Devices and Electronic Circuit Theory |

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|---|---|
| | Eleventh Edition<br>Robert L. Boylestad<br>Louis Nashelsky |
| ض) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| ط) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 106. خطة تطوير المقرر الدراسي |
|---|
| تطوير المختبرات و توفير المصادر الحديثة |

# المرحلة الثالثة

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 107. المؤسسة التعليمية | كلية الهادي الجامعة |
| 108. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 109. اسم / رمز المادة | الاجهزة الطبية MIE309/2 |
| 110. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 111. الفصل / السنة | 2024/2023 |
| 112. عدد الساعات الدراسية (الكلي) | 5 ساعات اسبوعيا |

| 113. تاريخ إعداد هذا الوصف | 11/1/2024 |
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114. أهداف المقرر

**1–دراسة الجهاز الطبي كجهاز الكتروني بحت تم اختلافه عن بقية الاجهزة الالكترونية لكونه جهاز طبي**

**2– دراسة الدوائر الالكترونية الداخلية ثم التدريب على كافة الدوائر الالكترونية في الاجهزة الطبية وطرق تشغيلها وصيانتها مما يؤهل الطالب في النهاية استخدام وصيانة الاجهزة الطبية بصورة عامة**

115. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية
أ1- وضع خطط وبرامج العمل وخاصة في صيانة الطبية الاجهزة
أ2- الاشراف الموقعي على تنفيذ الاعمال
أ3- اعداد البحوث والدراسات لتحسين تطور عمل الاجهزة الطبية
أ4- المشاركة في اللجان ذات العلاقة بنشاط الاجهزة الطبية
أ5- المشاركة في تحليل العطاءات الخاصة بالاجهزة الطبية البديل

ب - الاهداف المهاراتية الخاصة بالمقرر
ب1 – تدريب المهندسين والفنيين على تشغيل وصيانة الاجهزة الطبية
ب2 – نصب وتشغيل الاجهزة الطبية (اشرافا وتنفيذا)
ب3 –تقديم الاستشارة في مجال الاجهزة الطبية

طرائق التعليم والتعلم

محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية وورش عمل وندوات ووسائل الايضاح (data show)

طرائق التقييم

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| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة , تقارير اسبوعية |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يقدم مشاريع علمية في تصميم الدوائر للاجهزة الطبية<br>ج2- يصمم بورد الكتروني<br>ج3- يضع الخطط والافكار المستقبلية مما يتلائم مع الاحتياجات في مجال الاجهزة الطبية |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية, ووسائل الايضاح (data show),وورش عمل |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- اكساب الخريج مهارة علمية وتطبيقية تمكنهمن تشخيص الاعطال الناتجة في الاجهزة الطبية<br>د2- قابلية الخريج على عمل بوردات الكترونية في الاجهزة الطبية<br>د3- قابلية الخريج على تدريب الكوادر الفنية في مجالات الاجهزة الطبية<br>د4- تصميم دوائر الكترونية بديلة |

| 116. بنية المقرر | | | | | |
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| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| الاول + الثاني+الثالث | 15 | الطالب يفهم الدرس | ***Cardiac function recorders and monitors*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع +الخامس +السادس | 10 | الطالب يفهم الدرس | ***Surgical scopes*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع +الثامن +التاسع | 15 | الطالب يفهم الدرس | ***Audio logical system*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| **العاشر،الحادي عشر،الثاني عشر** | 15 | الطالب يفهم الدرس | ***Ophthalmic system*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| **الثالث عشر+الرابع عشر +الخامس عشر +السادس عشر +السابع عشر +الثامن عشر ا** | 30 | الطالب يفهم الدرس | ***Imaging tech.Ultrasound , Radiation , Thermal NMR , etc*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر +عشرون +الواحد والعشرون | 15 | الطالب يفهم الدرس | ***Pulmonary function system*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون والثالث والعشرون+الرابع والعشرون | 15 | الطالب يفهم الدرس | ***Pathological units*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر +السادس والعشرون +السابع والعشرون | 15 | الطالب يفهم الدرس | ***Therapeutic diathermy*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون +التاسع والعشرون+الثلاثون | 15 | الطالب يفهم الدرس | ***Coronary care units*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 117. البنية التحتية | |
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| 17- الكتب المقررة المطلوبة | 1. Medical application instrumentation and design, By: John G. Webster,4th edition. |
| 18- المراجع الرئيسية (المصادر) | 1. Handbook of biomedical instrumentation, 2nd edition By: R.S. Khandpur<br>2. A text book of medical instrument, By: S.Ananthi |

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| ظ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | 1. Encyclopedia of medical device and instrumentation, 2nd edition By: John G. Webster<br>2. Ophthalmic instrument and equipments,2nd edition ,V.Srinivasan,R.D.Thulasiraj |
| ع) المراجع الالكترونية ،مواقع الانترنيت ،..... | https://accessengineeringlibrary.com<br>https://en.wikipedia.org |

| 118. خطة تطوير المقرر الدراسي |
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| 1. Electroencephalograph instrument<br>2. Electromyograph instrument<br>3. Safety measures in biomedical instrument |

# نموذج وصف المقرر

## وصف المقرر

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| 119. المؤسسة التعليمية | كلية الهادي الجامعة |
| 120. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 121. اسم / رمز المادة | اللغة الانكليزية / MIE301 |
| 122. أشكال الحضور المتاحة | اسبوعي (نظري) |
| 123. الفصل / السنة | 2024/2023 |
| 124. عدد الساعات الدراسية (الكلي) | 1 ساعة اسبوعيا |
| 125. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 126. أهداف المقرر | |
| **1- تزويد الطلبة بالمهارات الأساسية للتواصل في اللغة الانجليزية** | |
| **2- قراءة النصوص باللغتين العربية والانجليزية وإستيعابها و تنمية المفردات** | |

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| **3–توظيف مهارات الكتابة والمناظرة والحوار وفق أسس صحيحة .** |
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| 127. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| أ- الاهداف المعرفية<br>أ1- خريج مؤهل للتحدث والحوار باللغة الانكليزية لمواقف مختلفة<br>أ2- خريج مؤهل للتعبير كتابة باللغة الانكليزية لمواقف مختلفة |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – مهارة القراءة<br>ب2 – مهارة الكتابة<br>ب3 – مهارة الاصغاء<br>ب4 – مهارة التحدث |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , الحوار بين الاستاذ والطالب , الحوار بين الطلبة نفسهم |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , واجبات يومية , تقييم يومي, اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- رفع مستوى الطلبة لغويا وترجميا<br>ج2- تشجيع الطلبة على التحاور وكسر الركور فيما بينهم |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , الحوار بين الاستاذ والطالب , الحوار بين الطلبة نفسهم |
| طرائق التقييم |

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| امتحانات فصلية عملية , امتحانات شهرية الكترونية , واجبات يومية , تقييم يومي , اسئلة سريعة |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- مهارة التحدث<br>د2- مهارة الكتابة<br>د3- مهارة معالجة المواقف على المستوى الشخصي<br>د4- تشجيع الطلبة على الالقاء السليم |

128. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول + الثاني | 2 | الطالب يفهم الدرس | Unit one: Tenses, Auxiliary verbs, Short answers , What's in a word? , Social expressions | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث + الرابع | 2 | الطالب يفهم الدرس | Unit two: Present tenses, Simple or continuous? , Passive , Sport , Numbers and dates | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس + السادس | 2 | الطالب يفهم الدرس | Unit three: Past tenses , Passive , Art and literature , Giving opinions | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع + الثامن | 2 | الطالب يفهم الدرس | Unit four: Modal verbs1 , obligation and permission , Nationality words , Request and offers | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع + العاشر | 2 | الطالب يفهم الدرس | Unit five: Future forms , The weather, Travelling around | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر+ الثالث عشر | 3 | الطالب يفهم الدرس | Unit six: like , Verb patterns, Describing food, towns , and people Sings and sounds | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر + السادس عشر + السابع عشر | 3 | الطالب يفهم الدرس | Unit seven: Present Perfect active and passive , Phrasal verbs , On the phone | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر + التاسع عشر + العشرون | 3 | الطالب يفهم الدرس | Unit eight: Conditionals, Time clauses, Base and strong adjectives, Making suggestions | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون + الثاني والعشرون + الثالث والعشرون | 3 | الطالب يفهم الدرس | Unit nine: Modal verbs2, probability, Character adjectives, So do! Neither do! | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون + الخامس والعشرون + السادس والعشرون | 3 | الطالب يفهم الدرس | Unit ten: Present Perfect Continuous , Time expressions , | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| | | Compound nouns , Quality | | | |
| السابع والعشرون + الثامن والعشرون | 2 | الطالب يفهم الدرس | Unit eleven: indirect questions , Questions tags, The body , informal English | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثلاثون | 2 | الطالب يفهم الدرس | Unit twelve: Reported speech, Reporting verbs, Birth, marriage, and death , Saying sorry | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 129. البنية التحتية | |
|---|---|
| 19- الكتب المقررة المطلوبة | Beginner student's book New Headway plus John and Liz Soras |
| 20- المراجع الرئيسية (المصادر) | Textbook English grammar in use by raymond murphy |
| غ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | English in A simplified way اللغة الانكليزية<br>BY Tahir Al bayati |
| ف) المراجع الالكترونية ،مواقع الانترنيت ،..... | https://www.grammarbank.com/beginners-English-quiz.html |

| 130. خطة تطوير المقرر الدراسي |
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| 3- العمل على تطويرمهارات الطالب في الاصغاء والتحدث والقراءة باستخدام الانترنت والاطلاع على احدث المصادروالمعلومات<br>4- العمل على تجديد المصادر وتنويعها |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 131. المؤسسة التعليمية | كلية الهادي الجامعة |
| 132. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 133. اسم / رمز المادة | الكترونيات القدرة /MIE307 |
| 134. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 135. الفصل / السنة | 2024/2023 |
| 136. عدد الساعات الدراسية (الكلي) | 4ساعات اسبوعيا |
| 137. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 138. أهداف المقرر | |

**1-يوفر وصف المقرر هذا ايجازا مقتضيا لاهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهنا عما اذاكان قد حقق الاستفادة القصوى من فرص التعلم المتاحة ز ولابدمن الربط بينها وبين وصف البرنامج.**

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| 139. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| أ- الاهداف المعرفية<br>أ1- تطوير مهارات الطلبة في مجال الكترونيات القدرة<br>أ2- استخدام عناصر الكترونيات القدرة بالسيطرة على سرعة المحركات<br>أ3- تطوير القابلية العلمية للطلبة في صيانة وتطوير الاجهزة الطبية<br>أ4-<br>أ5- |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – تصليح الاجهزة الطبية<br>ب2 – صيانة الاجهزة الطبية<br>ب3 –تطوير الاجهزة الطبية<br>ب4 – |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة الكترونيات القدرة<br>ج4-ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |

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| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- تصليح وصيانة وتطوير الاجهزة الطبية<br>د2- قابلية التعامل مع بيئة العمل<br>د3-<br>د4- |

140. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول | 4 | الطالب يفهم الدرس | Introduction to power electronics | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني +الثالث | 8 | الطالب يفهم الدرس | Switching devices,power & control device | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس | 8 | الطالب يفهم الدرس | Types and characteristic ,ranting (diode, transistor) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس +السابع + الثامن | 12 | الطالب يفهم الدرس | Methods of turning – on & turning – off | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع + العاشر | 8 | الطالب يفهم الدرس | Protection of power device | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر | 8 | الطالب يفهم الدرس | Triggering & base drive circuits | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر +الرابع عشر+ الخامس عشر | 12 | الطالب يفهم الدرس | Controlled rectifiers , 1 – phase & 3 – phase circuits . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر + السابع عشر+الثامن عشر | 12 | الطالب يفهم الدرس | Half – wave & full – wave circuits | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر+ العشرون+الواحد والعشرون | 12 | الطالب يفهم الدرس | D.C choppers ; step – up & step – down choppers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون + الثالث والعشرون | 8 | الطالب يفهم الدرس | A.C phase controllers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون + الخامس والعشرون+السادس عشر | 12 | الطالب يفهم الدرس | Invertors , 1 – phase & 3 – phase bridges | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون + الثامن والعشرون | 8 | الطالب يفهم الدرس | Some applications : a – uninterruptible power supply | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثلاثون | 8 | الطالب يفهم الدرس | (UPS) b – switching mode power supply (SMP) . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| 141. البنية التحتية | |
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| 21- الكتب المقررة المطلوبة | |
| 22- المراجع الرئيسية (المصادر) | Power electronic device Lander Power electronic drive Hroon |
| ق) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Power electronic device Lander Power electronic drive Hroon |
| ك) المراجع الالكترونية ،مواقع الانترنيت ،..... | مواقع الانترنيت والمكتبة الافتراضية |

| 142. خطة تطوير المقرر الدراسي |
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| عقد ندوات مع سوق العمل لتبادل الافكار لغرض تطوير المناهج بما يلائم متطلبات الجهات المستفيدة |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 143. المؤسسة التعليمية | كلية الهادي الجامعة |
| 144. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 145. اسم / رمز المادة | التطبيقات الحاسبة / MIE306 |
| 146. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 147. الفصل / السنة | 2024/2023 |
| 148. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 149. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 150. أهداف المقرر | |
| **1-** التعرف على بيئة عمل البرنامج و المكونات المختلفة لشاشة | |

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| **2–** معرفة واجهة البرنامج |
| 3- التعرف على انواع الايعازات للبرمجة |
| 4- برمجة وتصميم واجهة تحكم بالبرنامج |
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| 151. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
|---|
| أ- الاهداف المعرفية<br>أ1- معرفة البرنامج<br>أ2- فهم اهمية البرنامج<br>أ3- معرفة وفهم تطبيقات العملية للبرنامج<br>أ4- معرفة وفهم تعشيق البرنامج مع تطبيقات برمجية اخرى<br>أ5- معرفة وفهم التحكم بمختلف ادوات البرنامج الجاهزة<br>أ6- معرفة وفهم طرق اعداد العرض التقديمي |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – تصميم الواجهة للمستخدم<br>ب2 – يستخدم الطالب البرنامج **MATLAB**<br>ب3 –يكتب الطالب النتائج التي حصل عليها مختبريا<br>ب4 – |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يقدم مشاريع علمية في تصميم الدوائرللاجهزة الطبية<br>ج2- يصمم بورد الكتروني<br>ج3- يضع الخطط والافكار المستقبلية مما يتلائم مع الاحتياجات في مجال الاجهزة الطبية |

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| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- اكساب الخريج مهارة علمية وتطبيقية تمكنه من تشخيص الاعطال الناتجة في الاجهزة الطبية<br>د2- قابلية الخريج على عمل بوردات الكترونية في الاجهزة<br>د3- قابلية الخريج على تدريب الكوادر الفنية في مجالالت الاجهزة الطبية<br>د4- تصميم دوائر الكترونية بديلة |

| 152. بنية المقرر | | | | | |
|---|---|---|---|---|---|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| 1 | 4 | الطالب يفهم الدرس | **Introduction, MATLAB Environment,MATLAB Windows(Command Window, Workspace Window, Command History window, Help Window, Editor Window).** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 3-2 | 8 | الطالب يفهم الدرس | **A First Program, Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting ,End as a subscript, Colon Operator, Transpose Deleting Rows or Columns** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 6-5-4 | 12 | الطالب يفهم الدرس | **Variables and assignment statement, logical operator. Arrays, Built in functions, Basic Matrix Functions(sum, max, min ,mean, magic, diag, length, size, median, prod, sort** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 7 | 4 | الطالب يفهم الدرس | **Basic Plotting(Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits).** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| 9-8 | 8 | الطالب يفهم الدرس | **Arguments and return values, M-file, input-output statement** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 10 | 4 | الطالب يفهم الدرس | Control statement (conditional statement:IfElse Elseif ,swith case) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 11 | 4 | الطالب يفهم الدرس | **Repetition statements: (While statement, For statement)** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 15-14-13-12 | 16 | الطالب يفهم الدرس | **Procedures andFunctions(a custom-made Matlab function, define the name of the function, the input and the output variables, Calling Functions** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 16 | 4 | الطالب يفهم الدرس | **String handling** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 17 | 4 | الطالب يفهم الدرس | **Cells(Pre-defined cells, its usage, cell Arrays, cell two structure).** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 18 | 4 | الطالب يفهم الدرس | **Printing Output. Array Functions(length, size, reshape, dot)** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 20-19 | 8 | الطالب يفهم الدرس | **Handle graphics and user interface.<br>1.Pre-defined dialogs<br>2. Handle graphics<br>a) Graphics objects<br>b) Properties of objects<br>c) Modifying properties of graphics objects** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 23-22-21 | 12 | الطالب يفهم الدرس | ***GUI Interface ( Attaching buttons to actions, Getting Input, Setting Output) Predefined GUIs and Dialog Boxes*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 26--25-24 | 12 | الطالب يفهم الدرس | ***Menu-driven programs<br>a) Controls: uimenu and uicontrol<br>b) Interactive graphics<br>c) Large program logic*** **folw** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| 30-29-28-27 | 16 | الطالب يفهم الدرس | ***Menipulating text (Writing to a text file, Reading from a text file, Randomising and sorting a list, Searching a list). Introduction to Image Analysis(Reading & Writing Images, Displaying Images)*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 153. البنية التحتية | |
|---|---|
| 23- الكتب المقررة المطلوبة | |
| 24- المراجع الرئيسية (المصادر) | 1- Introduction to MATLAB for Engineers William J. Palm III<br>2- INTRODUCTION TO MATLAB FOR ENGINEERING STUDENTS ,David Houcque |
| ل) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| م) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 154. خطة تطوير المقرر الدراسي |
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# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 155. المؤسسة التعليمية | كلية الهادي الجامعة |
| 156. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 157. اسم / رمز المادة | تكنولوجيا الكهرباء/ MIE308 |
| 158. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 159. الفصل / السنة | 2024/2023 |
| 160. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 161. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 162. أهداف المقرر | |

| دراسة اسس تقنية الكهرباء والمحركات الكهربائية والمحولات الكهربائية المختلفة ونظرية عملها وطرق تشغيلها وكيفية اصلاح الاعطال وعمل الصيانة لهم |
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| 163. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يعدد الطالب انواع الكهربائية<br>أ2- يعدد الطالب انواع المكائن الكهربائية<br>أ3- يتعرف الطالب على خواص المحركات الكهربائيةوالمحولات<br>أ4- يتعلم الطالب كيفية السيطرة على المفاتيح الكهربائية<br>أ5- يتعرف الطالب على بعض انواع الدوائر الكهربائية للفولتيات العالية |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب الدوائر الكهربائية<br>ب2 – يستخدم الطالب انواع المكائن الكهربائية<br>ب3 –يكتسب الطالب مهارات ربط المحولات والمحركات الكهربائية<br>ب4 – يكتب الطالب النتائج التي حصل عليها مختبريا |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |

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| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغى الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة تكنولوجيا الكهرباء<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة ادبية<br>د3- انشطة فنية |

164. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أوالموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول + الثاني | 8 | الطالب يفهم الدرس | Transformers : single phase transformer and construction . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 4 | الطالب يفهم الدرس | Theory of operation , no load and short circuit test | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس | 8 | الطالب يفهم الدرس | Equivalent circuit , auto–transformers, instrument transformers | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس +السابع | 8 | الطالب يفهم الدرس | Three phase transformers , constructions methods of connection | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن+ التاسع | 8 | الطالب يفهم الدرس | Electromechanical energy conversion principles , relay operation | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر + الحادي عشر + الثاني عشر | 12 | الطالب يفهم الدرس | D.C machines : e.m.f and torque equation , equivalent circuit , methods of excitation , generator characteristics | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر +الرابع عشر +الخامس عشر | 12 | الطالب يفهم الدرس | Motor characteristics , testing , calculation of losses and efficiency | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر + السابع عشر +الثامن عشر | 12 | الطالب يفهم الدرس | Induction machines : equivalent circuit , basic equation , simple analysis testing . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر+ العشرون+ الواحد والعشرون | 12 | الطالب يفهم الدرس | Single phase induction motor , methods of starting , siplitphase , capacitor short , capacitor run and shaded pole motors . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون + الثالث والعشرون | 8 | الطالب يفهم الدرس | Synchronous machines , generators and motors , equivalent circuit , basic equation . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون + الخامس والعشرون | 8 | الطالب يفهم الدرس | Special machines : Reluctance motor , hysteresis motor , linear motor , stepper motor , | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| | | | dray cup type motor , servo motor , etc ……. | | |
| السادس عشر +السابع والعشرون | 8 | الطالب يفهم الدرس | Control switches : pilot switches , push bottoms , limits . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر | 4 | | Switches , flost switches , contactors , pressure switches | | |
| التاسع والعشرون + الثلاثون | 8 | الطالب يفهم الدرس | High voltage circuits . | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 165. البنية التحتية | |
|---|---|
| 25- الكتب المقررة المطلوبة | Theraga ( electrical machine ) |
| 26- المراجع الرئيسية (المصادر) | Electrical machine<br>By siskind<br>Basic machine for industry<br>By Theodore wildi<br>Elec-machine<br>By S.N.Ali |
| ن) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Theraga |
| ه) المراجع الالكترونية ،مواقع الانترنيت ،..... | www.mach |

| 166. خطة تطوير المقرر الدراسي |
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| 5- استخدام احدث الكتب والمناهج الموجود في الانترنت<br>6- استخدام الانترنت في البحث والتقارير<br>7- استخدام المختبرات الافتراضية الموجودة في اغلب الجامعات العالمية<br>8- عمل محاكاة للاجهزة المتوفرة |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 167. المؤسسة التعليمية | كلية الهادي الجامعة |
| 168. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 169. اسم / رمز المادة | معالجة الاشارة الرقمية / MIE303 |
| 170. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 171. الفصل / السنة | 2024/2023 |
| 172. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 173. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 174. أهداف المقرر | |

| تعليم الطالب المواضيع الاساسية لمعالجة الاشارة الرقمية واستخدامها في معالجة اشارات الصوت والصور الرقمية |
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| 175. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يفهم الطالب طبيعة الاشارات ومعالجتها<br>أ2- يتعلم الطالب حساب سلسلة فورير وتحويلاتها<br>أ3- يتعلم الطالب حساب تحويلات الz<br>أ4- يفهم الطالب المرشحات الرقمية<br>أ5- يتعلم الطالب طرق تصميم المرشحات الرقمية FIR,IIR<br>أ6- يتعلم الطالب معالجة اشارة الصوت والصورة |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب برامج المحاكاة<br>ب2 – يكتب الطالب البرامج بلغة ال MATLAB CODE<br>ب3 –يكتب الطالب النتائج التي حصل عليها مختبري من الحاسوب |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |

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| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغى الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة معالجة الاشارة الرقمية<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة رياضية<br>د3- انشطة فنية<br>د4- |

176. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| 3-2-1 | 12 | الطالب يفهم الدرس | مقدمة في معالجة الاشارة | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 6-5-4 | 12 | الطالب يفهم الدرس | ***Convolution and sampled data system*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 9-8-7 | 12 | الطالب يفهم الدرس | ***Fourier series and Fourier transform*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 12-11-10 | 12 | الطالب يفهم الدرس | ***Z – transform*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 14-13 | 8 | الطالب يفهم الدرس | ***Discrete Fourier transform (DFT) .*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 16-15 | 8 | الطالب يفهم الدرس | ***Fast Fourier Transform*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 19-18-17 | 12 | الطالب يفهم الدرس | ***Digital Filtering*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 22-21-20 | 12 | الطالب يفهم الدرس | ***IIR Filters*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 24-23 | 8 | الطالب يفهم الدرس | ***FIR Filters*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 27-26-25 | 12 | الطالب يفهم الدرس | ***Speech Processing*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 30-29-28 | 12 | الطالب يفهم الدرس | ***Image Processin*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

177. البنية التحتية

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| 27- الكتب المقررة المطلوبة | Digital Signal Processing; Principles, Algorithms and Applications John G. Proakis , Dimitris G. Manolakis |
| 28- المراجع الرئيسية (المصادر) | Digital Signal Processing Fundamentals and Applications<br>Li Tan |

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| و) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Schaum's Outline of Theory and Problems of Digital Signal Processing<br>Monson H. Hayes |
| ي) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 178. خطة تطوير المقرر الدراسي |
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| تغيير بنسبة 20% حسب التعليمات النافذة |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 179. المؤسسة التعليمية | كلية الهادي الجامعة |
| 180. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 181. اسم / رمز المادة | معالج وحاسبة دقيقة/ MIE305 |
| 182. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 183. الفصل / السنة | 2024/2023 |
| 184. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 185. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 186. أهداف المقرر | |
| **1-تدريب الطالب على اسس الدوائر المنطقية المستخدمة فس الحاسبات الالكترونية وكيفية عملها** | |
| **2- بناء دوائر منطقية** | |

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| **3–تعرف على الحاسبات الدقيقة – اجزائها , برمجتها , او تطبيقاتها** |
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| 187. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| أ- الاهداف المعرفية<br>أ1- يفهم الطالب طبيعة التصميم الرقمي<br>أ2- يعرف الطالب اسس الدوائر المنطقية المستخدمة في الحاسبات الدقيقة<br>أ3- يتعلم الطالب طرق التصميم الرقمية<br>أ4- يتعرف الطالب على الحاسبة الدقيقة واجزائها<br>أ5- بناء دوائر منطقية |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب برامج المحاكاة<br>ب2 – يكتب الطالب البرامج بلغة ال Assembly language<br>ب3 –يكتب الطالب النتائج التي حصل عليها مختبري من الحاسوب |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية عملية |
| طرائق التقييم |
| امتحانات فصلية تحريرية و عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغى الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة معالجة وحاسبة دقيقة<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |

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| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة رياضية<br>د3- انشطة فنية |

188. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| 3-2-1 | 12 | الطالب يفهم الدرس | Introduction to microprocessor and microcomputer | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 6-5-4 | 12 | الطالب يفهم الدرس | *Semiconductor memories (ROMs & RAMs* | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 9-8-7 | 12 | الطالب يفهم الدرس | Auxiliary (backing) memories ( magnetic tape , magnetic disk , etc) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 12-11-10 | 12 | الطالب يفهم الدرس | Microprocessor architecture | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 15 -14-13 | 12 | الطالب يفهم الدرس | *Bus signal timing & I/O timing* | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 16 – 17 -18 | 12 | الطالب يفهم الدرس | Microprocessor interfacing | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 21- 20- 19 | 12 | الطالب يفهم الدرس | Instruction sets & addressing modes | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 23 -22 | 8 | الطالب يفهم الدرس | Digital I/O ( parallel I/O & serial I/O) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 26-25-24 | 12 | الطالب يفهم الدرس | Analogue I/O ( interfacing ADC & DAC to microprocessor) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 28-27 | 8 | الطالب يفهم الدرس | Standard buses (serial & parallel buses) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 30-29 | 8 | الطالب يفهم الدرس | Some practical microprocessor | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

189. البنية التحتية

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| 29- الكتب المقررة المطلوبة | **Text Books:**<br>1. Hall D.V.,"Microprocessor and Interfacing-Programming and Hardware", 2nd Ed., Tata |

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| McGraw-Hill Publishing Company Limited, 2008. | |
| | 30- المراجع الرئيسية (المصادر) |
| **References and Recommended Books:**<br><br>1. Gaonkar R.S.,"Microprocessor Architecture,Programming and Applications", 5th Ed., Penram International, 2007.<br>2. Stewart J,"Microprocessor Systems-Hardware,Software and Programming", Prentice Hall International Edition,1990<br>3. Barry B Brey," The Intel microprocessors", 5th Ed. Prentice-Hall, Inc.,1999 | أ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) |
| **Internet links:**<br><br>1. https://gnindia.dronacharya.info/ECE/Downloads/Labmanuals/Microprocessor_Lab_Manual.pdf<br>2. https://www.gopalancolleges.com/gcem/course-material/ece/manuals/sem-VI/Microprocessor-lab-manual-10ECL68.pdf | بب) المراجع الالكترونية ،مواقع الانترنيت ،..... |

| 190. خطة تطوير المقرر الدراسي |
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| **Plan to upgrade the syllabus:**<br><br>1. Introducing FPGA as a platform to tech microprocessors.<br>2. Adopting VHDL as a tool to build reconfigurable system in the process of teaching microprocessor architecture |

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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|---|---|
| 191. المؤسسة التعليمية | كلية الهادي الجامعة |
| 192. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 193. اسم / رمز المادة | نظم اتصالات طبية/MIE302 |
| 194. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 195. الفصل / السنة | 2024/2023 |
| 196. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 197. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 198. أهداف المقرر | |
| **1-معرفة نظم وتراكيب المنظومات الاذاعية والتلفزيونية والهاتفية** | |
| **2- معرفة طرق نقل المعلومات في نظم اتصالات في الاجهزة الطبية** | |
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| 199. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يعدد الطالب انواع التضمين الرقمي والتماثلي<br>أ2- يميز الطالب الفرق بين التضمين الرقمي والتماثلي<br>أ3- يتعرف الطالب على انواع الاشارات والانظمة<br>أ4- يتعلم الطالب انواع التضمين النبظي<br>أ5- يعرف الطالب انواع اوساط انتقال الموجة الكهرومغناطسية<br>أ6-يتعرف الطالب على الهوائيات |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب التضمين الرقمي والتماثلي<br>ب2 – يستخدم الطالب برامج المحاكاة والبوردات المختبرية<br>ب3 –يكسب الطالب مهارات توصيل الدوائر الالكترونية بعضها مع البعض الاخر<br>ب4 – يكتب الطالب النتائج التي حصل عليها مختبريا من الاجهزة المختلفة والحاسوب |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغى الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة اتصالات<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |

**د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**

د1- انشطة رياضية

د2- انشطة فنية

د3- انشطة ادبية

200. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول | 4 | الطالب يفهم الدرس | General review in electrostatic | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني | 4 | الطالب يفهم الدرس | Gauss's law | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 4 | الطالب يفهم الدرس | Steady magnetic field | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والخامس | 8 | الطالب يفهم الدرس | Time varying magnetic field | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس | 4 | الطالب يفهم الدرس | Uniform plane waves | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع و الثامن | 8 | الطالب يفهم الدرس | Fourier transform | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعاشر | 8 | الطالب يفهم الدرس | Signal and system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر والثاني عشر | 8 | الطالب يفهم الدرس | Periodic , Non periodic signals | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر والرابع عشر | 8 | الطالب يفهم الدرس | AM and FM system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر و السادس عشر و السابع عشر | 12 | الطالب يفهم الدرس | Sampling , PAM PWM , PCM | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر و التاسع عشر والعشرون | 12 | الطالب يفهم الدرس | Digital modulation (ASK , FSK , PSK) | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشرون واثنان وعشرون | 8 | الطالب يفهم الدرس | Noise in analogue and digital systems | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث وعشرون والرابع وعشرون | 8 | الطالب يفهم الدرس | Rectangular wave-guides | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس وعشرون والسادس وعشرون | 8 | الطالب يفهم الدرس | Microwave passive devices | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع وعشرون والثامن وعشرون | 8 | طالب يفهم الدرس | Microwave generators | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| التاسع وعشرون وثلاثون | 8 | الطالب يفهم الدرس | Antennas | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 201. البنية التحتية | |
|---|---|
| 31- الكتب المقررة المطلوبة | 1-Introduction to communication systems (second edition –by ferrel. G . Stremler )<br>2-Engineering Electromagnetic (fifth edition – by William H. Hayt . JR) |
| 32- المراجع الرئيسية (المصادر) | 1-Modern Digital and Analog communication system (second edition –by ferrel . G. stremler)<br>2-Introduction to Communication<br>3-Engineering Electromagnetics(fifth edition- by William H. Hayt . JR)<br>4-Introduction to digital signal processing (Roman Kuct-Eng Taghreed Al –Amri)<br>5-Electrical and Electronic Engineering series (Antennas)by McGraw. Hill<br>6-Introduction to Antennas by Martin S. Smith1988<br>7-Introduction to Microwave by Baden fully 1999<br>8-Antennas for communication Tallguide. Ultra law Transmission loss waveguide |
| ثت) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| ثث) المراجع الالكترونية ،مواقع الانترنيت ،..... | www.tallguide .com<br>www.ainfoinc.com<br>www.millitech.com<br>www.rfcafe.com<br>www. globalspec.com |

| 202. خطة تطوير المقرر الدراسي |
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# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 203. المؤسسة التعليمية | كلية الهادي الجامعة |
| 204. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 205. اسم / رمز المادة | انظمة الكترونية طبية/MIE302 |
| 206. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 207. الفصل / السنة | 2024/2023 |
| 208. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 209. تاريخ إعداد هذا الوصف | 11/1/2024 |

| 210. أهداف المقرر |
|---|
| **1–التعرف على مكونات الدوائر الالكترونية** |
| **2– التعرف عمل الدوائر الالكترونية** |
| 3–التعرف على تطبيقات الدوائر الالكترونية في المجال الطبي |
| 4–تصميم الدوائر الالكترونية للاستخدامات الطبية |
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| 211. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
|---|
| أ- الاهداف المعرفية<br>أ1- يفهم الطالب مكونات الدوائر الالكترونية<br>أ2- يصمم الدوائر الالكترونية المختلفة<br>أ3- يفسر عمل الدوائر الالكترونية<br>أ4- يتعرف على الدوائر الالكترونية المستخدمة في الاجهزة الطبية<br>أ5- يتعرف على المنظومات الدوائر الالكترونية لاستخدام الحاسبة الالكترونية |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم راسم الاشارة في اظهار النتائج<br>ب2 – يكتب النتائج المعروضة على الحاسبة<br>ب3 –يرسم المنحنيات بين التيار والفولتية<br>ب4 – يكتب جداول لنتائج القياسات |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |

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| ج- الاهداف الوجدانية والقيمية<br>ج1- ان يصغى الطالب بانتباه على شرح الاستاذ<br>ج2- الالتزام بالهدوء والنظام داخل الصف<br>ج3- ان يتحسس الطالب بما يعانيه ضحايا التمييز العرفية<br>ج4- ان يتعرف الطالب على اثر العلم والعلماء |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- قابلية الطالب على البحث العلمي<br>د2- قابلية الطالب بالمشاركة في النشاطات اللاصفية مثل الرياضة والشعر والرسم التمثيل<br>د3- قابلية الطالب على اكتساب المهارات خارج المادة العلمية<br>د4- |

| 212. بنية المقرر | | | | | |
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| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| 1 | 4 | الطالب يفهم الدرس | ***Regulated power supplied*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 2 | 4 | الطالب يفهم الدرس | ***Monolithic regulators*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 3 | 4 | الطالب يفهم الدرس | ***Switching regulators*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 5-4 | 8 | الطالب يفهم الدرس | ***Additional switching regulator yp pologies*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 6 | 4 | الطالب يفهم الدرس | ***Active filters*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 8-7 | 8 | الطالب يفهم الدرس | ***Butter worth filter,practical realization*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 10-9 | 8 | الطالب يفهم الدرس | ***Band pass filter,band-rejectfilter*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 12-11 | 8 | الطالب يفهم الدرس | ***Active resonant and band pass filter*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 13 | 4 | الطالب يفهم الدرس | ***Active RC band pass filter*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 14 | 4 | الطالب يفهم الدرس | ***Digital to analogue converters (DAC)*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 15 | 4 | الطالب يفهم الدرس | ***A lodder – type DAC , multiplying DAC*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 16 | 4 | الطالب يفهم الدرس | ***Analogue to digital converters (ADC)*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 18-17 | 8 | الطالب يفهم الدرس | ***The counting ADC , successive approximation ADC*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| 20-19 | 8 | الطالب يفهم الدرس | ***The parallel – comparator ADC , dual – slope or radiometric ADC*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 23-22-21 | 12 | الطالب يفهم الدرس | ***Medical date acquisition system*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 26-25-24 | 12 | الطالب يفهم الدرس | ***Microcomputer based system ,*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 27 | 4 | الطالب يفهم الدرس | ***monitoring ,*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| 30-29-28 | 12 | الطالب يفهم الدرس | ***Other medical electronic system*** | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 213. البنية التحتية | |
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| 33- الكتب المقررة المطلوبة | Electronic deviced and circuit theory by :boylested |
| 34- المراجع الرئيسية (المصادر) | Design of microcomputer based medical instrumentation By : to mpkins |
| جج) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Digital principles and application By : Malvino |
| حح) المراجع الالكترونية ،مواقع الانترنيت ،..... | www. Medical electronic system |

| 214. خطة تطوير المقرر الدراسي |
|---|
| Study and design of digital filter |

# المرحلة الرابعة

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 215. المؤسسة التعليمية | كلية الهادي الجامعة |
| 216. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 217. اسم / رمز المادة | أجهزة طبية3/ MIE405 |
| 218. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 219. الفصل / السنة | 2024/2023 |
| 220. عدد الساعات الدراسية (الكلي) | 150 ساعة (60 نظري +90 عملي) |

| 221. تاريخ إعداد هذا الوصف | 2024/1/11 |
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| 222. أهداف المقرر | |
| **1- دارسة الجهاز الطبي كجهاز الكتروني بحت ، ثم اختلافه عن بقية الأجهزة الالكترونية لكونه جهاز طبي و دراسة دوائره الالكترونية الداخلية ثم التدريب على كافة الدوائر الالكترونية في الأجهزة الطبية و طرق تشغيلها و صيانتها مما يؤهل الطالب في النهاية استخدام و صيانة الأجهزة الطبية بصورة** | |
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| 223. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يفهم المكونات الاساسية للجهاز الطبية الجراحية<br>أ2-يدرس الاجهزة الجراحية وانواعها<br>أ3- يتعلم فائدة كل جهاز جراحي<br>أ4-يدرس اجهزة الصدمة<br>أ5- يدرس اجهزة القطع الجراحية الطبية.<br>أ6- يدرس اجهزة الاسنان.<br>أ7-يدرس اجهزة التخدير والتهوية.<br>أ8يتعلم تشغيل وصيانة اجهزة الديلزة.<br>أ9- يتعلم تشغيل وصيانة جهاز الرئة والقلب الصناعي واجهزة اخرى متعدده |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يفسر سبب اعطال الجهاز الطبي<br>ب2 – يستخدم الحاسوب لخزن مواصفات الجهاز الطبي<br>ب3 - يستخدم الحاسوب كوسيلة لمقارنة الحالات المرضية التي تؤخذ من الجهاز الطبي مع بيانات لحالات طبيعية تحفظ في الحاسوب<br>ب4- يشخص نتائج الجهاز الطبي |

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| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- ان يصغي الطالب بانتباه الى شرح الاستاذ<br>ج2-ان يحس الطالب بما يعانيه ضحايا التمييز العرقي<br>ج3-ان يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج4-ان يصف الطالب اهمية تعلم مادة الاجهزة الطبية الجراحية واهميتها.<br>ج5- ان يتعرف الطالب على استخدامها بطريقة صحيحة لخطورة الاخطاء الناتجه عن سوء الاستخدام. |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- المهارات المكتبيه خارج الماده العلمية<br>د2- قابلية الطالب على البحث العلمي<br>د3- -قابلية الطالب على المشاركة في النشاطات اللاصفية<br>د4- مهارات التعرف على الاجهزة الطبية الحديثة والتعامل معها |

224. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول + الثاني | 4ن+6ع | الطالب يفهم الدرس | Part 1 : general systems and specialized tools in . general surgery. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث +الرابع+ الخامس | 6ن+9ع | الطالب يفهم الدرس | Part 2 : specialized . systems and Inst. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس+ السابع | 4ن+6ع | الطالب يفهم الدرس | Ophthalmic microsurgical Inst. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن+ التاسع | 4ن+6ع | الطالب يفهم الدرس | Open heart & cardiovascular. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر | 2ن+3ع | الطالب يفهم الدرس | Heart – lung machine. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر | 4ن+6ع | الطالب يفهم الدرس | Kidney machine. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث عشر +الرابع عشر | 4ن+6ع | الطالب يفهم الدرس | Surgical diathermy. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر+ السادس عشر + السابع عشر | 6ن+9ع | الطالب يفهم الدرس | Artificial organs – internal & external. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن عشر+ التاسع عشر+ العشرون | 6ن+9ع | الطالب يفهم الدرس | Dental system. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون + الثاني والعشرون + | 4ن+6ع | الطالب يفهم الدرس | Gynecology Inst. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث والعشرون+ الرابع والعشرون | 4ن+6ع | الطالب يفهم الدرس | Ultrasonic assisting device. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس والعشرون + السادس والعشرون | 4ن+6ع | الطالب يفهم الدرس | Audio logical surgical units. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون + الثامن والعشرون | 4ن+6ع | الطالب يفهم الدرس | Anesthetic units. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون + الثلاثون | 4ن+6ع | الطالب يفهم الدرس | Intensive care units. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

225. البنية التحتية

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| 35- الكتب المقررة المطلوبة | Medical Instrumentation Application and Design |
| 36- المراجع الرئيسية (المصادر) | – Biomedical Engineering Handbook<br>J.D.Bronzino<br>-S. Ananthi ,2005,"A text book of medical instruments" |
| خخ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| دد) المراجع الالكترونية ،مواقع الانترنيت ،..... | www.bme.ncku.edu.com |

| 226. خطة تطوير المقرر الدراسي |
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## نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 227. المؤسسة التعليمية | كلية الهادي الجامعة |
| 228. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 229. اسم / رمز المادة | أدارة مشاريع/MIE402 |
| 230. أشكال الحضور المتاحة | اسبوعي (نظري) |
| 231. الفصل / السنة | 2024/2023 |
| 232. عدد الساعات الدراسية (الكلي) | 60 ساعة نظري |
| 233. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 234. أهداف المقرر | |
| **1-أكساب الطلاب مفاهيم تتعلق بالانشطة الادارية التي تمارسها المنظمة وتطبيقاتها وتعريف الطالب بمبادئ وعناصر استراتيجيات ادارة المشاريع من حيث التخطيط والجدولة والسيطرة على النشاطات . وفيها يتم التأكيد على الاساليب الكمية لاتخاذ النظر في جميع النشاطات والوظائف الادارية للمشروع فضلا عن تناول التجارب الحديثة للادارة اليابانية مقارنة بالادارة الامريكية (الغربية بصورة عامة )** | |
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| 235. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يكتسب الطالب مفاهيم تتعلق بالانشطة الادارية<br>أ2- يتعرف الطالب على مبادئ وعناصر وستراتيجيات ادارة المشاريع<br>أ3- يتعرف الطالب على انواع التجارب الاخرى في ادارة المشاريع<br>أ4- يقارن الطالب بين التجارب السابقة لادارة المشاريع<br>أ5- |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يكتسب الطالب المخطط الزمني لبدء وانتهاء المشروع<br>ب2 – يستخدم برامج تحليل البيانات<br>ب3 – يكتسب الطالب مهارات الجدولة الزمنية للمشاريع<br>ب4- يكتب طرق ادارة المشاريع |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة ادارة المشاريع<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
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| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة فنية<br>د3- انشطة ادبية |

236. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول | 2 | الطالب يفهم الدرس | Introduction to project management objective and tradeoffs.<br>Cost – schedule – performance | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني | 2 | الطالب يفهم الدرس | Planning and control : in projects<br>Planning<br>Scheduling<br>Controlling | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث | 2 | الطالب يفهم الدرس | Scheduling methods. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع | 2 | الطالب يفهم الدرس | Gant chart. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس | 2 | الطالب يفهم الدرس | Networks methods. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس | 2 | الطالب يفهم الدرس | Constant – time network. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع+ الثامن | 4 | الطالب يفهم الدرس | Pert network. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع + العاشر | 4 | الطالب يفهم الدرس | Critical path method. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر | 2 | الطالب يفهم الدرس | Precedence diagramming method. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني عشر + الثالث عشر | 4 | الطالب يفهم الدرس | Project phases: choice of project location. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر | 2 | الطالب يفهم الدرس | Process design. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس عشر | 2 | الطالب يفهم الدرس | Choice of technology. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس عشر + السابع عشر | 4 | الطالب يفهم الدرس | Financial analysis.<br>Purchase of new machine<br>Machine replacement. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| | | Layout of facilities. | | | |
| الثامن عشر | 2 | الطالب يفهم الدرس | Managing the work force in project who manages the work force.<br>Principles in decision of work – force management. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع عشر | 2 | الطالب يفهم الدرس | Japans work – force management. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العشرون | 2 | الطالب يفهم الدرس | New approach to evaluation performance. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون | 2 | الطالب يفهم الدرس | Materials handling. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني والعشرون | 2 | الطالب يفهم الدرس | Concepts of MRP system.<br>Elements of MRP system. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث والعشرون | 2 | الطالب يفهم الدرس | MRP versus order – point system.<br>MRP versus just in time system. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع والعشرون + الخامس والعشرون | 4 | الطالب يفهم الدرس | Activities in project: Coordination of project activities.<br>Activities breakdown. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السادس والعشرون | 2 | الطالب يفهم الدرس | Measuring project process tools.<br>Purpose of work measurement | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع والعشرون | 2 | الطالب يفهم الدرس | Methods study. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون | 2 | الطالب يفهم الدرس | Types of work measurements. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع والعشرون | 2 | الطالب يفهم الدرس | Time study. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثلاثون | 2 | الطالب يفهم الدرس | Time management. | محاضرة نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

237. البنية التحتية

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|---|---|
| 37- الكتب المقررة المطلوبة | . |
| 38- المراجع الرئيسية (المصادر) | 1- Y. Bakouros and V. Kelessidis "Project management" INNOREGIO: dissemination of innovation and knowledge management techniques, January 2000<br>2- J.R. Meredith and S.J. Mantel "Project Management", J. Wiley & Sons, 1995 |
| ذ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | 1- Principles of Project Management, NPC publication<br>2- S. Choudhury "Project Management", Tata McGraw Hill-2003<br>3-GANTT CHART Category: Planning/ Monitoring –Control<br>4-W. Durfee and T. Chase, "Project Management - Gantt Chart Tutorial" University of Minnesota, 2003<br>5-Billings, B.A., Musazi, B., Houston, M., "Bonus depreciation tax incentives may not work for needy firms". Tax Notes 118, 735-737s. 2008.<br>6-A. D. Luber. "Solving Business Problems with MRP II," Digital Press. Massachusetts, pp.17-63, 1991.<br>7-T. Tsukishima, H. Matoba, and H. Onari. "Development of synchronized supervision systems in a parallel MRP system," Waseda University, Fifth International Conference, Tokyo, 2000. |
| رر) المراجع الالكترونية ،مواقع الانترنيت ،..... | 1-J.R. Meredith and S.J. Mantel "Project Management" J. Wiley & Sons, 1995 .<br>2- http://www.projectmanagement.com/main.htm 2- GANTT CHART Category: Planning/ Monitoring control |

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| 3-<br>http://www.netmba.com/operations/project/gantt/<br>Mike Holt, “Applying Overhead and Determining Break-Even Cost” Mike Holt Enterprises, Inc,2001 www.ecmweb.com<br>4-<br>Iaba “Manual Materials Handling” Industrial Accident Prevention Association,2008.<br>.Website: www.iapa.ca | |

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| 238. خطة تطوير المقرر الدراسي |
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## نموذج وصف المقرر

### وصف المقرر

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| يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج. |

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| 239. المؤسسة التعليمية | كلية الهادي الجامعة |
| 240. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 241. اسم / رمز المادة | اللغة الانكليزية / MIE101 |
| 242. أشكال الحضور المتاحة | اسبوعي (نظري) |

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| 243. الفصل / السنة | 2024/2023 |
| 244. عدد الساعات الدراسية (الكلي) | 1 ساعة اسبوعيا |
| 245. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 246. أهداف المقرر | |
| **2- تزويد الطلبة بالمهارات الأساسية للتواصل في اللغة الانجليزية** | |
| **2- قراءة النصوص باللغتين العربية والانجليزية وإستيعابها و تنمية المفردات** | |
| **3-توظيف مهارات الكتابة والمناظرة والحوار وفق أسس صحيحة .** | |
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| 247. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
| أ- الاهداف المعرفية<br>أ1- خريج مؤهل للتحدث والحوار باللغة الانكليزية لمواقف مختلفة<br>أ2- خريج مؤهل للتعبير كتابة باللغة الانكليزية لمواقف مختلفة |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – مهارة القراءة<br>ب2 – مهارة الكتابة<br>ب3 – مهارة الاصغاء<br>ب4 – مهارة التحدث |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , الحوار بين الاستاذ والطالب , الحوار بين الطلبة نفسهم |
| طرائق التقييم |

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|---|
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , واجبات يومية , تقييم يومي, اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- رفع مستوى الطلبة لغويا وترجميا<br>ج2- تشجيع الطلبة على التحاور وكسر الركور فيما بينهم |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , الحوار بين الاستاذ والطالب , الحوار بين الطلبة نفسهم |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , واجبات يومية , تقييم يومي , اسئلة سريعة |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- مهارة التحدث<br>د2- مهارة الكتابة<br>د3- مهارة معالجة المواقف على المستوى الشخصي<br>د4- تشجيع الطلبة على الالقاء السليم |

248. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول + الثاني | 2 | الطالب يفهم الدرس | Unit one: The tense system , Informal language , Compound words , Social expressions | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث + الرابع | 2 | الطالب يفهم الدرس | Unit two: Present Perfect , Simple and continuous, Hot verbs – make, do , Exclamations | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس + السادس | 2 | الطالب يفهم الدرس | Unit three: past tenses, Time clauses , What's in the news? , Books and films | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع + الثامن | 2 | الطالب يفهم الدرس | Unit four: Questions and negatives , Prefixes and antonyms, Being polite | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| التاسع + العاشر | 2 | الطالب يفهم الدرس | Unit five: Future forms, Hot verbs-take ,put , Telephoning | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الحادي عشر + الثاني عشر + الثالث عشر | 3 | الطالب يفهم الدرس | Unit six: Expressions of quantity , export and ex 'port , Business expressions and numbers | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر + الخامس عشر + السادس عشر | 3 | الطالب يفهم الدرس | Unit seven: Modals and related verbs1 , Hot verb got , Exaggeration and understatement | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع عشر + الثامن عشر + التاسع عشر | 3 | الطالب يفهم الدرس | Unit eight: Relative clauses , Participles, Adverb collocations , The world around | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| + العشرون + الواحد والعشرون + الثاني والعشرون | 3 | الطالب يفهم الدرس | Unit nine: Expressing habit, used to do/ doing , Homonyms / Homophones , Making your point | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثالث والعشرون + الرابع والعشرون+ | 2 | الطالب يفهم الدرس | Unit ten: Modal auxiliary verbs2 , Synonyms , Metaphors and idioms – the body | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

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| الخامس والعشرون + السادس والعشرون السابع والعشرون + | 3 | الطالب يفهم الدرس | Unit eleven: Hypothesizing , Expression with if , Word pairs , Moans and groans | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون التاسع والعشرون + الثلاثون | 3 | الطالب يفهم الدرس | Unit twelve: Articles, Determiners, Hot words-life , time , Liking and commenting | محاضرات نظرية | امتحانات اسبوعية واسئلة قبلية وبعدية |

| 249. البنية التحتية | |
|---|---|
| 39- الكتب المقررة المطلوبة | Beginner student's book New Headway plus John and Liz Soars |
| 40- المراجع الرئيسية (المصادر) | Textbook English grammar in use by raymond murphy |
| زز) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | English in A simplified way اللغة الانكليزية BY Tahir Al bayati |
| سس) المراجع الالكترونية ،مواقع الانترنيت ،..... | https://www.grammarbank.com/beginners-English-quiz.html |

| 250. خطة تطوير المقرر الدراسي |
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| 5- العمل على تطويرمهارات الطالب في الاصغاء والتحدث والقراءة باستخدام الانترنت والاطلاع على احدث المصادروالمعلومات<br>6- العمل على تجديد المصادر وتنويعها |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 251. المؤسسة التعليمية | كلية الهادي الجامعة |
| 252. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 253. اسم / رمز المادة | المشروع/ MIE403 |
| 254. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 255. الفصل / السنة | 2024/2023 |
| 256. عدد الساعات الدراسية (الكلي) | 120ساعة (60 نظري + 60 عملي) |
| 257. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 258. أهداف المقرر | |

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| **1–يعتمد على لمى نفسه لإثبات مهاراته العلمية**<br>**2– يحدد خطوات العمل و تحليلها ووضع البدائل في حالة ظهور معوقات**<br>**3– يرسم الخرائط و يضع التصاميم الخاصة بالمشروع**<br>**4– يتابع تقدم العمل في المشروع من ناحية الوقت**<br>**5– يخمن كلفة المواد الأولية اللازمة لبناء المشروع**<br>**6– يرى و يشاهد نموذجا مبسطا لعمله**<br>**7– يتعلم كتابة التقرير النهائي للمشروع و بشكل منظم على صيغة البحوث.** |
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| 259. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
|---|
| أ- الاهداف المعرفية<br>أ1- يحدد الأهداف البارزة في المشروع<br>أ2- يتعلم كيفية التعامل مع مجموعة من الطلبة في سبيل دهم العمل الجماعي<br>أ3- يتعرف الطالب على انواع الدوائر الالكترونيةالتماثلية و الرقمية التقلدية والدوائرالقابلية للبرمجة.<br>أ4- يوظف الطالب ماتعلمه من المقررات الدراسية العملية والنظرية في تنفيذ المشروع<br>أ5- يتعلم الطالب كيفية كتابة المشاريع العلمية |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب الدوائر الالكترونية والكهربائية في تنفيذ المشروع<br>ب2 – يستخدم الطالب الاجزاء الميكانيكية في المشروع<br>ب3 – يكتسب الطالب المعرفة ببعض لغات البرمجة<br>ب4- يكتسب الطالب خبرة في كتابة البحوث العلمية<br>ب5- يكتب الطالب النتائج التي حصل عليها من البحث |
| طرائق التعليم والتعلم |

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| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى تعليمات المشرف بأنتباه فيما يخص المشروع<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية المشروع |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |
| طرائق التقييم |
| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة ادبية<br>د3- انشطة فنية<br>د4- |

| 10- بنية المقرر | |
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| الاشهر | مفردات المادة |
| الاول | توزيع المشاريع على الطلبة والالتقاء بالاستاذ المشرف والبدء بمراجعة المكتبة للحصول على المصادر الخاصة بالمشروع المقرر للطلبة . |
| الثاني | جمع المعلومات عن المشروع والبدء بالدراسة النظرية وتهيئة التصاميم اللازمة لتنفيذ المشروع. |
| الثالث | البدء بتنفيذ التصاميم المقررة عمليا واجراء التجارب والاختبارات للحصول على النتائج العملية .اختبار وتقويم للمرحلة السابقة |
| الرابع | نقل التجارب المنفذة مختبريا الى اللوحات النهائية للحصول على النموذج المصمم العملي واجراء الاختبار على النموذج النهائي والحصول على النتائج النهائية للمناقشة . |
| الخامس | مناقشة النتائج العملية ومدى ملائمتها من النتائج الواقعية وايجاد التعاليل اللازمة للحالات الظاهرة. |
| السادس | ترتيب اجزاء التقرير المكتوبة لكل مرحلة من المراحل السابقة لكتابة التقرير النهائي عن المشروع بالشكل التالي :<br>• اسم المشروع<br>• الاستاذ المشرف<br>• اسماء الطلبة<br>• الخلاصة<br>• الفصل الاول :المقدمة<br>• الفصل الثاني :الجزء النظري<br>• الفصل الثالث : الجزء العملي والنظري<br>• الفصل الرابع: مناقشة النتائج والاستناجات والمقترحات<br>• المصادر |
| السابع | تسليم النموذج العملي للمشروع مع التقرير النهائي لاجراء الاختبار النهائي والتقويم |

| 11-البنية التحتية | |
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| 41- الكتب المقررة المطلوبة | |

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| 42- المراجع الرئيسية (المصادر) | |
| **ش‌ش) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....)** | **تختلف باختلاف المشاريع وتعددها** |
| **ص‌ص) المراجع الالكترونية ،مواقع الانترنيت ،.....** | **مواقع الكترونية حسب المشروع** |

| 12-خطة تطوير المقرر الدراسي |
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# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 260. المؤسسة التعليمية | كلية الهادي الجامعة |
| 261. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 262. اسم / رمز المادة | نظم سيطرة/MIE404 |
| 263. أشكال الحضور المتاحة | اسبوعي ( عملي + نظري) |
| 264. الفصل / السنة | 2024/2023 |
| 265. عدد الساعات الدراسية (الكلي) | 120 ساعة (60نظري + 60عملي ) |
| 266. تاريخ إعداد هذا الوصف | 2024/1/11 |
| 267. أهداف المقرر | |
| **1-التعرف على مكونات دوائر السيطرة** | |
| **2- التعرف على انواع المسيطرات** | |
| **3-التعرف على استخدامات دوائر السيطرة** | |
| **4- التعرف على تطبيقات دوائر السيطرة** | |
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| 268. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يفهم مكونات دوائر السيطرة<br>أ2- يصمم دوائرالسيطرة لمختلف المنظمات<br>أ3- يفسر استقرارية منظمة السيطرة<br>أ4- يقارن بين انواع المسيطرات<br>أ5- يعرف الاستجابة الزمنية والترددية لمنظومات السيطرة |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 –يستخدم راسم الاشارة في اظهار النتائج<br>ب2 – يكتب النتائج المعروضة على الحاسبة<br>ب3 – يرسم المنحنيات الاستجابة الزمنية<br>ب4 – |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية وعملية , مهارات مكتبية , المكتبة الافتراضية |
| طرائق التقييم |
| امتحانات فصلية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- ان يصغي الطالب بانتباه على شرح الاستاذ<br>ج2- الالتزام بالهدوء والنظام داخل الصف<br>ج3- ان يتحسس الطالب بما يعانيه ضحايا التمييز العرفية<br>ج4- ان يتعرف الطالب على اثر العلم والعلماء |
| طرائق التعليم والتعلم |
| محاضرات , مختبرات , ندوات علمية |

| طرائق التقييم |
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| **تقييم يومي , تقييم شهري , تقيم فصلي , تقييم عملي , حضور يومي, تقارير اسبوعية , واجبات يومية , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- قابلية الطالب على البحث العلمي<br>د2- قابلية الطالب بالمشاركة في النشاطات اللاصفية مثل الرياضة الشعر الرسم التمثيل<br>د3- قابلية الطالب على اكتساب المهارات خارج المادة العلمية<br>د4- |

269. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| الاول | 2ن+2ع | الطالب يفهم الدرس | Introduction to control system | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني +الثالث | 4ن+4ع | الطالب يفهم الدرس | Lap lace transform & complex variable , metrics. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع+ الخامس+ السادس | 6ن+6ع | الطالب يفهم الدرس | Tranfor function , block diagram reduction,signal flow diagram. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع+ الثامن+ التاسع | 6ن+6ع | الطالب يفهم الدرس | Time domain analyses , steady state analysis | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| العاشر+ الحادي عشر | 4ن+4ع | الطالب يفهم الدرس | Stability analysis , Routh,Nyquist | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثاني عشر + الثالث عشر | 4ن+4ع | الطالب يفهم الدرس | Root locus technique. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الرابع عشر+ الخامس عشر+ السادس عشر | 6ن+6ع | الطالب يفهم الدرس | Frequency domain analysis, Gainmargin ,phase margin &bode plot | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| السابع عشر+ الثامن عشر | 4ن+4ع | الطالب يفهم الدرس | Frequency domain synthesis,phase lead | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| + التاسع عشر+ العشرون | 4ن+4ع | الطالب يفهم الدرس | Compensation,phase-lag compensation lag – lead compensation | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الواحد والعشرون + الثاني والعشرون + الثالث والعشرون+ الرابع والعشرون | 8ن+8ع | الطالب يفهم الدرس | PID conyrollers design | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الخامس والعشرون + السادس والعشرون + السابع والعشرون | 6ن+6ع | الطالب يفهم الدرس | State space representation & analysis. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |
| الثامن والعشرون+ التاسع والعشرون + الثلاثون | 6ن+6ع | الطالب يفهم الدرس | State ,analogue Diagram computer , Black diagram representation. | محاضرات نظرية و عملية | امتحانات اسبوعية واسئلة قبلية وبعدية |

270. البنية التحتية

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|---|---|
| 43- الكتب المقررة المطلوبة | Modern control system By : OGATA |
| 44- المراجع الرئيسية (المصادر) | Linear control system By : KHANNA Publishers |
| ضض)الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | Control system Analysis and Design By : Aggarwal |
| طط) المراجع الالكترونية ،مواقع الانترنيت ،..... | www. Control system |

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| 271. خطة تطوير المقرر الدراسي |
| Control of non linear |

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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|---|---|
| 272. المؤسسة التعليمية | كلية الهادي الجامعة |
| 273. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 274. اسم / رمز المادة | تصميم رقمي متقدم / MIE408 |
| 275. أشكال الحضور المتاحة | اسبوعي ( نظري) |
| 276. الفصل / السنة | 2024/2023 |
| 277. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 278. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 279. أهداف المقرر | |
| **1- تعليم الطالب على التعرف على الدوائر الالكترونية الرقمية المتقدمة وكيفية التمييز فيما بينها** | |

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| **2– تعليم الطالب على تصميم الدوائر الالكترونية الرقمية** |
| **3– التعرف على انواع الذاكرات الرقمية والدوائر الالكترونية القابلة للبرمجة** |
| **6– برمجة المسيطرات الدقيقة ( المايكروكونترولر ) من نوع PIC او AVR** |
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| 280. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
|---|
| أ- الاهداف المعرفية<br>أ1- يعدد الطالب انواع الداوئر الالكترونية المتكاملة الرقمية<br>أ2- يميز الطالب الفرق بين الدوائر المتكاملة الرقمية<br>أ3- يتعرف الطالب على انواع الذاكرات الرقمية والدوائر الالكترونية الرقمية القابلية للبرمجة<br>أ4- يتعلم الطالب برمجة المايكروكونترولر بلغة C او لغة التجميع (Assembly language)<br>أ5- يبرمج الطالب المايكروكونترولر<br>أ6- يتعرف الطالب على بعض تطبيقات المايكروكونترولر |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب الدوائر الالكترونية الرقمية<br>ب2 – يستخدم الطالب البرامج لبرمجة المايكروكونترولر<br>ب3 – يكتسب الطالب مهارات البرمجة بلغة C<br>ب4 – يكتب الطالب النتائج التي حصل عليها مختبريا |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , تجارب عملية |
| طرائق التقييم |
| امتحانات فصلية تحريرية وعملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة التصميم الرقمي المتقدم |

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| ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| المناقشة والحوار مع الطلبة |
| طرائق التقييم |
| **استبيان , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة فنية<br>د3- انشطة ادبية |

| 281. بنية المقرر | | | | | |
|---|---|---|---|---|---|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
| 1 | 2 نظري + 2 عملي | الطالب يفهم الدرس | TTL and CMOS Family | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 2 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Astable multivibrators | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 3 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Decoders. (4-to-16 decoder, The BCD decoder , BCD to Seven-segment decoder). | محاضرات نظرية و عملية | امتحان سريع |
| 4 | 2 نظري + 2 عملي | الطالب يفهم الدرس | PN codes generators | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 6 , 5 | 4 نظري + 4 عملي | الطالب يفهم الدرس | Binary Counters (Asynchronous binary counter , synchronous binary Counter and special purpose counter) | محاضرات نظرية و عملية | امتحان سريع |
| 7 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Cascade Counter and frequency divider | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 9 , 8 | 4 نظري + 4 عملي | الطالب يفهم الدرس | Shift register functions ( serial in –serial out , serial in –parallel out ,parallel in- serial out and parallel in –parallel out) | محاضرات نظرية و عملية | امتحان سريع |
| 10 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Memories and | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 11 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Random Access Memories (RAMs) | محاضرات نظرية و عملية | امتحان سريع |
| 12 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Read only Memories (ROMs). | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 13 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Programmable Read Only Memories (PROMs) [ EPROMs, UV EPROMs, and EEPROMs]. | محاضرات نظرية و عملية | امتحان سريع |
| 14 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Programmable Read Only Memories (PROMs) [ EPROMs, UV EPROMs, and EEPROMs]. | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 15 | 2 نظري + 2 عملي | الطالب يفهم الدرس | First in –First out serial memories (FIFOs). | محاضرات نظرية و عملية | امتحان سريع |

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| 16 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Last in - First out memories (LIFOs). | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 17 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Universal Asynchronous Receiver Transmitter (UART) | محاضرات نظرية و عملية | امتحان سريع |
| 18 | 2 نظري + 2 عملي | الطالب يفهم الدرس | Introduction to Microcontroller. | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 20 , 19 | 4 نظري + 4 عملي | الطالب يفهم الدرس | Microcontroller PIC16F84 | محاضرات نظرية و عملية | امتحان سريع |
| 23 , 22 , 21 | 6 نظري + 6 عملي | الطالب يفهم الدرس | Instruction set in PIC16xx microcontroller family. | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 26 , 25 , 24 | 6 نظري + 6 عملي | الطالب يفهم الدرس | Assembly language programming for PIC16xx family | محاضرات نظرية و عملية | امتحان سريع |
| 28 , 27 | 4 نظري + 4 عملي | الطالب يفهم الدرس | PIC16F84 programmer kit | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 30 , 29 | 4 نظري + 4 عملي | الطالب يفهم الدرس | PIC16F84 applications | محاضرات نظرية و عملية | امتحان سريع |

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| 282. البنية التحتية | |
| -45 الكتب المقررة المطلوبة | Text Books:<br>1. Simon Monk, “Programming Arduino: Getting Started with Sketches”, 2nd Ed., McGraw-Hill Companies., 2012 |
| -46 المراجع الرئيسية (المصادر) | 1- Digital fundamentals ninth edition by Thomas L.Floyd 2006<br>2- PIC microcontrollers Author: Nebojsa Matic ,May 15,2000<br>3- John Boxall, “Arduino Workshop: A Hands-On Introduction with 65 Projects”, 2th Ed., No Starch Press, Inc.2013<br>47- Ethan Thorpe, “Arduino: Advanced Methods and Strategies of Using Arduino”, 2020<br>48- John Warren, Josh Adams, Harald Molle, "Arduino Robotics Technology in Action", Springer-Verlag Berlin and Heidelberg Gmbh & Co. Kg, 2011 |
| ظظ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | 1- Digital Principles and Logic Design ,chapter 11. by A. Saha and N. Manna. 2007.<br>2- Digital Electronics Principles, Devices and Applications ,chapter5. by Anil K. Maini 2007.<br>3- Theory and Problems of digital principles third Edition , chapter6. by ROGER L. TOKHEIM, M.S.1994<br>4- PIC microcontrollers Author: Nebojsa Matic ,May 15,2000 |

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| عع) المراجع الالكترونية ،مواقع الانترنيت ،..... | 1. https://create.arduino.cc/projecthub/projects/tags/robotics<br>2. https://howtomechatronics.com/arduino-projects/ |

283. خطة تطوير المقرر الدراسي

اضافة مايكروكونترولر اخر نوع AVR يعتمد على بورد ARDUINO لغرض دراسة الاتي:

## Plan to upgrade the syllabus:

Introduce students to advanced design methodologies and practical design approaches for high-performance FPGA applications using the following objectives

1. Translate a software application into hardware logic for FPGA architectures
2. Design synthesizable VHDL systems based on industry-standard coding methods.
3. Optimize logic for various performance goals (timing, frequency, area, and power).
4. Build test-benches and create data models to verify bit-true accurate designs.
5. Design streaming architectures for high-performance computing applications.
6. Calculate throughput, resource allocation, and other performance metrics.
7. Simulate and compare performance results between different optimizations.
8. Utilize commercial FPGA development tools for compilation, simulation, and synthesis.

# نموذج وصف المقرر

## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 284. المؤسسة التعليمية | كلية الهادي الجامعة |
| 285. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 286. اسم / رمز المادة | تطبيقات الحاسبة / MIE409 |
| 287. أشكال الحضور المتاحة | اسبوعي ( نظري+عملي) |
| 288. الفصل / السنة | 2024/2023 |
| 289. عدد الساعات الدراسية (الكلي) | 3 ساعات اسبوعيا |
| 290. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 291. أهداف المقرر | |
| **1- الطالب يكون قادرا على معرفة تشغيل البرنامج** | |
| **2- الطالب يكون قادرا على معرفة واجهة البرنامج** | |

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| 3- الطالب يكون قادرا على معرفة انشاء عرض تقدمي |
| 7- معرفة ادخال شريحة جديدة للعرض التقدمي |
| 8- الطالب يكون قادرا على معرفة كيفية ادخال الرسوم للعرض التقدمي |
| 9- الطالب يكون قادرا على معرفة اضافة الصور والجداول البيانة والتحكم بها |

| 292. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- معرفة البرنامج<br>أ2- فهم اهمية البرنامج<br>أ3- معرفة وفهم تطبيقات العملية للبرنامج<br>أ4- معرفة وفهم تعشيق البرنامج مع تطبيقات برمجية اخرى<br>أ5- معرفة وفهم طرق اعداد العرض التقدمي |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – تصميم العرض التقدمي<br>ب2 – اضافة الحركات الرسومية للعرض التقدمي<br>ب3 – التحكم في اسلوب عرض الشرائح للعرض التقدمي<br>ب4 – تصميم حركات الانتقال بين شرائح العرض التقدمي |
| طرائق التعليم والتعلم |
| المحاضرات الاكاديمية : حيث توفر الاساس المتين الذي يعتمد عليه بتطوير الرصيد المعرفي للطلبة<br>المختبر العملي: الذي يوفر كل ما يحتاج اليه الطالب من خبرات تساعد على تطوير الجانب المهاري العملي وترسيخ المباديء الضرورية للقيام بتنفيذ المشاريع بصورة صحيحة |
| طرائق التقييم |
| التقييم التفاعلي : حيث يوفر الاساس لتقييم الطالب عن طريق ملاحظة مدى تفاعله اثناء المحاضرة ومشاركته<br>الاختبارات التحريرية: التي توفر المعرفة لمدى فهم الطالب ومتابعته للمادة والملاحظات العلمية المعطاة من قبل التدريسي<br>الاختبارات الفصلية: وتكون الحلقة الوسطية لتقييم مدى اهتمام الطالب وتفاعله مع المادة العلمية التي تلقاها خلال الفصل الدراسي بجانبيها الاكاديمي والمهاري<br>الاختبارات النهائية: وتكون الحلقة النهائية لتقييم مدى اهتمام الطالب وتفاعله مع المادة العلمية التي تلقاها خلال الفصل الدراسي بجانبيها الاكاديمي والمهاري<br>اختبارات يومية و اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- زرع روح الابداع لدى الطلبة والحرص على ايجادهم حلول مبتكرة للمشكلات المختلفة<br>ج2- تنمية قابلية الطلبة على العمل الجماعي كفرق فعالة تخرج بنتائج متميزة<br>ج3- تنمية الشعور بالمسؤولية لدى الطلبة والتهيئة النفسية لتحمل الاعباء الملقاة على عاتقهم<br>ج4- تنمية قيم الحرص والمثابرة على انجاز العمل للوصول الى نتائج مرضية |
| طرائق التعليم والتعلم |
| تحفيز الجانب الابداعي للطلبة وذلك عن طريق طرح مشكلات علمية مختلفة والطلب من الطلبة ايجاد الحلول العلمية المناسبة لها بطرق مختلفة<br>تنمية روح التعاون بين الطلبة عن طريق تشكيل فرق عمل و تحفيز الطلبة على بذل جميع الجهود اللازمة للعمل بالظروف المختلفة ومع اشخاص عدة |
| طرائق التقييم |
| التقييم المباشر: حيث يتم هذا التقييم من قبل التدريسي بصورة مباشرة ومن خلال ملاحظة تفاعل الطالب اثناء المحاضرة وتثبيت الملاحظات بخصوص ذلك<br>المشاريع العملية: يتم تقييم مدى قدرة الطالب على الانجاز والابداع وعلى العمل ضمن فرق والنتائج والحلول لمختلف المشكلات العلمية |

**د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**

د1- تدريب على تطبيقات عملية لبرنامج العرض التقدمي

د2- تطبيق البرنامج العرض التقدمي على مواد الدراسية الاخرى المتعلقة بالطالب

د3- ادخال تطبيقات الاخرى على عرض تقدمي

د4- توظيف البرنامج التقدمي في مشاريع التخرج لطلبة المرحلة الرابعة

293. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| 1- 6 | 18 | الطالب يفهم الدرس | برنامج بوربوينت | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |
| 7 - 14 | 24 | الطالب يفهم الدرس | بناء عرض تقدمي جديد, خزن العرض التقدمي , اجراء العرض, التعديل وحفظ التغييرات | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |
| 15 - 19 | 15 | الطالب يفهم الدرس | ادخال شريحة جديدة ( نص او صورة ), ادخال الملاحظات , ادخال العناوبين الرئيسية للشريحة | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |
| 20 – 23 | 12 | الطالب يفهم الدرس | تعديل النص والتحكم بهيئته , التحكم بالالوان والارضية الخاصة بالشريحة | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |
| 24-25 | 6 | الطالب يفهم الدرس | اضافة الصور الطبيعية وادوات التحكم بها, اضافة المخططات من برنامج الاكسل , قواعد البيانات من برنامج الاكسس | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |
| 26-28 | 9 | الطالب يفهم الدرس | الانتقال بين شرائح البرنامج , اساليب الحركة ووضع المؤثرات الصوتية للشرائح | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |
| 29-30 | 6 | الطالب يفهم الدرس | تطبيق عن cad cam | محاضرات نظرية , مختبر | الاسئلة الشفهية , الامتحان اليومي |

294. البنية التحتية

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|---|---|
| 49- الكتب المقررة المطلوبة | |
| 50- المراجع الرئيسية (المصادر) | 1- PowerPoint 2019: For DummiesI John Wiley, Inc., Hoboken, New Jersey<br>2- Fundamentals of Computer-Aided Design ,Goyal, Katson, Delhi, 2013 |
| غغ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | 1.Microsoft Official Academic Course MICROSOFT POWERPOINT 2016.<br>2. CAD/CAM Priciples and Applications, Rao ,McGraw-Hill, New Delhi, 2010. |

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| فـف) المراجع الالكترونية ،مواقع الانترنيت ،..... | **http://www.powerpointninja.com/** |

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| 295. خطة تطوير المقرر الدراسي |
| ادخال البرامج والتطبيقت الحديثة واستخدام حاسبة حديثة |

## نموذج وصف المقرر

### وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 296. المؤسسة التعليمية | كلية الهادي الجامعة |
| 297. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 298. اسم / رمز المادة | نظم الليزر الطبية / MIE407 |
| 299. أشكال الحضور المتاحة | اسبوعي ( نظري + نظري) |
| 300. الفصل / السنة | 2024/2023 |
| 301. عدد الساعات الدراسية (الكلي) | 4ساعات اسبوعيا |
| 302. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 303. أهداف المقرر | |
| **يهدف المقرر الى دراسة توليد انواع الليزر واسلوب نقلها واستقبالها و كيفية استخدامها بالاجهزة الطبية** | |

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| 304. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
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| أ- الاهداف المعرفية<br>أ1- يعدد الطالب انواع الليزر<br>أ2- يميز الطالب الفرق بين الليزر والضوء<br>أ3- يتعرف الطالب على تطبيقات الليزر العامة والطبية بصورة خاصة<br>أ4- يتعلم الطالب خواص الليزر<br>أ5- يتعرف الطالب على تجنب مخاطر الليزر والاستخدام الامن لليزر |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب اجهزة توليد الليزر<br>ب2 – يستخدم الطالب متحسسات اليزر<br>ب3 – يكتسب الطالب مهارات خواص وتطبيقات الليزر<br>ب4 – يكتب الطالب النتائج التي حصل عليها مختبريا من الظواهر الخاصة بالليزر |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , تجارب عملية عملية |
| طرائق التقييم |
| امتحانات فصلية نظرية وعملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |

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| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة نظم الليزر وتطبيقاته الطبية<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| المناقشة والحوار مع الطلبة |
| طرائق التقييم |
| **استبيان , ندوات , محاور نقاش** |
| **د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**<br>د1- انشطة رياضية<br>د2- انشطة فنية<br>د3- انشطة ادبية |

305. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| 1, 2 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Laser generation*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 3 , 4 | 4 نظري + 4 عملي | الطالب يفهم الدرس | ***Types of laser.*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 5 , 6 , 7 | 6نظري + 6عملي | الطالب يفهم الدرس | ***Light and light propagation in glass fiber.*** | محاضرات نظرية و عملية | امتحان سريع |
| 8 , 9 , 10 | 6نظري + 6عملي | الطالب يفهم الدرس | ***Optical fiber wave guide, band width distance product, dispersion and pulse spreading, maximum allowable data rate, fiber power losses.*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 11 , 12 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Transmitter devise and circuits (communication LEDs).*** | محاضرات نظرية و عملية | امتحان سريع |
| 13 , 14 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Injection lasers, modulators.*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 15 , 16 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Receiver devices and circuits photo diode light detector.*** | محاضرات نظرية و عملية | امتحان سريع |
| 17 | 2 نظري + 2عملي | الطالب يفهم الدرس | ***PIN photo diodes, photo multiplier.*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 18 , 19 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Avalanche photo diode (APD), receiver circuits.*** | محاضرات نظرية و عملية | امتحان سريع |
| 20 , 21 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Transmission technology, fiber technology, connectors.*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 22 ,23 | 4 نظري + 4عملي | الطالب يفهم الدرس | ***Splices, couplers.*** | محاضرات نظرية و عملية | امتحان سريع |
| 24 , 25 , 26 , 27 | 6 نظري + 6 عملي | الطالب يفهم الدرس | ***Types of medical applications of laser.*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 28 , 29 ,30 | 6 نظري + 6 عملي | الطالب يفهم الدرس | ***Laser hazards, the standard level for a safe working environment, lab – safety.*** | محاضرات نظرية و عملية | امتحان سريع |

306. البنية التحتية

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|---|---|
| 51- الكتب المقررة المطلوبة | |
| 52- المراجع الرئيسية (المصادر) | An introduction to the Laser theory an applications<br>By M. N. Avadhanulu Dr. P. S. Hemne |
| قق) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| كك) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 307. خطة تطوير المقرر الدراسي |
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## وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

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| 308. المؤسسة التعليمية | كلية الهادي الجامعة |
| 309. القسم العلمي / المركز | هندسة تقنيات الاجهزة الطبية |
| 310. اسم / رمز المادة | هندسة اجهزة الاشعاع / MIE406 |
| 311. أشكال الحضور المتاحة | اسبوعي ( نظري + عملي) |
| 312. الفصل / السنة | 2024/2023 |
| 313. عدد الساعات الدراسية (الكلي) | 4 ساعات اسبوعيا |
| 314. تاريخ إعداد هذا الوصف | 11/1/2024 |
| 315. أهداف المقرر | |
| **يهدف المقرر الى دراسة توليد تركيب الذرة والاشعاع الذري والنووي وتأثيرهما على الجسم البشري واستخداماتها في الاجهزة الطبية** | |
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| 316. مخرجات المقرر وطرائق التعليم والتعلم والتقييم |
|---|
| أ- الاهداف المعرفية<br>أ1- يعدد الطالب انواع اجهزة الاشعاع<br>أ2- يميز الطالب الفرق بين الاشعة والاشعاعات النووية<br>أ3- يتعرف الطالب على تطبيقات اجهزة الاشعاع<br>أ4- يتعلم الطالب خواص اجهزة الاشعاع<br>أ5- يتعرف الطالب على تجنب مخاطر الاشعاع والاستخدام الامن للاشعاع |
| ب - الاهداف المهاراتية الخاصة بالمقرر<br>ب1 – يستخدم الطالب اجهزة توليد الاشعاع<br>ب2 – يستخدم الطالب متحسسات الاشعاع<br>ب3 – يكتسب الطالب مهارات خواص وتطبيقات الاشعاع<br>ب4 – يكتب الطالب النتائج التي حصل عليها مختبريا من الظواهر الخاصة بالاشعاع |
| طرائق التعليم والتعلم |
| محاضرات نظرية والكترونية , تجارب عملية |
| طرائق التقييم |
| امتحانات فصلية نظرية عملية , امتحانات شهرية الكترونية , اختبارات يومية , اسئلة سريعة |
| ج- الاهداف الوجدانية والقيمية<br>ج1- يصغي الطالب الى الشرح بانتباه<br>ج2- يتعرف الطالب على اثر العلم والعلماء في الحياة<br>ج3- ان يصف الطالب اهمية تعلم مادة هندسة اجهزة الاشعاع وتطبيقاته الطبية<br>ج4- ان يهتم الطالب بهدوء ونظام الصف |
| طرائق التعليم والتعلم |
| المناقشة والحوار مع الطلبة |
| طرائق التقييم |
| **استبيان , ندوات , محاور نقاش** |

**د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).**

د1- انشطة رياضية

د2- انشطة فنية

د3- انشطة ادبية

317. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |
|---|---|---|---|---|---|
| 1 , 2 | 4 +4 | الطالب يفهم الدرس | ***Atomic structure &atomic radiation*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 3 , 4 | 4 +4 | الطالب يفهم الدرس | ***The nuclear &nuclear radiation*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 5 , 6 | 4 +4 | الطالب يفهم الدرس | ***Interaction of radiation with matter*** | محاضرات نظرية و عملية | امتحان سريع |
| 7 , 8 , 9 | 4 + 4 + 4 | الطالب يفهم الدرس | ***Radiation detection & engineering of radiation detectors*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 10 , 11 , 12 | 4 + 4 + 4 | الطالب يفهم الدرس | ***Engineering of radiation dosimetry & dosimeters*** | محاضرات نظرية و عملية | امتحان سريع |
| 13 , 14 | 4 +4 | الطالب يفهم الدرس | ***Radiation protection*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 15 , 16 | 4 +4 | الطالب يفهم الدرس | ***Engineering of body scanners*** | محاضرات نظرية و عملية | امتحان سريع |
| 17 , 18 | 4 +4 | الطالب يفهم الدرس | ***Production of X-rays*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 19 , 20 | 4 +4 | الطالب يفهم الدرس | ***Clinical radiation generators*** | محاضرات نظرية و عملية | امتحان سريع |
| 21 , 22 | 4 +4 | الطالب يفهم الدرس | ***Dose distribution & scatter analysais*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 23 , 24 | 4 +4 | الطالب يفهم الدرس | A ***system of dosimetric calculations*** | محاضرات نظرية و عملية | امتحان سريع |
| 25 , 26 | 4 +4 | الطالب يفهم الدرس | ***Treatment plannig*** | محاضرات نظرية و عملية | الاسئلة المباشرة |
| 27 , 28 | 4 +4 | الطالب يفهم الدرس | ***Engineering of electron beam therapy*** | محاضرات نظرية و عملية | امتحان سريع |
| 29 , 30 | 4 +4 | الطالب يفهم الدرس | ***Brachy therapy*** | محاضرات نظرية و عملية | الاسئلة المباشرة |

| 318. البنية التحتية | |
|---|---|
| 53- الكتب المقررة المطلوبة | |
| 54- المراجع الرئيسية (المصادر) | 1.Physics for Scientists and Engineers with Modern Physics,Eighth Edition<br>By: Raymond A.Serway and John W.Jewett,Jr<br>2.Classical radiation therapy part 2<br>By : Faiz Khans<br>3. The Physics and radiation theraby<br>By : Faiz Khan ed. 3,4<br>4. Principle of radiological physics<br>By : Donald T.Graham<br>Paul colce<br>Martin vosper |
| لل) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....) | |
| مم) المراجع الالكترونية ،مواقع الانترنيت ،..... | |

| 319. خطة تطوير المقرر الدراسي |
|---|
| |

**Ministry of Higher Education a**
**Scientific Supervision and**
**Department of Quality Assurance and A**
**Accredi**

# Academic Program and Course Description Guide

**2024**

# Introduction:

The educational program is a coordinated and organized package of courses that include procedures and experiences organized in the form of academic vocabulary whose main purpose is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market, which is reviewed and evaluated annually through internal or external audit procedures and programs such as the external examiner program.

The description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that are being worked on to acquire for students based on the objectives of the academic program, and the importance of this description is evident because it represents the cornerstone in obtaining program accreditation and is written jointly by the teaching staff under the supervision of the scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the developments and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the description of the academic program circulated according to the letter of the Department of Studies T 3/2906 on

3/5/2023 regarding the programs that adopt the Bologna track as the basis for their work.

In this regard, we can only emphasize the importance of writing a description of academic programs and courses to ensure the proper functioning of the educational process.

## Concepts and terminology:

**Academic Program Description:** The description of the academic program provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

**Course Description:** Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities. It is derived from the description of the program.

**Program Vision: An** ambitious picture for the future of the academic program to be a sophisticated, inspiring, stimulating, realistic and applicable program.

**Program Mission:** Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

**Program Objectives:** They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

**Curriculum Structure:** All courses / subjects included in the academic program according to the approved learning system (semester, yearly, Bologna track) whether it is a requirement (ministry, university, college and scientific department) with the number of study units.

**Learning Outcomes: A** compatible set of knowledge, skills and values acquired by the student after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

**Teaching and learning strategies:** They are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. That is, describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

## Academic Program Description Form

**University Name: University .... Al, Hadi University College**

**Faculty/Institute: Faculty ....Al, Hadi University College .....**

**Scientific Department: Department of .....Medical Devices Technology Engineering**

**Academic or Professional Program Name: Medical Devices Technology Engineering**

**Final Certificate Name: Bachelor of Engineering in Medical Devices Technologies.....**

**Academic System: Yearly**

**Date of preparation of the description: 7/3/2024**

**File filling date: 7/3/2024**

معاون العميد للشؤون العلمية

Signature:

Scientific Associate Name:

Assist. Prof. Majeed Mahmoud Abd Ali

Date : 28/4/2024

كلية الهادي الجامعة
قسم هندسة تقنيات الاجهزة الطبية

Assist. Prof. Hussam AL-Obaidi

**Signature**

**Head of department** :

Assist. Prof. Hussam Abd Ali Al-Obaidi

**Date** : **28/4/2024**

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Check the file before

Division of Quality Assurance and University Performance

Name of the Director of the Quality Assurance and University Performance Division: Prof. Dr. Muhammad Jawaid alwan

Date 28/4/2024

Signature

كلية الهادي الجامعة
ضمان الجودة والأداء الجامعي

Approval of the Dean

Prof. Abdul Mohsen Naji Al-Muhaisen Al-Ajaili



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| 15. **Program Vision** |
| --- |
| The Department of Medical Equipment Engineering represents an effective means to meet the community's need for specialized staff in supporting various health, research and educational institutions, in addition to investing the energies of teachers and students in theoretical and applied scientific research and studies primary and higher as well as training, awareness and health and scientific mobilization within future foundations in line with modern developments through the acquisition of high technical and professional expertise and harnessing them scientifically and academically according to an advanced methodological perspective. |

| 16. **Program Mission** |
| --- |
| Graduate engineering cadres with excellent efficiency and ability to install, operate and maintain medical devices of all kinds, provide distinguished education and produce creative research that serves the community, and contributes to building a knowledge economy by creating a stimulating environment for learning, intellectual creativity, |

optimal employment of technology, and effective local and global partnership.

## 17. Program Objectives

1. Preparing applied engineers in the field of electrical and electronic medical technical engineering works.

2. Training and development of engineering and technical cadres on the maintenance, installation and operation of various medical devices.

3. Preparing research and studies to improve and develop the work and performance of medical devices.

4. Graduating students with the ability to familiarize themselves with the parts of medical devices and their technologies and keep pace with the development that occurs in them.

5. Providing students with scientific and practical skills that enable them to diagnose malfunctions resulting in medical devices.

6. Develop proposals, solutions and alternatives for medical devices

## 18. Program Accreditation -

There isn't any

## 19. Other external influences

| |
|---|
| There isn't any |

| 20. **Program Structure** | | | | |
|---|---|---|---|---|
| **Reviews*** | **Percentage** | **Unit of study** | **Number of Courses** | **Program Structure** |
| Basic Course | | 192 | 38 | **Requirements of the institution** |
| | | | Yes | **College Requirements** |
| | | | Yes | **Department Requirements** |
| | | | There is in the second stage | **Summer Training** |
| | | | | **Other** |

* It can include notes whether the course is basic or optional.

| 21. **Program Description** | | | |
|---|---|---|---|
| **Credit Hours** | **Course Name** | **Course or Course Code** | **Year/Level** |
| | | | **First Stage Bologna Track** |

Republic of Iraq - Ministry of Higher Education and Scientific Research
Middle Technical University
Bachelor's degree in Medical Instrumentation Engineering Techniques (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
الجامعة التقنية الوسطى
بكالوريوس في هندسة تقنيات الاجهزة الطبية (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = 25 ساعة
المنهاج الدراسي للعام ٢٠٢٣-٢٠٢٤

| Level | Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) | | | | | | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | | | | | | | |
| UGI | One | 1 | MIET1101 | Fundamentals of Electrical Engineering (DC) | مبادئ الهندسة الكهربائية (DC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | |
| | | 2 | MTU1004 | Computer Priciples | اساسيات الحاسوب | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | B | |
| | | 3 | MIET1103 | Differential Mathematics | الرياضيات التفاضلية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | |
| | | 4 | EETC102 | Engineering Drawing | الرسم الهندسي | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | | 5 | MTU1006 | Democracy and Human Rights | الديمقراطية و حقوق الانسان | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 6 | MTU1002 | English Language I | اللغة الانكليزية I | English | 1 | 1 | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 7 | MIET1107 | Medical Chemistry | الكيمياء الطبية | English | 3 | | 2 | | 1 | | 4 | 94 | 81 | 175 | 7.00 | S | |
| | | | | | | Total | 12 | 1 | 10 | 0 | 4 | 0 | 24 | 429 | 321 | 750 | 30.00 | | |

| Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) | | | | | | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | | | | | | | |
| Two | 1 | MIET1201 | Fundamentals of Electrical Engineering (AC) | مبادئ الهندسة الكهربائية (AC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | MIET1101 |
| | 2 | MIET1202 | Medical Physics | الفيزياء الطبية | English | 2 | | 2 | | | | 4 | 64 | 61 | 125 | 5.00 | S | |
| | 3 | MIET1203 | Mechanics | الميكانيك | English | 2 | | | | 1 | | 3 | 48 | 52 | 100 | 4.00 | S | |
| | 4 | MIET1204 | Integral Mathematics | الرياضيات التكاملية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | MIET1103 |
| | 5 | EETC101 | Engineering Workshops | الورش الهندسية | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | 6 | MIET1206 | Computer Programming and Applications I | برمجة الحاسوب وتطبيقاته I | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | S | |
| | 7 | MTU1001 | Arabic Language | اللغة العربية | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | | | | Total | 12 | 0 | 10 | 0 | 4 | 0 | 24 | 414 | 336 | 750 | 30.00 | | |

Note: The student should complete 4 weeks of Summer Internships to fulfill the requirements of the Bachelor's degree

Structured SWL (hr/w) type:
- CL Class Lecture
- Lab Laboratory
- Pr Practical Training
- Tut Tutorial
- Lect Online lecture
- Semn Seminar

Module type:
- B Basic learning activities
- C Core learning activity
- S Support or related learning activity
- E Elective learning activity

- SWL: Student Workload
- SSWL: Structured SWL
- USSWL: Unstructured SWL

Note: Columns O, Q and R are programmed, protected and should not be edited

| | | | | | |
|---|---|---|---|---|---|
| | 17 | **17** | **Baath Party Crimes digital Technologies, Math/2 anatomy And Physiology, clinical Chemistry Instrumentation,** | MIE201<br>MIE202<br>MIE203<br>MIE204<br>MIE205<br>MIE206<br>MIE207<br>MIE208<br>MIE209<br>MIE210 | 2023−2024/ second |

| | | | | |
|---|---|---|---|---|
| | | **electronic Components And Circuits, medical Measurements And Transformers, Medical Devices/1 , Calculator Applications , Methodological training** | | |
| 17 | **16** | **Medical Electronic Systems , digital Signal Processor, Medical Communication Systems , Processor & Accurate Calculator , calculator Applications, power Electronics, Electrical Technology , Medical Devices/2, Methodological training** | MIE301<br>MIE302<br>MIE303<br>MIE304<br>MIE305<br>MIE306<br>MIE307<br>MIE308<br>MIE309<br>MIE310 | 2023−2024/ Third |
| 19 | 14 | **Professional Ethics Project Management , Project Control Systems , Medical Devices/3 , Radiation Instrumentation Engineering , Medical Laser Systems , Advanced Digital Design ,** | MIE401<br>MIE402<br>MIE403<br>MIE404<br>MIE405<br>MIE406<br>MIE407<br>MIE408<br>MIE409 | 2023−2024/IV |

| | | | | |
|---|---|---|---|---|
| | | **Calculator Applications ,** | | |

| 22. **Expected learning outcomes of the program** | |
|---|---|
| **Knowledge** | |
| | - A-A cognitive objectives.<br>A1- Develop plans and work programs for the maintenance of medical devices.<br>A2- On-site supervision of the implementation of the works.<br>A3- Preparing research and studies to improve and develop the work of medical devices.<br>A4- Participation in committees related to the activities of medical devices.<br>A5- Participate in the analysis of bids for medical devices and the selection of alternatives. |
| **Skills** | |
| | B - Skills objectives of the program :<br>B1 – Training engineers on the maintenance and installation of medical devices.<br>B2 – Installation and operation of medical devices in supervision and implementation. |

| | |
|---|---|
| | |
| | |
| **Values** | |
| | Providing advice in the field of medical devices.<br>Participate in the analysis of bids for medical devices and the selection of alternatives. |
| | |

## 23. Teaching and Learning Strategies

Lectures - laboratories - means of illustration (data show) - workshops - seminars - scientific exhibitions

## 24. Evaluation methods

Daily assessment (quiz) – Semester assessment – Practical assessment – Final assessment – Progressive presentation – Reports – Homework – Daily attendance – Classroom activities

## 25. Faculty

**26.**

**Faculty Members**

| Preparation of the teaching staff | Special Requirements/Skills (if applicable) | Specialization | Academic Rank |
|---|---|---|---|

| lecturer | Permanent staff | | | special | year | |
|---|---|---|---|---|---|---|
| | Permanent staff | | | Electrical and Electronic Engineering | Connections | Assoc. Prof. Hossam Abd Ali |
| | Permanent staff | | | | Atmospheric Science | Eng. Abdul Wahab Hussein Mohammed |
| | Permanent staff | | | Electrical Engineering | Electrical engineering | Dr. Adnan Fadel Abbas Shehab |
| | Permanent staff | | | | Life Sciences | Eng. Fawzia Mahmoud Awad |
| | Permanent staff | | | Electrical Power Engineering | Electrical Power Engineering | Eng. Amer Ali Abd |
| | Permanent staff | | | Mechanical Engineering | Mechanical Engineering | Eng. Ayyad Abdel Hamid |
| | Permanent staff | | | Electronic Hamdessa | Electrical Engineering | Eng. Wissam Hossam Qasim |
| | Permanent staff | | | Electrical engineering | Electrical | Eng. Mohammed Al-Baqer Adnan |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | engineering | |
| lecturer | | | | Electrical Engineering | Electrical Engineering | Dr. Jamal Abd Ali |
| lecturer | | | | Electrical Engineering | Electrical Engineering | Dr. Omar Kanaan |
| lecturer | | | | | Microbiology | Dr. Marwan Jawad |
| lecturer | | | | | chemistry | Dr. Alaa Bader |
| lecturer | | | | Electronic engineering | Communication engineering | Eng. Hossam Hamed |
| lecturer | | | | Electrical Power Technologies Engineering | Electrical Engineering | Eng. Mustafa Safaa |
| lecturer | | | | | Laser Science | Eng. Marwan Lotfy |
| lecturer | | | | Medical Device Engineering | Medical Device Engineering | M.M. Shilan Khader |
| lecturer | | | | | Mechanical | Eng. Hassan Thabet Naji |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | Engineering | |
| | | | | | | |

| Professional Development |
|---|
| **Mentoring new faculty members** |
| |
| **Professional development of faculty members** |
| |

| 27. **Acceptance Criterion** |
|---|
| **Central admission through an electronic window by the Ministry of Higher Education.**<br>**10- Sixth preparatory graduate / scientific branch**<br>**11- Graduate of the first preparatory industry / branch of medical devices**<br>**Graduate of the first technical medical institutes.** |

| 28. **The most important sources of information about the program** |
|---|
| **Library, Internet, official websites.** |

## 29. Program Development Plan

1- Using new concepts in the field of medical devices engineering and the use of electronic and electrical devices for

| Learning outcomes required from the program | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General and qualifying skills transferred (Other skills related to employability and personal development) | | | | Emotional and value goals | | | | Program Skills Objectives | | | | Cognitive Objectives | | | | Specialized Or an assistant | Material Name | Article Code | Year/Level |
| D4 | D3 | D2 | D1 | C4 | C3 | C2 | C1 | B4 | B3 | B2 | B1 | A4 | A3 | A2 | A1 | | | | |
| / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | Help | English Language | MIE1002 | First course I |
| | | | | | | | | | | | | | | | | Help | Calculator Applications/1 | MIE1004 | |
| | | | | | | | | | | | | | | | | General | Democracy and Human Rights | MTUI1006 | |
| | | | | | | | | | | | | | | | | Specialized | Principles of Electrical Engineering,DC | MIET1101 | |
| | | | | | | | | | | | | | | | | Help | math/1, | MIET1103 | |
| | | | | | | | | | | | | | | | | Help | medicinal Chemistry, | MIET1107 | |
| | | | | | | | | | | | | | | | | Help | engineering Drawing, | EETC102 | |
| | | | | | | | | | | | | | | | | Specialized | modulus | MIE108 | |
| | | | | | | | | | | | | | | | | Specialized | Principles of Electrical Engineering AC | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | **Help** | **Mechanics** | MIE110 | |
| | | | | | | | | | | | | | | | | **Help** | **medical Physics,** | MIE105 | |
| | | | | | | | | | | | | | | | | **Specialized** | Integrative Mathematics | MIET1204 | |
| | | | | | | | | | | | | | | | | **Help** | **Computer programming and applications** | MIET1206 | |
| | | | | | | | | | | | | | | | | **Help** | **Arabic** | MTU1001 | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | **Help** | **Baath Party Crimes** | MIE201 | **The second** |
| | | | | | | | | | | | | | | | | **Specialized** | **digital Technologies,** | MIE202 | |
| | | | | | | | | | | | | | | | | **Help** | **Math/2** | MIE203 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | **Help** | **anatomy And Physiology,** | MIE204 | |
| | | | | | | | | | | | | | | | **Specialized** | **clinical Chemistry Instrumentation,** | MIE205 | |
| | | | | | | | | | | | | | | | **Specialized** | **electronic Components And Circuits,** | MIE206 | |
| | | | | | | | | | | | | | | | **Specialized** | **medical Measurements And Transformers,** | MIE207 | |
| | | | | | | | | | | | | | | | **Specialized** | **Medical Devices/1 ,** | MIE208 | |
| | | | | | | | | | | | | | | | **Help** | **Calculator Applications ,** | MIE209 | |
| | | | | | | | | | | | | | | | **Specialist** | **Methodological training** | MIE110 | |
| | | | | | | | | | | | | | | | | | MIE301 | **Third** |
| | | | | | | | | | | | | | | | **Specialized** | **Medical Electronic Systems ,** | MIE302 | |
| | | | | | | | | | | | | | | | **Specialized** | **digital Signal Processor,** | MIE303 | |
| | | | | | | | | | | | | | | | **Specialized** | **Medical Communication Systems ,** | MIE304 | |
| | | | | | | | | | | | | | | | **Specialized** | **Processor & Accurate Calculator ,** | MIE305 | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | **Help** | **calculator Applications,** | MIE306 | |
| | | | | | | | | | | | | | | | **Specialized** | **power Electronics,** | MIE307 | |
| | | | | | | | | | | | | | | | **Specialized** | **Electrical Technology ,** | MIE308 | |
| | | | | | | | | | | | | | | | **Specialized** | **Medical Devices/2,** | MIE309 | |
| | | | | | | | | | | | | | | | **Specialized** | **Methodological training** | MIE110 | |
| | | | | | | | | | | | | | | | **Help** | **Professional Ethics** | MIE401 | **Fourth** |
| | | | | | | | | | | | | | | | **General** | **Project Management ,** | MIE402 | |
| | | | | | | | | | | | | | | | **Specialized** | **Project** | MIE403 | |
| | | | | | | | | | | | | | | | **Specialized** | **Control Systems ,** | MIE404 | |
| | | | | | | | | | | | | | | | **Specialized** | **Medical Devices/3 ,** | MIE405 | |
| | | | | | | | | | | | | | | | **Specialized** | **Radiation Instrumentation Engineering ,** | MIE406 | |
| | | | | | | | | | | | | | | | **Specialized** | **Medical Laser Systems ,** | MIE407 | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | **Specialized** | **Advanced Digital Design ,** | MIE408 | |
| | | | | | | | | | | | | | | | **Help** | **Calculator Applications ,** | 409MIE | |

Republic of Iraq - Ministry of Higher Education and Scientific Research
Middle Technical University
Bachelor's degree in Medical Instrumentation Engineering Techniques (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
الجامعة التقنية الوسطى
بكالوريوس في هندسة تقنيات الاجهزة الطبية (الدورة الأولى)
أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = 25 ساعة
المنهاج الدراسي للعام ٢٠٢٣-٢٠٢٤

| Level | Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UGI | One | 1 | MIET1101 | Fundamentals of Electrical Engineering (DC) | مبادئ الهندسة الكهربائية (DC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | |
| | | 2 | MTU1004 | Computer Priciples | اساسيات الحاسوب | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | B | |
| | | 3 | MIET1103 | Differential Mathematics | الرياضيات التفاضلية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | |
| | | 4 | EETC102 | Engineering Drawing | الرسم الهندسي | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | | 5 | MTU1006 | Democracy and Human Rights | الديمقراطية و حقوق الانسان | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 6 | MTU1002 | English Language I | اللغة الانكليزية I | English | 1 | 1 | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | 7 | MIET1107 | Medical Chemistry | الكيمياء الطبية | English | 3 | | 2 | | 1 | | 4 | 94 | 81 | 175 | 7.00 | S | |
| | | | | | | Total | 12 | 1 | 10 | 0 | 4 | 0 | 24 | 429 | 321 | 750 | 30.00 | | |

| Level | Semester | No. | Module Code | Module Name in English | اسم المادة الدراسية | Language | SSWL (hr/w) CL (hr/w) | Lect (hr/w) | Lab (hr/w) | Pr (hr/w) | Tut (hr/w) | Semn (hr/w) | Exam hr/sem | SSWL hr/sem | USSWL hr/sem | SWL hr/sem | ECTS | Module Type | Prerequisite Module(s) Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UGI | Two | 1 | MIET1201 | Fundamentals of Electrical Engineering (AC) | مبادئ الهندسة الكهربائية (AC) | English | 2 | | 2 | | 1 | | 4 | 79 | 71 | 150 | 6.00 | C | MIET1101 |
| | | 2 | MIET1202 | Medical Physics | الفزياء الطبية | English | 2 | | 2 | | | | 4 | 64 | 61 | 125 | 5.00 | S | |
| | | 3 | MIET1203 | Mechanics | الميكانيك | English | 2 | | | | 1 | | 3 | 48 | 52 | 100 | 4.00 | S | |
| | | 4 | MIET1204 | Integral Mathematics | الرياضيات التكاملية | English | 3 | | | | 2 | | 3 | 78 | 47 | 125 | 5.00 | S | MIET1103 |
| | | 5 | EETC101 | Engineering Workshops | الورش الهندسية | English | | | 4 | | | | 3 | 63 | 62 | 125 | 5.00 | S | |
| | | 6 | MIET1206 | Computer Programming and Applications I | برمجة الحاسوب وتطبيقاته I | English | 1 | | 2 | | | | 4 | 49 | 26 | 75 | 3.00 | S | |
| | | 7 | MTU1001 | Arabic Language | اللغة العربية | Arabic | 2 | | | | | | 3 | 33 | 17 | 50 | 2.00 | B | |
| | | | | | | Total | 12 | 0 | 10 | 0 | 4 | 0 | 24 | 414 | 336 | 750 | 30.00 | | |

Note: The student should complete 4 weeks of Summer Internships to fulfill the requirements of the Bachelor's degree

Structured SWL (hr/w) type: CL Class Lecture; Lab Laboratory; Pr Practical Training; Tut Tutorial; Lect Online lecture; Semn Seminar

Module type: B Basic learning activities; C Core learning activity; S Support or related learning activity; E Elective learning activity

SWL: Student Workload; SSWL: Structured SWL; USSWL: Unstructured SWL

Note: Columns O, Q and R are progrmaed, protected and should not be edited

| | | | | |
|---|---|---|---|---|
| 17 | 17 | **Baath Party Crimes digital Technologies, Math/2 anatomy And Physiology, clinical Chemistry Instrumentation, electronic Components And Circuits, medical Measurements And Transformers, Medical Devices/1 , Calculator Applications , Methodological training** | MIE201<br>MIE202<br>MIE203<br>MIE204<br>MIE205<br>MIE206<br>MIE207<br>MIE208<br>MIE209<br>MIE210 | The second |
| 17 | 16 | **Medical Electronic Systems , digital Signal Processor,** | MIE301<br>MIE302<br>MIE303 | Third |

| | | | | |
|---|---|---|---|---|
| | | **Medical Communication Systems , Processor & Accurate Calculator , calculator Applications, power Electronics, Electrical Technology , Medical Devices/2, Methodological training** | MIE304<br>MIE305<br>MIE306<br>MIE307<br>MIE308<br>MIE309<br>MIE310 | |
| 19 | 14 | **Professional Ethics Project Management , Project Control Systems , Medical Devices/3 , Radiation Instrumentation Engineering , Medical Laser Systems , Advanced Digital Design , Calculator Applications ,** | MIE401<br>MIE402<br>MIE403<br>MIE404<br>MIE405<br>MIE406<br>MIE407<br>MIE408<br>MIE409 | Fourth |

| |
|---|
| 4. Planning for personal development |
| **Field visits, scientific trips, educational seminars (outside the scope of the study plan)** |
| 5. Admission criterion (setting regulations related to admission to a college or institute) |
| **Central admission through an electronic window by the Ministry of Higher Education.**<br>**12- Sixth preparatory graduate / scientific branch**<br>**13- Graduate of the first preparatory industry / branch of medical devices**<br>**14- Graduate of the first technical medical institutes.** |
| 6. The most important sources of information about the program |

| |
|---|
| **Library, Internet, official websites.** |

# Course Description

# MODULE DESCRIPTION FORM

## Course Description Form

| **Module Information**<br>Course Information | | | |
|---|---|---|---|
| **Module Title** | **Fundamentals of Electrical Engineering (DC)** | **Module Delivery** | |
| **Module Type** | **Core** | ☒ **Theory** | |
| **Module Code** | **MIET1101** | ☐ **Lecture** | |
| | | ☒ **Lab** | |
| **ECTS Credits** | **6** | ☒ **Tutorial** | |
| **SWL (hr/sem)** | **150** | ☐ **Practical** | |
| | | ☐ **Seminar** | |
| **Module Level** | UGI | **Semester of Delivery** | 1 |
| **Administering Department** | MIET | **College** | HUC |
| **Module Leader** | Jamal Abdali | **e-mail** | |

| | | | |
|---|---|---|---|
| **Module Leader's Acad. Title** | Lecturer | **Module Leader's Qualification** | Ph.D. |
| **Module Tutor** | Salah Hassan Abbas | e-mail | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>Relationship with other subjects | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| **Module Aims, Learning Outcomes and Indicative Contents**<br>Course objectives, learning outcomes and instructional contents | |
|---|---|
| **Module Aims**<br>Course Objectives | 1. To develop knowledge on standard units of electricity and understanding of DC circuit theorems.<br>2. To understand voltage, current and power of DC circuits.<br>3. To learn the basic concept of DC electrical circuits connections.<br>4. To explain the DC electrical circuits.<br>5. To understand basic laws of electricity.<br>6. To perform DC-network theorem.<br>7. To perform DC-circuit analysis methods.<br>8. To understand independent sources and dependent sources. |

| | |
|---|---|
| **Module Learning Outcomes**<br><br>Learning outcomes of the course | 1-Recognize how electricity works in electrical circuits.<br>2-List the various terms associated with electrical circuits.<br>3-Summarize what is meant by a basic electric circuit.<br>4-Describe electrical power, voltage, and current.<br>5-Define Ohm's law and define the relation between voltage, resistance, and current.<br>6-Identify the basic circuit elements and their applications.<br>7-Discuss the operations of power and energy in electric circuit.<br>8-Discuss the various properties of resistors connections.<br>9-Explain the two Kirchhoff's laws used in circuit analysis.<br>10-Identify the implementation of resistor circuit's connection.<br>11-Learn measurements of voltage ad current.<br>12-Practical Identification of resistance based on color code. |
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following.<br>DC circuits – Current and voltage definitions, and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law, Network reduction, Introduction to mesh and nodal analysis. [20 hrs]<br>Conversion of delta – connected resistance into an equivalent Wye connection & Vic versa. [10 hrs]<br>Fundamentals of the Power sources connected in parallel, Thevenin and Norton equivalent circuits, current and voltage division, Loop current method, Super position method ,maximum power transfer, Non- linear direct current circuit [20 hrs] Independent sources and dependent sources [10 hrs] source transformation [5 hrs] Revision problem classes [5 hrs] |

| | |
|---|---|
| | **Learning and Teaching Strategies**<br>Learning and Teaching Strategies |
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students. |

| Student Workload (SWL)<br>Student Load | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Student's regular C-Class Load | 79 | **Structured SWL (h/w)**<br>C Regular student Pregnancy weekly | 5 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 71 | **Unstructured SWL (h/w)**<br>C non Regular student Pregnancy weekly | 5 |
| **Total SWL (h/sem)**<br>School load Total For the student during the semester | 150 | | |

| Module Evaluation<br>Course Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/ Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5, 10 | LO #1, 2, LO# 10 and 11 |
| | **Online Assignments** | 2 | 10% (10) | 2, 12 | LO # 3, 4, LO# 6, 7 |
| | **Projects** | 1 | 6% (6) | Continuous | LO# 1-12 |
| | **Lab** | 10 | 10% (10) | Continuous | LO# 1-12 |
| | **Report** | 1 | 4% (4) | 13 | LO #5, 8, 9, 12 |
| **Summative assessment** | **Midterm Exam** | 3 hr | 10% (10) | 7 | LO #1-7 |
| | **Final Exam** | 4hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 marks) | | |

| Delivery Plan (Weekly Syllabus)<br>Theoretical Weekly Curriculum | |
|---|---|
| | **Material Covered** |

| | |
|---|---|
| **Week 1** | Symbols and abbreviations, Units, Electric circuits, and its elements. |
| **Week 2** | The direct–current network (Ohm's law, Kirchhoff's voltage and current laws & their use in network). |
| **Week 3**<br>**Week 4** | Series elements and Voltage Division<br>Parallel elements and Current Division |
| **Week 5** | Power sources are connected in parallel, |
| **Week 6**<br>**Week 7** | Circuit analysis methods:<br>3- Node voltage method.<br>4- Loop current method. |
| **Week 8** | Mid-term exam |
| **Week 9** | Conversion of delta–connected resistance into an equivalent Wye connection &<br>Vic versa |
| **Weeks 10-13** | Circuit analysis Theorems:<br>5. Superposition<br>6. Thevenin<br>7. Norton<br>8. Maximum power |
| **Weeks 14-15** | Independent sources and Dependent sources, source transformation and preparation for final exam |

| Delivery Plan (Weekly Lab. Syllabus)<br>Weekly Curriculum of the Laboratory | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to electrical elements, sources, and measuring devices related to electrical circuits. |
| **Week 2** | Resistance measurement based on AVO meter readings and color code identification. |
| **Week 3** | Verification of Ohm's Law |
| **Weeks 4-5** | Verification of KVL and KCL |
| **Weeks 6-7** | Verification of Thevenin's and Norton's theorems |
| **Weeks 8-9** | Verification of the superposition theorem |
| **Week 10** | Verification of the maximum power transfer theorem |
| **Week 11** | Verification of the Nodal Voltage Theorem |
| **Week 12** | Verification of the Mesh Theorem |
| **Weeks 13-14** | practical implementation of Independent sources and Dependent sources |
| **Week 15** | Preparation for Final exam |

| Learning and Teaching Resources<br>Learning and Teaching Resources | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education | Yes |
| **Recommended Texts** | Electric Circuits Seventh Edition and Schaum's Outline Series | No |
| **Websites** | https://www.youtube.com/watch?v=SfKw8bHk7-o (for practical implementation of Independent sources and Dependent sources, **Weeks 13-14**) | |

| Grading Scheme<br>Grading chart | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | Appreciation | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C -** Good | J.D. | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Deposit (in processing) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

# Course Description Form

| **Module Information**<br>Course Information | | |
|---|---|---|
| **Module Title** | **Computer Applications (IC3)** | **Module Delivery** |

| | | |
|---|---|---|
| **Module Type** | **Basic** | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** |
| **Module Code** | **MIET1102** | |
| **ECTS Credits** | **3** | |
| **SWL (hr/sem)** | **75** | |

| | | | |
|---|---|---|---|
| **Module Level** | UGI | **Semester of Delivery** | 1 |
| **Administering Department** | MIET | **College** | HUC |
| **Module Leader** | Wissam Hussam Qassem | **e-mail** | |
| **Module Leader's Acad. Title** | Assistant Lecturer | **Module Leader's Qualification** | M.Sc. |
| **Module Tutor** | | **e-mail** | E-mail |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

**Relationship with other modules** Relationship with other subjects

| | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

**Module Aims, Learning Outcomes and Indicative Contents** Course objectives, learning outcomes and how-to contents

| | |
|---|---|
| **Module Objectives**<br>**Course** Objectives | 15. To understand operating system, be familiar with its types.<br>16. To be familiar with the desktop.<br>17. To be familiar and manage files and folders.<br>18. To be familiar with the basic concepts of hardware components of the computer.<br>19. To be able to use the basic functions in control panel.<br>20. To recognize software types.<br>21. To be able to understand the basic similarities and differences among (MS Office) applications.<br>22. To be able to use MS Word program.<br>23. To be able to use MS Excel program.<br>24. To be able to use MS PowerPoint program.<br>25. To be able to use MS Outlook.<br>26. To be familiar with search engines and the World Wide Web.<br>27. To be able to use Google apps.<br>28. To be introduced to AI tools. |
| **Module Learning Outcomes**<br><br>Learning outcomes of the course | 15. Demonstrate understanding of operating systems, including their types.<br>16. Navigate and utilize the desktop effectively.<br>17. Manage files and folders proficiently.<br>18. Identify hardware components of a computer system.<br>19. Utilize the control panel efficiently.<br>20. Differentiate software types and their applications.<br>21. Effectively utilize essential applications such as MS Office.<br>22. Demonstrate proficiency in using the MS Word program.<br>23. Demonstrate proficiency in using the MS Excel program.<br>24. Demonstrate proficiency in using the MS PowerPoint program.<br>25. Utilize MS Outlook for email and scheduling purposes.<br>26. Navigate search engines and utilize the World Wide Web effectively.<br>27. Utilize Google apps for various tasks.<br>28. Basic Use of AI tools. |

| | |
|---|---|
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following.<br>Introduction to Operating Systems: Definition, functions, and capabilities of an operating system. Types of operating systems (e.g., Windows, macOS, Linux) with examples. Differences between operating systems and software applications. Power options: computer power on/off and power settings. (3 hrs)<br>Exploring the Desktop: Navigating the desktop environment. Using the start button and working with applications. Understanding the relationship between software and hardware, their differences, importance, and influence on each other. Introduction to software updates. Exploring the taskbar. (6 hrs)<br>Files and Folders: Understanding the typical window and file management.<br>Introduction to the Recycle Bin. Understanding file names and common extensions. |
| | (6 hrs)<br>Computer Hardware: Identifying various computer types . Exploring components inside a computer, such as the microprocessor, system memory, and storage systems. Recognizing input/output devices and their interaction. (6 hrs)<br>Familiarity with the control panel and its categories and usage. (6 hrs)<br>Software Overview: Understanding software requirements and their implications for hardware. Introduction to different types of application software + Dealing with viruses and malwares (2 hrs)<br>Main Screen Features: Common features found in word processing, spreadsheet, and presentation software. Understanding the ribbon, tabs, and status bar, and their specific functions in each application. (3 hrs)<br>MS Office Basics: Definitions and key concepts in MS Office applications and Usage.<br>(9 hrs)<br>Google apps and Gmail ( 3hrs)<br>Digital Citizenship: Identifying ethical issues in the digital realm, including intellectual property, copyright, and licensing. Protecting data and computers from software threats and understanding viruses. Ensuring online privacy and security. And basic understanding and usage for AI tools (3 hrs) |

| Learning and Teaching Strategies Learning and Teaching Strategies | |
|---|---|
| **Strategies** | Incorporate a mix of theoretical study, hands-on practice, experimentation, and realworld applications to reinforce understanding and proficiency in each of the desired learning outcomes. Seek feedback, engage in discussions, and actively participate in exercises to enhance learning and address any gaps in knowledge. |

| Student Workload (SWL) calculated for **15** weeks | | | |
|---|---|---|---|
| **Structured SWL (h/sem)** **Regular academic load of the student during the semester** | 49 | **Structured SWL (h/w)** **Regular student load per week** | 3 |
| **Unstructured SWL (h/sem)** **Irregular academic load of the student during the semester** | 26 | **Unstructured SWL (h/w)** **Irregular student load per week** | 2 |
| **Total SWL (h/sem)** **The student's total academic load during the semester** | 75 | | |

| Module Evaluation Course Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5 and 9 | LO #1, #2, #3 and #6, #7 |

| | | | | | |
|---|---|---|---|---|---|
| | **Assignments** | 2 | 10% (10) | 4 and 6 | LO #4 ,#8, #12 and #5, #12 |
| | **Projects / Lab.** | 5 | 15% (15) | 10,11,12, 13 and 14, | LO #7, #12, #13 and #8 , #12, #13 and #9, #12, #13 and #10, #12, #13 and #11, #12, #13 |
| | **Report** | 1 | 5% (5) | 6 | LO #12, #7, #8 and #12 |
| **Summative assessment** | **Midterm Exam** | 3 hr | 10% (10) | 8 | LO #1 - #6 |
| | **Final Exam** | 4hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 marks) | | |

| **Delivery Plan (Weekly Syllabus)** | |
|---|---|
| The curriculum of the week of vision | |
| | **Material Covered** |

| | |
|---|---|
| **Week 1** | Introduction to operating system and its types, the differences between operating systems and software applications; Common operating system features. |
| **Week 2** | Looking and navigation of the desktop; start button components; Understanding Taskbar ,Software and hardware relationship. |
| **Week 3** | Software updates+, Files and folders looking at typical window.+ Understanding files and folders+ Libraries |
| **Week 4** | understanding Recycle bin; understanding file name and common extensions. View options + Computer hardware identifying computers |
| **Week 5** | Looking inside a computer (microprocessor, system memory, storage systems)+ recognizing input/ output devices + understanding how it works together. |
| **Week 6** | Understanding control panel categories + Understanding Ease of access + Understanding User account rights |
| **Week 7** | What is software , application software + Avoiding and dealing Viruses and malwares |
| **Week 8** | **Mid Term** |
| **Week 9** | MS office common features and differences |
| **Week 10** | Basic concepts and Usage of MS Word + Basic concepts and Usage of MS Power Point |
| **Week 11** | Basic concepts and Usage of MS Excell + Basic concepts and Usage of MS Outlook |
| **Week 12** | Introduction to Google apps |
| **Week 13** | Digital citizenship identifying ethical issues; protecting your data or computer |
| **Week 14** | Basic understanding and usage for AI tools |
| **Week 15** | **Preparatory week before the final Exam** |

| Delivery Plan (Weekly Lab. Syllabus)<br>Weekly Curriculum of the Laboratory | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: Getting to know computer hardware + turn on and shut down options +looking at the desktop<br>+ using mouse (Menu, pointing, selecting, dragging, scrolling and execution)+ using start button |
| **Week 2** | Lab 2: Create a folder (and file) , Rename, Copy, Cut, find, shortcut +Recycle bin ; using Tusk bar |
| **Week 3** | Lab 3: looking at a typical window +control buttons + move, resize a window+ view options+ select files + file options +using taskbar. |
| **Week 4** | Lab 4: Install, open, close, and(control panel- Programs) uninstall applications(internet and other sources); Control Panel (power options), Control Panel (add a device or printer), Control Panel ( Project) |
| **Week 5** | Lab 5: Personalization (background and color) +(User Account (create a standard account, change password , picture and name)<br>Control Panel- Clock and region (change date, time , and region) + Ease of Access ( Narrator, Magnifier, on screen keyboard)). |
| **Week 6** | Lab 6: MS Office (word, Excel, Power point, outlook) Starting each program and identify the main screen in details as title bar, main ribbons, etc. |
| **Week 7** | Lab 7: MS Word (Home Tab, Insert Tab, Layout Tab, View Tab + Watermark, Page boarder and Page color). |
| **Week 8** | Lab 8:**Mid Term** |
| **Week 9** | Lab 9: MS Excel (Home Tab, Insert, Page layout, Formula, Data). |
| **Week 10** | Lab 10: MS Power Point (Home Tab, Insert, Design, Transition, Animation). |
| **Week 11** | Lab 11: MS outlook (Home Tab, send and receive) + Calendar |

| | |
|---|---|
| **Week 12** | Lab 12: **Google apps Vs MS office.** |
| **Week 13** | Lab 13: Creating Gmail+ basic e-mail functions+ using google class. Using internet (Google scholar + fining courses and materials, Khan academy and finding resources). |
| **Week 14** | Lab 14: Using AI tools |

| **Learning and Teaching Resources** Learning ResourcesGoing to | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Internet and Computing Core Certification | No |
| **Recommended Texts** | | |
| **Websites** | https://alison.com/tag/microsoft<br>Share and Discover Knowledge on SlideShare<br>https://support.microsoft.com/en-us/training<br>https://support.google.com/a/users<br>https://edu.gcfglobal.org/en/topics/googleapps/#<br>https://edu.gcfglobal.org/en/subjects/office/#https://chat.openai.com | |

| **Grading Scheme** Grading chart | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | Appreciation | **Marks %** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C -** Good | J.D. | 70 - 79 | Sound work with notable errors |

| | | | | |
|---|---|---|---|---|
| | **D -** Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Fail (in processing) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## Course Description Form

| Module Information<br>Course Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | Differential Mathematics | | | **Module Delivery** | |
| **Module Type** | Support | | | ☒ **Theory**<br>☐Lecture<br>☐ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | MIET1103 | | | | |
| **ECTS Credits** | 5 | | | | |
| **SWL (hr/sem)** | 125 | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | 1 | |
| **Administering Department** | MIET | | **College** | HUC | |
| **Module Leader** | Ayadh Abdul Hamid Abdul Rahman | | **e-mail** | Ayadh73@huc.edu.iq | |
| **Module Leader's Acad. Title** | Lecturer Assistant | | **Module Leader's Qualification** | MSc. | |
| **Module Tutor** | | | **e-mail** | | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | | **e-mail** | hussamuotg@huc.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>Relationship with other subjects | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>Course objectives, learning outcomes and instructional contents | |
|---|---|
| **Module Objectives**<br>Course Objectives | 6. To develop problem solving skills and understanding of Differential calculus through a broad range of Differentiation techniques.<br>7. To understand limits and theory of derivative and apply it on various types of functions.<br>8. This is the basic subject for all engineering fields.<br>9. Demonstrate basic knowledge and understanding of a core of plane analytical geometry, algebra and applied mathematics.<br>10. Introduce students to Derivatives of trigonometric functions and their inverses. |
| **Module Learning Outcomes**<br>Learning outcomes of the course | Recall basic concepts of calculus: functions, variables, limits, and continuity.<br>Use the limit laws to evaluate the limit of a function.<br>Discuss continuity at a point and continuity over an interval.<br>Understand transcendental functions and how a function and its inverse are related. 5. Define Plane analytical geometry and identify how conic sections are formed in addition to define both in words and in algebraic formulae, a circle and its center and radius, and an ellipse and its foci.<br>Learn how to convert rectangular coordinates to polar coordinates and vice versa, as well as plot points using polar coordinates.<br>Differentiate algebraic and transcendental functions<br>Midterm<br>Discuss Chain rules and applications of the derivatives.<br>Define determinants and understand their relation to matrices · Also explain the methodology for finding a determinant. 10. Learn how to solve Linear equations by Cramer's rule. |

| | |
|---|---|
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following.<br><br>1-Limits and Continuity, Trigonometric functions, and their inverses. Hyperbolic and inverse hyperbolic functions, Exponential function and logarithmic function. Plane analytical geometry, parabola & ellipse, hyperbola. [25 hrs.]<br><br>2-Polar coordinates, Theory and rules of derivatives, Implicit Differentiation and Chain rules, Derivatives of trigonometric functions and their inverses. Derivatives of Transcendental functions and their inverses. [33 hrs.]<br><br>3-Properties of determinants, Solution of Linear equations by Cramer's rule. [10 hrs.]<br><br>4- Revision problem classes [5 hrs.] |

| **Learning and Teaching Strategies**<br>Learning and Teaching Strategies | |
|---|---|
| **Strategies** | The major approach used to offer this module will be to promote student engagement in the exercises while also enhancing and broadening their critical thinking abilities. Classes and interactive lessons will be used to achieve this. |

| **Student Workload (SWL)**<br>The student's academic load is calculated for **15** weeks | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 78 | **Structured SWL (h/w)**<br>Regular student load per week | 5 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 47 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 3 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | **125** | | |

| Module Evaluation<br>Course Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 6 and 10 | LO #2, #7, #9, and #10 |
| | **Online assignments** | 2 | 10% (10) | 4 and 12 | LO #1 - #5 and #6 - #10 |
| | **Report** | 1 | 10% (10) | 14 | LO #1 - #8 |
| | **OnSite assignments** | 2 | 10% (10) | 2 and 5 | LO #1 - #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #7 |
| | **Final Exam** | 3 hr | 50% (50) | 16 | LO #1 - #10 |
| **Total assessment** | | | 100% (100 marks) | | |

| Delivery Plan (Weekly Syllabus)<br>Weekly Curriculum | |
|---|---|
| | **Material Covered** |
| **Week 1** | Limits and Continuity |
| **Week 2** | Transcendental functions- trigonometric functions, and their inverses. |
| **Week 3** | Transcendental functions-Hyperbolic and inverse hyperbolic functions |
| **Week 4** | Transcendental functions-Exponential function and logarithmic function. |
| **Week 5** | Plane analytical geometry, parabola & ellipse, hyperbola. |
| **Week 6** | Polar coordinates. |
| **Week 7** | Mid-term Exam |
| **Week 8** | Theory and rules of derivatives |
| **Week 9** | Implicit Differentiation and Chain rules. |
| **Week 10** | Derivatives of trigonometric functions<br>Derivatives of inverse trigonometric functions. |
| **Week 11** | Derivatives of the exponential and natural logarithms functions. |
| **Week 12** | Derivatives of Hyperbolic and inverse hyperbolic functions. |
| **Week 13** | Applications of the derivatives. |
| **Week 14** | Determinants and properties of determinants. |
| **Week 15** | Solution of Linear equations by Cramer's rule. + Preparatory week before the final Exam |

| Learning and Teaching Resources<br>Learning and Teaching Resources | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Engineering Mathematics I (**pdf**) | No |

| | | |
|---|---|---|
| **Recommended Texts** | Thomas ' Calculus (**pdf**)<br>Fouteenth edition<br>Based on the original work by GEORGE B. THOMAS, JR. | No |
| **Websites** | https://elearningatria.files.wordpress.com/2013/10/differential-calculus-1-23.pdf<br>http://dl.konkur.in/post/Book/Paye/Thomas-Calculus-14th-Edition-%5Bkonkur.in%5D.pdf | |

**Grading Scheme**

Grade T chart

| Group | Grade | Appreciation | Marks % | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C -** Good | Good | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | Matos I | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Fail (in process) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## Course Description Form

| Module Information<br>Course Information | | | |
|---|---|---|---|
| **Module Title** | **Engineering Drawing** | **Module Delivery** | |
| **Module Type** | **Support** | ☐ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1104** | | |
| **ECTS Credits** | **5** | | |
| **SWL (hr/sem)** | **125** | | |
| **Module Level** | UGI | **Semester of Delivery** | 1 |
| **Administering Department** | MIET | **College** | HUC |

| | | | |
|---|---|---|---|
| **Module Leader** | Ahmed Satar Jaber | **e-mail** | AhmedJaber@huc.edu.iq |
| **Module Leader's Acad. Title** | Assistant Lecturer | **Module Leader's Qualification** | M.Sc. |
| **Module Tutor** | Ahmed Hassan Ali | **e-mail** | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>Relationship with other subjects | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| **Module Aims, Learning Outcomes and Indicative Contents**<br>Course objectives, learning outcomes and instructional contents | |
|---|---|
| **Module Aims** | The module aims for the Basics of Engineering Drawing courseware is to teach the student the basic commands necessary for professional 2D drawing, design, and drafting using AutoCAD. Upon completion of the course, the student will:<br>• Become familiar with the AutoCAD user interface.<br>• Understand the fundamental concepts and features of AutoCAD.<br>• Use the precision drafting tools in AutoCAD to develop accurate technical drawings.<br>• Present drawings in a detailed and visually impressive manner.<br>• Develop a level of comfort and confidence with AutoCAD through hands-on experience. |

| | |
|---|---|
| **Module Learning Outcomes** | Upon completion of the course, students should be able to:<br>10. The student will describe key terms and concepts associated with drafting and the drafting profession.<br>• Identifying software drafting tools (e.g. AutoCAD, Micro station, SolidWorks, and Google Sketch Up).<br>11. The student will identify elements of the AutoCAD software interface.<br>• Starting the AutoCAD program from the start menu.<br>• Using existing AutoCAD templates to create drawing documents.<br>• Identifying file extensions (such as.dwg, dxf, dwt, and .bak) and file locations.<br>• Creating, formatting, editing and saving an Auto CAD drawing.<br>12. The student will demonstrate an understanding of the skills necessary to create basic 2D AutoCAD drawings.<br>• Drawing lines, curves, circles, ellipses, rectangles, polygons, and donuts.<br>• Modifying a drawing using the Erase tool.<br>• Identifying and using the various types of Object Snaps and Auto tracking.<br>• Using the offset tool, drawing points, construction lines and rays.<br>13. The student will demonstrate the ability to modify an AutoCAD drawing.<br>• Creating and managing multiple layers that define line color, line width, line type, etc.<br>• Identifying and using object editing tools (such as fillet, chamfer, break, join, trim, extend, lengthen, and scale).<br>• Arranging and patterning objects with move, copy, mirror, rotate, align, and array.<br>14. The student will demonstrate an understanding How to assign: Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space.<br>15. The student will demonstrate an understanding Dealing with: Text, Style, M text, Scale text, Spell,<br>16. The student will demonstrate the Object viewing.<br>• Zooming techniques<br>Panning techniques • |

| | |
|---|---|
| | 17. The student will demonstrate the ability to output drawings in AutoCAD.<br>18. Drawing 3d modeling.<br>10.Drawing the Exercises. |

| | |
|---|---|
| **Indicative Contents** | Indicative content includes the following.<br>**Basic Drawing & Editing Commands**<br>• Drawing Lines<br>• Erasing Objects<br>• Drawing Lines with Polar Tracking<br>• Drawing Rectangles<br>• Drawing Circles<br>• Undo and Redo Actions [20 hrs.]<br>**Making Changes in Your Drawing**<br>• Selecting Objects for Editing<br>• Moving Objects<br>• Copying Objects<br>• Rotating Objects<br>• Scaling Objects<br>• Mirroring Objects<br>• Editing with Grips [4 hrs.]<br>**Display Control**<br>• Zoom<br>• Pan<br>• Redraw<br>• Clean Screen.<br>[4 hrs.]<br>**Adding Dimensions**<br>•Dimensioning Concepts<br>•Adding Linear Dimensions<br>•Adding Radial and Angular Dimensions<br>•Editing Dimensions<br>[4 hrs.]<br>**Hatching**<br>•Hatching<br>•Editing Hatches<br>[4hrs]<br>**Printing Your Drawing**<br>•Printing Layouts<br>• Print and Plot Settings [4 hrs.] |

| | |
|---|---|
| | **3D MODELLING, Convert** 2D to 3D, Solid Editing [19 hrs.] |

**Learning and Teaching Strategies**

Learning and Teaching Strategies

| | |
|---|---|
| **Strategies** | When it comes to learning and teaching engineering drawing using AutoCAD, there are several strategies that can be effective. Here are some recommendations:<br>Familiarize with the Software: Before diving into engineering drawing concepts, it's important to become familiar with the AutoCAD software. This includes understanding the user interface, basic tools, and commands. Start with introductory tutorials or online resources that cover the basics of AutoCAD.<br>Start with Fundamentals: Begin by teaching the fundamental concepts of engineering drawing, such as orthographic projection, isometric projection, dimensioning, and tolerancing. Explain the principles and techniques used in creating accurate and clear technical drawings.<br>Hands-on Practice: Engineering drawing is a practical skill, so provide ample opportunities for hands-on practice. Assign exercises and projects that require students to create different types of drawings using AutoCAD. Encourage them to explore and experiment with various tools and commands.<br>Step-by-Step Instructions: Break down complex drawing tasks into smaller, manageable steps. Provide step-by-step instructions and demonstrations using AutoCAD, showing students how to execute each step effectively. This approach helps students understand the workflow and build their confidence.<br>Visual Aids and Examples: Utilize visual aids, such as slides, diagrams, and examples, to reinforce concepts. Show real-world engineering drawings and explain how they were created using AutoCAD. Visual representations can enhance understanding and make abstract concepts more tangible.<br>Group Activities and Collaboration: Promote collaboration among students by assigning group activities or projects. This allows them to work together, share knowledge, and learn from one another. Encourage students to discuss their approaches and problem-solving techniques related to engineering drawing in AutoCAD.<br>Provide Feedback: Regularly provide constructive feedback on students' drawings. Highlight areas for improvement, suggest alternative methods, and point out common mistakes. This feedback loop is crucial for students to refine their skills and develop a deeper understanding of engineering drawing principles.<br>Stay Updated with AutoCAD Features: AutoCAD is regularly updated with new features and enhancements. Stay up to date with these changes to ensure you're teaching the latest tools and workflows. Familiarize yourself with new capabilities that can improve efficiency and accuracy in engineering drawing. |

| | |
|---|---|
| | Online Resources and Communities: Encourage students to explore online resources, tutorials, and communities dedicated to AutoCAD and engineering drawing. There are numerous websites, forums, and YouTube channels that offer valuable content and support for learning AutoCAD.<br>Project-Based Learning: Incorporate project-based learning into the curriculum, where students can apply their engineering drawing skills to real-world scenarios. Assign projects that simulate industry-related tasks, such as creating architectural plans, mechanical assemblies, or electrical schematics using AutoCAD. |

| Student Workload (SWL)<br>The student's academic load is calculated for **15** weeks | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 63 | **Structured SWL (h/w)**<br>Regular student load weekly | 4 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 62 | **Unstructured SWL (h/w)**<br>Irregular student load weekly | 4 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 125 | | |

| Module Evaluation<br>Course Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/ Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 20% (20) | 5, 12 | (LO #3,4) (LO #5,6) |
| | **Online Assignments** | 3 | 6% (6) | Continuous | (LO #3-5) (LO #6-10) |
| | **Projects** | 1 | 10% (10) | 13 | All |
| | **Onsite assignment** | 4 | 1% (1) | 4, 5, 10, 11 | LO #3-9 |
| **Summative assessment** | **Midterm Exam** | 1 hr | 10% (10) | 7 | LO #1-5 |
| | **Final Exam** | 3 hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 marks) | | |

| Delivery Plan (Weekly Lab. Syllabus)<br>Weekly Curriculum of the Laboratory | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Introduction to Autodesk AutoCAD**<br>Starting the Software<br>User Interface<br>Working with Commands<br>Cartesian Workspace<br>Opening an Existing Drawing File<br>Saving a Drawing File |
| **Week 2** | **Basic Drawing & Editing Commands**<br>Drawing Lines<br>Erasing Objects<br>Drawing Lines with Polar Tracking |
| | Drawing Rectangles<br>Drawing Circles<br>Undo and Redo Actions |
| **Week 3** | **Projects - Creating a Simple Drawing**<br>Create a Simple Drawing<br>Create Simple Shapes |
| **Week 4** | **Drawing Precision in AutoCAD**<br>Using Running Object Snaps<br>Using Object Snap Overrides<br>Polar Tracking at Angles<br>Object Snap Tracking<br>Drawing with Snap and Grid |

| | |
|---|---|
| **Week 5** | **Making Changes in Your Drawing**<br>Selecting Objects for Editing<br>Moving Objects<br>Copying Objects<br>Rotating Objects<br>Scaling Objects<br>Mirroring Objects<br>Editing with Grips |
| **Week 6** | **Advanced Object Types**<br>Drawing Arcs<br>Drawing Polylines<br>Editing Polylines<br>Drawing Polygons<br>Drawing Ellipses |
| **Week 7** | **Advanced Editing Commands**<br>Trimming and Extending Objects<br>Stretching Objects<br>Creating Fillets and Chamfers<br>Offsetting Objects<br>Creating Arrays of Objects |
| **Week 8** | Mid-term exam |
| **Week 9** | **Adding Dimensions**<br>•Dimensioning Concepts<br>•Adding Linear Dimensions<br>•Adding Radial and Angular Dimensions |
| | •Editing Dimensions<br><br>**Text**<br>•Working with Annotations<br>•Adding Text in a Drawing<br>•Modifying Multiline Text<br>•Formatting Multiline Text<br>•Adding Notes with Leaders to Your Drawing |

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|---|---|
| **Week 10** | **Hatching**<br>•Hatching<br>•Editing Hatches |
| **Week 11** | 3D modeling |
| **Week 12** | Convert 2D To 3D. |
| **Week 13** | Exercises drawing |
| **Week 14** | **Printing Your Drawing**<br>•Printing Layouts<br>•Print and Plot Settings |
| **Week 15** | Preparatory week before the final Exam |

## Learning and Teaching Resources

Learning and Teaching Resources

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | D. A. Madsen, D. P. Madsen, and J. E. Briesacher, Engineering Drawing and Design, 5th ed., Clifton Park, NY: Delmar Cengage Learning, 2011. | Yes |
| **Recommended Texts** | F. E. Giesecke, A. Mitchell, H. C. Spencer, I. L. Hill, and J. T. Dygdon, Technical Drawing with Engineering Graphics, 15th ed., Upper Saddle River, NJ: Pearson, 2016. | No |
| **Websites** | https://www.coursera.org/browse/physical-science-and-engineering | |

## Grading Scheme

Grading chart

| Group | Grade | Taqdi R | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |

| | | | | |
|---|---|---|---|---|
| | **C -** Good | Good | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | Matos I | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | Fail (in process) | (45-49) | More work required but credit awarded |
| | **F** – Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## Course Description Form

| **Module Information** Course Information | | | |
|---|---|---|---|
| **Module Title** | **Democracy and Human Rights** | **Module Delivery** | |
| **Module Type** | **Basic** | ☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar** | |
| **Module Code** | **MIET1105** | | |
| **ECTS Credits** | **2** | | |
| **SWL (hr/sem)** | **50** | | |
| **Module Level** | UGI | **Semester of Delivery** | 1 |

| | | | |
|---|---|---|---|
| **Administering Department** | MIET | **College** | HUC |
| **Module Leader** | Ali Abdel Moneim Ahmed | **e-mail** | |
| **Module Leader's Acad. Title** | Assistant Lecturer | **Module Leader's Qualification** | M.Scs. |
| **Module Tutor** | | **e-mail** | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

## Relation with other Modules

Relationship with other subjects

| | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

## Module Aims, Learning Outcomes and Indicative Contents

Course objectives, learning outcomes and instructional contents

| | |
|---|---|
| **Module Aims**<br><br>Course Objectives | 8. Historical development of human rights:<br><br>Study the historical evolution of the understanding of human rights from ancient civilizations to modern times.<br>9. Human rights in heavenly laws:<br><br>Focus on human rights in Islam and how they are incorporated into Islamic law.<br>10. Regional recognition of human rights:<br><br>Examine the recognition of human rights by European, American, African, Islamic, and Arab regions.<br>11. Role of NGOs:<br><br>Study the role of organizations such as the International Committee of the Red Cross and Amnesty International in the protection of human rights.<br>12. International and regional legal framework:<br><br>Focus on international and regional conventions, such as the Universal Declaration of Human Rights.<br>13. Analysis of human rights in national legislation:<br><br>Study how human rights are translated into national legislation, with a focus on the Iraqi constitution.<br>14. Classification and guarantees of human rights:<br>Understand the different forms of human rights and the constitutional, judicial and political guarantees for their protection. |
| **Module Learning Outcomes**<br><br>Learning outcomes for the course | Ability to describe and analyze the historical development of human rights from ancient civilizations to modern times.<br>Ability to examine human rights in Mesopotamian civilization and elsewhere to understand the cultural impact on its development.<br>Interpret human rights in Islam and understand how they are included in Islamic law.<br>Ability to analyze the evolution of human rights during the Middle Ages and modern.<br>Comprehensive understanding of the recognition of human rights by European, American, African, Islamic, and Arab regions. |

| | |
|---|---|
| | Ability to assess the role of organizations such as the International Committee of the Red Cross and Amnesty International in the protection of human rights.<br>Ability to study and analyze international and regional conventions, including the Universal Declaration of Human Rights.<br>An ability to examine how human rights have been translated into national legislation, focusing on the example of the Iraqi constitution.<br>11. The ability to classify human rights into individual, collective, and generational forms such as civil, political, economic, and social rights.<br>12. Ability to analyse constitutional, judicial and political guarantees of human rights at the national, international and regional levels. |
| **Indicative Contents**<br>Indicative Contents | Understanding the evolutionary history of human rights 3) Q (Analysis of human rights in ancient civilizations ) 3 Q (Understanding human rights in divine laws 3) Q ( Analysis of human rights in the Middle Ages and modern 3) Q ( Understanding the territorial recognition of human rights 3) Q ( Appreciation of the role of NGOs ) 3) o ) Understanding the human rights legal framework 3) Q ( |
| | Analysis of human rights in national legislation 3) Q ( Understanding the forms and generations of human rights 3) Q ( Analysis of human rights guarantees 3) Q ( |

| Learning and Teaching Strategies<br>Learning and Teaching Strategies | |
|---|---|
| **Strategies** | Encourage students to participate in interactive discussions about the evolution of human rights throughout history.<br>Research Projects:<br>Guiding students in the preparation of research projects exploring the development of human rights in specific historical periods.<br>Use of technology:<br>Include technological means to enhance student interaction and provide information more interactively.<br>Workshops and Practical Representation:<br>Conduct interactive workshops and representational activities for a deeper understanding of human rights concepts.<br>Provide continuous assessment:<br>Provide an ongoing assessment to examine students' progress and understanding of the evolution of human rights over the ages. |

| Student Workload (SWL)<br>Student Load | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 33 | **Structured SWL (h/w)**<br>Regular student load per week | 2 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 17 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 1 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 50 | | |

| Module Evaluation<br>Course Evaluation | | | | |
|---|---|---|---|---|
| | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning** |

| | | | | | Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 9 | LO #1, 2, 3, LO # 6, 7 |
| | Assignments | 2 | 10% (10) | 6, 13 | LO # 4 and LO#9 |
| | Seminar | 1 | 10% (10) | 12 | LO# 5, 6, 7, 8 |
| | Report | 1 | 10% (10) | 14 | LO# 8, 9, 10 |
| Summative assessment | Midterm Exam | 2hr | 10% (10) | 7 | LO #1-7 |
| | Final Exam | 3 hr | 50% (5)0 | 16 | All |
| Total assessment | | | 100% (100 marks) | | |

## Delivery Plan (Weekly Syllabus)

Weekly Curriculum

| | |
|---|---|
| The historical development of human rights in ancient civilizations (Mesopotamian civilization and other ancient civilizations) | First week |
| Human rights in heavenly laws with a focus on human rights in Islam.<br><br>Human rights in the Middle Ages and the Modern. | Second week |
| Regional recognition of human rights at the European-American, African, Islamic and Arab levels | Third week |
| NGOs and their role in human rights International Committee of the Red Cross, Amnesty International, Human Rights Watch Arab Organization for Human Rights ( | Fourth week |
| Human rights in international and regional conventions and national legislation.<br><br>Human rights in international conventions (the Universal Declaration of Human Rights - the International Covenants on Human Rights | Fifth week |
| Human rights in regional conventions European Convention on Human Rights American Convention on Human Rights African Charter on Human Rights Arab Charter on Human Rights | Week Six |
| Mid-term Exam | Week seven |
| Human rights in national legislation (Iraqi Constitution ) | Week eight |

| | |
|---|---|
| Forms and duties of human rights: Forms of human rights Individual rights, collective rights Human rights generations First generation Civil and political rights, (second generation economic and social rights), (third generation: modern human rights, German and home consciousness | Week Nine |
| Guarantees and protection of human rights at the national level Constitutional, judicial and political guarantees | Week Ten |
| Human rights guarantees and protection at the regional and international levels (the role of the United Nations, the role of regional organizations) the crime of genocide. | Eleventh week |
| Classification of public freedoms Fundamental and individual freedoms Freedom of security and a sense of reassurance Freedom to go and return, personal freedom | Twelfth week |
| Intellectual and cultural freedoms Freedom of opinion, freedom of belief, freedom of education, freedom of the press, freedom of assembly, freedom of association | Thirteenth week |
| Economic and social freedoms, freedom of work, freedom of ownership, freedom of trade and industry | Fourteenth week |
| Preparing for the final exam | Fifteenth week |

| **Learning and Teaching Resources**<br>Learning and Teaching Resources | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | 1 L am a man of the same age "Human Rights in the Arab World: Issues and Challenges", written by: Hijazi and Jamal Shaat. Edition: Second Edition, Year: .2017<br>2. "Principles of Human Rights: Modern Concepts and Issues", written by: Ahmed | Yes |

| | | |
|---|---|---|
| | Field and Ghassan Hamdan.<br>Edition: First Edition, Year: 2019. | |
| **Recommended Texts** | 1. "Human Rights and Democracy", written by: Mustafa Kamel Mahmoud<br>Edition: First Edition, Year: 2015.<br>2" "History of Human Rights in Antiquity and the Middle Ages"<br>Author : Nabil Rizk.<br>Edition: Third Edition, Year: 2012.<br>3 . "Human Rights in Iraq: Reality and Challenges",<br>Author : Saad Allah Abbas<br>Edition: First Edition, Year: 2014.<br>4 . "Human Rights in Iraq: Concept and Development",<br>Author : Abdul Karim Al-Samarrai<br>Edition: First Edition, Year: 2018 .<br>5 . "Human Rights in Iraq: Between Challenges and Prospects",<br>Written by: Muhammad Al-Samarrai and Military Communication<br>Edition: First Edition, Year: 2018 . | No |
| **Websites** | The Collage E-Library | |

**Grading Scheme**

Grade T chart

| Group | Grade | Appreciation | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C -** Good | Good | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Fail (in process) | (45-)94 | More work required but credit awarded |
| | **F –** Fail | Failure | (0-)44 | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## Course Description Form

| Module Information<br>Course Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **English Language 1** | | | **Module Delivery** | |
| **Module Type** | **Basic** | | | ☒ **Theory**<br>☒ **Lecture**<br>☐ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1106** | | | | |
| **ECTS Credits** | **2** | | | | |
| **SWL (hr/sem)** | **50** | | | | |
| **Module Level** | UGI | | **Semester of Delivery** | 1 | |
| **Administering Department** | MIET | | **College** | HUC | |
| **Module Leader** | Ameer Ali Abd | | **e-mail** | amer73@huc.edu.iq | |
| **Module Leader's Acad. Title** | Lecturer Assistant | | **Module Leader's Qualification** | MSc. | |
| **Module Tutor** | | | **e-mail** | | |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | | **e-mail** | hussamuotg@huc.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>Relationship with other subjects | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>Course objectives, learning outcomes and how-to contents |
|---|

| | |
|---|---|
| **Module Aims**<br>Course Objectives | The module aims of English Language (1) are designed to help learners at the beginner – pre-intermediate level develop their English language skills and achieve specific learning objectives, By the end of this course, students will:<br><br>12. Grammar Mastery: Develop a strong command of grammar rules, including possessive forms, question words, pronouns, prepositions, present simple, past simple, present continuous, past continuous, comparative and superlative adjectives, verb patterns, modal verbs (have/got to, should, must), time and conditional clauses, present perfect, past perfect, reported statements, and more.<br><br>13. Vocabulary Expansion: Expand their vocabulary in various contexts, covering numbers, family members, rooms and furniture, locations in and out of town, food and dining, parts of speech, synonyms, antonyms, and phrasal verbs.<br><br>14. Everyday English Proficiency: Develop practical language skills for everyday communication, including greetings, introductions, short answers, conversations, and expressions commonly used in daily life.<br><br>15. Reading Comprehension: Improve their reading comprehension skills through the analysis of diverse texts, including stories, articles, and informative content on a wide range of topics.<br><br>16. Writing Competence: Enhance their writing abilities by composing informal letters, using linking words, writing reviews of books or films, and crafting stories.<br><br>17. Critical Thinking and Analysis: Develop critical thinking skills by analyzing and discussing texts, comparing and contrasting information, and drawing conclusions from reading materials.<br><br>18. Cultural Awareness: Gain cultural insights through readings and discussions about various cultures and places around the world, fostering a broader worldview.<br><br>19. Effective Communication: Improve their ability to express ideas clearly and confidently in both spoken and written forms, making them effective communicators in English.<br><br>20. Language Assessment: Prepare for assessments, including a midterm exam, by reviewing and demonstrating their understanding of grammar, vocabulary, and reading comprehension. |

| | |
|---|---|
| | 21. Independent Learning: Develop independent learning skills, enabling them to continue improving their English language proficiency beyond the course.<br><br>22. Language Fluency: Work towards achieving fluency in English, allowing them to engage in conversations, express thoughts, and write coherently with ease.<br><br>12. Cultural Competency: Build cultural competence and sensitivity through exposure to diverse texts and discussions about different cultures and lifestyles.<br><br>These course goals reflect the overarching objectives of the English class and provide a clear direction for student learning and language development throughout the 15-week course. |

| | |
|---|---|
| **Module Learning Outcomes**<br><br>Learning outcomes of the course | The learning outcomes for English (1) 15-week English class syllabus:<br><br>3. Students will comprehend and discuss texts on different topics<br>4. Students will expand their vocabulary related to various topics 3. Students will acquire vocabulary related to Various topics<br>15. Students will be able to write letters , and reviews.<br>16. Students will be able to use possessive forms correctly in sentences, indicating ownership.<br>17. Students will master question words, pronouns, and prepositions.<br>18. Students will distinguish between present simple and past simple tenses.<br>19. Students will learn about the present continuous, present simple vs. continuous, and have & have got.<br>20. Students will study the past continuous and quantity and articles.<br>21. Students will understand comparative and superlative adjectives.<br>22. Students will focus on verb patterns, future intentions, and present perfect and past simple tenses.<br>23. Students will study modal verbs (have/got to, should, must).<br>24. Students will learn about time and conditional clauses.<br>25. Students will cover present perfect continuous, present perfect simple vs. continuous, past perfect for clarification, and reported statements. |

| | |
|---|---|
| **Indicative Contents**<br>Indicative Contents | Beginners book :<br><br>**Grammar :** Possessive ( CH1,2,4)<br>**Vocabulary –** numbers –( CH1, 2, 5) -- the family (CH4)<br>**Every day English-all** (Ch1,3)<br>**Reading-** where are they (Ch2) , The Chairty Walk, (Ch3) , My best Friend,(Ch4) ..... (2 hours)<br><br>**Grammar :** Question words ( CH 7) – Pronouns (Ch7) – Prepositions (Ch8) **Vocabulary –** Rooms and Furniture –(CH8) – in and out of Town (CH4),<br>Saying Years (ch9)<br>**Every day English-all** (Ch 9)<br>**Reading-** A Postcard from San Fransisco (Ch7) , Vancouver , the best city in the world, (Ch8) , It is a Jacksin Pollock ,(Ch9) ..... (2 hours)<br><br>**Grammar :** Present Simple (ch5,6)- Past Simple (ch9,10)<br>**Vocabulary – shopping, food, in a restaurant** (ch12)<br>**Every day English-all** (Ch 14)<br>**Reading-** The internet (Ch11) , You are what you eat (Ch12) , This week is different (Ch13) , Life's big events (Ch14) ..... (2 hours)<br><br>Pre-intermediate book:<br>**Grammar :** - |

| | |
|---|---|
| | **Vocabulary –** Parts of speech (ch1,3, 7)<br>**Every day English-Social** expressions (Ch 1)<br>**Reading-** People the great communicators (Ch1)<br>**Writing-** A letter to a pen friend (informal) (Ch1) ..... (2 hours)<br><br>**Grammar :** - Present continuous – Present simple vs. continuous- have &have got (ch2)<br>**Vocabulary –**<br>**Every day English-Making** conversation (Ch 2)<br>**Reading-** Living in the USA (Ch2)<br>**Writing-** Linking words (Ch2,3) ..... (2 hours)<br><br>**Grammar :** - Past continuous (ch3) – Quantity and Articles (ch4)<br>**Vocabulary –**<br>**Every day English-**<br>**Reading-** The burglar's friend – The thief, his mother and 2 billion – Sherlock Holmes the three students (Ch3)<br>**Writing-** ..... (2 hours)<br><br>**Grammar :** - comparative and superlative adj (ch6)<br>**Vocabulary –** synonyms and antonyms (ch6)<br>**Every day English-**<br>**Reading-** Markets around the world(Ch4)<br>**Writing-** ..... (2 hours)<br><br>**Grammar :**<br>**Vocabulary:**<br>**Every day English:**<br>**Reading-** Hollywood Kids (Ch5) – A tale of two millionaires (ch6) **Writing-** ..... (2 hours)<br><br>**Grammar :** Verb Patterns (Ch5) – Future intentions (ch5)- Present Perfect and Past simple (ch7) **Vocabulary:**<br>**Every day English:**<br>**Reading:**<br>**Writing:** Relative clauses (ch6,7)..... (2 hours)<br><br>**Grammar :** have (got)to, should, must (ch8)<br>**Vocabulary: -**<br>**Every day English:** Short Answers (ch7) – At the doctor's (ch8)<br>**Reading-** Celebrity interview from Hi (Ch7)<br>**Writing-** ..... (2 hours) |

| | |
|---|---|
| | **Grammar :** Time and conditional clauses (ch9)<br>**Vocabulary: -**<br>**Every day English:** In a hotel (ch9)<br>**Reading-** Problem page (Ch8)<br>**Writing-** Formal letter (ch8) ..... (2 hours)<br><br>**Grammar:**<br>**Vocabulary: -**<br>**Every day English:** Exclamation (ch11) – saying goodbye (ch14)<br>**Reading-** The world's first megalopolis (Ch9)<br>**Writing-** writing a review of a book or a film (ch11)..... (2 hours)<br><br>**Grammar :**<br>**Vocabulary:** Phrasal verbs (ch12)- word formation (ch3)<br>**Every day English:** Social expressions (ch12)<br>**Reading-** Super volcano (Ch12)<br>**Writing-** writing a story (ch14)..... (2 hours)<br><br>**Grammar :** present perfect continuous (ch13) - Present perfect simple vs continuous (ch13)- Past perfect for clarification (ch14) – Reported statement (ch14)<br>**Vocabulary:**<br>**Every day English:**<br>**Reading-** A funny way to earn a living (Ch13)<br>**Writing-** ..... (2 hours) |

| Learning and Teaching Strategies<br>Learning and Teaching Strategies | |
|---|---|
| **Strategies** | The learning and teaching strategies for the English Language (Beginner) module may include:<br>6. Interactive Language Practice: Engage learners in communicative activities that promote active participation and language practice. This can include pair work, group discussions, role-plays, and language games.<br>7. Authentic Materials: Incorporate authentic materials such as videos, audio recordings, and reading texts that reflect real-life language use. This helps learners develop their listening, speaking, reading, and writing skills in authentic contexts.<br>8. Task-Based Learning: Design tasks and projects that require learners to use the target language to accomplish specific goals or solve problems. This promotes meaningful language use and encourages critical thinking and problem-solving skills.<br>9. Visual Aids and Multimedia: Utilize visual aids, charts, diagrams, and multimedia resources to support language learning and comprehension. Visuals can enhance understanding, aid in vocabulary acquisition, and provide context for language use.<br>10. Error Correction and Feedback: Provide timely and constructive feedback on learners' language production to help them identify and correct errors. Encourage self-correction and peer correction to foster a supportive learning environment. |

| Student Workload (SWL)<br>The student's academic load is calculated for 15 weeks | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 33 | **Structured SWL (h/w)**<br>Regular student load per week | 2 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 17 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 1 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 50 | | |

| Module Evaluation<br>Course Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 3, 12 | LO #1-6 and 1,2,4,10-12 |
| | **Assignments** | 2 | 10% (10) | 4, 10 | LO #1-7 & 1-11 |
| | **Discussion** | 2 | 10% (10) | continuous | 1-14 |
| | **Onsite assignment** | 5 | 10% (10) | continuous | 1-14 |
| **Summative assessment** | **Midterm Exam** | 2 hours | 10% (10) | 7 | LO #1-9 |
| | **Final Exam** | 3 hours | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 marks) | | |

| Delivery Plan (Weekly Syllabus)<br>Theoretical Weekly Curriculum | |
|---|---|
| | **Material Covered** |
| **Week 1** | **Grammar :** Possessive ( CH1,2,4)<br>**Vocabulary –** numbers –( CH1, 2, 5) -- the family (CH4)<br>**Every day English-all** (Ch1,3)<br>**Reading-** where are they (Ch2) , The Chairty Walk, (Ch3) , My best Friend,(Ch4) |
| **Week 2** | **Grammar :** Question words ( CH 7) – Pronouns (Ch7) – Prepositions (CH8)<br>**Vocabulary –** Rooms and Furniture –( CH8) – in and out of Town (Ch4), Saying Years (ch9) **Every day English-all** (Ch 9)<br>**Reading-** A Postcard from San Fransisco (Ch7) , Vancouver , the best city in the world (Ch8) , It is a Jacksin Pollock (Ch9) |

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|---|---|
| **Week 3** | **Grammar :** Present Simple (ch5,6)- Past Simple (ch9,10)<br>**Vocabulary – shopping, food, in a restaurant** (ch12)<br>**Every day English-all** (Ch 14)<br>**Reading-** The internet (Ch11) , You are what you eat (Ch12) , This week is different (Ch13)<br>, Life's big events (Ch14) |
| **Week 4** | **Vocabulary –** Parts of speech (ch1,3, 7)<br>**Every day English-all** (Ch 1)<br>**Reading-** People the great communicators (Ch1)<br>**Writing-** A letter to a pen friend (informal) (Ch1) |
| **Week 5** | **Grammar :** - Present continuous – Present simple vs. continuous- have &have got (ch2)<br>**Every day English-Making** conversation (Ch 2)<br>**Reading-** Living in the USA (Ch2)<br>**Writing-** Linking words (Ch2,3) |
| **Week 6** | **Grammar :** - Past continuous (ch3) – Quantity and Articles (ch4)<br>**Reading-** The burglar's friend – The thief, his mother and 2 billion – Sherlock Holmes the three students (Ch3) |
| **Week 7** | **Midterm** |
| **Week 8** | **Grammar:** - comparative and superlative adj (ch6)<br>**Vocabulary –** synonyms and antonyms (ch6)<br>**Reading-** Markets around the world(Ch4) |
| **Week 9** | **Reading-** Hollywood Kids (Ch5) – A tale of two millionaires (ch6) |
| **Week 10** | **Grammar :** Verb Patterns (Ch5) – Future intentions (Ch5)- Present Perfect and Past simple (ch7)<br>**Writing:** Relative clauses (ch6,7) |
| **Week 11** | **Grammar :** have (got)to, should, must (ch8)<br>**Every day English:** Short Answers (ch7) – At the doctor's (ch8) **Reading-** Celebrity interview from Hi (ch7) |
| **Week 12** | **Grammar :** Time and conditional clauses (ch9)<br>**Every day English:** In a hotel (ch9)<br>**Reading-** Problem page (Ch8)<br>**Writing-** Formal letter (ch8) |
| **Week 13** | **Every day English:** Exclamation (ch11) – saying goodbye (ch14)<br>**Reading-** The world's first megalopolis (Ch9)<br>**Writing-** writing a review of a book or a film (ch11) |
| **Week 14** | **Vocabulary:** Phrasal verbs (ch12)- word formation (ch3)<br>**Every day English:** Social expressions (ch12)<br>**Reading-** Super volcano (Ch12)<br>**Writing-** writing a story (ch14) |
| **Week 15** | **Grammar :** present perfect continuous (ch13) - Present perfect simple vs continuous |

| | |
|---|---|
| | (ch13)- Past perfect for clarification (ch14) – Reported statement (ch14) **Reading-** A funny way to earn a living (ch13) |

| **Learning and Teaching Resources**<br>Learning and Teaching Resources | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | • Soars, J., Soars, L. (2014). New Headway Plus: Beginner Student's Book. United Kingdom: Oxford University Press.<br>• Soars, J., Soars, L. (2006). New Headway Plus: Preintermediate. United Kingdom: Oxford University Press. | Yes |
| **Recommended Texts** | Audio CDs or Online Audio: Recordings of listening exercises, dialogues, and pronunciation practice.<br>Beginner workbook<br>Pre-intermediate Workbook | No |
| **Websites** | | |

| **Grading Scheme**<br>Grading chart | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | Appreciation | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |

| | | | | |
|---|---|---|---|---|
| | **C -** Good | Good | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Fail (in process) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# MODULE DESCRIPTION FORM

## Course Description Form

| Module Information<br>Course Information | | | |
|---|---|---|---|
| **Module Title** | **MEDICAL CHEMISTRY** | **Module Delivery** | |
| **Module Type** | **Support** | ☒ **Theory** | |
| **Module Code** | **MIET1107** | ☐ **Lecture** | |
| **ECTS Credits** | **7** | ☒ **Lab** | |
| **SWL (hr/sem)** | **175** | ☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Level** | UGI | **Semester of Delivery** | 1 |

| | | | |
|---|---|---|---|
| **Administering Department** | MIET | **College** | HUC |
| **Module Leader** | Above the Bader | **e-mail** | alaa.mohammed@kus.edu.iq |
| **Module Leader's Acad. Title** | Lecturer | **Module Leader's Qualification** | Ph.D. |
| **Module Tutor** | Savana Ali | **e-mail** | Safana1986@huc.edu.iq |
| **Peer Reviewer Name** | Assist. Prof. Dr. Hussam Abdali | **e-mail** | hussamuotg@huc.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules**<br>Relationship with other subjects | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | - |
| **Co-requisites module** | None | **Semester** | - |

| **Module Aims, Learning Outcomes and Indicative Contents**<br>Course objectives, learning outcomes and instructional contents | |
|---|---|
| **Module Aims**<br>Course Objectives | 3- To write and balance chemical equation which many calculations depend on.<br>4- To convert chemical formula to components composition percent or to conclude empirical formula depending upon composition percent.<br>3-To predict about the economic pathway for specific reaction to happen depending upon stoichiometric calculations of balanced chemical equations.<br>4-To Know how to prepare buffers with different ranges of pH using acids with suitable dissociation constant of acid. |

| | |
|---|---|
| | 5- To understand the effect of common ions on equilibrium of reversible reactions.<br>6-To focus on theoretical working principles of spectrophotometric instruments.<br>7- to discuss the importance of isotopes in diseases treatment and diagnosis. |
| | At ending of course, the student will:<br>5- Able to give chemical compounds their systematic names and to write their chemical formulae.<br>6- Know how to calculate concentrations of chemicals and to express them in various concentration terms. In addition to convert one term to another.<br>7- Calculate the compound composition percent according to chemical formula or know empirical formula depending on compounds composition percent.<br>8- Write chemical equations of different reactions and balance them and predict the limiting reactant in addition to the expected weight of products.<br>5-Eestimate the reaction direction according to calculation of equilibrium constant of reversible reactions.<br>6-Know how to prepare buffers and how buffer work?<br>10- Understand importance and wide application of slightly soluble salts.<br>11- Perform the statistical treatment of analytical results and source of errors.<br>12- Recognize the importance of galvanic cells in current generation and role of electrolytic cells in metallic electroplating. |

| | |
|---|---|
| | 9-Consider zero, 1st and 2nd laws of thermodynamic processes, and evaluate thermodynamic functions of work, enthalpy, heat, internal energy and giving judgment of spontaneous process or not by entropy and Gibbs free energy.<br><br>10-List the components of photometric determination techniques, in addition to principals of their works.<br><br>11- Identify the photometric instrumentations such as FIS, FT-IR spectrophotometer, and mass spectrophotometry.<br><br>12- Emphasize the vital role of isotopes in diagnosis and diseases treatment. |

| | |
|---|---|
| **Indicative Contents**<br>Indicative Contents | Isotopes, Chemical formula, Units conversion (5 hr) Normality, Formality, Molarity, Molality, Mole fraction, Mill equivalent, ppm, ppb, mass percent, mass/vol percent. (10 free) Stoichiometry (4 hr) Chemical equilibrium (4 hr) dissociation constant (5 hr) pH (4 hr) Buffers (5 hr) common ion (4 hr) Solubility product constant (4 hr) Statistical treatment, average, range, standard deviation, variance, Absolute error, relative error. (6 free) Redox reactions, Electrochemistry, electrolytes, Nernst equation, cell potential (6 hr). 1st law of thermodynamic, Reversible and irreversible process, Heat capacities, adiabatic process, Isothermal processes (6 hr). 2nd law of thermodynamic, entropy, Gibbs free energy (4 hr). Photochemistry, electromagnetic spectrum, Beer Lambert law (6 hr). IR Spectrophotometer, mass spectroscopy, FIS, FES (6 hr). Potentiometer, conductive meter, pH-meter (5 hr). |

| **Learning and Teaching Strategies**<br>Learning and Teaching Strategies | |
|---|---|
| **Strategies** | Homework assignments, written exam, Quizzes, seminars, reports, practical tests and Online tests |

| **Student Workload (SWL)**<br>Student Load | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 94 | **Structured SWL (h/w)**<br>Regular student load per week | 6 |

| | | | |
|---|---|---|---|
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 81 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 5 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 175 | | |

## Module Evaluation
Course Evaluation

| | | Time/ Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Formative assessment** | **Quizzes** | 15min/ 2 times | 20% (20) | 5th , 12th | LO# 1st – 5th<br>LO# 10th – 12th |
| | **Online Assignments** | 5min/ 2 times | 10% (10) | 6s, 13sec | LO# 1st<br>LO# 10th |
| | **Lab, you know, you know,** | Each lab/ 5 times | 5% (5) | 3rd, 4th, 5th, 6th, 7th | LO# 1st -2nd ,<br>LO# 3rd<br>LO# 4th<br>LO# 5th<br>LO# 6th – 7th |
| | **Seminar** | 10min/ One time | 5% (5) | 6th | LO# 2nd – 5th |
| **Summative assessment** | **Midterm Exam** | 180 min/ one time | 10% | 8th | LO# 1st – 10th |
| | **Final Exam** | 240min/ one time | 50% | 16th | |
| **Total assessment** | | | 100% | | |

## Delivery Plan (Weekly Syllabus)

Theoretical Weekly Curriculum

| | Material Covered |
|---|---|
| Week 1 | Introduction, Units conversion, Isotopes, Chemical formula and chemical equation |
| Week 2 | Methods of expressing analytical concentrations: Normality, Formality, Molarity, Molality, Mole fraction, Mill equivalent, ppm, ppb, wt. and vol. percent ratio. |
| Week 3 | Stoichiometry |
| Week 4 | Chemical equilibrium |
| Week 5 | Acid-Base dissociation constant |
| Week 6 | pH-scale, buffer solution+ Solubility of precipitations, common ion effect |
| Week 7 | Mid-term Exam |
| Week 8 | Errors & statistical treatment of analytical data sources of errors, types of errors, average mode, range, average derivation, standard deviation, relative standard deviation, variance, method of expressing accuracy, Absolute error, relative error. |
| Week 9 | Redox reactions, balancing of redox equation |
| Week 10 | Electrochemistry: electrochemical cells, types of electrodes, electrolytes, Nernst equation, cell potential |
| Week 11 | Thermodynamic, Zero and first law of thermodynamic, Reversible and irreversible expansion, Heat capacities, adiabatic expansion, Isothermal processes. |
| Week 12 | Second law of thermodynamic: spontaneous processes, entropy and Gibbs free energy. |

| | |
|---|---|
| **Week 13** | **Photochemistry (spectrophotometer analysis), Regions of electromagnetic spectrum, Absorption and emission of electromagnetic spectrum, Beer Lambert law, instrumentations components of spectrophotometer.** |
| **Week 14** | **IR Spectrophotometer, mass spectroscopy, flame ionization spectrophotometry.** |
| **Week 15** | **Potentiometer, conductive meter, pH-meter and some other applications of chemical sensors+**<br>**Preparatory week before the final Exam** |

## Delivery Plan (Weekly Lab. Syllabus)

Weekly Curriculum of the Laboratory

| | **Material Covered** |
|---|---|
| **Week 1** | Principals of qualitative analysis. |
| **Week 2** | Qualitative analysis of cations of 1st and 2nd groups. |
| **Week 3** | Qualitative analysis of cations of 3rd and fifth groups. |
| **Week 4** | Introduction to Quantitative (volumetric) analysis and types of standard substance in titration, principles and calculations of titration. |
| **Week 5** | How to prepare a solution of primary standard materials and to standardize secondary standard substance of HCl, (acid-base titration) |
| **Week 6** | Standardization secondary standard substance of NaOH and its application by determination of vinegar acidity. |
| **Week 7** | Determination of residual chloride in tape water by titration against silver nitrate (precipitation titration). |

| Learning and Teaching Resources<br>Learning and Teaching Resources | | |
|---|---|---|
| | | |
| **Required Texts** | | |
| **Recommended Texts** | **3-ESSENTIALS OF GENERAL CHEMISTRY By**<br>**EBBING GABBON RAGSDALE**<br>**4-CHEMICAL PRINCIPLES**<br>**By Steven S Zumdahl - 4th edition** | **No** |
| **Websites** | | |

| Grading Scheme<br>Grade T chart | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | Appreciation | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 – 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 – 89 | Above average with some errors |
| | **C -** Good | Good | 70 – 79 | Sound work with notable errors |
| | **D -** Satisfactory | medium | 60 – 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 – 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Fail (in process) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Ras B | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# Course Description First Stage Second Course

**MODULE DESCRIPTION FORM**

**Course Description Form**

| **Module Information** | | | | | |
|---|---|---|---|---|---|
| Course Information | | | | | |
| **Module Title** | **Fundamentals of Electrical Engineering (AC)** | | | **Module Delivery** | |
| **Module Type** | **Core** | | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1201** | | | | |
| **ECTS Credits** | **6** | | | | |
| **SWL (hr/sem)** | **150** | | | | |
| **Module Level** | | UGI | **Semester of Delivery** | | 2 |
| **Administering Department** | | MIET | **College** | EETC | |
| **Module Leader** | Huda Farooq Jamil | | **e-mail** | Huda_baban@mtu.edu.iq | |
| **Module Leader's Acad. Title** | | Established. Lecturer | **Module Leader's Qualification** | | M.Sc |
| **Module Tutor** | Salah Hassan Abbas | | e-mail | salah.shaw.84a@gmail.com | |
| **Peer Reviewer Name** | | Dr. Aws Alazawi | **e-mail** | aws_basil@mtu.edu.iq | |

| | | | |
|---|---|---|---|
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

## Relation with other Modules

Stuck with other subjects

| | | | |
|---|---|---|---|
| **Prerequisite module** | Fundamentals of Electrical Engineering (DC) | **Semester** | 1 |
| **Co-requisites module** | None | **Semester** | |

## Module Aims, Learning Outcomes and Indicative Contents

Course objectives, learning outcomes and instructional content

| | |
|---|---|
| **Module Aims**<br>Course Objectives | 9. To develop problem solving skills and understanding of circuit theory through the application of techniques.<br>10. To understand capacitance, inductance and resistance from an AC circuit.<br>11. To learn the basic concept of First-Order electrical circuits.<br>12. To explain the parallel and series circuits.<br>13. To understand Sinusoids and Phasors problems.<br>14. To perform AC- network theorem.<br>15. To perform AC Power Analysis.<br>16. To understand 3-phase system. |

| | |
|---|---|
| **Module Learning Outcomes**<br><br>Learning outcomes of the course | 14. Recognize how electricity works in electrical circuits.<br>15. List the various terms associated with electrical circuits.<br>16. Summarize what is meant by a basic electric circuit.<br>17. Describe electrical capacitance, inductance and resistance.<br>18. Define First-Order electrical circuits' voltage, resistance, and current.<br>19. Identify the basic circuit elements and their applications.<br>20. Discuss the operations of sinusoids and phasors in an electric circuit.<br>21. Discuss the various properties of resistors, capacitors, and inductors.<br>22. Explain the parallel and series circuits.<br>23. Identify the capacitor and inductor phasor relationship with respect to voltage and current.<br>24. Learn the 3-Phase system, Wye connection and Delta connection.<br>25. Identify the power in balance phase circuit.<br>26. Describe the Magnetism and Magnetic Circuits |
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following.<br>AC circuits I – Generation of alternating current, Sinusoidal current. The mean values of current and voltage. [15 hrs]<br>AC Circuits II - The effective values of current and voltage. The vector diagram, [10 hrs]<br>The instantaneous power and mean power of A.C , relative and apparent power .<br>. [10 hrs]<br>Revision problem classes [8 hrs]<br>3-Phase system, Wye connection, and Delta connection [10 hrs]<br>The power in balance phase circuit. [7 hrs]<br>Revision problem classes [5 hrs] |

## Learning and Teaching Strategies

Learning and Teaching Strategies

| | |
|---|---|
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students. |

## Student Workload (SWL)

Student Load

| | | | |
|---|---|---|---|
| **Structured SWL (h/sem)** Regular pregnancy of the student during the semester | 79 | **Structured SWL (h/w)** Regular pregnancy for the student weekly | 5 |
| **Unstructured SWL (h/sem)** Regular irrigation of the student during the semester | 71 | **Unstructured SWL (h/w)** [illegible]he student per week | 5 |
| **Total SWL (h/sem)** The pregnancy is the [illegible] | 150 | | |

## Module Evaluation

Course Evaluation

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Formative assessment** | **Quizzes** | 2 | 8% (8) | 5, 10 | LO #1-4, 6-9 |
| | **Project** | 1 | 10% (10) | 12 | LO #1-11 |
| | **OnSite assignment** | 2 | 6% (6) | 4, 11 | LO # 4, 11 |
| | **Report and presentation** | 1 | 6% (6) | 13 | LO # 6, 8, 10 |
| | **Lab** | 5 | 10% (10) | 3, 6, 9, 12, 15 | LO # 1-2, 4-5, 7-8, 10-11, 13-14 |

| | | | | | |
|---|---|---|---|---|---|
| **Summative assessment** | **Midterm Exam** | 1 hr | 10% (10) | 7 | LO #1-7 |
| | **Final Exam** | 4hr | 50% (50) | 15 | All |
| **Total assessment** | | | 100% (100 marks) | | |

## Delivery Plan (Weekly Syllabus)

Theoretical Curriculum

| | **Material Covered** |
|---|---|
| **Week 1** | Generation of alternating current, Sinusoidal current |
| **Week 2** | Average and RMS values of current & voltage |
| **Week 3** | AC in resistive circuits<br>Current & voltage in an inductive circuit |
| **Weeks 4-6** | Current and voltage in an capacitive circuits<br>AC series and parallel circuit<br>RL, RC and RLC circuit analysis & phasor representation |
| **Week 7** | Mid-term exam |
| **Weeks 8-11** | Power in resistive circuits<br>Power in inductive and capacitive circuits<br>Power in circuit with resistance and reactance<br>Measurement of power in a single-phase AC circuit |
| **Week 12-15** | Basic concept & advantage of Three-phase circuit<br>Phasor representation of star & delta connection<br>Measurements of power & power factor in 3-phase system<br>Preparation for final exam |

## Delivery Plan (Weekly Lab. Syllabus)

Seventh Curriculum for the Laboratory

| | **Material Covered** |
|---|---|
| **Week 1** | Introduction to electrical elements, sources, and measuring devices related to electrical circuits. |
| **Week 2 + week3** | Generating AC Voltages and Measurement Frequency, Period, Amplitude, and Peak Value. |
| **Week 4** | Calculations and Verification of the Impedance of RL series circuits |
| **Weeks 5** | Calculations and Verification of the current of RL series circuits |
| **Week 6** | Calculations and Verification of Impedance RC series circuits + Calculations and Verification of Current RC series circuits |
| **Weeks 7** | Mid-term exam |

| | |
|---|---|
| **Week 8** | Calculations and verification of the impedance of RLC series circuits |
| **Week 9** | Calculations and verification of the current of RLC series circuits |

| | |
|---|---|
| **Week 10** | Calculations of Power in AC Circuits |
| **Week 11** | Calculations and verification of the impedance of RL and RC parallel circuits |
| **Week 12** | Calculations and verification of the current of RL and RC parallel circuits |
| **Week 13** | Calculations and verification of the impedance RLC parallel circuits |
| **Week 14** | Calculations and verification of the impedance current RLC parallel circuits |
| **Week 15** | Final exam |

## Learning and Teaching Resources

Learning and Teaching Resources

| | **Text** | **Available in the Library?** |
|---|---|---|
| **Required Texts** | Fundamentals of Electric Circuits, C.K. Alexander and M.N.O Sadiku, McGraw-Hill Education | Yes |
| **Recommended Texts** | Electric Circuits Seventh Edition and Schaum's Outline Series | No |
| **Websites** | | |

## Grading Scheme

Grading chart

| **Group** | **Grade** | Appreciation | **Marks (%)** | **Definition** |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C -** Good | Good | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Deposit (in processing) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

**Course Description Form**

| **Module Information**<br>Course Information | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Medical physics** | | | **Module Delivery** | |
| **Module Type** | **Support** | | | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1202** | | | | |
| **ECTS Credits** | **5** | | | | |
| **SWL (hr/sem)** | **125** | | | | |
| **Module Level** | UG1 | | **Semester of Delivery** | 2 | |
| **Administering Department** | MIET | | **College** | EETC | |
| **Module Leader** | Mayss El-Reem, Nizar Hammed | | **e-mail** | Mayssalreem92@mtu.edu.iq | |
| **Module Leader's Acad. Title** | Assist. lecturer | | **Module Leader's Qualification** | M.Sc. | |
| **Module Tutor** | | | **e-mail** | | |
| **Peer Reviewer Name** | Prof Dr. Jinan Fadhil Mahdi | | **e-mail** | Jinan.f@mtu.edu.iq | |
| **Scientific Committee Approval Date** | 8/11/2023 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>Stuck with other subjects | | | |
|---|---|---|---|
| **Prerequisite module** | none | **Semester** | |
| **Co-requisites module** | none | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>Course objectives, learning outcomes andguidance contents | |
|---|---|
| **Module Aims**<br>Course Objectives | 7- to recognize the influence of forces on the human body Identify how the skeleton works<br>8- to show how pressure affects the body's organs Recognize physical activity of the lungs and breathing<br>9- to demonstrate the physics of the cardiovascular system and the urinary system<br>10- to distinguishes the basic principles using the applications of electricity and magnetism in medicine<br>11- shall be acquainted with respiratory, cardiovascular and cardiovascular equipment<br>12- to distinguishes the basic principles, using the sound waves in medicine and the use of x-rays in the diagnosis and identification of diseases |
| **Module Learning Outcomes**<br>Learning outcomes of the course | Upon completion of the course, students should be able to:<br>1- Understand the difference between the Forces.<br>7- Know the bone has at least six functions. What are the main components of the bone, and to study the methods of Measurement the minerals quantity in the bone<br>8- know methods of diathermy<br>9- understand how Energy change in the body<br>10- know pressures inside the body parts and measure it<br>11- understand how to work the lungs and How the blood and lungs interact 7- know nervous system and the neuron<br>10- know the graphing devices of the body organs<br>11- know the applications of Electricity and Magnetism in Medicine 10- know the application of sound in medicine, know sonar devices 11- know the application of light and laser in medicine<br>12- know Major components of the cardiovascular system<br>13- know physics of nuclear medicine<br>14- know the x- ray device |
| **Indicative Contents**<br>Indicative Contents | 5- Define the Forces , Frictional Forces , Dynamics (5hrs)<br>6- functions of the skeleton and Bone consists of quite different materials and how to measure mineral in the bones (5 hrs)<br>7- Types of thermometers , Heat therapy, Cryogenics (5 hrs)<br>8- Sphygmomanometer, blood pressure, bladder pressure , tonometer(4hrs)<br>5- Function of Lungs & Breathing, breath rate, airways, Dalton's law of partial pressures(3hrs)<br>6- The nervous system and the neuron, Electrocardiogram, Electro retion gram (ERG), The magneto cardiogram (MCG)(4hrs) |

| | |
|---|---|
| | 7- Magnetic signals from the heart –magneto cardiogram(3hrs)<br>8- Macro shock, Micro shock (3hrs)<br>11- General Properties of Sound, Acoustic Impedance, Absorption, A-mode Display, Doppler Ultrasound(5hrs)<br>12- Endoscope, cystoscopes, Emissive IR photography. (5hrs)<br>11- Laser, population inversion, X-ray (6hrs)<br>12- Physics of the cardiovascular system (5 hrs) |

| **Learning and Teaching Strategies**<br>Learning and Teaching Strategies | |
|---|---|
| **Strategies** | Daily assessment - weekly assessment - quarterly assessment - objective questions - general questions - practical tests. |

| **Student Workload (SWL)**<br>Student Load | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 64 | **Structured SWL (h/w)**<br>Regular student load per week | 4 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 61 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 4 |
| **Total SWL (h/sem)**<br>The student 's total academic load during the semester | 125 | | |

**Module Evaluation**

Course Evaluation

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 4, 11 | LO #1-3 and 8-10 |
| | **Online Assignments** | 2 | 6% (6) | 4, 7 | LO #3 & 6 |
| | **Onsite Assignments** | 2 | 4% (4) | 9, 12 | LO #8 & 11 |

| | | | | | |
|---|---|---|---|---|---|
| | **Lab** | 2 | 10% (10) | 8, 13 | LO #1-6 and 7-11 |
| | **Report** | 5 | 10% (10) | 14 | LO # 1,2 and 3,4 and 5-6 and 7.8 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | and 9,10 |
| **Summative assessment** | **Midterm Exam** | 2 free. | 10% (10) | 7 | LO #1-7 |
| | **Final Exam** | 4 free. | 50% (50) | 14 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)** Theoretical Curriculum | |
|---|---|
| | **Material Covered** |
| **Week 1** | Forces on and in the body. |
| **Week 2** | Physics of the skeleton. |
| **Week 3** | Heat & cold in medicine |
| **Week 4** | Energy, work and power of the body, Pressure in body organs |
| **Week 5** | Physics of the lungs and breathing. |
| **Week 6** | Physics of cardiovascular system |
| **Week 7** | **Mid Term Exam** |
| **Week 8** | Physics of urinary system. |
| **Week 9** | Electricity within the body. |
| **Week 10** | Sound in medicine and physics of hearing. |
| **Week 11** | Light in medicine and physics of vision. |
| **Week 12** | Diagnostic X-rays |
| **Week 13** | Physics of nuclear medicine (radioisotopes in medicine). |
| **Week 14** | Physics of radiation therapy+ Radiation protection |
| **Week 15** | **Preparatory week before the final exam** |

| **Delivery Plan (Weekly Lab. Syllabus)** Seventh Curriculum for the Laboratory | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: Introduction to laboratory tools |
| **Week 2** | Lab 2: the simple pendulum |
| **Week 3** | Lab 3: hook's law |
| **Week 4** | Lab 4: the blood pressure |
| **Week 5** | Lab 5: the friction |

| | |
|---|---|
| **Week 6** | Lab 6: the speed of sound |

| | |
|---|---|
| **Week 7** | Lab 7: the laser |
| **Week 8** | Lab 8: viscosity of liquids |
| **Week 9** | Lab 9: The cylindrical body |
| **Week 10** | Lab 10: The convex lens |
| **Week 11** | Lab 11: the concave lens |

| **Learning and Teaching Resources**<br>Learning and Teaching Resources | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Recommended Texts** | Introductory Physics I Elementary Mechanics by Robert G. Brown | NO |
| **Websites** | https://webhome.phy.duke.edu/~rgb/Class/intro_physics_1/intro_physics_1.pdf | |

| **Grading Scheme**<br>Grading chart | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | Appreciation | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A** - Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C** - Good | Good | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| | **FX** – Fail | Deposit (in | (45-49) | More work required but credit |

| | | | | |
|---|---|---|---|---|
| **Fail Group (0 – 49)** | | processing) | | awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

**Course Description Form**

## Module Information

### Course Information

| | | | |
|---|---|---|---|
| **Module Title** | **Mechanics** | **Module Delivery** | |
| **Module Type** | **Support** | | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** |
| **Module Code** | **MIET 1203** | | |
| **ECTS Credits** | **4** | | |
| **SWL (hr/sem)** | **100** | | |
| **Module Level** | UGI | **Semester of Delivery** | 2 |
| **Administering Department** | MIET | **College** | EETC |
| **Module Leader** | Abbas Sheyaa Alwan | **e-mail** | Abbas_sheyaa@mtu.edu.iq |
| **Module Leader's Acad. Title** | Professor | **Module Leader's Qualification** | Ph.D. |
| **Module Tutor** | Name (if available) | **e-mail** | E-mail |
| **Peer Reviewer Name** | Dr. Ghaidaa Abdulrahman Khalid | **e-mail** | ghaidaakhalid@mtu.edu.iq |

| | | | |
|---|---|---|---|
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

## Relation with other Modules

Stuck with other subjects

| | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

## Module Aims, Learning Outcomes and Indicative Contents

Course objectives, learning outcomes and instructional content

| | |
|---|---|
| **Module Aims**<br>Course Objectives | 8. To understand mechanics theory through the application of motion.<br>9. To determine the forces, stress and strain under force effected.<br>10. To determine the reaction forces under load applied.<br>11. To understand the friction basic under mechanic applied<br>12. To understand the newton laws in motion.<br>13. To understand and solve problems in forces analysis.<br>14. To determine the materials properties and selective of materials. |
| **Module Learning Outcomes**<br>Learning outcomes of the course | 14. Identifying the basic of forces results in applications of structures.<br>15. Identify the basics of Equilibrium force system.<br>16. Recognize how phenomena motion in mechanic's subject.<br>17. Summarize what is mean of forces reaction in beams.<br>18. Explain the analysis force in mechanics application.<br>19. Identify the basics of stress and strain in mechanical applications.<br>20. List the various parameters associated with mechanics theory.<br>21. Identify the basics of forces analysis and their applications.<br>22. Explain the Newton's laws used in mechanics application.<br>23. Identify the basics of friction forces in motion.<br>24. Identify the basics of welding and riveted joints in mechanical applications.<br>25. Explain the mechanical test to determine the mechanical properties.<br>26. Discuss the phenomena of moment of forces under different force moment. |
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following.<br><u>Part A :</u><br>5- Introduction of forces, Analysis of Forces, Result of forces, Moment of forces, Equilibrium force system. [5 hrs]<br>6- Stress, Strain, stress – strain curve, Simple strain, Variable stress. [6 Hours]<br>7- Beams and bending, Analysis of structure. [5 hrs]<br>8- Friction, coefficient of friction, mechanism of friction. [5 hrs]<br><u>Part B:</u> |

| | |
|---|---|
| | 5- Materials properties, material selective, stress- strain diagram. [5 hrs]<br>6- Mechanical tensile test, compression test, impact test, hardness test. [5 hrs]<br>7- Mechanical joint, Rivet joint, welding connection. [5 hrs]<br>8- Beams and bending, Analysis of structure, Centroid, Second moment of area. [7 hrs] |

## Learning and Teaching Strategies

Learning and Teaching Strategies

| | |
|---|---|
| **Strategies** | Strategies in mechanical subject like:<br>The main strategy that will be adopted in delivering this module is to encourage students to participate in the exercises, while at the same time refining and expanding their mechanical subject thinking development skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. |

## Student Workload (SWL)

Student Load

| | | | |
|---|---|---|---|
| **Structured SSWL (h/sem)**<br>Regular academic load of the student during the semester | 48 | **Structured SWL (h/w)**<br>Regular student load per week | 3 |
| **Unstructured USWL (h/sem)**<br>Irregular academic load of the student during the semester | 52 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 4 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 100 | | |

## Module Evaluation

Course Evaluation

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 2 | 10% (10) | 3, 12 | LO #1-2 and 10-11 |
| | Online Assignments | 2 | 10% (10) | 5, 9 | LO #3-4 and 6-7 |
| | Onsite Assignments | 2 | 10% (10) | 6, 10 | LO #5-6 & 8-9 |
| | Report | 1 | 10% (10) | 14 | LO #2-10 |
| Summative assessment | Midterm Exam | 1 hr | 10% (10) | 8 | LO #1-7 |
| | Final Exam | 3 hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 marks) | | |

## Delivery Plan (Weekly Syllabus)

Theoretical Curriculum

| | Material Covered |
|---|---|
| Week 1: | • Introduction to Engineering Mechanics<br>• Basic Concepts and Definitions |
| Week 2: | **Introduction to Statics and Vectors (Part 1)**<br>• Course introduction, syllabus, and importance of Statics.<br>• Fundamentals of forces, types of forces.<br>• Scalars and vectors.<br>• Vector addition and subtraction.<br>• Vector components and unit vectors. |
| Week 3: | |
| Week 4: | **Introduction to Statics and Vectors (Part 2)**<br>• Resultant of force systems (graphical method).<br>• Resultant of force systems (analytical method).<br>• Moments of forces (torque).<br>• Conditions for equilibrium.<br>• Free-body diagrams and solving equilibrium problems. |
| Week 5: | |
| Week 6: | **Stress, Strain, and Material Properties (Part 1)**<br>• Stress and types of stress.<br>• Strain and types of strain.<br>• Hooke's Law and material properties.<br>• Stress-strain diagrams.<br>• Thermal stress and strain. |
| Week 7: | |
| Week 8: | **Mid-term Exam** |
| Week 9: | **Stress, Strain, and Material Properties (Part 2)**<br>• Simple strain and deformation.<br>• Stress and strain transformations.<br>• Shear and axial deformation.<br>• Review and applications of stress and strain.<br>• Assignment on stress and strain analysis. |
| Week 10: | |

| | |
|---|---|
| **Week 11:** | **Second Moment of Area and Structural Analysis (Part 1)**<br>• Geometric properties of shapes.<br>• Centroids and center of mass.<br>• Second moment of area (moment of inertia).<br>• Bending stress in beams.<br>• Shear stress in beams. |
| **Week 12:** | |
| **Week 13:** | **Second Moment of Area and Structural Analysis (Part 2)**<br>• Shear and moment diagrams.<br>• Introduction to beams and types of loads.<br>• Determining reactions in statically determinate structures.<br>• Truss analysis.<br>• Frame analysis. |
| **Week 14:** | **Friction**<br>• Friction coefficient<br>• Type of friction<br>• Mechanism of friction.<br>**Stress Concentration, Fatigue, and Special Topics**<br>• Review of special topics.<br>• Comprehensive review of the course material.<br>• Final exam or project presentations.<br>Course evaluation and feedback. |
| **Week 15:** | Preparatory week before the final Exam |

## Learning and Teaching Resources

Learning and Teaching Resources

| | **Text** | **Available in the Library?** |
|---|---|---|
| **Required Texts** | 1- Engineering Mechanic's Statics, 12th Edition by R. C. Nibbler, 1995. | Yes |
| **Recommended Texts** | 2- Engineering Mechanic's Statics, 7th Edition by James, L. Meriam, L. G Kraige, 1995. | No |
| **Websites** | | |

## Grading Scheme

Grading chart

| Group | Grade | Appreciation | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A** - Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C** - Good | Good | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | Deposit (in processing) | (45-49) | More work required but credit awarded |
| | **F** – Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the
automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

Course description form

## Module Information

Course Information

| | | | |
|---|---|---|---|
| **Module Title** | Integral Mathematics | **Module Delivery** | |
| **Module Type** | Support | ☒ **Theory**<br>☐ **Lecture**<br>☐ **Lab**<br>☒ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | MIET1204 | | |
| **ECTS Credits** | 5 | | |
| **SWL (hr/sem)** | 125 | | |
| **Module Level** | UGI | **Semester of Delivery** | 2 |
| **Administering Department** | MEET | **College** | EETC |
| **Module Leader** | Founded Jabbar Majeed | **e-mail** | awss_alogaidi@mtu.edu.iq |

| | | | |
|---|---|---|---|
| **Module Leader's Acad. Title** | Lecturer | **Module Leader's Qualification** | Ph.D. |
| **Module Tutor** | | **e-mail** | |
| **Peer Reviewer Name** | Saleem Lateef Mohammed | **e-mail** | Saleem_lateef_mohammed@mtu.edu.iq |
| **Scientific Committee Approval Date** | 15/11/2023 | **Version Number** | 2.0 |

| **Relation with other Modules**<br>Stuck with other study subjects | | | |
|---|---|---|---|
| **Prerequisite module** | Differential Mathematics | **Semester** | 1 |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>Course objectives, learning outcomes and instructional content | |
|---|---|
| **Module Objectives**<br>Course Objectives | 6. To develop problem solving skills and understanding of Integral calculus through a broad range of Integration techniques.<br>7. To understand theory and methods of integrations and apply it on various types of functions.<br>8. This is the basic subject for all engineering fields<br>9. Demonstrate basic knowledge and understanding of a core of linear algebra and applied mathematics.<br>10. Introduce student to integration of trigonometric functions and their inverses. |
| **Module Learning Outcomes**<br>Learning outcomes of the course | 1. Identify the integration.<br>2. Interpret definite and indefinite integrals.<br>3. Integrate functions resulting in inverse trigonometric functions.<br>8. Integrate functions involving exponential and logarithmic functions.<br>9. Learn approximation techniques for integration.<br>10. Calculate the areas of curved regions by using integration methods.<br>11. Find the volume of a solid of revolution using various integration methods.<br>11. Learn how to find the length of a plane curve for a given function.<br>12. Teaching students how to calculate the inverses of matrices and how to identify them.<br>13. Teaching students how to find the solution of a homogeneous system of linear equations.<br>11. Teaching students how to find the eigenvalues of a matrix and the corresponding eigenvectors of a matrix.<br>12. Determine the diagonalizability of a given matrix. |
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following.<br><br>Introduction to integration. Methods of integration and Basics of Definite and indefinite Integration, Integration of trigonometric and inverse functions. Integration of the exponential functions, Integration of logarithmic functions. Integration of Hyperbolic and inverse hyperbolic functions, numerical integration and applications of the definite integrals. [30 hrs]<br><br>Area of surface, Volume of revolution, Length of plane curve, Matrices and Inverse of matrix, Matrix DiagonalizationSolution of homogeneous systems, Eigenvalues, and Eigenvectors[40 hrs]<br><br>Revision problem classes [3 hrs] |

| Learning and Teaching Strategies<br>SR Learning Outcomes and Teaching | |
|---|---|
| **Strategies** | The major approach used to offer this module will be to promote student engagement in the exercises while also enhancing and broadening their critical thinking abilities. Classes and interactive lessons will be used to achieve this. |

| Student Workload (SWL)<br>The student's pregnancy is calculated for **51** weeks | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular pregnancies of the student during the semester | 78 | **Structured SWL (h/w)**<br>Regular pregnancies of the student weekly | 5 |
| **Unstructured SWL (h/sem)**<br>Regular pregnancies of the student during the semester | 47 | **Unstructured SWL (h/w)**<br>Regular pregnancies per week | 3 |
| **Total SWL (h/sem)**<br>The pregnancy that you have for the student during the semester | 125 | | |

| Module Evaluation<br>Evaluation of the course | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5, 12 | LO #1-4 and 6-12 |
| | **Online Assignments** | 2 | 10% (10) | 3, 13 | LO #1-4 and 6-12 |
| | **Onsite Assignments** | 2 | 10% (10) | 5, 14 | LO #1-5 and 7-11 |
| | **Report** | 1 | 10% (10) | 14 | LO # 1-5 and 8-11 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 7 | LO #1 - #5 |
| | **Final Exam** | 3 hr | 50% (50) | 16 | LO #1- #12 |
| **Total assessment** | | | 100% (100 marks) | | |

| Delivery Plan (Weekly Syllabus)<br>Curriculum A Theoretical Insult | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to integration. |
| **Week 2** | Methods of integration and Basics of Definite and indefinite Integration. |
| **Week 3** | Integration of trigonometric and inverse functions. |
| **Week 4** | Integration of the exponential functions. |
| **Week 5** | Integration of logarithmic functions. |
| **Week 6** | Integration of Hyperbolic and inverse hyperbolic functions. |
| **Week 7** | **Mid-term Exam** + numerical integration and applications of the definite integrals. |
| **Week 8** | Area of surface. |
| **Week 9** | Volume of revolution. |
| **Week 10** | Length of plane curve. |
| **Week 11** | Matrices and Inverse of matrix. |
| **Week 12** | Matrix Diagonalization |
| **Week 13** | Solution of homogeneous systems |
| **Week 14** | Eigenvalues and Eigenvectors |
| **Week 15** | **Preparatory week before the final Exam** |

| Learning and Teaching Resources<br>Learning Resources and Teaching | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | Notes on Calculus II Integral Calculus Miguel A. Lerma | No |
| **Recommended Texts** | Thomas ' Calculus (pdf)<br>Fouteenth edition<br>Based on the original work by GEORGE B. THOMAS, JR. | No |
| **Websites** | https://sites.math.northwestern.edu/~mlerma/courses/math214-2-02f/notes/c2-all.pdf<br>http://dl.konkur.in/post/Book/Paye/Thomas-Calculus-14th-Edition-%5Bkonkur.in%5D.pdf | |

| Grading Scheme<br>Grading chart | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | Appreciation | **Marks %** | **Definition** |

| | | | | |
|---|---|---|---|---|
| **Success Group** | **A -** Excellent | privilege | 90 - 100 | Outstanding Performance |

| | | | | |
|---|---|---|---|---|
| **(50 - 100)** | **B -** Very Good | Good CD | 80 - 89 | Above average with some errors |
| | **C -** Good | Good | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | Deposit (in processing) | (45-49) | More work required but credit awarded |
| | **F –** Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

**Course Description Form**

## Module Information

Course Information

| | | | | |
|---|---|---|---|---|
| **Module Title** | **Engineering Workshops** | | **Module Delivery** | |
| **Module Type** | **Support** | | ☐ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **EETC101** | | | |
| **ECTS Credits** | **5** | | | |
| **-SOL (free/sem)** | **125** | | | |
| **Module Level** | UGI | **Semester of Delivery** | 2 | |
| **Administering Department** | MIET | **College** | EETC | |
| **Module Leader** | Huda Farooq Jamil | **e-mail** | huda_baban@mtu.edu.iq | |
| **Module Leader's Acad. Title** | Assist. lecturer | **Module Leader's Qualification** | M.Sc. | |
| **Module Tutor** | Mayss El-Reem, Nizar Hammed | **e-mail** | Mayssalreem92@mtu.edu.iq | |

| | | | |
|---|---|---|---|
| **Peer Reviewer Name** | Dr. Ghaidaa Abdulrahman Khalid | **e-mail** | ghaidaakhalid@mtu.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| **Relation with other Modules** | | | |
|---|---|---|---|
| Stuck with other subjects | | | |
| **Prerequisite module** | None | **Semester** | None |
| **Co-requisites module** | None | **Semester** | None |

| Module Aims, Learning Outcomes and Indicative Contents<br>Course objectives, learning outcomes and instructional content | |
|---|---|
| **Module Aims**<br>Course Objectives | 10. To explain the lathe workshop: various measuring devices and how to use them. How to operate the lathe and use different tools and cutting tools.<br>11. To explain the welding and gas welding processes and familiarize yourself with the devices and equipment used. Point welding, familiarization with the devices and equipment used, and carrying out a simple exercise.<br>12. To understand the electrical transformers and their types: magnetic circuits; electrical circuits; measuring the wire diameters of the transformer.<br>13. To understand the drawing of a circuit for establishing (the lamp ladder) two roads using a two-way switch—a practical application of the circuit.<br>14. To learn how to use the different measuring devices in the workshop (such as a multimeter, oscilloscope, etc.).<br>15. To learn how to use caustics, soldering irons, and various printed electronic circuits, identify how to install them, and install various electronic components on them.<br>16. To understand different types of coils and methods of checking them. Different types of capacitors differ in terms of the type of insulator used between the capacitor plates and the methods of checking them. The different types of resistors, in terms of the material they are made of and the capacity they can withstand, How to read the values of the resistors in different ways Variable and special resistors: how to check them.<br>17. To understand the different types of switches used in electronic devices and their examination methods. Different types of fuses There are different types of resistors in terms of the material they are made of. Types of semiconductor diodes and transistors and finding the equivalents Semiconductor check, diode check, and transistor check.<br>18. To understand how to read the electronic map and how to track faults on the electronic map How to install and solder electronic components on the printed board Implementation of a simple electronic circuit on the printed board integrated electronic circuits: identify the types of these circuits. |
| **Module Learning Outcomes**<br>Learning outcomes of the course | Upon completion of the course, students should be able to:<br>8. Recognize the methods of work on the lathe.<br>9. Cuts metals with a cutting and punching machine.<br>10. Install some simple structures.<br>11. Providing the student with manual experience and scientific proficiency in it.<br>12. Learn about electronic components.<br>13. Electronic components exchange is used to build and solder simple |

| | |
|---|---|
| | circuits.<br>14. Examine electronic circuits and their components. |

| | |
|---|---|
| | 14. Read the electronic map and learn how to track faults on the electronic map.<br>15. How to install and solder electronic components on the printed board.<br>16. Implementation of a simple electronic circuit on the printed board.<br>17. Removing solder from circuits for the purpose of lifting and replacing.<br>18. How to design electronic circuits on the printed board.<br>19. Methods of soldering integrated circuits. |
| **Indicative Contents**<br>Indicative Contents | Indicative content includes the following:<br>Lathe workshop, measuring devices, different tools, cutting tools, welding, gas welding, and point welding. [7 hrs.].<br>Electrical transformers, magnetic circuit, and electrical circuits. [6 hrs.].<br>Different measuring devices in the workshop (such as an ovometer, oscilloscope, power supply, etc.) [8 hrs].<br>Soldering iron and printed electronic circuits [4 hrs.].<br>Coils, capacitors, and resistors [6 hrs.].<br>Switches and fuses [4 hrs.].<br>Semiconductor diode, and transistor [6 hrs.].<br>Electronic map, faults on the electronic map, and design electronic circuits on the printed board [8 hrs.].<br>Implemented a simple electronic circuit on the printed board [4 hrs.].<br>Integrated electronic circuits [4 hrs.]. |

| **Learning and Teaching Strategies**<br>Learning and Teaching Strategies | |
|---|---|
| **Strategies** | Daily assessment - weekly assessment - quarterly assessment - objective questions - general questions - practical tests. |

| **Student Workload (SWL)**<br>Student Load | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 63 | **Structured SWL (h/w)**<br>Regular student load per week | 4 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the | 62 | **Unstructured SWL (h/w)**<br>Irregular student academic load per week | 4 |

| | | | |
|---|---|---|---|
| semester | | | |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 125 | | |

| Module Evaluation<br>Course Evaluation | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 3, 8 | LO #1-2 and 4-7 |
| | **Projects** | 1 | 5% (5) | 13 | LO #1-12 |
| | **Lab** | 2 | 10% (10) | 7, 14 | LO #1-6 and 8-13 |
| | **Onsite Assignments** | 2 | 10% (10) | 4, 12 | LO # 1-3 and 5-11 |
| | **Report** | 1 | 5% (5) | 11 | LO #1-10 |
| **Summative assessment** | **Midterm Exam** | 2 free. | 10% (10) | 8 | LO #1-7 |
| | **Final Exam** | 3 free. | 50% (50) | 15 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Lab. Syllabus)<br>Seventh Curriculum for the Laboratory | |
|---|---|
| | **Material Covered** |
| **Week 1** | Lab 1: Lathe workshop: various measuring devices and how to use them. How to operate the lathe and use different tools and cutting tools |
| **Week 2** | Lab 2: Welding and gas welding, and familiarization with the devices and equipment used. Point welding, familiarization with the devices and equipment used, and carrying out a simple exercise. |
| **Week 3** | Lab 3: Electrical transformers: their types magnetic circuits; electrical circuits; opening transformers; taking information from the old transformer for primary and secondary coils measuring the wire diameters of the transformer; measuring the plastic coil template rewinding<br>primary and secondary coils. |
| **Week 4** | Lab 4: Drawing a circuit for establishing two roads using a two-way switch is a practical application of the circuit. Identifying electrical collectors-their types, their use, thermal follow-ups, and time position. |
| **Week 5** | Lab 5: Training on making electrical installations (establishing inside tubes). Pipe cutting process: dental work, pipe bending, using drag springs. |
| **Week 6** | Lab 6: How to use the different measuring devices in the workshop (such as a multimeter, oscilloscope, etc.). |

| | |
|---|---|
| **Week 7** | Lab 7: How to use caustics: types of caustics used in the workshop; caustic welding training. |

| | |
|---|---|
| | Types of solder used: auxiliary materials for soldering; soldering some wires with each other and with some components. How to use a soldering iron and a soldering absorbent kit such as a solder sucker or solder remover, training on some electronic components, and lifting them from the printed plate. Various printed electronic circuits, identifying how to install them, and the installation of various electronic components on them.<br>Lab 8- Coil types, methods of checking them, electrical transformers, types, checking, auto-transformer, the difference between an auto-transformer and an ordinary transformer. The different types of capacitors in terms of the type of insulator used between the capacitor plates, the effort that the capacitor bears, and reading the values of the capacitors using the different methods used in coding How to check the amplifiers and how to switch them. Making connections of the capacitors in parallel, series, and mixed on the printed board with the<br>examination. |
| **Week 8** | Midterm- Exam |
| **Week 9** | Lab 9: The different types of switches used in electronic devices and their examination methods, the current that each switch bears, and the use of each type. Types of fuses used in electronic circuits, types and diameters of wires used and diameters of wires used in fuses, the<br>current that each type bears, and how to repair fuses |
| **Week 10** | Lab 10: The different types of resistors, in terms of the material they are made of and the capacity they can withstand, How to read the values of the resistors in different ways Variable and special resistors (VDR-PYC-NTC) how to check them. Make a circuit to connect the resistors in series, make a circuit to connect the resistors in parallel, make a circuit to connect<br>the resistors in series and parallel, and check the circuit. |
| **Week 11** | Lab 11: Types of semiconductor diodes and transistors and finding the equivalents. Semiconductor check, diode check, transistor check |
| **Week 12** | Lab 12: How to read the electronic map and track faults on the electronic map.<br>Introduce the student to how to design electronic circuits on the printed board. |
| **Week 13** | Lab 13: How to install and solder electronic components on the printed board. Implementation of a simple electronic circuit on the printed board. |
| **Week 14** | Lab 14: Integrated electronic circuits: identify the types of these circuits. Cautery for soldering integrated circuits, the correct method of soldering integrated circuits, and removing solder from circuits for the purpose of lifting and replacing. |
| **Week 15** | **Final Exam** |

## Learning and Teaching Resources

Learning and Teaching Resources

| | Text | Available in the Library? |
|---|---|---|
| **Recommended Texts** | 6- Encyclopedia of Electronic Components Volume 1 (Charles Platt).<br>7- Encyclopedia of Electronic Components Volume 2 (Charles Platt).<br>8- Encyclopedia of Electronic Components Volume 3 (Charles Platt).<br>9- Encyclopedia of Electronic Components Volume 4 (Charles Platt).<br>10- Encyclopedia of Electronic Components Volume 5 (Charles Platt). | NO |
| **Websites** | https:// www.electricaltechnology.org/2013/03/how-to-remember-direction-of-pnp-and.html | |

## Grading Scheme

Grading chart

| Group | Grade | Appreciation | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A** - Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | Very good | 80 - 89 | Above average with some errors |
| | **C** - Good | Good | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | Deposit (in processing) | (45-49) | More work required but credit awarded |
| | **F** – Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original
marker(s) will be the automatic rounding outlined above.

**MODULE DESCRIPTION FORM**

Course Description Form

## Module Information

Course Information

| | | | |
|---|---|---|---|
| **Module Title** | **Computer Programming and Applications I** | **Module Delivery** | |
| **Module Type** | **Support** | ☒ **Theory**<br>☐ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **MIET1206** | | |
| **ECTS Credits** | **3** | | |
| **SWL (hr/sem)** | **75** | | |
| **Module Level** | COME | **Semester of Delivery** | 3 |
| **Administering Department** | MIET | **College** | EETC |
| **Module Leader** | Luban Hamdy Hameed | **e-mail** | Luban_alqudsi@mtu.edu.iq |
| **Module Leader's Acad. Title** | Assistant Lecturer | **Module Leader's Qualification** | M.Sc |
| **Module Tutor** | | **e-mail** | |
| **Peer Reviewer Name** | Dr. Aws Alazawi | **e-mail** | aws_basil@mtu.edu.iq |
| **Scientific Committee Approval Date** | 8/11/2023 | **Version Number** | 1.0 |

| Relation with other Modules<br>Stuck with other study subjects | | | |
|---|---|---|---|
| **Prerequisite module** | None | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>Course objectives, learning outcomes and instructional content | |
|---|---|
| **Module Aims**<br>Course Objectives | 1. Understanding the fundamental concepts of MATLAB programming language environment.<br>4. The students will understand and learn how to use MATLAB as an effective programming language.<br>5. The students will be able to solve different mathematical and engineering problems as well as using plotting functions and design projects using codes or GUI.<br>6. Students will acquire the knowledge of basic MATLAB syntax such as: variables, input, output, vectors, matrices, functions, plotting, and GUI,<br>7. The students will gain the necessary skills to design and implements appropriate algorithms that solve problems dealing with different mathematical and engineering applications. |
| **Module Learning Outcomes**<br>Learning outcomes of the course | 13. Understand the MATLAB environments and windows (Command Window, Workspace Window, Command History window, Help Window, Editor Window).<br>14. The students learn how to write first program and learn Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns.<br>15. Explain how to use variables and assignment statement, logical operator.<br>16. Practice on using Arrays, Built in functions, Basic Matrix Functions(sum, max, min, mean, magic, diag, length, size, median, prod, sort).<br>17. Learn how to perform basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits).<br>18. Understand arguments and return values, M-file, input-output statement.<br>19. Train on using control Statements (Conditional statements: If, Else, Else, Else, switch case)<br>20. Identify the repetition statements: (While statement, For statement).<br>21. Learn how to use combination of conditional and repetition statements.<br>22. Understand the procedures and functions (a custom-made MATLAB function, define the name of the function, the input and the output variables, Calling Functions).<br>23. Learn how to handle graphics and user interface.<br>1. pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects.<br>24. Train of GUI Interface (Attaching buttons to actions, Getting Input, Setting Output). |
| **Indicative Contents**<br>Indicative Contents | 1. Window, Workspace Window, Command History window, Help Window, Editor Window. (3 free)<br>4. Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns. (5 free)<br>5. variables and assignment statement, logical operator. (5 free) |

| | |
|---|---|
| | 13. sum, max, min, mean, magic, diag, length, size, median, prod, sort. (2 free)<br>14. Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits. (2 free)<br>15. M-file, input-output statement. (2 free)<br>16. Conditional statements: If, Else, Elseif, switch case. (3 free)<br>17. While statement, For statement. (4 free)<br>18. conditional and repetition statements. (4 free)<br>19. accustom-made MATLAB function. (4 free)<br>20. GUI. (4 free)<br>21. GUI attaching buttons to actions, Getting Input, Setting Output. (4 free) |

## Learning and Teaching Strategies

Learning and Teaching Strategies

| | |
|---|---|
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. Moreover, motivate the creative side by posing various problems to students and urging them to find appropriate solutions.<br>Also forming work teams to assess the results of their work and change their structure periodically to develop the spirit of cooperation and development and motivate students to make intensive efforts to work different roles. |

## Student Workload (SWL)

Student Load

| | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>Regular academic load of the student during the semester | 49 | **Structured SWL (h/w)**<br>Regular student load per week | 3 |
| **Unstructured SWL (h/sem)**<br>Irregular academic load of the student during the semester | 26 | **Unstructured SWL (h/w)**<br>Irregular student load per week | 2 |
| **Total SWL (h/sem)**<br>The student's total academic load during the semester | 75 | | |

## Module Evaluation

Evaluation of the course

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 10 | LO # 2-4 and 8-9 |
| | Online Assignments | 2 | 8% (8) | Continuous | LO #1-12 |
| | Onsite Assignments | 4 | 12% (12) | Continuous | LO #1-12 |
| | Report | 2 | 10% (10) | 6, 12 | LO #4-5 and 9-11 |
| Summative assessment | Midterm Exam | 3 hr | 10% (10) | 7 | LO #1-7 |
| | Final Exam | 4hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 marks) | | |

## Delivery Plan (Weekly Syllabus)

Theoretical Curriculum

| | Material Covered |
|---|---|
| Week 1 | Introduction, MATLAB Environment, MATLAB Windows(Command Window, Workspace Window, Command History window, Help Window, Editor Window). |
| Week 2 | A First Program, Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns. |
| Week 3 | Variables and assignment statement, logical operator. |
| Week 4 | Arrays, Built in functions, Basic Matrix Functions (sum, max, min, mean, magic, diag, length, size, median, prod, sort). |
| Week 5 | Basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits). |
| Week 6 | Arguments and return values, M-file, input-output statement,+ + Control Statements (Conditional statements: If, Else, Elseif, switch case) |
| Week 7 | Mid-Exam |
| Week 8 | Repetition statements: (While statement, For statement) |
| Week 9 | Combination of conditional and repetition statements I |
| Week 10 | Combination of conditional and repetition statements II |

| | |
|---|---|
| **Week 11** | Procedures and Functions (a custom-made MATLAB function, define the name of the function, the input and the output variables, Calling Functions) |

| | |
|---|---|
| **Week 12** | Handle graphics and user interface. 1.pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects |
| **Week 13** | GUI Interface (Attaching buttons to actions, Getting Input, Setting Output) I |
| **Week 14** | GUI Interface (Attaching buttons to actions, Getting Input, Setting Output) II |
| **Week 15** | **Preparatory week before the final exam** |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>Seventh Curriculum of the Laboratory | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction, MATLAB Environment, MATLAB Windows (Command Window, Workspace Window, Command History window, Help Window, Editor Window). |
| **Week 2** | A First Program, Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting, End as a subscript, Colon Operator, Transpose Deleting Rows or Columns. |
| **Week 3** | Variables and assignment statement, logical operator. |
| **Week 4** | Arrays, Built in functions, Basic Matrix Functions (sum, max, min, mean, magic, diag, length, size, median, prod, sort). |
| **Week 5** | Basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits). |
| **Week 6** | Arguments and return values, M-file, input-output statement |
| **Week 7** | Control Statements (Conditional statements: If, Else, Elseif, switch case) |
| **Week 8** | Repetition statements: (While statement, For statement) |
| **Week 9** | Combination of conditional and repetition statements I |
| **Week 10** | Combination of conditional and repetition statements II |
| **Week 11** | Procedures and Functions(a custom-made Matlab function, define the name of the function, the input and the output variables, Calling Functions) |
| **Week 12** | Handle graphics and user interface. 1.Pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects |
| **Week 13** | GUI Interface ( Attaching buttons to actions, Getting Input, Setting Output) I |
| **Week 14** | GUI Interface ( Attaching buttons to actions, Getting Input, Setting Output) II |

## Learning and Teaching Resources

### Learning Resources and Teaching

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | Introduction to MATLAB for Engineers William J. Palm III | yes |
| **Recommended Texts** | INTRODUCTION TO MATLAB FOR ENGINEERING STUDENTS ,David Houcque | |
| **Websites** | | |

## Grading Scheme

### Grading chart

| Group | Grade | Appreciation | Marks (%) | Definition |
|---|---|---|---|---|
| **Success Group (50 - 100)** | **A** - Excellent | privilege | 90 - 100 | Outstanding Performance |
| | **B** - Very Good | Good CD | 80 - 89 | Above average with some errors |
| | **C** - Good | Good | 70 - 79 | Sound work with notable errors |
| | **D** - Satisfactory | medium | 60 - 69 | Fair but with major shortcomings |
| | **E** - Sufficient | Acceptable | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX** – Fail | Deposit (in processing) | (45-49) | More work required but credit awarded |
| | **F** – Fail | Failure | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

## Module Aims, Learning Outcomes and Indicative Contents

## أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|---|---|
| **Module Aims**<br>أهداف المادة الدراسية | أهداف المادة الدراسية هي اني يكون الطالب قادراً على أن :<br>1. يتعرف على أنواع الأخطاء اللغوية المشتركة وتوضيح أسبابها وكيفية تجنبها.<br>2. يتعلم القواعد المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة وكيفية كتابتها بشكل صحيح.<br>3. يتعلم قواعد كتابة الألف الممدودة والمقصورة واستخدام الحروف الشمسية والقمرية بشكل صحيح.<br>4. التعرف على الضاد والظاء ومعرفة كيفية التمييز بينهما في الكتابة.<br>5. يتعلم طرق كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية.<br>6. التعرف على علامات الترقيم واستخدامها بشكل صحيح في النصوص.<br>7. يفهم الفروق بين الاسم والفعل والتمييز بينهما في الجمل.<br>8. يفهم المفاعيل و كيفية استخدامها بشكل صحيح في النصوص.<br>9. يتعلم الأرقام والعدد واستخدامها في التعبير عن الكميات.<br>10. يتجنب الأخطاء اللغوية الشائعة في سياقات عملية لتعزيز فهم القواعد وتحسين المهارات اللغوية.<br>11. يدرس النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل.<br>12. يركز على الجوانب الشكلية للخطاب الإداري وكيفية كتابته بأسلوب صحيح ومناسب.<br>13. التعرف على لغة الخطاب الإداري وفهم استخدامها في التواصل الإداري.<br>14. يفهم نماذج من المراسلات الإدارية لتطبيق المفاهيم والمهارات المكتسبة في الخطاب الإداري. |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | مخرجات التعلم للمادة الدراسية هي:<br>1. قدرة الطلاب على تحليل وتعريف الأخطاء اللغوية المشتركة وتطبيق القواعد الصحيحة لتجنبها.<br>2. القدرة على استخدام القواعد اللغوية المتعلقة بالتاء المربوطة والطويلة والتاء المفتوحة بشكل صحيح.<br>3. قدرة الطلاب على استخدام الألف الممدودة والمقصورة بشكل صحيح واستخدام الحروف الشمسية والقمرية بطريقة صحيحة.<br>4. تمكين الطلاب من التمييز بين الضاد والظاء وتطبيق القواعد الصحيحة في الكتابة.<br>5. القدرة على كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية.<br>6. استخدام علامات الترقيم بشكل صحيح في النصوص المكتوبة.<br>7. فهم الطلاب للفروق بين الاسم والفعل وتمكينهم من استخدامهما بشكل صحيح في الجمل.<br>8. القدرة على استخدام المفاعيل بشكل صحيح في النصوص المكتوبة.<br>9. استخدام الأرقام والعدد بطريقة صحيحة للتعبير عن الكميات.<br>10. التمكن من تطبيق الأخطاء اللغوية الشائعة في سياقات عملية وتصحيحها بشكل مناسب.<br>11. فهم استخدام النون والتنوين ومعاني حروف الجر واستخدامها بشكل صحيح في الجمل.<br>12. القدرة على كتابة الخطاب الإداري بأسلوب صحيح ومناسب وفهم لغة الخطاب الإداري.<br>13. تطبيق المفاهيم والمهارات المكتسبة في كتابة المراسلات الإدارية بشكل صحيح وفعال. |
| **Indicative Contents**<br>المحتويات الإرشادية | المحتويات الإرشادية في مادة اللغة تشمل مجموعة من المفاهيم والمواضيع التي يتم تغطيتها خلال عملية التعلم. ومن بين المحتويات الإرشادية المهمة:<br>1. مقدمة عن الأخطاء اللغوية والتعريف بالتاء المربوطة والتاء المطوّلة والتاء المفتوحة. (3 ساعات)<br>2. قواعد كتابة الألف الممدودة والمقصورة والتعرف على الحروف الشمسية والقمرية. ( 3 ساعات)<br>3. دراسة الضاد والظاء وتعلم طرق كتابتهما بشكل صحيح. ( 3ساعات)<br>4. تعلم كتابة الهمزة بشكل صحيح وفقًا للقواعد اللغوية. ( 3 ساعات)<br>5. دراسة علامات الترقيم وتعلم استخدامها بشكل صحيح في النصوص اللغوية. ( 3 ساعات)<br>6. التعرف على الاسم والفعل والتفريق بينهما وفهم القواعد المتعلقة بهما. ( 3 ساعات)<br>7. دراسة المفاعيل وتعلم استخدامها في الجمل اللغوية. ( 3 ساعات)<br>8. التعرف على الأعداد واستخدامها بشكل صحيح في العبارات والجمل. ( 3 ساعات)<br>9. دراسة الأخطاء اللغوية الشائعة وتطبيقاتها في النصوص اللغوية. ( 3 ساعات) |

| | |
|---|---|
| | 10. تعلم استخدام النون والتنوين وفهم معاني حروف الجر واستخدامها بشكل صحيح في الجمل. ( 2 ساعات)<br>11. التعرف على الجوانب الشكلية للخطاب الإداري وفهم لغته وقواعده. ( 2 ساعات)<br>12. دراسة نماذج من المراسلات الإدارية وتطبيقها في الكتابة. ( 2 ساعات)<br><br>توفر هذه المحتويات الإرشادية للطلاب فهمًا شاملاً للمفاهيم اللغوية وتعلم القواعد والتطبيقات العملية التي تساعدهم في تطوير مهاراتهم اللغوية. |
| **Learning and Teaching Strategies**<br>استراتيجيات التعلم والتعليم | |
| **Strategies** | استراتيجيات التعلم والتعليم المستخدمة في مادة اللغة تشمل مجموعة متنوعة من النهج والتقنيات التي تعزز عملية التعلم للطلاب. من بين هذه الاستراتيجيات:<br><br>1. التفاعل النشط: يتم تشجيع الطلاب على المشاركة والمشاركة الفعالة في الدروس من خلال المناقشات الجماعية والأنشطة التفاعلية.<br>2. التعلم التعاوني: يشجع التعاون والتعاون بين الطلاب من خلال العمل الجماعي والمشاريع الجماعية، حيث يتعاون الطلاب مع بعضهم البعض لتحقيق أهداف التعلم المحددة.<br>3. التطبيق العملي: يتم توفير فرص للطلاب لتطبيق المفاهيم والمهارات المكتسبة في سياقات عملية وواقعية، مما يعزز التفاعل الفعال مع المادة.<br>4. استخدام التقنيات الحديثة: يستفيد الطلاب من استخدام التكنولوجيا في عملية التعلم، مثل استخدام الحواسيب والإنترنت للبحث والتعلم الذاتي.<br>5. توفير ردود فعل فورية: يتم توفير ردود فعل فورية وتقييم مستمر للطلاب، سواء عن طريق التقييمات الشفهية أو الكتابية، مما يساعدهم على تحسين أدائهم وتطوير مهاراتهم.<br>6. التنويع في وسائل التواصل: يتم استخدام مجموعة متنوعة من وسائل التواصل والتعليم، مثل المحاضرات التوضيحية، والمناقشات الجماعية، والأنشطة العملية، والعروض التقديمية، لتلبية احتياجات وأساليب التعلم المختلفة للطلاب.<br>7. باستخدام هذه الاستراتيجيات، يتم تعزيز التفاعل والتعلم الفعال للطلاب، و<br>8. تحفيزهم على المشاركة واكتساب المعرفة والمهارات بشكل شامل وشيق. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 33 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 2 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 17 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 1 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | 50 | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
| Formative assessment | Quizzes | 2 | 10% (10) | 3, 6 | LO # 1-3 and 4-6 |
| | Onsite Assignments | 5 | 10% (10) | 4, 5 | LO # 8-9 and10-11 |
| | Report | 1 | 10% (10) | 13 | LO # 1-13 |
| | Seminar | 2 | 10% (10) | 10 , 11 | LO # 12 &13 |
| Summative assessment | Midterm Exam | 2 hours | 10% (10) | 7 | LO # 1-7 |
| | Final Exam | 3 hours | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus)<br>المنهاج الاسبوعي النظري | | |
|---|---|---|
| 1-8 | مقدمة عن الأخطاء اللغوية –التاء المربوطة والطويلة والتاء المفتوحة | الأسبوع الأول |
| 9-14 | قواعد كتابة الالف الممدودة والمقصورة – الحروف الشمسية والقمرية | الأسبوع الثـــاني |
| 15-19 | الضاد والظاء | الاسبوع الثـــالث |
| 20-30 | كتابة الهمزة | الأسبوع الـــرابـع |
| 31-36 | علامات الترقيم | الأسبوع الخـــامس |
| 37-44 | الاسم والفعل والتفريق بينهما | الأسبوع الســـادس |
| 45-50 | المفاعيل + العـــدد | الأسبوع الســـابع |
| 51-61 | امتحان منتصف الفصل الدراسي | الأسبوع الثـــامن |
| 62-69 | تطبيقات الأخطاء اللغوية الشائعة | الأسبوع التاسع والعاشر |
| 70-75 | النون والتنوين ـ معاني حروف الجر | الاسبوع الحادي عشر |
| 76-80 | الجوانب الشكلية للخطاب الإداري | الاسبوع الثاني عشر |
| 81-86 | لغة الخطاب الإداري +نماذج من المراسلات الإدارية | الأسبوع الثالث عشر والرابـــع عشر |
| | الاستعداد للأمتحان النهائي | الأسبوع الخامس عشر |

| Learning and Teaching Resources<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | Text | Available in the Library? |

| | | |
|---|---|---|
| **Required Texts** | -اخطاء لغوية شائعة ،تأليف: خالد بن هلال بن ناصر العنبري ،مكتبة :الجيل الواعد الطبعة الاولى.<br>٢-قواعد الاملاء وعلامات الترقيم ، تأليف : عبد السلام هارون، تحقيق :نبيل عبد السلام هارون، دار الكتب العلمية ،الطبعة الاولى ،٢٠٠٥. | Yes |
| **Recommended Texts** | أقسام الكلام العربي من حيث الشكل والوظيفة، تأليف: الدكتور فاضل مصطفى الساق ، تقديم الاستاذ الدكتور: تمام حسان ،مكتبة الخانجي – القاهرة، طبعة ١٩٧٧م. | No |
| **Websites** | The Collage E-Library | |

| **Grading Scheme**<br>مخطط الدرجات | | | | |
|---|---|---|---|---|
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group (50 - 100)** | **A -** Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | **B -** Very Good | جيد جدا | 80 - 89 | Above average with some errors |
| | **C -** Good | جيد | 70 - 79 | Sound work with notable errors |
| | **D -** Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| | **E -** Sufficient | مقبول | 50 - 59 | Work meets minimum criteria |
| **Fail Group (0 – 49)** | **FX –** Fail | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F –** Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

# Second stage

**Course Description Form**

**Course Description**

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the

student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 320. Educational institution |
| Medical Devices Technology Engineering | 321. Scientific Department / Center |
| Medical Devices MIE208/ | 322. Material Name/Code |
| Weekly (Practical + Theoretical) | 323. Available Attendance Forms |
| 2023/2024 | 324. Semester / Year |
| 150 60Theoretical +90 Practical) | 325. Number of Credit Hours (Total) |
| 11/1/2024 | 326. The history of preparation of this description |
| 327. Course Objectives | |
| **1- Studying the medical device as a purely electronic device** | |
| **2- Studying the device as a medical device and its difference from electronic** | |
| **3- Training on all electronic circuits in medical devices and methods of operation and maintenance** | |
| **4- Qualifying the student for the maintenance of medical devices in general** | |
| | |
| | |

328. Course Outcomes and Methods of Teaching, Learning and Assessment

| |
|---|
| A- Knowledge Objectives<br>A1- Understands the basic componentsof the medical body<br>A2- Studying laboratory equipment and their types<br>A3- Learns the usefulness of each laboratory<br>A4- Studying sterilization devices<br>A5- Studying the devices of ancient and modern medicalparts<br>A6- Studying radiology and physiotherapy devices<br>A7- Studying the incubatorof infants and for the benefit of it<br>A8Learns to open and maintain the medical devicein the event ofa gift |
| B - Course skills objectives<br>B1 – Explains the cause of medical device malfunctions<br>B2 – The computer is used to store the specifications of themedical device<br>B3 - The computer is used as a means of recording the resonance of pathological cases taken from the medical devicewith data on natural cases that are preserved In the computer<br>B4- Diagnoses the results of themedical device |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student should listen attentively to the professor's explanation<br>C2- The student should feel what the victims of racial discrimination suffer<br>C3- The student should recognize the impactof science and scientists in life<br>C4- The student should describe theimportance of learning about medical devices |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1-The office of the scientific material<br>2- The student's ability to scientific research<br>3- The student's ability to participate in extracurricular activities |

| 329. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Introduction to medical instruments | The student understands the lesson | 2N+3P | First |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Electronic balance | The student understands the lesson | 4N+6P | II +III |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Thermal instruments | The student understands the lesson | 4N+6P | IV + V |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Water baths | The student understands the lesson | 2N+3P | Sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Ovens | The student understands the lesson | 4N+6P | VII + VIII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Autoclave | The student understands the lesson | 4N+6P | Ninth + tenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | (.Incubators (lab | The student understands the lesson | 4N+6P | Eleventh + Twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Water distiller | The student understands the lesson | 4N+6P | Thirteenth +Fourteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Cautery | The student understands the lesson | 4N+6P | Fifteenth +Sixteenth |
| Weekly exams and pre- and | Theoretical and practical lectures | Other thermal instruments | The student understands the lesson | 4N+4P | Seventeenth + Eighteenth |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Centrifuge | The student understands the lesson | 4N+6P | Nineteenth+Twentieth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Microscopes(light dark field, flourcents, polarized, electro) | The student understands the lesson | 6N+9P | Twenty-one + Twenty-second + Twenty-third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | X-ray equipment's | The student understands the lesson | 4N+6P | Twenty-fourth + twenty-fifth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Rehabilitation equipment | The student understands the lesson | 4N+6P | Twenty-sixth + twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Medical gases system | The student understands the lesson | 4N+6P | Twenty-ninth + twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Infant incubators | The student understands the lesson | 2N+3P | Xxx |

330. Infrastructure

| | |
|---|---|
| Biomedical Engineering Handbook _2000 J.D.Bronzino | 55- Required textbooks |
| Medical Instrumentation Application and Design | 56- Main references (sources) |
| | نن) Recommended books and references (scientific journals, reports, .....) |
| www.bme.ncku.edu.com | ٥٥) Electronic references, websites, ..... |

331. Course Development Plan

9- Using the latest books and curricula on the Internet
10- Using the Internet in research and reports
11- Using virtual laboratories in most international universities
12- Simulation of available devices

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 332. Educational institution |
| Medical Devices Technology Engineering | 333. Scientific Department / Center |
| Baath Party Crimes / MIE201 | 334. Material Name/Code |
| Weekly (theoretical) | 335. Available Attendance Forms |
| 2024/2023 | 336. Semester / Year |
| 1 hour per week | 337. Number of Credit Hours (Total) |
| 11/1/2202 | 338. The history of preparation of this description |

339. Course Objectives

**1- Focusing on the crimes of the Baath Party committed against the various sects of the Iraqi people and highlighting the most important crimes and explicit violations of international criminal and national law and how to try them in accordance with the rulings of the Iraqi Criminal Tribunal for the year 2005**

**129. Course Outcomes and Methods of Teaching and Evaluation**

**A- Cognitive Objectives:**

**1- Teaching the most prominent crimes and violations of the Baath Party**

**2- As for the behavioral aspect, the lectures should aim to focus on not violating human rights**

**3- Behavioral patterns to long-term work and continuous activities in order to defend them and in fact strengthen efforts to solve the problems of these violations**

**4- Focusing on the most important legal texts violated by the Baath Party.**

340. Course Outcomes and Methods of Teaching, Learning and Assessment

**129. Course Outcomes and Methods of Teaching and Evaluation**

**A- Cognitive Objectives:**

**1- Teaching the most prominent crimes and violations of the Baath Party**

**2- As for the behavioral aspect, the lectures should aim to focus on not violating human rights**

**3- Behavioral patterns to long-term work and continuous activities in order to defend them and in fact strengthen efforts to solve the problems of these violations**

**4- Focusing on the most important legal texts violated by the Baath Party.**

B - Course skills objectives

B1 – Fair distribution of scientific skills

B2 – Encouraging the necessity of accepting all communities

B3 – Receptive to other schools of thought

B4 – The need to respect national law, international law and human rights principles

Teaching and learning methods

Theoretical and electronic lectures, dialogue between teacher and student, dialogue between students themselves

Evaluation methods

Practical Semester Exams , Monthly Electronic Exams , Daily Assignments , Daily Assessment , Quick Questions

C- Emotional and value goals

C1- Raising the level of students linguistically and translatively

C2- Encouraging students to dialogue and break the confusion among themselves

Teaching and learning methods

Theoretical and electronic lectures, dialogue between teacher and student, dialogue between students themselves

| |
|---|
| Evaluation methods |
| Practical Semester Exams , Electronic Monthly Exams , Daily Assignments , Daily Assessment , Quick Questions |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Speaking skill<br>D2- Writing skill<br>D3- The skill of dealing with situations on a personal level<br>D4- Encouraging students to deliver properly |

| 341. Course Development Plan |
|---|
| 7- Work on developing the student's skills in listening, speaking and reading using the Internet and access to the latest sources and information<br>8- Work on the renewal and diversification of sources |

## Course Description Form

# Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 342. Educational institution |
| Medical Devices Technology Engineering | 343. Scientific Department / Center |
| Anatomy and Physiology/ MIE204 | 344. Material Name/Code |
| Weekly (Practical + Theoretical) | 345. Available Attendance Forms |
| 2120/2202 | 346. Semester / Year |
| 120 hours (60 theoretical + 60 practical) | 347. Number of Credit Hours (Total) |
| 11/1/2202 | 348. The history of preparation of this description |
| 349. Course Objectives | |
| **1- Preparing the student to study and understand medical devices by clarifying the physiological changes, especially the electrical ones, which take place when the different organs of the body perform their function and their relationship tothe devices thatwork to measure and diagnose various phenomena and diseases.** | |
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| 350. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- Determines the anatomical structure of the human being<br>A2- Determines the relationship between the structures of the human body<br>A3- Understands the physiology of the human body<br>A4- Understands electrical phenomena in cells and tissues<br>A5- Understands the functions of organs and organsin the human body |
| B - Course skills objectives<br>B1 – Uses the technology of the medical device and the principle of its work in medical analyzes<br>B2 – Measures some of the elements involved in the composition of the human body<br>B3 – Able to analyze and measure blood components<br>B4 – Analysis and measurement of electrical phenomena in the human body |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student should listen to the explanation of the<br>C2- The student should recognize the effect of physiology and windin life<br>C3- The student should describe the importance of analyzing the chemicals in human body fluids<br>C4- The student should take care of the calm andorder of the class |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- The student's ability to scientific research<br>2- The student's ability to participate in extracurricular activities<br>3- Library and via the Internet outside the scientific field |

| 351. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Cells & Tissues | The student understands the lesson | 4N+4P | First + Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The integumentary system | The student understands the lesson | 2N+2P | Third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The skeletal system | The student understands the lesson | 2N+2P | Fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Articulations | The student understands the lesson | 4N+4P | V+VI |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The muscular system | The student understands the lesson | 2N+2P | Seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Nervous tissue | The student understands the lesson | 2N+2P | Eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Central nervous system | The student understands the lesson | 2N+2P | Ninth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Autonomic nervous system | The student understands the lesson | 2N+2P | X |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Sensory , motor and integrative functions | The student understands the lesson | 4N+4P | Eleventh + Twelfth |
| Weekly exams and pre- and | Theoretical and practical lectures | The endocrine system | The student understands the lesson | 2N+2P | Thirteenth |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The cardiovascular system : Blood | The student understands the lesson | 4N+4P | Fourteenth +Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The cardiovascular system : the heart | The student understands the lesson | 4N+4P | XVI + XVII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The cardiovascular system : Blood vessels | The student understands the lesson | 4N+4P | XVIII + XIX |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The lymphatic system and immunity | The student understands the lesson | 4N+4P | Twenty + twenty one |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The respiratory system | The student understands the lesson | 4N+4P | Twenty-second + Twenty-third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The digestive system | The student understands the lesson | 4N+4P | Twenty-fourth + twenty-fifth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Metabolism | The student understands the lesson | 4N+4g | Twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The urinary system | The student understands the lesson | 2N+2P | Twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Fluid , electrolyte and Acid – Base balance | The student understands the lesson | 2N+2P | Twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The reproductive system | The student understands the lesson | 4N+4P | Twenty-ninth + thirty-ninth |

## 352. Infrastructure

| | |
|---|---|
| 1 - Lectures summarized for the theoretical and practical<br>2-Frederic H Martini, Edwin F Bartholomew, William C. Ober, Claire W. Garrison, Kathleen Welch, & Ralf T Hutchings (2007), Essentials of Anatomy and Physiology, 14th edn, Pearson Education, San Francesco, USA. | 57- Required textbooks |
| -Interactive physiology, Copyright © 2005 Pearson Education, Inc. publishing as Benjamin | 58- Main references (sources) |
| Human Anatomy text book Human Physiology text book | وو) Recommended books and references (scientific journals, reports, .....) |
| Human Physiology Study Guide 1-<br>2-Human Anatomy & Physiology: Help and review | يي) Electronic references, websites, ..... |

| 353. Course Development Plan |
|---|
| 3- Adding an introductory introduction to theanatomical and physiological concepts so that the student can understand the subsequent topics<br>4- - Providing some dollsto illustrate the human body .<br>3- Updating practical experimentsto understand thephysiological phenomena in the human body. |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 354. Educational institution |
| Medical Devices Technology Engineering | 355. Scientific Department / Center |
| Calculator Applications/ MIE209 | 356. Material Name/Code |
| Weekly (Practical + Theoretical) | 357. Available Attendance Forms |
| 1202/2202 | 358. Semester / Year |
| 90 hours (30 theoretical + 60 practical) | 359. Number of Credit Hours (Total) |
| 11/1/2024 | 360. The history of preparation of this description |
| 361. Course Objectives | |
| **1- Identify the work environment of the program andthe different components of the screen** | |
| **2- Know the interface of theprogram** | |
| **3- Identify the typesof software instructions** | |
| **4- Programming and design anda program controller** | |
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| | |

| 362. Course Outcomes and Methods of Teaching, Learning and Assessment |
| --- |
| A- Knowledge Objectives<br>A1- Knowledge of the program<br>A2- Understand the importance of theprogram<br>A3- Know and understand the practical applications of the program<br>A4- Knowledge and understanding of the interlock of the program with other software applications<br>A5- Knowledge and understandingof the control of the various tools of thedevice program<br>A6- Knowing and understanding the preparation of the presentation |
| B - Course skills objectives<br>B1 – User interface design<br>B2 – The student uses programs to program the visual basic<br>B3 – The student acquires programming skills in VB<br>B4- The student writes the results obtained by the laboratory |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The studentlistens to the explanation attentively<br>C2- The student learns about the impactof science and scientists in life<br>C3- The student should describe theimportance of learning to program the visual basic<br>C4- The student should take care of the calm and the class system |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |

**d. General andrehabilitative skills transferred (other skills related to employability and personal development).**

D1- Sports activities

D2- Art Activities

D3- Literary activities

| 363. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | The concept of networking Networks and their types, The concept of the Internet Internet Run | The student understands the lesson | 1N+2P | First |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Describe the main screen and its components, how to connect to theglobal network (Web) | The student understands the lesson | 1N+2P | Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Take advantage of search engines Popular sites such as Yahoo and Google learn ways to search for andaccess information. | The student understands the lesson | 1N+2P | Third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Algorithms and flowcharts and their importance in programming. | The student understands the lesson | 3N+6A | Fourth + Fifth + Sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Introduction to the Visual Basic language and the program environment. What is the VB language , it is a VB application,to know the program screen and its components, steps to create and apply (introduction to the user environment) the properties of control keys, adding codefor the source of Code).) | The student understands the lesson | 1N+2P | Seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Sports expressions ,* (Expressions in VB) /,<,>..... ,etc. VB functions. ABS, ASC, Chr, COs Date, Rnd, Sin, .....etc . | The student understands the lesson | 3N+6A | Eighth + Ninth + Tenth |
| Weekly exams and pre- and | Theoretical and practical lectures | It is an IF andits different uses and states. | The student understands the lesson | 1N+2P | X |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | if/ then , if then/end if , if/then/else/end if , Select case , Go. | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Looping looping loops Do while, Do until , Do/loop while , Do/loop until , for/next. | The student understands the lesson | 1N+2P | Eleventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Learn about the different tools Tool box A. From Message Box , Command Buttons , Label Bones , Text Boxes . B, you know, I don' Check Boxes , Option Buttons , Control Arrays , Frames , List Boxes , Combo Boxes . C. Scroll bars , Lone , Shape , Picture , Image , Drive List Box , Directory/file ) list Box . Dr. Ed. Common dialog Box. , | The student understands the lesson | 4N+8P | Twelfth + Thirteenth + Fourteenth +Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Create a standalone VB application. Creating a stand – Alone VB Application. | The student understands the lesson | 1N+2P | Sixteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Add command lists to the VB application. Adding Menus to an application Learn about using the editor Menu editor . | The student understands the lesson | 1N+2P | Seventeenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Create operational VB applications Creating VB executable file Design icons.Use &VB Package Deployment Wizard. | The student understands the lesson | 1N+2P | Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Error control in the designed software. Error Handling Dealing with text files (Text file) Open/close file Read from file Vrite to file Print. | The student understands the lesson | 2N+4P | Nineteenth+Twentieth |

| | | | | | |
|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | VB drawing techniques using Paste, Current X, Current Y, Line, Circle, CLS. Tomake VB print with Colors with colors Mouse down, mouse up, mouse move, drag performance drop , drag over . . Timer Timer Characteristics of time Movement Techniques Random numbers and an introduction to game design | The student understands the lesson | 3N+6A | Twenty-one + Twenty-second + Twenty-third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Audio files and multimedia Sounds & Multimedia recognition Use some keys Advanced . Keys) Mashed edit control chart controls Rich text Box Slider Tabbed Dialog Multiple Forms | The student understands the lesson | 3N+6A | Twenty-fourth + twenty-fifth + twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Various examples and application programs. | The student understands the lesson | 4N+8P | Twenty-seventh + Twenty-eighth + Twenty-ninth + Thirty |

364. Infrastructure

| | |
|---|---|
| Learn Visual Basic 6.0 1-<br>2. Visual Basic Programming | 59- Required textbooks |
| Visual Basic step by step | 60- Main references (sources) |
| | أأأ) Recommended books and references (scientific journals, reports, .....) |
| | ببب) Electronic references, websites, ..... |

| 365. Course Development Plan |
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| |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
| --- | --- |
| Al, Hadi University College | 366. Educational institution |
| Medical Devices Technology Engineering | 367. Scientific Department / Center |
| Digital Technologies / MIE202 | 368. Material Name/Code |
| Weekly (Practical + Theoretical) | 369. Available Attendance Forms |
| 2024/2023 | 370. Semester / Year |

| | |
|---|---|
| 120 hours (60 hours theoretical + 60 hours practical) | 371. Number of Credit Hours (Total) |
| 11/1/2024 | 372. The history of preparation of this description |
| 373. Course Objectives | |
| **1- Teaching the demand to identify digital electronic circuits andhow to distinguish between them** | |
| **2- Teaching the student to design digital electronic circuits** | |
| **3- Identification of digital electroniccircuits** | |
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| 374. Course Outcomes and Methods of Teaching, Learning and Assessment |
| A- Knowledge Objectives<br>A1- The student enumerates thetypes of digital integrated circuits<br>A2- The student distinguishes the difference between digital integrated circuits<br>A3- The student learns about the types of programmable electronicdigital circuits |
| B - Course skills objectives<br>B1 – The student uses digital electronic circuits<br>B2 – The student writes the results obtained by the laboratory<br>B3 – The student acquires programming skills |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |

| |
|---|
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student listens to the explanation attentively<br>C2- The student gets to know the impactof science and scientists in life<br>C3- The student should describe theimportance of learning whatthe advanced digital e-mail is<br>C4- The student should take care of the calm and the class system |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Active Sports<br>D2-Artistic activities<br>D3- Literary activities<br>D4- |

| 375. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Number system : Binary numbers , Octal numbers , Hexadecimal numbers | The student understands the lesson | 4N+4P | First + Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Binary codes | The student understands the lesson | 4N+4P | III + IV |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Logic gates | The student understands the lesson | 4N+4P | V+VI |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | De Margan's theorems | The student understands the lesson | 4N+4P | VII + VIII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Laws and theorem of Boolean algebra | The student understands the lesson | 4N+4P | Ninth + tenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Arithmetic circuit | The student understands the lesson | 4N+4P | Eleventh + Twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Simplifying logic circuits : fundamentals products , sum of products , algebraic simplification | The student understands the lesson | 6N+6P | Thirteenth +Fourteen+Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Truth table to Karnaugh map | The student understands the lesson | 6N+6P | Sixteenth + Seventeenth + Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Truth table to Karnaugh map | The student understands the lesson | 6N+6P | Nineteenth + Twenty + Twenty-first |
| Weekly exams and pre- and | Theoretical and practical lectures | Counters | The student understands the lesson | 6N+6P | Twenty-second + Twenty-third |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | + Twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Special counters and shift registers | The student understands the lesson | 4N+4P | Twenty-fifth + twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Special counters and shift registers | The student understands the lesson | 4N+4P | Twenty-seventh + twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Analogue to digital conversion | The student understands the lesson | 4N+4P | Twenty-ninth + thirty-ninth |

| 376. Infrastructure | |
|---|---|
| Digital | 61- Required textbooks |
| | 62- Main references (sources) |
| | تتت) Recommended books and references (scientific journals, reports, .....) |
| | ثثث) Electronic references, websites, ..... |

| 377. Course Development Plan |
|---|
| |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 378. Educational institution |
| Medical Devices Technology Engineering | 379. Scientific Department / Center |
| MIE203/ Mathematics | 380. Material Name/Code |
| Weekly (theoretical) | 381. Available Attendance Forms |
| 2024/2023 | 382. Semester / Year |
| 90 hours | 383. Number of Credit Hours (Total) |

| | |
|---|---|
| 11/1/2024 | 384. The history of preparation of this description |
| 385. Course Objectives | |
| **1- Helping the student to understand the laws andmathematical issues necessary for the purpose of solving simple and sterile electrical circuits** | |
| **2- Upgrading the student's level in mathematics** | |
| **3- Developing sound thinking methods and unleashing the student's potential and applying them in the engineering field** | |
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| 386. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- The student should mention, for example, (the text of the vector - the definition of the vector.....)<br>A2- The student distinguishes between point and non-directional multiplication<br>A3- The student should use more than one method to solve differentiated equations<br>A4- The student should know the typesof coordinates<br>A5- The student should understand how to find recurring integration<br>A6- The student should judge the validity of the conclusionshe reaches. |
| B - Course skills objectives<br>B1 Solving some mathematical problems and solvingatypical questions that require multiple tasks<br>B2- Accuracy and clarity andachievement in the expression<br>B3 – Ability to consistently think logically<br>B4- Formulating a life problem, formulating sports andusing methods to solve it |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student should listen attentively to the professor's explanation<br>C2- The student should take care of the calm and orderlinessof the class<br>C3- The student should recognize the impactof science and scientists in life<br>C4- The student should describe theimportance of learning mathematics, for example |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- The graduate acquires foundational skills for whatis this mathematics in terms of language,symbols, information and methods of thinking |

D2- Developing mental skills that enable the graduate to benefit from the information he learns and the skills he has acquired andemployed in the service of his requirements and in his service to the goals of society in terms of social and economic development

D3-Acquiring some practical skillssuch as the useof engineering tools and measurement skills and the operation of some devices and machines

D4- Developing methods of thinking and unleashing potential

| 387. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical lecture | Vector analysis | The student understands the lesson | 3 | First |
| Weekly exams and pre- and post-questions | Theoretical lecture | Vector field | The student understands the lesson | 3 | Second |
| Weekly exams and pre- and post-questions | Theoretical lecture | Linear algebra | The student understands the lesson | 3 | Third |
| Weekly exams and pre- and post-questions | Theoretical lecture | Vector calculs | The student understands the lesson | 3 | Fourth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Scalars and vector unit | The student understands the lesson | 3 | V |
| Weekly exams and pre- and post-questions | Theoretical lecture | Orthogonal vector | The student understands the lesson | 3 | Sixth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Dot product | The student understands the lesson | 3 | Seventh |
| Weekly exams and pre- and post-questions | Theoretical lecture | cross product | The student understands the lesson | 3 | Eighth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Theory for vector field | The student understands the lesson | 3 | Ninth |
| Weekly exams and pre- and | Theoretical lecture | Vector variable function | The student understands the lesson | 3 | X |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical lecture | Polar coordinates –gradient in polar | The student understands the lesson | 3 | Eleventh |
| Weekly exams and pre- and post-questions | Theoretical lecture | Spherical coordinates | The student understands the lesson | 3 | Twelfth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Complex number | The student understands the lesson | 3 | Thirteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Polar form of complex number | The student understands the lesson | 3 | Fourteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Algebra for complex number | The student understands the lesson | 3 | Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Algebra for Spherical coordinates | The student understands the lesson | 3 | Sixteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Infinite series | The student understands the lesson | 3 | Seventeenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Power series | The student understands the lesson | 3 | Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Convergence and divergence series | The student understands the lesson | 3 | Nineteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Number and Complex series | The student understands the lesson | 3 | 20th |

| | | | | | |
|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical lecture | Complex variable | The student understands the lesson | 3 | Twenty one |
| Weekly exams and pre- and post-questions | Theoretical lecture | Cauchy –Riemann equations | The student understands the lesson | 3 | Twenty-second |
| Weekly exams and pre- and post-questions | Theoretical lecture | Differential equation | The student understands the lesson | 3 | Twenty-third |
| Weekly exams and pre- and post-questions | Theoretical lecture | Differential equation of the first order | The student understands the lesson | 3 | Twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Differential equation of n order | The student understands the lesson | 3 | Twenty-fifth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Application | The student understands the lesson | 3 | Twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Multiple integrations | The student understands the lesson | 3 | Twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical lecture | Surface area | The student understands the lesson | 3 | Twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Green theorem | The student understands the lesson | 3 | Twenty-ninth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Stokes theorem | The student understands the lesson | 3 | Xxx |

## 388. Infrastructure

| | |
|---|---|
| Calculus II | 63- Required textbooks |
| Books – Internet | 64- Main references (sources) |
| Calculus Thomas -13th edition<br>Schaum,s mathematic book Practice problem calculus II Topic s in a calculus II-wolfram mathworld | ج٦٦) Recommended books and references (scientific journals, reports, .....) |
| https://tutorial.math.lamar.edu/classes/calcii/PowerSeries.aspx<br><br>https://math24.net/linear-differential-equations-first-order.html | ج٦٦) Electronic references, websites, ..... |

| 389. Course Development Plan |
|---|
| 1- Updating books and sources<br>2- Using the Internet and websites in research and increasing the scientific knowledge of the student<br>3- Adding transfers to LablaS to benefit from it in engineering lessons<br>4- The useof programming language in sports for its application |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 390. Educational institution |
| Medical Devices Technology Engineering | 391. Scientific Department / Center |
| Medical Measurements & Adapters / MIE207 | 392. Material Name/Code |
| Weekly (Practical + Theoretical) | 393. Available Attendance Forms |
| 2024/2023 | 394. Semester / Year |
| 150 hours (60 theoretical +90 practical) | 395. Number of Credit Hours (Total) |
| 11/1/2024 | 396. The history of preparation of this description |
| 397. Course Objectives | |
| **1- Knowing the basic components of measuring devices, methods of using devices in measurements, identifying the factors affecting reading accuracy, how to choose the appropriate device for testing, and identifying the calibration of measuring devices** | |

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| 398. Course Outcomes and Methods of Teaching, Learning and Assessment |
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| A- Knowledge Objectives<br>A1- Determines the skillsto deal with the student's measurement devices<br>A2- Compare the types of measuring devices.<br>A3- Learns the basic componentsof the measuring apparatus<br>A4- Understand the principle of determining the accuracy of the measurementdevice and the causes of errors in it |
| B - Course skills objectives<br>B1 – Fluent in the use of measuring device<br>B2 – Diagnosis of reading errorsin themeasurement equipment and analyzetheir causes<br>B3. The device shall be specified to be used.<br>B4- Obtains the accuracy required for the measurement |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student listens attentively to the professor's explanation<br>C2- The student should feel what the victims of racial discrimination suffer<br>C3- The student should recognize the impactof science and scientists in life<br>C4- The student should describe theimportance of measuring devices.<br>C5- The student should understand the risk of errorsresulting from the lack of accuracy of measurement |
| Teaching and learning methods |

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| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Office skills outside the scientific subject<br>2- The student's ability to scientific research<br>3- The student's ability to participate in extracurricular activities |

| 399. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Measurement and errors | The student understands the lesson | 2N+3P | First |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | System of units of measurements | The student understands the lesson | 2N+3P | Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Standard of measurement | The student understands the lesson | 2N+3P | Third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Measurement device and system | The student understands the lesson | 4N+6P | IV + V |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | D.C indicating instrument | The student understands the lesson | 4N+6P | VI + VII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | A.C indicating instrument | The student understands the lesson | 4N+6P | VIII+IX |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Power transducers | The student understands the lesson | 2N+3P | X |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Measurements of R, L and C | The student understands the lesson | 4N+6P | Eleventh + Twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Descriptive lectures | The student understands the lesson | 4N+6P | Thirteenth + Fourteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Review of fundamentals of electrical measurements | The student understands the lesson | 4N+6P | Fifteenth + Sixteenth |

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| Weekly exams and pre- and post-questions | Theoretical and practical lectures | General theory of PMMC instrument | The student understands the lesson | 4N+6P | Seventeenth + Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Various instrument | The student understands the lesson | 4N+6P | Nineteenth +Twentieth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Circuits for D.C measurements | The student understands the lesson | 2N+3P | Twenty one |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Fundamental of A.C measurements | The student understands the lesson | 2N+3P | Twenty-second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Electronic measuring instruments , oscilloscope. | The student understands the lesson | 4N+6P | Twenty-third +Twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Frequency measurements. | The student understands the lesson | 2N+3P | Twenty-fifth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Magnetic instrument | The student understands the lesson | 2N+3P | Twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Concepts of cle | The student understands the lesson | 2N+3P | Twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Types of medical transducers | The student understands the lesson | 4N+6P | Twenty-eighth + twenty-ninth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Analogue and digital data acquisition systems | The student understands the lesson | 2N+3P | Xxx |

## 400. Infrastructure

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|---|---|
| Electronic Instrumentation and Measurement Techniques. W.D.Cooper & A.D. Helfrick | 65- Required textbooks |
| Electronic Measurement and Instrumentation J.BGupta<br>Electronic measurement devices and measurement techniques translated by: Hani Aziz, Abdullah Mohammed, and Gabriel Al-Yousha | 66- Main references (sources) |
| | خخخ) Recommended books and references (scientific journals, reports, .....) |
| | ددد) Electronic references, websites, ..... |

| 401. Course Development Plan |
|---|
| Developing and developing a laboratory for measuring devices to enhance the student's understanding. |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 402. Educational institution |
| Medical Devices Technology Engineering | 403. Scientific Department / Center |
| Clinical Chemistry Instrumentation MIE205/ | 404. Material Name/Code |
| Weekly (Practical + Theoretical) | 405. Available Attendance Forms |
| 2024/2023 | 406. Semester / Year |
| 120 hours (60 theoretical + 60 practical) | 407. Number of Credit Hours (Total) |
| 11/1/2024 | 408. The history of preparation of this description |
| 409. Course Objectives | |
| **1- The student is introduced to the concepts of clinical chemistry and the reactionsthat challenge within the human body** | |
| **2- Understands the analysis of clinical chemistry and the wayto detect it** | |
| **3- Explains the technology of laboratory medical devices andthe principle of their operation** | |
| **4- Understands the maintenance ofmedical devices and knows the electrical andmechanical malfunctions** | |
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| | |

| 410. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| **A- Knowledge Objectives**<br>**A1- Determines the chemical compositionof the human**<br>**A2- List the medical laboratory equipment used in the analysis**<br>**A3- Understand thecharacteristics of the medical device**<br>**A4- Explains the technology of the medical device andthe principle of its work**<br>**A5- Listing methodsfor detecting and analyzing elements andchemicals in the human body** |
| B **- Course skills objectives**<br>**B1 – Use the technology of the medical device andthe principle of its work in the analysis**<br>**B2 – Prepare chemical materials for analysis**<br>**B3 – Use the steps of the methodof analysis**<br>**B4- Write the results of the analysisdisplayed in the device** |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student listens attentively to the teacher's explanation<br>C2- The student should know the impact of clinical chemistryon life<br>C3- The student should describe theimportance of analyzing chemical elements and materialsin the human body<br>C4- The student should take care of the calm and the class system |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |

**d. General andrehabilitative skills transferred (other skills related to employability and personal development).**

D1- The student's ability to conduct scientific research

2- The student's ability to participate in the classroom activities

D3-

D4-

| 411. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical lecture | Work security in laboratories | The student understands the lesson | 2N+2P | First |
| Weekly exams and pre- and post-questions | Theoretical lecture | Quality control | The student understands the lesson | 2N+2P | Second |
| Weekly exams and pre- and post-questions | Theoretical lecture | Best laboratory use | The student understands the lesson | 2N+2P | Third |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Spectrum instrument and uses | The student understands the lesson | 4N+4P | IV + V |
| Weekly exams and pre- and post-questions | Theoretical and practical lecture | Ion measurement instrument | The student understands the lesson | 4N+4P | VI + VII |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Salt measurement instrument and it uses | The student understands the lesson | 4N+4P | VIII+IX |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Auto-Analysis instrument | The student understands the lesson | 4N+4P | X +XI |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Minerals measurement instrument | The student understands the lesson | 4N+4P | Twelfth + Thirteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Elisa instrument and its uses | The student understands the lesson | 4N+4P | Fourteenth + Fifteenth |

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|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical lecture | Electrical conduction | The student understands the lesson | 4N+4P | XVI + XVII |
| Weekly exams and pre- and post-questions | Theoretical lecture | Osmotic conduction | The student understands the lesson | 4N+4P | XVIII + XIX |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Enzymes and their measurements | The student understands the lesson | 4N+4P | Twenty + Twenty-first |
| Weekly exams and pre- and post-questions | Theoretical lecture + practical laboratory | Protein and importance | The student understands the lesson | 4N+4P | Twenty-second + Twenty-third |
| Weekly exams and pre- and post-questions | Theoretical lecture | Fats and importance | The student understands the lesson | 4N+4P | Twenty-fourth + twenty-fifth |
| Weekly exams and questions before and after | Theoretical lecture | Maemoglobin | The student understands the lesson | 2N+2P | Twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Minerals and neutrition | The student understands the lesson | 4N+4P | Twenty-seventh + twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Immunological | The student understands the lesson | 4N+4P | Twenty-ninth + thirty-ninth |

| 412. Infrastructure | |
|---|---|
| Fundamentals of clinical chemistry<br>By carl A. Burtis pb.D. | 67- Required textbooks |
| | 68- Main references (sources) |

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| | ذذذذ) Recommended books and references (scientific journals, reports, .....) |
| Chemistry WWW.clinic | ررر) Electronic references, websites, ..... |

| 413. Course Development Plan |
|---|
| Providing a clinical chemistry laboratory that performs chemical analysis |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 414. Educational institution |
| Medical Devices Technology Engineering | 415. Scientific Department / Center |
| Electronic components and circuits | 416. Material Name/Code |
| Weekly (Practical + Theoretical) | 417. Available Attendance Forms |
| 2024/2023 | 418. Semester / Year |
| 150 hours (60 theoretical + 90 practical) | 419. Number of Credit Hours (Total) |
| 11/1/2024 | 420. The history of preparation of this description |
| 421. Course Objectives | |
| 1- See the characteristics of electronic materials and how to manufacture them | |
| 2- Understand and know the practical applications of diode andtransitor | |
| 3- Understand and know themajor types oftransitors and the principle of action of each one | |
| 4- Understand and know the types oftransitors and the principle of action of each one | |
| 5- Practical applications of amplifiers and electrical circuitsused | |
| | |

| 422. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1-To identify the curve of the characteristics of the signal coming out of the daide andthe practical applications in which it is used<br>A2- Identify thetransistor in its operation, the characteristicsof the signal entering andleaving it, and the methods of its control in electronic circuits<br>A3- A. Types of transistors andthe principle of operation of each of thesetypes<br>A4- Identify the frequency response of each type of transistor andhow to employ this in the design of electrical circuits |

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| A5-To identify the signal amplifier or its types and the applicationsused in it in addition tothe frequency response to these amplifiers<br>A6- Toget to know the integrated circuits |
| B - Course skills objectives<br>B1 – Calculation of the values entering and leaving the electronic circuits that contain diode ortransistor<br>B2 – How to design electrical circuits according to certain values<br>B3 –<br>B4 – |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- Instilling a spirit of creativity in students andensuring that they find innovative solutions to various problems<br>C2- Developing students' ability to work together as effective teams that produce outstanding results<br>C3- Developing a sense of responsibility among students andpreparing them psychologically to bear the burdens placed on them<br>C4- Developing the values of diligence andperseverance to accomplishwork to reach satisfactory results |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |

**d. General andrehabilitative skills transferred (other skills related to employability and personal development).**

D1- Calculation of the values entering and leaving the electronic circuits containing the diode ortransistor

D2- How to design electrical circuits according to certain values

D3- Knowledge of the analysis of any complex electronic data

D4-

| 423. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Semiconductors | The student understands the lesson | 4N+6P | First + Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Diode applications in DC | The student understands the lesson | 4N+6P | III + IV |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Applications of diode in AC | The student understands the lesson | 4N+6P | V+VI |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Zenir Daiud Characteristics and Applications | The student understands the lesson | 2N+3P | Seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | TransistorBJTCharacteristics and Methods | The student understands the lesson | 6N+9P | Eighth + Ninth + Tenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Analysis of DC transistor circuits | The student understands the lesson | 4N+6P | Eleventh + Twelfth + Thirteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Analysis of circles Transistor AC and modelsused to solve thesecircuits | The student understands the lesson | 8N+12P | Fourteenth + Fifteenth + Sixteenth + Seventeenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | FET transistor characteristics and applications | The student understands the lesson | 8N+12P | Eighteenth + Nineteen + Twentieth + Twenty-first |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Responseto liters of instructors of all kinds | The student understands the lesson | 4N+6P | Twenty-second + Twenty-third |
| Weekly exams and pre- and | Theoretical and practical lectures | Signal amplifiers A types and application | The student understands the lesson | 8N+12P | Twenty-fourth + Twenty-fifth + Twenty-sixth |

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|---|---|---|---|---|---|
| post-questions | | | | | + Twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Power Amplifier | The student understands the lesson | 6N+9P | Twenty-eighth + Twenty-ninth + Thirty |

424. Infrastructure

| | |
|---|---|
| Electronic device and circuit theory | 69- Required textbooks |
| Devices and Electronic Circuit Theory<br>Eleventh Edition<br>Robert L. Boylestad<br>Louis Nashelsky | 70- Main references (sources) |
| | ززز) Recommended books and references (scientific journals, reports, .....) |
| | سسس) Electronic references, websites, ..... |

425. Course Development Plan

Laboratory development and provision of up-to-date resources

# Third stage

# Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 426. Educational institution |

| | |
|---|---|
| Medical Devices Technology Engineering | 427. Scientific Department / Center |
| Medical Devices 2/ MIE309 | 428. Material Name/Code |
| Weekly (Practical + Theoretical) | 429. Available Attendance Forms |
| 2024/2023 | 430. Semester / Year |
| 5 hours per week | 431. Number of Credit Hours (Total) |
| 11/1/2024 | 432. The history of preparation of this description |

433. Course Objectives

**1- Studying the medical device as a purely electronic device that has been different from the rest of the electronic devices because it is a medical device**

**2- Studying the internal electronic circuits and then training on all electronic circuits in medical devices and methods of operation and maintenance, which qualifies the student in the end to use and maintain medical devices in general**

434. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Knowledge Objectives

A1- Develop work plans and programs, especially in the maintenance of medical devices

A2- On-site supervision of the implementation of the works

A3- Preparing research and studies to improve the development of medical devices

A4- Participation in committees related to the activity of medical devices

A5- Participate in the analysis of bids for alternative medical devices

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| B - Course skills objectives<br>B1 – Training engineers and technicians on the operation and maintenance of medical devices<br>B2 – Installation and operation of medical devices (supervision and implementation)<br>B3 – Providing advice in the field of medical devices |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library, workshops, seminars and means of illustration (data show) |
| Evaluation methods |
| Practical Semester Exams , Electronic Monthly Exams , Daily Tests , Quick Questions , Weekly Reports |
| C- Emotional and value goals<br>C1- Provides scientific projects in the design of circuits for medical devices<br>C2- Designs an electronic board<br>A3- Develops future plans and ideas, which suits the needs in the field of medical devices |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars, data shows, and workshops |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Providing the graduate with a scientific and applied skill that enables him to diagnose malfunctions resulting in medical devices<br>D2- The graduate's ability to make electronic boards in medical devices<br>D3- The graduate's ability to train technical staff in the fields of medical devices<br>D4- Design of alternative electronic circuits |

435. Course Structure

| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Cardiac function recorders and monitors*** | The student understands the lesson | 15 | First + Second + Third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Surgical scopes*** | The student understands the lesson | 10 | Fourth +V +VI |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Audio logical system*** | The student understands the lesson | 15 | Seventh +Eighth +Ninth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Ophthalmic system*** | The student understands the lesson | 15 | **Tenth, First Tenth, twelfth** |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Imaging tech. Ultrasound , Radiation , Thermal NMR , etc*** | The student understands the lesson | 30 | **Thirteenth + Fourteenth +Fifteenth +Sixteenth +Seventeenth +Eighteenth A** |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Pulmonary function system*** | The student understands the lesson | 15 | Nineteenth +Twenty +Twenty-One |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Pathological units*** | The student understands the lesson | 15 | Twenty-second and twenty-third + twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Therapeutic diathermy*** | The student understands the lesson | 15 | Fifteenth +Twenty-sixth +Twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Coronary care units*** | The student understands the lesson | 15 | Twenty-eighth +twenty-ninth+thirtieth |

436. Infrastructure

| | |
|---|---|
| 1. Medical application instrumentation and design, By: John G. Webster,4th edition. | 71- Required textbooks |
| 1. Handbook of biomedical instrumentation, 2nd edition By: R.S. Khandpur<br>2. A text book of medical instrument, By: S.Ananthi | 72- Main references (sources) |
| 1. Encyclopedia of medical device and instrumentation, 2nd edition By: John G. Webster<br>2. Ophthalmic instrument and equipments,2nd edition ,V.Srinivasan,R.D.Thulasiraj | ششش) Recommended books and references (scientific journals, reports, .....) |
| https://accessengineeringlibrary.com<br>https://en.wikipedia.org | صصص) Electronic references, websites, ..... |

| 437. Course Development Plan |
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| 1. Electroencephalograph instrument<br>2. Electromyograph instrument<br>3. Safety measures in biomedical instrument |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 438. Educational institution |
| Medical Devices Technology Engineering | 439. Scientific Department / Center |
| English / MIE301 | 440. Material Name/Code |
| Weekly (theoretical) | 441. Available Attendance Forms |
| 2024/2023 | 442. Semester / Year |
| 1 hour per week | 443. Number of Credit Hours (Total) |
| 11/1/2024 | 444. The history of preparation of this description |
| 445. Course Objectives | |
| **3- Provide students with basic communication skills in the English language** | |

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| **2- Reading texts in Arabic and English, absorbing them and developing vocabulary** |
| 3**- Employing writing, debate and dialogue skills according to sound foundations.** |
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| 446. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- A graduate qualified to speak and dialogue in English for different situations<br>A2- A graduate qualified to express in writing in English for different situations |
| B - Course skills objectives<br>B1 – Reading skill<br>B2 – Writing skill<br>B3 – Listening skill<br>B4 – Speaking skill |
| Teaching and learning methods |
| Theoretical and electronic lectures, dialogue between teacher and student, dialogue between students themselves |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Assignments , Daily Assessment , Quick Questions |
| C- Emotional and value goals<br>C1- Raising the level of students linguistically and translatively<br>C2- Encouraging students to dialogue and break the confusion among themselves |
| Teaching and learning methods |
| Theoretical and electronic lectures, dialogue between teacher and student, dialogue between students themselves |

| |
|---|
| Evaluation methods |
| Practical Semester Exams , Electronic Monthly Exams , Daily Assignments , Daily Assessment , Quick Questions |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Speaking skill<br>D2- Writing skill<br>D3- The skill of dealing with situations on a personal level<br>D4- Encouraging students to deliver properly |

| 447. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit one: Tenses, Auxiliary verbs, Short answers , What's in a word? , Social expressions | The student understands the lesson | 2 | First + Second |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit two: Present tenses, Simple or continuous? , Passive , Sport , Numbers and dates | The student understands the lesson | 2 | III + IV |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit three: Past tenses , Passive , Art and literature , Giving opinions | The student understands the lesson | 2 | V + VI |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit four: Modal verbs1 , obligation and permission , Nationality words , Request and offers | The student understands the lesson | 2 | VII + VIII |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit five: Future forms , The weather, Travelling around | The student understands the lesson | 2 | Ninth + tenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit six: like , Verb patterns, Describing food, towns , and people Sings and sounds | The student understands the lesson | 3 | Eleventh + Twelfth + Thirteenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit seven: Present Perfect active and passive , Phrasal verbs , On the phone | The student understands the lesson | 3 | Fourteenth + Sixteenth + Seventeenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit eight: Conditionals, Time clauses, Base and strong adjectives, Making suggestions | The student understands the lesson | 3 | Eighteenth + Nineteen + Twenty |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit nine: Modal verbs2, probability, Character adjectives, So do! Neither do! | The student understands the lesson | 3 | Twenty-one + Twenty-second + Twenty-third |
| Weekly exams and pre- and | Theoretical lectures | Unit ten: Present Perfect Continuous , Time expressions , | The student understands the lesson | 3 | Twenty-fourth + twenty-fifth + twenty-sixth |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | Compound nouns , Quality | | | |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit eleven: indirect questions , Questions tags, The body , informal English | The student understands the lesson | 2 | Twenty-seventh + twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit twelve: Reported speech, Reporting verbs, Birth, marriage, and death , Saying sorry | The student understands the lesson | 2 | Twenty-ninth + thirty-ninth |

448. Infrastructure

| | |
|---|---|
| Beginner student's book New Headway plus John and Liz Soras | 73- Required textbooks |
| Textbook English grammar in use by raymond murphy | 74- Main references (sources) |
| English in A simplified way BY Tahir Al bayati | ضضضض) Recommended books and references (scientific journals, reports, .....) |
| https://www.grammarbank.com/beginners-English-quiz.html | ططط) Electronic references, websites, ..... |

449. Course Development Plan

9- Work on developing the student's skills in listening, speaking and reading using the Internet and access to the latest sources and information
10- Work on the renewal and diversification of sources

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 450. Educational institution |
| Medical Devices Technology Engineering | 451. Scientific Department / Center |
| Power Electronics /MIE307 | 452. Material Name/Code |
| Weekly (Practical + Theoretical) | 453. Available Attendance Forms |
| 2024/2023 | 454. Semester / Year |
| 4 hours a week | 455. Number of Credit Hours (Total) |
| 11/1/2024 | 456. The history of preparation of this description |
| 457. Course Objectives | |
| **1- This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the** | |

**most of the available learning opportunities and must be linked to the program description.**

| 458. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- Developing students' skills in the field of power electronics<br>A2- The use of power electronics elements to control the speed of motors<br>A3- Developing the scientific ability of students in the maintenance and development of medical devices<br>A4-<br>A5- |
| B - Course skills objectives<br>B1 – Repair of medical devices<br>B2 – Maintenance of medical devices<br>B3 – Development of medical devices<br>B4 – |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>A1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning power electronics<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |

**d. General andrehabilitative skills transferred (other skills related to employability and personal development).**

D1- Repair, maintenance and development of medical devices

D2- Ability to deal with the work environment

D3-

D4-

| 459. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Introduction to power electronics | The student understands the lesson | 4 | First |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Switching devices,power & control device | The student understands the lesson | 8 | II +III |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Types and characteristic ,ranting (diode, transistor) | The student understands the lesson | 8 | IV + V |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Methods of turning – on & turning – off | The student understands the lesson | 12 | VI + VII + VIII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Protection of power device | The student understands the lesson | 8 | Ninth + tenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Triggering & base drive circuits | The student understands the lesson | 8 | Eleventh + Twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Controlled rectifiers , 1 – phase & 3 – phase circuits . | The student understands the lesson | 12 | Thirteenth + Fourteenth + Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Half – wave & full – wave circuits | The student understands the lesson | 12 | Sixteenth + Seventeenth + Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | D.C choppers ; step – up & step – down choppers | The student understands the lesson | 12 | Nineteenth + Twenty + Twenty-One |
| Weekly exams and pre- and | Theoretical and practical lectures | A.C phase controllers | The student understands the lesson | 8 | Twenty-second + Twenty-third |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Invertors , 1 – phase & 3 – phase bridges | The student understands the lesson | 12 | Twenty-fourth + twenty-fifth + sixteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Some applications : a – uninterruptible power supply | The student understands the lesson | 8 | Twenty-seventh + twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | (UPS) b – switching mode power supply (SMP) . | The student understands the lesson | 8 | Twenty-ninth + thirty-ninth |

460. Infrastructure

| | |
|---|---|
| | 75- Required textbooks |
| Power electronic device Lander Power electronic drive Hroon | 76- Main references (sources) |
| Power electronic device Lander Power electronic drive Hroon | ظظظ) Recommended books and references (scientific journals, reports, .....) |
| Websites and Virtual Library | ع ع ع) Electronic references, websites, ..... |

461. Course Development Plan

Holding seminars with the labor market to exchange ideas for the purpose of developing curricula to suit the requirements of the beneficiaries

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 462. Educational institution |
| Medical Devices Technology Engineering | 463. Scientific Department / Center |
| Calculator Applications / MIE306 | 464. Material Name/Code |
| Weekly (Practical + Theoretical) | 465. Available Attendance Forms |

| | |
|---|---|
| 2024/2023 | 466. Semester / Year |
| 4 hours per week | 467. Number of Credit Hours (Total) |
| 11/1/2024 | 468. The history of preparation of this description |
| 469. Course Objectives | |
| **1-** Identify the work environment of the program and the different components of the screen | |
| **2-** Know the interface of the program | |
| 3- Identify the types of programming instructions | |
| 4- Programming and designing a program control interface | |
| | |
| | |

| 470. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- Knowledge of the program<br>A2- Understand the importance of the program<br>A3- Knowledge and understanding of the practical applications of the program<br>A4- Know and understand the interlock of the program with other software applications<br>A5- Knowledge and understanding of the control of various ready-made program tools<br>A6- Know and understand the methods of preparing a presentation |
| B - Course skills objectives<br>B1 – User interface design<br>B2 – The student uses **the MATLAB program**<br>B3 – The student writes the results obtained in the laboratory<br>B4 – |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |

| |
|---|
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- Presents scientific projects in the design of circuits for medical devices<br>C2- Designs an electronic board<br>A3- Develops future plans and ideas, which suits the needs in the field of medical devices |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Providing the graduate with a scientific and applied skill that enables him to diagnose the resulting malfunctions in medical devices<br>D2- The graduate's ability to make electronic boards in the devices<br>D3- The graduate's ability to train technical personnel in the fields of medical devices<br>D4- Design of alternative electronic circuits |

| 471. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Introduction, MATLAB Environment,MATLAB Windows(Command Window, Workspace Window, Command History window, Help Window, Editor Window).** | The student understands the lesson | 4 | 1 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **A First Program, Expressions, Constants, Entering Matrices, Useful Matrix Generators, Subscripting ,End as a subscript, Colon Operator, Transpose Deleting Rows or Columns** | The student understands the lesson | 8 | 2-3 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Variables and assignment statement, logical operator. Arrays, Built in functions, Basic Matrix Functions(sum, max, min ,mean, magic, diag, length, size, median, prod, sort** | The student understands the lesson | 12 | 4-5-6 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Basic Plotting(Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits).** | The student understands the lesson | 4 | 7 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Arguments and return values, M-file, input-output statement** | The student understands the lesson | 8 | 8-9 |

| | | | | | |
|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Control statement (conditional statement:IfElse Elseif ,swith case) | The student understands the lesson | 4 | 10 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Repetition statements: (While statement, For statement)** | The student understands the lesson | 4 | 11 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Procedures andFunctions(a custom-made Matlab function, define the name of the function, the input and the output variables, Calling Functions** | The student understands the lesson | 16 | 12-13-14-15 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **String handling** | The student understands the lesson | 4 | 16 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Cells(Pre-defined cells, its usage, cell Arrays, cell two structure).** | The student understands the lesson | 4 | 17 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Printing Output. Array Functions(length, size, reshape, dot)** | The student understands the lesson | 4 | 18 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | **Handle graphics and user interface. 1.Pre-defined dialogs 2. Handle graphics a) Graphics objects b) Properties of objects c) Modifying properties of graphics objects** | The student understands the lesson | 8 | 19-20 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***GUI Interface ( Attaching buttons to actions, Getting Input, Setting Output) Predefined GUIs and Dialog Boxes*** | The student understands the lesson | 12 | 21-22-23 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Menu-driven programs a) Controls: uimenu and uicontrol b) Interactive graphics c) Large program logic* folw** | The student understands the lesson | 12 | 24-25--26 |

| | | | | | |
|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Menipulating text (Writing to a text file, Reading from a text file, Randomising and sorting a list, Searching a list). Introduction to Image Analysis(Reading & Writing Images, Displaying Images)*** | The student understands the lesson | 16 | 27-28-29-30 |

## 472. Infrastructure

| | |
|---|---|
| | 77- Required textbooks |
| 1- Introduction to MATLAB for Engineers William J. Palm III<br>2- INTRODUCTION TO MATLAB FOR ENGINEERING STUDENTS ,David Houcque | 78- Main references (sources) |
| | غغغ) Recommended books and references (scientific journals, reports, .....) |
| | فففف) Electronic references, websites, ..... |

## 473. Course Development Plan

# Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 474. Educational institution |
| Medical Devices Technology Engineering | 475. Scientific Department / Center |
| Electrical Technology/ MIE308 | 476. Material Name/Code |
| Weekly (Practical + Theoretical) | 477. Available Attendance Forms |
| 2024/2023 | 478. Semester / Year |
| 4 hours per week | 479. Number of Credit Hours (Total) |
| 11/1/2024 | 480. The history of preparation of this description |
| 481. Course Objectives | |
| **Studying the foundations of electricity technology, electric motors and various electrical transformers, their theory of operation, methods of operation, how to repair faults and do maintenance for them** | |
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| 482. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- The student lists the types of electrical<br>A2- The student lists the types of electrical machines<br>A3- The student learns about the properties of electric motors and transformers<br>A4- The student learns how to control the electrical switches<br>A5- The student gets acquainted with some types of electrical circuits for high voltages |
| B - Course skills objectives<br>B1 – The student uses electrical circuits<br>B2 – The student uses types of electrical machines<br>B3 – The student acquires the skills of connecting transformers and electric motors<br>B4 – The student writes the results obtained in the laboratory |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning electricity technology<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |

| Evaluation methods |
| --- |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2 - literary activities<br>D3- Artistic activities |

| 483. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit Name / Subject | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Transformers : single phase transformer and construction . | The student understands the lesson | 8 | First + Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Theory of operation , no load and short circuit test | The student understands the lesson | 4 | Third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Equivalent circuit , auto–transformers, instrument transformers | The student understands the lesson | 8 | IV + V |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Three phase transformers , constructions methods of connection | The student understands the lesson | 8 | VI + VII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Electromechanical energy conversion principles , relay operation | The student understands the lesson | 8 | VIII+IX |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | D.C machines : e.m.f and torque equation , equivalent circuit , methods of excitation , generator characteristics | The student understands the lesson | 12 | Tenth + Eleventh + Twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Motor characteristics , testing , calculation of losses and efficiency | The student understands the lesson | 12 | Thirteenth +Fourteenth +Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Induction machines : equivalent circuit , basic equation , simple analysis testing . | The student understands the lesson | 12 | Sixteenth + Seventeenth + Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Single phase induction motor , methods of starting , siplitphase , capacitor short , capacitor run and shaded pole motors . | The student understands the lesson | 12 | Nineteenth + Twenty + Twenty-first |
| Weekly exams and pre- and | Theoretical and practical lectures | Synchronous machines , generators and motors | The student understands the lesson | 8 | Twenty-second + Twenty-third |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | , equivalent circuit , basic equation . | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Special machines : Reluctance motor , hysteresis motor , linear motor , stepper motor , dray cup type motor , servo motor , etc ..... | The student understands the lesson | 8 | Twenty-fourth + twenty-fifth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Control switches : pilot switches , push bottoms , limits . | The student understands the lesson | 8 | Sixteenth +Twenty-seventh |
| | | Switches , flost switches , contactors , pressure switches | | 4 | Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | High voltage circuits . | The student understands the lesson | 8 | Twenty-ninth + thirty-ninth |

## 484. Infrastructure

| | |
|---|---|
| Theraga (electrical machine) | 79- Required textbooks |
| Electrical machine<br>By siskind<br>Basic machine for industry<br>By Theodore wildi<br>Elec-machine<br>By S.N.Ali | 80- Main references (sources) |
| Theraga | قققق) Recommended books and references (scientific journals, reports, .....) |
| www.mach | ككككك) Electronic references, websites, ..... |

## 485. Course Development Plan

13- Using the latest books and curricula on the Internet
14- Using the Internet in research and reports
15- Using virtual laboratories in most international universities
16- Simulation of available devices

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 486. Educational institution |
| Medical Devices Technology Engineering | 487. Scientific Department / Center |
| Digital Signal Processing / MIE303 | 488. Material Name/Code |
| Weekly ( Practical + Theoretical) | 489. Available Attendance Forms |
| 2024/2023 | 490. Semester / Year |
| 4 hours per week | 491. Number of Credit Hours (Total) |
| 11/1/2024 | 492. The history of preparation of this description |

| 493. Course Objectives |
| --- |
| **Teaching the student the basic topics of digital signal processing and its use in the processing of digital audio and image signals** |
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| 494. Course Outcomes and Methods of Teaching, Learning and Assessment |
| --- |
| A- Knowledge Objectives<br>A1- The student understands the nature of the signals and their processing<br>A2- The student learns to calculate the Fourier series and its transformations<br>A3- The student learns to calculate the Z conversions<br>A4- The student understands digital filters<br>A5- The student learns methods of designing digital filters FIR, IIR<br>A6- The student learns to process the audio and image signal |
| B - Course skills objectives<br>B1 – The student uses simulation programs<br>B2 – THE STUDENT WRITES THE PROGRAMS IN THE MATLAB CODE LANGUAGE<br>B3 – The student writes the results obtained by my laboratory from the computer |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |

| |
|---|
| C- Emotional and value goals<br>C1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning the digital signal processing material<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2- Sports activities<br>D3- Artistic activities<br>D4- |

| 495. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Introduction to Signal Processing | The student understands the lesson | 12 | 1-2-3 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Convolution and sampled data system*** | The student understands the lesson | 12 | 4-5-6 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Fourier series and Fourier transform*** | The student understands the lesson | 12 | 7-8-9 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Z – transform*** | The student understands the lesson | 12 | 10-11-12 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Discrete Fourier transform (DFT) .*** | The student understands the lesson | 8 | 13-14 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Fast Fourier Transform*** | The student understands the lesson | 8 | 15-16 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Digital Filtering*** | The student understands the lesson | 12 | 17-18-19 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***IIR Filters*** | The student understands the lesson | 12 | 20-21-22 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***FIR Filters*** | The student understands the lesson | 8 | 23-24 |
| Weekly exams and pre- and | Theoretical and practical lectures | ***Speech Processing*** | The student understands the lesson | 12 | 25-26-27 |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Image Processin*** | The student understands the lesson | 12 | 28-29-30 |

| 496. Infrastructure | |
|---|---|
| Digital Signal Processing; Principles, Algorithms and Applications John G. Proakis , Dimitris G. Manolakis | 81- Required textbooks |
| Digital Signal Processing Fundamentals and Applications Li Tan | 82- Main references (sources) |
| Schaum's Outline of Theory and Problems of Digital Signal Processing Monson H. Hayes | لللل) Recommended books and references (scientific journals, reports, .....) |
| | ممم) Electronic references, websites, ..... |

| 497. Course Development Plan |
|---|
| Change of 20% according to the instructions in force |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 498. Educational institution |
| Medical Devices Technology Engineering | 499. Scientific Department / Center |
| Processor and Precision Calculator / MIE305 | 500. Material Name/Code |
| Weekly (Practical + Theoretical) | 501. Available Attendance Forms |
| 2024/2023 | 502. Semester / Year |
| 4 hours per week | 503. Number of Credit Hours (Total) |
| 11/1/2024 | 504. The history of preparation of this description |

| 505. Course Objectives |
|---|
| **1- Training the student on the foundations of logical circuits used in electronic computers and how they work** |
| **2- Building logical circuits** |
| **3- Learn about microcomputers - their parts, programming, or applications** |
| |
| |
| |

| 506. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- The student understands the nature of digital design<br>A2- The student knows the foundations of logical circuits used in microcomputers<br>A3- The student learns digital design methods<br>A4- The student gets acquainted with the accurate calculator and its parts<br>A5- Building logical circuits |
| B - Course skills objectives<br>B1 – The student uses simulation programs<br>B2 – The student writes the programs in the Assembly language<br>B3 – The student writes the results obtained by my laboratory from the computer |
| Teaching and learning methods |
| Theoretical and practical electronic lectures |
| Evaluation methods |
| Written and practical semester exams, electronic monthly exams, daily tests, quick questions |
| C- Emotional and value goals<br>C1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning an accurate processing and calculator |

| |
|---|
| C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2- Sports activities<br>D3- Artistic activities |

| 507. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Introduction to microprocessor and microcomputer | The student understands the lesson | 12 | 1-2-3 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | *Semiconductor memories (ROMs & RAMs* | The student understands the lesson | 12 | 4-5-6 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Auxiliary (backing) memories ( magnetic tape , magnetic disk , etc) | The student understands the lesson | 12 | 7-8-9 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Microprocessor architecture | The student understands the lesson | 12 | 10-11-12 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | *Bus signal timing & I/O timing* | The student understands the lesson | 12 | 13-14- 15 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Microprocessor interfacing | The student understands the lesson | 12 | 16 – 17 -18 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Instruction sets & addressing modes | The student understands the lesson | 12 | 19 -20 -21 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Digital I/O ( parallel I/O & serial I/O) | The student understands the lesson | 8 | 22- 23 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Analogue I/O ( interfacing ADC & DAC to microprocessor) | The student understands the lesson | 12 | 24-25-26 |
| Weekly exams and pre- and | Theoretical and practical lectures | Standard buses (serial & parallel buses) | The student understands the lesson | 8 | 27-28 |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Some practical microprocessor | The student understands the lesson | 8 | 29-30 |

## 508. Infrastructure

| | |
|---|---|
| **Text Books:**<br>2. Hall D.V.,"Microprocessor and Interfacing-Programming and Hardware", 2nd Ed., Tata McGraw-Hill Publishing Company Limited, 2008. | 83- Required textbooks |
| | 84- Main references (sources) |
| **References and Recommended Books:**<br>4. Gaonkar R.S.,"Microprocessor Architecture,Programming and Applications", 5th Ed., Penram International, 2007.<br>5. Stewart J,"Microprocessor Systems-Hardware,Software and Programming", Prentice Hall International Edition,1990<br>6. Barry B Brey," The Intel microprocessors, 5th ed. Prentice-Hall, Inc.,1999 | ننن) Recommended books and references (scientific journals, reports, .....) |
| **Internet Links:**<br>3. https://gnindia.dronacharya.info/ECE/Downloads/Labmanuals/Microprocessor_Lab_Manual.pdf<br>4. https://www.gopalancolleges.com/gcem/course-material/ece/manuals/sem-VI/Microprocessor-lab-manual-10ECL68.pdf | ههه) Electronic references, websites, ..... |

## 509. Course Development Plan

**Plan to upgrade the syllabus:**

3. Introducing FPGA as a platform to tech microprocessors.

4. Adopting VHDL as a tool to build reconfigurable system in the process of teaching microprocessor architecture

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 510. Educational institution |
| Medical Devices Technology Engineering | 511. Scientific Department / Center |
| Medical Communication Systems / MIE302 | 512. Material Name/Code |
| Weekly (Practical + Theoretical) | 513. Available Attendance Forms |
| 2024/2023 | 514. Semester / Year |
| 4 hours per week | 515. Number of Credit Hours (Total) |
| 11/1/2024 | 516. The history of preparation of this description |

| 517. Course Objectives |
| --- |
| **1- Knowledge of systems and structures of radio, television and telephone systems** |
| **2- Knowing the methods of transferring information in communication systems in medical devices** |
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| 518. Course Outcomes and Methods of Teaching, Learning and Assessment |
| --- |
| A- Knowledge Objectives<br>A1- The student lists the types of digital and analogue inclusion<br>A2- The student distinguishes the difference between digital and analogue inclusion<br>A3- The student learns about the types of signals and systems<br>A4- The student learns the types of pulse inclusion<br>A5- The student knows the types of electromagnetic wave transmission media<br>A6- The student recognizes the antennas |
| B - Course skills objectives<br>B1 – The student uses digital and analogue embedding<br>B2 – The student uses simulation programs and laboratory boards<br>B3 – The student gains the skills of connecting electronic circuits with each other<br>B4 – The student writes the results obtained in the laboratory from various devices and the computer |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |

| |
|---|
| C- Emotional and value goals<br>C1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning communications<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2- Art Activities<br>D3- Literary activities |

| 519. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | General review in electrostatic | The student understands the lesson | 4 | First |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Gauss's law | The student understands the lesson | 4 | Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Steady magnetic field | The student understands the lesson | 4 | Third |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Time varying magnetic field | The student understands the lesson | 8 | Fourth and fifth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Uniform plane waves | The student understands the lesson | 4 | Sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Fourier transform | The student understands the lesson | 8 | Seventh and eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Signal and system | The student understands the lesson | 8 | Ninth and tenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Periodic , Non periodic signals | The student understands the lesson | 8 | Eleventh and twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | AM and FM system | The student understands the lesson | 8 | Thirteenth and fourteenth |
| Weekly exams and pre- and | Theoretical and practical lectures | Sampling, PAM PWM, PCM | The student understands the lesson | 12 | Fifteenth, sixteenth and seventeenth |

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|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Digital modulation (ASK , FSK , PSK) | The student understands the lesson | 12 | Eighteenth, nineteenth and twenty |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Noise in analogue and digital systems | The student understands the lesson | 8 | Twenty-eleven and twenty-two |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Rectangular wave-guides | The student understands the lesson | 8 | Twenty-third and twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Microwave passive devices | The student understands the lesson | 8 | Twenty-fifth and twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Microwave generators | A student who understands the lesson | 8 | Twenty-seventh and twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Antennas | The student understands the lesson | 8 | Twenty ninth thirty |

| 520. Infrastructure | |
|---|---|
| 1-Introduction to communication systems (second edition –by ferrel. G . Stremler )<br>2-Engineering Electromagnetic (fifth edition – by William H. Hayt . TRACTION) | 85- Required textbooks |
| 1-Modern Digital and Analog communication system (second edition –by ferrel . G. stremler)<br>2-Introduction to Communication<br>3-Engineering Electromagnetics(fifth edition- by William H. Hit, I don't know what to do TRACTION)<br>4-Introduction to digital signal processing (Roman Kuct-Eng Taghreed Al –Amri)<br>5-Electrical and Electronic Engineering series (Antennas)by McGraw. Hill | 86- Main references (sources) |

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|---|---|
| 6-Introduction to Antennas by Martin S. Smith1988<br>7-Introduction to Microwave by Baden fully 1999<br>8-Antennas for communication Tallguide.<br>Ultra law Transmission loss waveguide | |
| | ووو) Recommended books and references (scientific journals, reports, .....) |
| www.tallguide .com<br>www.ainfoinc.com<br>www.millitech.com<br>www.rfcafe.com<br>Whoa, whoa, who globalspec.com | يييي) Electronic references, websites, ..... |

| 521. Course Development Plan |
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## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 522. Educational institution |
| Medical Devices Technology Engineering | 523. Scientific Department / Center |
| Medical Electron Systems / MIE302 | 524. Material Name/Code |
| Weekly ( Practical + Theoretical) | 525. Available Attendance Forms |
| 2024/2023 | 526. Semester / Year |
| 4 hours per week | 527. Number of Credit Hours (Total) |
| 11/1/2024 | 528. The history of preparation of this description |
| 529. Course Objectives | |
| **1- Identify the components of electronic circuits** | |
| **2- Identify the work of electronic circuits** | |
| 3- Identify the applications of electronic circuits in the medical field | |
| 4- Design of electronic circuits for medical uses | |
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| 530. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- The student understands the components of electronic circuits<br>A2- Designs different electronic circuits<br>A3- Explains the work of electronic circuits<br>A4- Identify the electronic circuits used in medical devices<br>A5- Identify electronic circuit systems to use electronic calculators |

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| B - Course skills objectives<br>B1 – The signal plotter is used to show the results<br>B2 – Writes the results displayed on the calculator<br>B3 – Draws curves between current and voltage<br>B4 – Writes tables of measurement results |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student should listen attentively to the professor's explanation<br>C2- Commitment to calm and order in the classroom<br>C3- The student should be sensitive to the suffering of victims of customary discrimination<br>C4- The student should know the impact of science and scientists |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- The student's ability to scientific research<br>D2- The student's ability to participate in extracurricular activities such as sports, poetry, painting, acting<br>D3- The student's ability to acquire skills outside the scientific material<br>D4- |

| 531. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Regulated power supplied*** | The student understands the lesson | 4 | 1 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Monolithic regulators*** | The student understands the lesson | 4 | 2 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Switching regulators*** | The student understands the lesson | 4 | 3 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Additional switching regulator yp pologies*** | The student understands the lesson | 8 | 4-5 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Active filters*** | The student understands the lesson | 4 | 6 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Butter worth filter,practical realization*** | The student understands the lesson | 8 | 7-8 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Band pass filter,band-rejectfilter*** | The student understands the lesson | 8 | 9-10 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Active resonant and band pass filter*** | The student understands the lesson | 8 | 11-12 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Active RC band pass filter*** | The student understands the lesson | 4 | 13 |
| Weekly exams and pre- and | Theoretical and practical lectures | ***Digital to analogue converters (DAC)*** | The student understands the lesson | 4 | 14 |

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|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***A lodder – type DAC , multiplying DAC*** | The student understands the lesson | 4 | 15 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Analogue to digital converters (ADC)*** | The student understands the lesson | 4 | 16 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***The counting ADC , successive approximation ADC*** | The student understands the lesson | 8 | 17-18 |
| Weekly exams and pre- and post-questions | Theoretical lectures and practical | ***The parallel – comparator ADC , dual – slope or radiometric ADC*** | The student understands the lesson | 8 | 19-20 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Medical date acquisition system*** | The student understands the lesson | 12 | 21-22-23 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Microcomputer based system ,*** | The student understands the lesson | 12 | 24-25-26 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***monitoring ,*** | The student understands the lesson | 4 | 27 |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | ***Other medical electronic system*** | The student understands the lesson | 12 | 28-29-30 |

| 532. Infrastructure | |
|---|---|
| Electronic deviced and circuit theory by :boylested | 87- Required textbooks |
| Design of microcomputer based medical instrumentation By : to mpkins A | 88- Main references (sources) |

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|---|---|
| Digital principles and application By : Malvino | أأأأ) Recommended books and references (scientific journals, reports, .....) |
| Whoa, whoa, who Medical electronic system | بببب) Electronic references, websites, ..... |

| 533. Course Development Plan |
|---|
| Study and design of digital filter |

# Fourth stage

**Course Description Form**

# Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 534. Educational institution |
| Medical Devices Technology Engineering | 535. Scientific Department / Center |
| Medical Devices/3 MIE405 | 536. Material Name/Code |
| Weekly (Practical + Theoretical) | 537. Available Attendance Forms |
| 2024/2023 | 538. Semester / Year |
| 150 hours (60 theoretical +90 practical) | 539. Number of Credit Hours (Total) |
| 11/1/2024 | 540. The history of preparation of this description |
| 541. Course Objectives | |
| **1-** Studying **themedical device as a purely electronic device , then its difference from the rest of the electronic devicesbecause it is a medical device and studying the internal electronic circuits and then training on all electronic circuitsin medical devices and methods of operation And its maintenance, which qualifies the student in the end touse and maintain medical devicesina way** | |
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| 542. Course Outcomes and Methods of Teaching, Learning and Assessment |
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| A- Knowledge Objectives<br>A1- Understand the basic components of the surgical medical apparatus<br>A2- Studying surgical devices and their types<br>A3- Learn the usefulness of each surgical face<br>A4- Studying shock devices<br>A5- Studying the devices for medical surgical cuttings.<br>A6- Studying dental appliances.<br>A7- Studying anesthesia and ventilation devices.<br>A8Learns to operate and maintain a dialysis device.<br>A9- Learn to operate and maintain the lung apparatus, the artificial heart and a multiple other device |
| B - Course skills objectives<br>B1 – Explain the cause of the malfunctions of the medical device<br>B2 – The computer is used to store the specifications of themedical device<br>B3 - The computer is used as a means of detecting the resonance of pathological cases taken from the medical devicewith data of natural cases kept in the computer<br>B4- Diagnoses the results of themedical device |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student should listen attentively to the explanation of the<br>C2- The student should feel what the victims of racial discrimination suffer<br>C3- The student should recognize the impactof science and scientists in life<br>C4- The student should describe theimportance of learningthe importance of medical-surgical devices. |

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| C5- The student should know its use in a correct way to the seriousness of errorsresulting from misuse. |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Office skills outside the scientific subject<br>D2- The student's ability to scientific research<br>D3- The student's ability to participate in classroom activities<br>D4- Skills of identifying and dealing with modernmedical devices |

| 543. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Part 1 : general systems and specialized tools in general surgery. . | The student understands the lesson | 4N+6P | First + Second |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Part 2 : specialized systems and Inst. . | The student understands the lesson | 6N+9P | Third + Fourth + Fifth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Ophthalmic microsurgical Inst. | The student understands the lesson | 4N+6P | VI + VII |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Open heart & cardiovascular. | The student understands the lesson | 4N+6P | VIII+IX |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Heart – lung machine. | The student understands the lesson | 2N+3P | X |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Kidney machine. | The student understands the lesson | 4N+6P | Eleventh + Twelfth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Surgical diathermy. | The student understands the lesson | 4N+6P | Thirteenth +Fourteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Artificial organs – internal & external. | The student understands the lesson | 6N+9P | Fifteenth + Sixteenth + Seventeenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Dental system. | The student understands the lesson | 6N+9P | Eighteenth + Nineteenth + Twentieth |
| Weekly exams and pre- and | Theoretical and practical lectures | Gynecology Inst. | The student understands the lesson | 4N+6P | Twenty one + twenty second + |

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|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Ultrasonic assisting device. | The student understands the lesson | 4N+6P | Twenty-third + Twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Audio logical surgical units. | The student understands the lesson | 4N+6P | Twenty-fifth + twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Anesthetic units. | The student understands the lesson | 4N+6P | Twenty-seventh + twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Intensive care units. | The student understands the lesson | 4N+6P | Twenty-ninth + thirty-ninth |

## 544. Infrastructure

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|---|---|
| Medical Instrumentation Application and Design | 89- Required textbooks |
| Biomedical Engineering Handbook - J.D.Bronzino<br>-S. Ananthi ,2005,"A text book of medical instruments" | 90- Main references (sources) |
| | تتتتت) Recommended books and references (scientific journals, reports, .....) |
| www.bme.ncku.edu.com | ثثثثث) Electronic references, websites, ..... |

## 545. Course Development Plan

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 546. Educational institution |
| Medical Devices Technology Engineering | 547. Scientific Department / Center |
| MIE402/ Project Management | 548. Material Name/Code |
| Weekly (theoretical) | 549. Available Attendance Forms |
| 2024/2023 | 550. Semester / Year |
| 60 hours theoretical | 551. Number of Credit Hours (Total) |
| 11/1/2024 | 552. The history of preparation of this description |
| 553. Course Objectives | |

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|---|
| **1- Providing students with concepts related to the administrative activities practiced by the organization and its applications and introducing the student to the principles and elements of project management strategies in terms of planning, scheduling and controlling activities. In it, emphasis is placed on quantitative methods to take consideration of all the activities and administrative functions of the project, as well as addressing the recent experiences of the Japanese administration compared to the American administration (Western in general).** |
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| 554. Course Outcomes and Methods of Teaching, Learning and Assessment |
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| A- Knowledge Objectives<br>A1- The student acquires concepts related to administrative activities<br>A2- The student is introduced to the principles, elements and strategies of project management<br>A3- The student learns about other types of experiences in project management<br>A4- The student compares previous project management experiences<br>A5- |
| B - Course skills objectives<br>B1 – The student acquires the timeline for the start and end of the project<br>B2 – Uses data analysis software<br>B3 – The student acquires the skills of schedulingthe project<br>B4- Writes methods of project management |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |

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| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The studentlistens to the explanation attentively<br>C2- The student learns about the impactof science and scientists in life<br>C3- The student should describe theimportance of learning whatis the management of projects<br>C4- The student should take care of the calm and the class system |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2-Artistic activity<br>D3- Literary activity |

| 555. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical lecture | Introduction to project management objective and tradeoffs. Cost – schedule – performance | The student understands the lesson | 2 | First |
| Weekly exams and pre- and post-questions | Theoretical lecture | Planning and control in projects : Planning Scheduling Controlling | The student understands the lesson | 2 | Second |
| Weekly exams and pre- and post-questions | Theoretical lecture | Scheduling methods. | The student understands the lesson | 2 | Third |
| Weekly exams and pre- and post-questions | Theoretical lecture | Gant chart. | The student understands the lesson | 2 | Fourth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Networks methods. | The student understands the lesson | 2 | V |
| Weekly exams and pre- and post-questions | Theoretical lecture | Constant – time network. | The student understands the lesson | 2 | Sixth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Pert network. | The student understands the lesson | 4 | VII + VIII |
| Weekly exams and pre- and post-questions | Theoretical lecture | Critical path method. | The student understands the lesson | 4 | Ninth + tenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Precedence diagramming method. | The student understands the lesson | 2 | Eleventh |
| Weekly exams and pre- and | Theoretical lecture | Project phases: choice of project location. | The student understands the lesson | 4 | Twelfth + Thirteenth |

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|---|---|---|---|---|---|
| post-questions | | | | | |
| Weekly exams and pre- and post-questions | Theoretical lecture | Process design. | The student understands the lesson | 2 | Fourteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Choice of technology. | The student understands the lesson | 2 | Fifteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Financial analysis. Purchase of new machine Machine replacement. Layout of facilities. | The student understands the lesson | 4 | XVI + XVII |
| Weekly exams and pre- and post-questions | Theoretical lecture | Managing the work force in project who manages the work force. Principles in decision of work – force management. | The student understands the lesson | 2 | Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Japans work – force management. | The student understands the lesson | 2 | Nineteenth |
| Weekly exams and pre- and post-questions | Theoretical lecture | New approach to evaluation performance. | The student understands the lesson | 2 | 20th |
| Weekly exams and pre- and post-questions | Theoretical lecture | Materials handling. | The student understands the lesson | 2 | Twenty one |
| Weekly exams and pre- and post-questions | Theoretical lecture | Concepts of MRP system. Elements of MRP system. | The student understands the lesson | 2 | Twenty-second |
| Weekly exams and pre- and post-questions | Theoretical lecture | MRP versus order – point system. MRP versus just in time system. | The student understands the lesson | 2 | Twenty-third |
| Weekly exams and pre- and post-questions | Theoretical lecture | Activities in project: Coordination of project activities. Activities breakdown. | The student understands the lesson | 4 | Twenty-fourth + twenty-fifth |

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|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical lecture | Measuring project process tools. Purpose of work measurement | The student understands the lesson | 2 | Twenty-sixth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Methods study. | The student understands the lesson | 2 | Twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical lecture | Types of work measurements. | The student understands the lesson | 2 | Twenty-eighth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Time study. | The student understands the lesson | 2 | Twenty-ninth |
| Weekly exams and pre- and post-questions | Theoretical lecture | Time management. | The student understands the lesson | 2 | Xxx |

556. Infrastructure

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| . | 91- Required textbooks |
| 1-Y. Bakouros and V. Kelessidis "Project management" INNOREGIO: dissemination of innovation and knowledge management techniques, January 2000<br>2-J.R. Meredith and S.J. Mantel "Project Management", J. Wiley & Sons, 1995 | 92- Main references (sources) |
| 1- Principles of Project Management, NPC publication<br>2- S. Choudhury "Project Management", Tata McGraw Hill-2003<br>3-GANTT CHART Category: Planning/ Monitoring –Control<br>4-W. Durfee and T. Chase, "Project Management - Gantt Chart Tutorial" University of Minnesota, 2003<br>5-Billings, B.A., Musazi, B., Houston, M., "Bonus depreciation tax incentives may not | ƈƈƈƈ) Recommended books and references (scientific journals, reports, .....) |

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| work for needy firms". Tax Notes 118, 735-737s. 2008.<br>6-A. D. Luber. "Solving Business Problems with MRP II," Digital Press. Massachusetts, pp.17-63, 1991.<br>7-T. Tsukishima, H. Matoba, and H. Onari. "Development of synchronized supervision systems in a parallel MRP system," Waseda University, Fifth International Conference, Tokyo, 2000. | |
| 1- J.R. Meredith and S.J. Mantel "Project Management" J. Wiley & Sons, 1995.<br>2- http://www.projectmanagement.com/main.htm 2- GANTT CHART Category: Planning/ Monitoring control<br><br>3- http://www.netmba.com/operations/project/gantt/<br>Mike Holt, "Applying Overhead and Determining Break-Even Cost" Mike Holt Enterprises, Inc,2001 www.ecmweb.com<br>4- Iaba "Manual Materials Handling" Industrial Accident Prevention Association,2008. Website: www.iapa.ca. | ςςςς) Electronic references, websites, ..... |

| 557. Course Development Plan |
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## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the

student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 558. Educational institution |
| Medical Devices Technology Engineering | 559. Scientific Department / Center |
| English / MIE101 | 560. Material Name/Code |
| Weekly (theoretical) | 561. Available Attendance Forms |
| 2024/2023 | 562. Semester / Year |
| 1 hour per week | 563. Number of Credit Hours (Total) |
| 11/1/2024 | 564. The history of preparation of this description |
| 565. Course Objectives | |
| **4- Provide students with basic communication skills in the English language** | |
| **2- Reading texts in Arabic and English, absorbing them and developing vocabulary** | |
| **3- Employing writing, debate and dialogue skills according to sound foundations.** | |
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566. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Knowledge Objectives

A1- A graduate qualified to speak and dialogue in English for different situations

A2- A graduate qualified to express in writing in English for different situations

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| B - Course skills objectives<br>B1 – Reading skill<br>B2 – Writing skill<br>B3 – Listening skill<br>B4 – Speaking skill |
| Teaching and learning methods |
| Theoretical and electronic lectures, dialogue between teacher and student, dialogue between students themselves |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Assignments , Daily Assessment , Quick Questions |
| C- Emotional and value goals<br>C1- Raising the level of students linguistically and translatively<br>C2- Encouraging students to dialogue and break the confusion among themselves |
| Teaching and learning methods |
| Theoretical and electronic lectures, dialogue between teacher and student, dialogue between students themselves |
| Evaluation methods |
| Practical Semester Exams , Electronic Monthly Exams , Daily Assignments , Daily Assessment , Quick Questions |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Speaking skill<br>D2- Writing skill<br>D3- The skill of dealing with situations on a personal level<br>D4- Encouraging students to deliver properly |

| 567. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit one: The tense system , Informal language , Compound words , Social expressions | The student understands the lesson | 2 | First + Second |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit two: Present Perfect , Simple and continuous, Hot verbs – make, do , Exclamations | The student understands the lesson | 2 | III + IV |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit three: past tenses, Time clauses , What's in the news? , Books and films | The student understands the lesson | 2 | V + VI |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit four: Questions and negatives , Prefixes and antonyms, Being polite | The student understands the lesson | 2 | VII + VIII |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit five: Future forms, Hot verbs-take ,put , Telephoning | The student understands the lesson | 2 | Ninth + tenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit six: Expressions of quantity , export and ex 'port , Business expressions and numbers | The student understands the lesson | 3 | Eleventh + Twelfth + Thirteenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit seven: Modals and related verbs1 , Hot verb got , Exaggeration and understatement | The student understands the lesson | 3 | Fourteenth + Fifteenth + Sixteenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit eight: Relative clauses , Participles, Adverb collocations , The world around | The student understands the lesson | 3 | Seventeenth + Eighteenth + Nineteenth |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit nine: Expressing habit, used to do/ doing , Homonyms / Homophones , Making your point | The student understands the lesson | 3 | + Twenty + Twenty-One + Twenty-second |

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|---|---|---|---|---|---|
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit ten: Modal auxiliary verbs2 , Synonyms , Metaphors and idioms – the body | The student understands the lesson | 2 | Twenty-third + Twenty-fourth + |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit eleven: Hypothesizing , Expression with if , Word pairs , Moans and groans | The student understands the lesson | 3 | Twenty-fifth + twenty-sixth Twenty-seventh + |
| Weekly exams and pre- and post-questions | Theoretical lectures | Unit twelve: Articles, Determiners, Hot words-life , time , Liking and commenting | The student understands the lesson | 3 | Twenty-eighth Twenty-ninth + thirty-ninth |

568. Infrastructure

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|---|---|
| Beginner student's book New Headway plus John and Liz Soars | 93- Required textbooks |
| Textbook English grammar in use by raymond murphy | 94- Main references (sources) |
| English in A simplified way BY Tahir Al bayati | خخخخ) Recommended books and references (scientific journals, reports, .....) |
| https://www.grammarbank.com/beginners-English-quiz.html | ددددد) Electronic references, websites, ..... |

569. Course Development Plan

11- Work on developing the student's skills in listening, speaking and reading using the Internet and access to the latest sources and information

12- Work on the renewal and diversification of sources

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 570. Educational institution |
| Medical Devices Technology Engineering | 571. Scientific Department / Center |
| Project / MIE403 | 572. Material Name/Code |
| Weekly (Practical + Theoretical) | 573. Available Attendance Forms |
| 2024/2023 | 574. Semester / Year |
| 120 hours (60 theoretical + 60 practical) | 575. Number of Credit Hours (Total) |
| 11/1/2024 | 576. The history of preparation of this description |
| 577. Course Objectives | |
| **1- He relies on himself to prove his scientific skills** | |

| |
|---|
| **2- Identify the steps of work, analyze them and developalternatives in case of obstacles**<br>**3- Draws maps and develops designsfor the projectand**<br>**4- Follows up the progress of work in the project in terms of time**<br>**5- Estimate the cost of the raw materials needed to build the project**<br>**6- He sees and watches the growth of a simplified taste of his work**<br>**7- Learn to write the final report of the project and in an organized manner on the form of research.** |
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| 578. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- Identify the prominent objectives of the project<br>A2- Learn how to deal with a group of students in the way of group work<br>A3- The student is introduced to the types of analogue electroniccircuits, traditional digital circuits andprogrammability circuits.<br>A4- The student employs what he has learned from the practical courses andtheory in the implementation of the project<br>A5- The student learns how to write scientific projects |
| B - Course skills objectives<br>B1 – The student uses electronic and electrical circuits in the implementation of the project<br>B2 – The student uses the mechanical parts of the project<br>B3 – The student acquires knowledge of some programming languages<br>B4- The student gains experience in writing scientific research<br>B5- The student writes the results obtained from the research |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |

| |
|---|
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student listens to the supervisor's instructions with attention regarding the project<br>C2- The student learns about the impactof science and scientists in life<br>C3- The student should describe the project |
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2 - literary activities<br>D3- Artistic activities<br>D4- |

| 10. Course Structure | |
|---|---|
| Article Vocabulary | Months |
| Distributing projects to students, meeting with the supervising professor, and starting to review the library to obtain resources for the project scheduled for students. | First |
| Collect information about the project, start theoretical study and prepare the necessary designs for the implementation of the project. | Second |
| Start implementing the planned designs practically and conducting experiments and tests to obtain practical results. | Third |
| Transfer the laboratory-executed experiments to the final boards to obtain the practical designed model and conduct the test on the final model and obtain the final results of the discussion. | Fourth |
| Discuss the practical results and their suitability from the realistic results and find the necessary explanations for the apparent cases. | V |
| Arranging the parts of the report written for each of the previous stages of writing the final report on the project as follows:<br>• Project Name<br>• Supervising Professor<br>• Students' Names<br>• The bottom line<br>• Chapter One: Introduction<br>• Chapter Two: Theoretical Part<br>• Chapter Three: Practical and Theoretical Part | Sixth |

| | |
|---|---|
| • Chapter Four: Discussion of Findings, Conclusions and Proposals<br>• Sources | |
| Submit the practical model of the project with the final report of the final test and evaluation | Seventh |

| 11. Infrastructure | |
|---|---|
| | 95- Required textbooks |
| | 96- Main references (sources) |
| **Varies according to different projects and their multiplicity** | **نننن) Recommended books and references (scientific journals, reports, .....)** |
| **Websites by project** | **ررررر) Electronic references, websites, .....** |

| 12. Course Development Plan |
|---|
| |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 579. Educational institution |
| Medical Devices Technology Engineering | 580. Scientific Department / Center |
| MIE404/ Control Systems | 581. Material Name/Code |
| Weekly (Practical + Theoretical) | 582. Available Attendance Forms |
| 2024/2023 | 583. Semester / Year |
| 120 hours (60 theoretical + 60 practical) | 584. Number of Credit Hours (Total) |
| 11/1/2024 | 585. The history of preparation of this description |
| 586. Course Objectives | |
| **1. Identify the components of the control circuits** | |
| **2- Identify the typesof controllers** | |

| |
|---|
| **3- Identify the uses of control** |
| 4**- Identify the application of control circles** |
| |
| |

| 587. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1. Understands the components of the control circles<br>A2- Designs control departments for various organizations<br>A3- Explains the stability of the control organization<br>A4- Compare between types of controls<br>A5- Defines the time and frequency response of control systems |
| B - Course skills objectives<br>B1 – The signal plotter is used to show theresults<br>B2 – Write the resultsdisplayed on the calculator<br>B3 – Draws curves for time response<br>B4 – |
| Teaching and learning methods |
| Theoretical, electronic and practical lectures, office skills, virtual library |
| Evaluation methods |
| Practical Semester Exams , Monthly Electronic Exams , Daily Tests , Quick Questions |
| C- Emotional and value goals<br>C1- The student should listen attentively to the teacher's evil<br>C2- Commitment to calm and orderduring the class<br>C3- The student should be sensitive to the suffering of victims ofcustomary discrimination<br>C4- The student should know the impactof science and scientists |

| |
|---|
| Teaching and learning methods |
| Lectures, laboratories, scientific seminars |
| Evaluation methods |
| **Daily Assessment, Monthly Evaluation, Quarterly Evaluation, Practical Evaluation, Daily Attendance, Weekly Reports, Daily Assignments, Seminars, Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- The student's ability to scientific research<br>D2- The student's ability to participate in classroom activities such as sports and poetry paintingto represent<br>D3- The student's ability to acquire skills in the scientific material<br>D4- |

| 588. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Introduction to control system | The student understands the lesson | 2N+2P | First |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Lap lace transform & complex variable , metrics. | The student understands the lesson | 4N+4P | II +III |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Tranfor function , block diagram reduction,signal flow diagram. | The student understands the lesson | 6N+6P | Fourth + Fifth + Sixth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Time domain analyses , steady state analysis | The student understands the lesson | 6N+6P | Seventh + Eighth + Ninth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Stability analysis , Routh,Nyquist | The student understands the lesson | 4N+4P | Tenth+ Eleventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Root locus technique. | The student understands the lesson | 4N+4P | Twelfth + Thirteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Frequency domain analysis, Gainmargin ,phase margin &bode plot | The student understands the lesson | 6N+6P | Fourteenth + Fifteenth + Sixteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Frequency domain synthesis,phase lead | The student understands the lesson | 4N+4P | Seventeenth + Eighteenth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | Compensation,phase-lag compensation lag – lead compensation | The student understands the lesson | 4N+4P | + Nineteenth + Twentieth |
| Weekly exams and pre- and | Theoretical and practical lectures | PID conyrollers design | The student understands the lesson | 8N+8P | Twenty-one + Twenty-second + Twenty-third |

| | | | | | |
|---|---|---|---|---|---|
| post-questions | | | | | + Twenty-fourth |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | State space representation & analysis. | The student understands the lesson | 6N+6P | Twenty-fifth + twenty-sixth + twenty-seventh |
| Weekly exams and pre- and post-questions | Theoretical and practical lectures | State Diagram ,analogue computer , Black diagram representation. | The student understands the lesson | 6N+6P | Twenty-eighth + Twenty-ninth + Thirty |

| 589. Infrastructure | |
|---|---|
| Modern control system By : OGATA | 97- Required textbooks |
| Linear control system By : KHANNA Publishers | 98- Main references (sources) |
| Control system Analysis and Design By : Aggarwal | زززز) Recommended books and references (scientific journals, reports, .....) |
| Whoa, whoa, who Control system | سسسس) Electronic references, websites, ..... |

| 590. Course Development Plan |
|---|
| Control of non linear |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 591. Educational institution |
| Medical Devices Technology Engineering | 592. Scientific Department / Center |
| Advanced Digital Design / 408MIE | 593. Material Name/Code |
| Weekly (theoretical) | 594. Available Attendance Forms |
| 2024/2023 | 595. Semester / Year |
| 4 hours per week | 596. Number of Credit Hours (Total) |

| | |
|---|---|
| 11/1/2024 | 597. The history of preparation of this description |

598. Course Objectives

**2- Teaching the student to recognize advanced digital electronic circuits and how to distinguish between them**

**2- Teaching the student to design digital electronic circuits**

**3- Identify the types of digital memories and programmable electronic circuits**

**15- Microcontroller programming of PIC or AVR type**

599. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Knowledge Objectives

A1- The student enumerates the types of digital integrated electronic circuits

A2- The student distinguishes the difference between digital integrated circuits

A3- The student learns about the types of digital memories and digital electronic circuits Programmability

A4- The student learns to program microcontrollers in C or assembly language (Assembly language)

A5- The student programs the microcontroller

A6- The student gets acquainted with some microcontroller applications

B - Course skills objectives

B1 – The student uses digital electronic circuits

B2 – The student uses programs to program the microcontroller

B3 – The student acquires programming skills in C

B4 – The student writes the results obtained in the laboratory

Teaching and learning methods

Theoretical and electronic lectures, practical experiences

Evaluation methods

Written and practical semester exams, electronic monthly exams, daily tests, quick questions

| |
|---|
| C- Emotional and value goals<br>A1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning advanced digital design<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Discussion and dialogue with students |
| Evaluation methods |
| **Questionnaire , Seminars , Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2- Art Activities<br>D3- Literary activities |

| 600. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Direct Questions | Theoretical and practical lectures | TTL and CMOS Family | The student understands the lesson | 2 theoretical + 2 practical | 1 |
| Direct Questions | Theoretical and practical lectures | Astable multivibrators | The student understands the lesson | 2 theoretical + 2 practical | 2 |
| Rapid exam | Theoretical and practical lectures | Decoders. (4-to-16 decoder, The BCD decoder , BCD to Seven-segment decoder). | The student understands the lesson | 2 theoretical + 2 practical | 3 |
| Direct Questions | Theoretical and practical lectures | PN codes generators | The student understands the lesson | 2 theoretical + 2 practical | 4 |
| Rapid exam | Theoretical and practical lectures | Binary Counters (Asynchronous binary counter , synchronous binary Counter and special purpose counter) | The student understands the lesson | 4 theoretical + 4 practical | 5 , 6 |
| Direct Questions | Theoretical and practical lectures | Cascade Counter and frequency divider | The student understands the lesson | 2 theoretical + 2 practical | 7 |
| Rapid exam | Theoretical and practical lectures | Shift register functions ( serial in –serial out , serial in –parallel out ,parallel in- serial out and parallel in –parallel out) | The student understands the lesson | 4 theoretical + 4 practical | 8 , 9 |
| Direct Questions | Theoretical and practical lectures | Memories and | The student understands the lesson | 2 theoretical + 2 practical | 10 |
| Rapid exam | Theoretical and practical lectures | Random Access Memories (RAMs) | The student understands the lesson | 2 theoretical + 2 practical | 11 |
| Direct Questions | Theoretical and practical lectures | Read only Memories (ROMs). | The student understands the lesson | 2 theoretical + 2 practical | 12 |
| Rapid exam | Theoretical and practical lectures | Programmable Read Only Memories (PROMs) [ EPROMs, | The student understands the lesson | 2 theoretical + 2 practical | 13 |

| | | | | | |
|---|---|---|---|---|---|
| | | UV EPROMs, and EEPROMs]. | | | |
| Direct Questions | Theoretical and practical lectures | Programmable Read Only Memories (PROMs) [ EPROMs, UV EPROMs, and EEPROMs]. | The student understands the lesson | 2 theoretical + 2 practical | 14 |
| Rapid exam | Theoretical and practical lectures | First in –First out serial memories (FIFOs). | The student understands the lesson | 2 theoretical + 2 practical | 15 |
| Direct Questions | Theoretical and practical lectures | Last in - First out memories (LIFOs). | The student understands the lesson | 2 theoretical + 2 practical | 16 |
| Rapid exam | Theoretical and practical lectures | Universal asynchronous receiver transmitter (UART) | The student understands the lesson | 2 theoretical + 2 practical | 17 |
| Direct Questions | Theoretical and practical lectures | Introduction to Microcontroller. | The student understands the lesson | 2 theoretical + 2 practical | 18 |
| Rapid exam | Theoretical and practical lectures | Microcontroller PIC16F84 | The student understands the lesson | 4 theoretical + 4 practical | 19 , 20 |
| Direct Questions | Theoretical and practical lectures | Instruction set in PIC16xx microcontroller family. | The student understands the lesson | 6 theoretical + 6 practical | 21 , 22 , 23 |
| Rapid exam | Theoretical and practical lectures | Assembly language programming for PIC16xx family | The student understands the lesson | 6 theoretical + 6 practical | 24 , 25 , 26 |
| Direct Questions | Theoretical and practical lectures | PIC16F84 programmer kit | The student understands the lesson | 4 theoretical + 4 practical | 27 , 28 |
| Rapid exam | Theoretical and practical lectures | PIC16F84 applications | The student understands the lesson | 4 theoretical + 4 practical | 29 , 30 |

| 601. Infrastructure | |
|---|---|
| Text Books:<br>Simon Monk, "Programming Arduino: Getting Started with Sketches", 2nd Ed., 1. McGraw-Hill Companies., 2012 | 99- Required textbooks |
| 1- Digital fundamentals ninth edition by Thomas L.Floyd 2006<br>2- PIC microcontrollers Author: Nebojsa Matic ,May 15,2000 | 100- Main references (sources) |

| | |
|---|---|
| 3- John Boxall, "Arduino Workshop: A Hands-On Introduction with 65 Projects", 2th Ed., No Starch Press, Inc.2013<br>101- Ethan Thorpe, "Arduino: Advanced Methods and Strategies of Using Arduino", 2020<br>102- John Warren, Josh Adams, Harald Molle, "Arduino Robotics Technology in Action", Springer-Verlag Berlin and Heidelberg Gmbh & Co. Kg, 2011 | |
| 1- Digital Principles and Logic Design , chapter 11. by A. Saha and N. Manna. 2007.<br>2- Digital Electronics Principles, Devices and Applications ,chapter5. by Anil K. Maini 2007.<br>3- Theory and Problems of digital principles third Edition , chapter6. by ROGER L. TOKHEIM, M.S.1994<br>4- PIC microcontrollers Author: Nebojsa Matic, May 15,2000 | ش)ششش Recommended books and references (scientific journals, reports, .....) |
| 3. https://create.arduino.cc/projecthub/projects/tags/robotics<br>4. https://howtomechatronics.com/arduino-projects/ | ص)صصص Electronic references, websites, ..... |

## 602. Course Development Plan

Add another AVR type microcontroller based on the ARDUINO board for the purpose of studying the following:

**Plan to upgrade the syllabus:**

Introduce students to advanced design methodologies and practical design approaches for high-performance FPGA applications using the following objectives

9. Translate a software application into hardware logic for FPGA architectures
10. Design synthesizable VHDL systems based on industry-standard coding methods.
11. Optimize logic for various performance goals (timing, frequency, area, and power).
12. Build test-benches and create data models to verify bit-true accurate designs.
13. Design streaming architectures for high-performance computing applications.
14. Calculate throughput, resource allocation, and other performance metrics.
15. Simulate and compare performance results between different optimizations.
16. Utilize commercial FPGA development tools for compilation, simulation, and synthesis.

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 603. Educational institution |
| Medical Devices Technology Engineering | 604. Scientific Department / Center |
| Calculator Applications / MIE409 | 605. Material Name/Code |
| Weekly (theoretical + practical) | 606. Available Attendance Forms |
| 2024/2023 | 607. Semester / Year |

| | |
|---|---|
| 3 hours per week | 608. Number of Credit Hours (Total) |
| 11/1/2024 | 609. The history of preparation of this description |
| 610. Course Objectives | |
| **2- The student will be able to know the operation of the program** | |
| **2- The student will be able to know the interface of the program** | |
| 3- **The student will be able to know the creation of a progressive presentation** | |
| **16- Learn to insert a new slide for the progressive presentation** | |
| 17- **The student will be able to learn how to enter fees for the progressive presentation** | |
| 18- **The student will be able to know the addition of images and tables and control them** | |

## 611. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Knowledge Objectives
A1- Knowledge of the program
A2- Understand the importance of the program
A3- Knowledge and understanding of the practical applications of the program
A4- Know and understand the interlock of the program with other software applications
A5- Know and understand the methods of preparing the progressive presentation

B - Course skills objectives
B1 – Progressive Presentation Design
B2 – Add graphic animations to the progressive presentation
B3 – Control the style of slideshow for progressive presentation
B4 – Design transition animations between progressive slides

### Teaching and learning methods

Academic lectures: They provide a solid foundation on which to develop the knowledge balance of students
Practical laboratory: which provides all the experiences the student needs to help develop the practical skill side and consolidate the necessary principles to carry out the implementation of projects correctly

### Evaluation methods

Interactive assessment: It provides the basis for evaluating the student by observing the extent of his interaction during the lecture and his participation
Written tests: which provide knowledge of the extent to which the student understands and follows up on the material and scientific notes given by the teacher
Semester exams: The middle circle is to assess the extent of the student's interest and interaction with the scientific material he received during the semester, with its academic and skill aspects.
Final exams: The final episode is to assess the student's interest and interaction with the scientific material he received during the semester, both academic and skillful aspects.
Daily quizzes and quick questions

### C- Emotional and value goals

C1- Cultivating the spirit of creativity among students and ensuring that they find innovative solutions to various problems
C2- Developing students' ability to work together as effective teams that produce outstanding results
C3- Developing a sense of responsibility among students and psychological preparation to bear the burdens placed on them
C4- Developing the values of diligence and perseverance to complete the work to reach satisfactory results

### Teaching and learning methods

Stimulating the creative side of students by posing different scientific problems and asking students to find appropriate scientific solutions to them in different ways
Developing the spirit of cooperation among students by forming work teams and motivating students to make all necessary efforts to work in different circumstances and with several people

### Evaluation methods

Direct evaluation: This evaluation is carried out by the teacher directly and by observing the student's interaction during the lecture and confirming the observations regarding this Practical projects: The student's ability to achieve, innovate and work in teams, results and solutions to various scientific problems are evaluated.

**d. General andrehabilitative skills transferred (other skills related to employability and personal development).**

D1- Training on practical applications of the progressive presentation program

D2- Application of the program of progressive presentation on other subjects related to the student

D3- Introducing other applications to a progressive offer

D4- Employing the progressive program in graduation projects for fourth stage students

612. Course Structure

| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
|---|---|---|---|---|---|
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | PowerPoint Program | The student understands the lesson | 18 | 2- 6 |
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | Build a new progressive view, store the progressive view, make the view, modify and save changes | The student understands the lesson | 24 | 7 - 14 |
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | Insert a new slide (text or image), insert notes, enter the main titles of the slide | The student understands the lesson | 15 | 15 - 19 |
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | Modify the text and control its shape, control the colors and the floor of the slide | The student understands the lesson | 12 | 20 – 23 |
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | Add natural images and control tools, add charts from Excel, databases from Access | The student understands the lesson | 6 | 24-25 |
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | Moving between program slides, animation methods and sound effects mode for slides | The student understands the lesson | 9 | 26-28 |
| Oral Questions, Daily Exam | Theoretical lectures , laboratory | Application About CAD CAM | The student understands the lesson | 6 | 29-30 |

613. Infrastructure

| | |
|---|---|
| | 103- Required textbooks |

| | |
|---|---|
| 1- PowerPoint 2019: For DummiesI John Wiley, Inc., Hoboken, New Jersey<br>2- Fundamentals of Computer-Aided Design Goyal, Katson, Delhi, 2013, | 104- Main references (sources) |
| 1.Microsoft Official Academic Course MICROSOFT POWERPOINT 2016.<br>2. CAD/CAM Priciples and Applications, Rao ,McGraw-Hill, New Delhi, 2010. | ضضضضض) Recommended books and references (scientific journals, reports, .....) |
| **http://www.powerpointninja.com/** | طططط) Electronic references, websites, ..... |

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|---|
| 614. Course Development Plan |
| Introducing modern programs and applications and using a modern calculator |

## Course Description Form

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 615. Educational institution |
| Medical Devices Technology Engineering | 616. Scientific Department / Center |
| Medical Laser Systems /MIE407 | 617. Material Name/Code |
| Weekly (theoretical + theoretical) | 618. Available Attendance Forms |
| 2024/2023 | 619. Semester / Year |
| 4 hours per week | 620. Number of Credit Hours (Total) |

| | |
|---|---|
| 11/1/2024 | 621. The history of preparation of this description |
| 622. Course Objectives | |
| **The course aims to study the generation of laser types, the method of transporting and receiving them, and how to use them with medical devices.** | |
| | |
| | |
| | |
| | |
| | |

| 623. Course Outcomes and Methods of Teaching, Learning and Assessment |
|---|
| A- Knowledge Objectives<br>A1- The student lists the types of lasers<br>A2- The student distinguishes the difference between laser and light<br>A3- The student is introduced to the general and medical laser applications in particular<br>A4- The student learns the properties of lasers<br>A5- The student learns about avoiding the dangers of lasers and the safe use of lasers |
| B - Course skills objectives<br>B1 – The student uses laser generation devices<br>B2 – The student uses laser sensors<br>B3 – The student acquires the skills of laser properties and applications<br>B4 – The student writes the results obtained in the laboratory from the phenomena of laser |
| Teaching and learning methods |
| Theoretical and electronic lectures, practical practical experiences |
| Evaluation methods |

| |
|---|
| Theoretical and practical semester exams, electronic monthly exams, daily tests, quick questions |
| C- Emotional and value goals<br>A1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning laser systems and its medical applications<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |
| Discussion and dialogue with students |
| Evaluation methods |
| **Questionnaire , Seminars , Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2- Art Activities<br>D3- Literary activities |

| 624. Course Structure | | | | | |
|---|---|---|---|---|---|
| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
| Direct Questions | Theoretical and practical lectures | ***Laser generation*** | The student understands the lesson | 4 theoretical + 4 practical | 1, 2 |
| Direct Questions | Theoretical and practical lectures | ***Types of laser.*** | The student understands the lesson | 4 theoretical + 4 practical | 3 , 4 |
| Rapid exam | Theoretical and practical lectures | ***Light and light propagation in glass fiber.*** | The student understands the lesson | 6 theoretical + 6 practical | 5 , 6 , 7 |
| Direct Questions | Theoretical and practical lectures | ***Optical fiber wave guide, band width distance product, dispersion and pulse spreading, maximum allowable data rate, fiber power losses.*** | The student understands the lesson | 6 theoretical + 6 practical | 8 , 9 , 10 |
| Rapid exam | Theoretical and practical lectures | ***Transmitter devise and circuits (communication LEDs).*** | The student understands the lesson | 4 theoretical + 4 practical | 11 , 12 |
| Direct Questions | Theoretical and practical lectures | ***Injection lasers, modulators.*** | The student understands the lesson | 4 theoretical + 4 practical | 13 , 14 |
| Rapid exam | Theoretical and practical lectures | ***Receiver devices and circuits photo diode light detector.*** | The student understands the lesson | 4 theoretical + 4 practical | 15 , 16 |
| Direct Questions | Theoretical and practical lectures | ***PIN photo diodes, photo multiplier.*** | The student understands the lesson | 2 theoretical + 2 practical | 17 |
| Rapid exam | Theoretical and practical lectures | ***Avalanche photo diode (APD), receiver circuits.*** | The student understands the lesson | 4 theoretical + 4 practical | 18 , 19 |
| Direct Questions | Theoretical and practical lectures | ***Transmission technology, fiber technology, connectors.*** | The student understands the lesson | 4 theoretical + 4 practical | 20 , 21 |
| Rapid exam | Theoretical and practical lectures | ***Splices, couplers.*** | The student understands the lesson | 4 theoretical + 4 practical | 22 ,23 |

| | | | | | |
|---|---|---|---|---|---|
| Direct Questions | Theoretical and practical lectures | ***Types of medical applications of laser.*** | The student understands the lesson | 6 theoretical + 6 practical | 24 , 25 , 26 , 27 |
| Rapid exam | Theoretical and practical lectures | ***Laser hazards, the standard level for a safe working environment, lab – safety.*** | The student understands the lesson | 6 theoretical + 6 practical | 28 , 29 ,30 |

## 625. Infrastructure

| | |
|---|---|
| | 105- Required textbooks |
| An introduction to the Laser theory an applications By M. N. Avadhanulu Dr. P. S. Hemne | 106- Main references (sources) |
| | ظظظظ) Recommended books and references (scientific journals, reports, .....) |
| | عععع)Electronic references, websites, ..... |

## 626. Course Development Plan

## Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

| | |
|---|---|
| Al, Hadi University College | 627. Educational institution |
| Medical Devices Technology Engineering | 628. Scientific Department / Center |
| Radiation Instrumentation Engineering / MIE406 | 629. Material Name/Code |
| Weekly (theoretical + practical) | 630. Available Attendance Forms |
| 2024/2023 | 631. Semester / Year |
| 4 hours per week | 632. Number of Credit Hours (Total) |
| 11/1/2024 | 633. The history of preparation of this description |
| 634. Course Objectives | |
| **The course aims to study the generation of the structure of the atom and atomic and nuclear radiation and their effect on the human body and their uses in devices Medical** | |
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| 635. Course Outcomes and Methods of Teaching, Learning and Assessment |
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| A- Knowledge Objectives<br>A1- The student lists the types of radiation devices<br>A2- The student distinguishes the difference between radiation and nuclear radiation<br>A3- The student gets acquainted with the applications of radiation devices<br>A4- The student learns the properties of radiation devices<br>A5- The student learns about avoiding radiation hazards and the safe use of radiation |
| B - Course skills objectives<br>B1 – The student uses radiation generating devices<br>B2 – The student uses radiation sensors<br>B3 – The student acquires the skills of the properties and applications of radiation<br>B4 – The student writes the results obtained in the laboratory from the phenomena of radiation |
| Teaching and learning methods |
| Theoretical and electronic lectures, practical experiences |
| Evaluation methods |
| Practical theoretical semester exams , electronic monthly exams , daily tests , quick questions |
| C- Emotional and value goals<br>A1- The student listens to the explanation attentively<br>C2- The student learns about the impact of science and scientists in life<br>C3- The student should describe the importance of learning radiation equipment engineering and its medical applications<br>C4- The student should care about the calmness and order of the class |
| Teaching and learning methods |

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| Discussion and dialogue with students |
| Evaluation methods |
| **Questionnaire , Seminars , Discussion Topics** |
| **d. General andrehabilitative skills transferred (other skills related to employability and personal development).**<br>D1- Sports activities<br>D2- Art Activities<br>D3- Literary activities |

636. Course Structure

| Evaluation method | Method of education | Unit / Subject Name | Required Learning Outcomes | Hours | The week |
|---|---|---|---|---|---|
| Direct Questions | Theoretical and practical lectures | ***Atomic structure & atomic radiation*** | The student understands the lesson | 4 4 + | 1 , 2 |
| Direct Questions | Theoretical and practical lectures | ***The nuclear & nuclear radiation*** | The student understands the lesson | 4 4 + | 3 , 4 |
| Rapid exam | Theoretical and practical lectures | ***Interaction of radiation with matter*** | The student understands the lesson | 4 4 + | 5 , 6 |
| Direct Questions | Theoretical and practical lectures | ***Radiation detection & engineering of radiation detectors*** | The student understands the lesson | 4 + 4 + 4 | 7 , 8 , 9 |
| Rapid exam | Theoretical and practical lectures | ***Engineering of radiation dosimetry & dosimeters*** | The student understands the lesson | 4 + 4 + 4 | 10 , 11 , 12 |
| Direct Questions | Theoretical and practical lectures | ***Radiation protection*** | The student understands the lesson | 4 4 + | 13 , 14 |
| Rapid exam | Theoretical and practical lectures | ***Engineering of body scanners*** | The student understands the lesson | 4 4 + | 15 , 16 |
| Direct Questions | Theoretical and practical lectures | ***Production of X-rays*** | The student understands the lesson | 4 4 + | 17 , 18 |
| Rapid exam | Theoretical and practical lectures | ***Clinical radiation generators*** | The student understands the lesson | 4 4 + | 19 , 20 |
| Direct Questions | Theoretical and practical lectures | ***Dose distribution & scatter analysais*** | The student understands the lesson | 4 4 + | 21 , 22 |
| Rapid exam | Theoretical and practical lectures | A ***system of dosimetric calculations*** | The student understands the lesson | 4 4 + | 23 , 24 |
| Direct Questions | Theoretical and | ***Treatment plannig*** | The student understands the lesson | 4 4 + | 25 , 26 |

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| | practical lectures | | | | |
| امتحان سريع | محاضرات نظرية و عملية | ***Engineering of electron beam therapy*** | الطالب يفهم الدرس | 4 4 + | 27 , 28 |
| الاسئلة المباشرة | محاضرات نظرية و عملية | ***Brachy therapy*** | الطالب يفهم الدرس | 4 +4 | 29 , 30 |

637. البنية التحتية

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| 107- الكتب المقررة المطلوبة | |
| 108- المراجع الرئيسية (المصادر) | 1.Physics for Scientists and Engineers with Modern Physics,Eighth Edition<br>By: Raymond A.Serway and John W.Jewett,Jr<br>2.Classical radiation therapy part 2<br>By : Faiz Khans<br>3. The Physics and radiation theraby<br>By : Faiz Khan ed. 3,4<br>4. Principle of radiological physics<br>By : Donald T.Graham<br>Paul colce<br>Martin vosper |
| الكتب والمراجع التي يوصى بها (غغغغ (المجلات العلمية ،التقارير ،.....) | |
| المراجع الالكترونية (فـفـفـف ،مواقع الانترنيت ،..... | |

638. خطة تطوير المقرر الدراسي