MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

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| **Module Information**  **معلومات المادة الدراسية** | | | | | | | |
| **Module Title** | Engineering Drawing | | | | **Module Delivery** | | |
| **Module Type** | Suport or related learning activity | | | | * **☐ Theory** * **☐ Lecture** * **☒ Lab** * **☐ Tutorial** * **☐ Practical** * **☐ Seminar** | | |
| **Module Code** | CET1104 | | | |
| **ECTS Credits** | 5 | | | |
| **SWL (hr/sem)** | 125 | | | |
| **Module Level** | | UGx11 1 | **Semester of Delivery** | | | | 1 |
| **Administering Department** | | CET | **College** | EETC | | | |
| **Module Leader** | Rawaa dawood Salim | | **e-mail** | rawaadawood@mtu.edu.iq | | | |
| **Module Leader’s Acad. Title** | | Asst. lecturer | **Module Leader’s Qualification** | | | | MSC. |
| **Module Tutor** | Asst. Prof. Dr. Oras Ahmed Shareef | | **e-mail** | dr.oras@mtu.edu.iq | | | |
| **Peer Reviewer Name** | | Dr. Mahmoud Shuker Mahmoud | **e-mail** | mahmoud.shukur@mtu.edu.iq | | | |
| **Scientific Committee Approval Date** | | 29/10/2023 | **Version Number** | | | 1.0 | |

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

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| **Module Aims, Learning Outcomes and Indicative Contents**  **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية** | |
| **Module Aims**  **أهداف المادة الدراسية** | 1. To develop spatial visualization skills: Enhance your ability to visualize and   mentally manipulate objects in three-dimensional space based on two- dimensional drawings. Strengthen your spatial awareness and improve  your understanding of complex engineering design   1. Learn sketching and taking field dimensions. 2. Take data and transform it into graphic drawings. 3. Learn basic engineering drawing formats. 4. Learn basic AutoCAD skills. 5. Learn who draw 2D drawings in AutoCAD. |
| **Module Learning Outcomes**  **مخرجات التعلم للمادة الدراسية** | 1. Identify the basic of AutoCAD 2. Explain Drawing settings 3. How to drawing: Point, Line, Multiline, P line, Spline, X line, Rectangle. 4. How to drawing: Donut, Polygon, Circle, Arc, Ellipse 5. List Modify Tools   Identify: Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror,   1. Identify Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. 2. Explain Zoom, Pan. 3. How to assign: Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions. 4. Dealing with: Text, Style, M text, Scale text, Spell, 5. Knowing the Hatching Objects. 6. Drawing 3d modeling. 7. Drawing the Exercises . |
| **Indicative Contents**  **المحتويات الإرشادية** | Indicative content includes the following.  **--AutoCAD Software,** drawing settings, Drawing Tools, Line, Circle, Arc, Ellipse, Donut, Polygon, Rectangle, Point, Multiline, P line, Spline, X line. **[20 hrs.]**  **--Modify Tools**  Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. **[4 hrs.]**  **--Display Control** Zoom, Pan, Redraw, Clean Screen. **[4 hrs.]**  **--Dimension** - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions. **[4 hrs.]**  --Hatching Objects **[4hrs]**  **--Text**, Style, M text, Scale text, Spell, **[4 hrs.]**  **--3D MODELLING, Convert** 2D to 3D, Solid Editing **[20 hrs.]** |

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| **Learning and Teaching Strategies**  **استراتيجيات التعلم والتعليم** | |
| **Strategies** | 1. 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. with introductory tutorials or online resources that cover the basics of AutoCAD.   1. 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.   1. 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.   1. 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. 2. 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. |

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| **Student Workload (SWL)**  **الحمل الدراسي للطالب موزع على 15 اسبوع** | | | |
| **Structured SWL (h/sem)**  **الحمل الدراسي المنتظم للطالب خلال الفصل** | 48 | **Structured SWL (h/w)**  **الحمل الدراسي المنتظم للطالب أسبوعيا** | 3.2 |
| **Unstructured SWL (h/sem)**  **الحمل الدراسي غير المنتظم للطالب خلال الفصل** | 77 | **Unstructured SWL (h/w)**  **الحمل الدراسي غير المنتظم للطالب أسبوعيا** | 5.13 |
| **Total SWL (h/sem)**  **الحمل الدراسي الكلي للطالب خلال الفصل** | 125 | | |

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| **Module Evaluation**  **تقييم المادة الدراسية** | | | | | |
| **As** | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5, 11 | LO #1-3, 4 and 11 |
| **Assignments** | 2 | 10% (10) | 4,11 | 1-3 , 3-10 |
| **Projects / Lab.** | 10 | 20% (20) | Continuous |  |
| **Report** |  |  |  |  |
| **Summative assessment** | **Midterm Exam** | 3 hr | 10% (10) | 7 | LO # 1-7 |
| **Final Exam** | 3hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) |  |  |

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| **Delivery Plan (Weekly Lab. Syllabus)**  **المنهاج الاسبوعي للمختبر** | |
| **Week** | **Material Covered** |
| **Week 1** | Introducing of Engineering Drawing |
| **Week 2** | Drawing settings of AutoCAD |
| **Week 3** | Drawing Tools  Point, Line ,Multiline, P line, Spline, X line. |
| **Week 4** | Rectangle, Donut, Polygon |
| **Week 5** | Circle, Arc, Ellipse |
| **Week 6** | Modify Tools  Erase, Undo, Redo, Explode, Move, Copy, Rotate, Mirror, Array, Align, Scale, Stretch, Lengthen, Trim, Extend, Break, Join, Chamfer, Fillet. Display Control  Zoom, Pan, Redraw, Clean Screen. |
| **Week 7** | Mid exam |
| **Week 8** | Dimension - Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Baseline, Tolerance, Dimension Space, Dimension Break, Jogged radius, Ordinate dimensions |
| **Week 9** | Annotation Tools  Text, Style, M text, Scale text, Spell |
| **Week 10** | Hatching Objects |
| **Week 11,12** | 3D modeling |
| **Week13** | Convert 2D To 3D |
| **Week 14** | Solid Editing |
| **Week 15** | Exercises drawing |
| **Week 16** | **Preparatory week before the final Exam** |

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| **Learning and Teaching Resources**  **مصادر التعلم والتدريس** | | |
|  | **Text** | **Available in the Library?** |
| **Required Texts** | Introduction to AutoCAD 2010  By Alf Yarwood  Copyright 2009 | Yes |
| **Recommended Texts** | An Introduction to Autodesk Inventor 2010 and AutoCAD 2010 Unbnd Edition  by Randy Shih | No |
| **Websites** |  | |

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| **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 |
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| **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. | | | | |