MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

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| **Module Information**  **معلومات المادة الدراسية** | | | | | | | |
| **Module Title** | Engineering Drawing | | | | **Module Delivery** | | |
| **Module Type** | Basic | | | | * **☒ Theory** * **☐ Lecture** * **☒ Lab** * **☐ Tutorial** * **☒ Practical** * **☐ Seminar** | | |
| **Module Code** | MATE107 | | | |
| **ECTS Credits** | 4 | | | |
| **SWL (hr/sem)** | 100 | | | |
| **Module Level** | | UGx11 1 | **Semester of Delivery** | | | | 2 |
| **Administering Department** | | Materials Engineering | **College** | College of Engineering | | | |
| **Module Leader** |  | | **e-mail** |  | | | |
| **Module Leader’s Acad. Title** | |  | **Module Leader’s Qualification** | | | |  |
| **Module Tutor** |  | | **e-mail** |  | | | |
| **Peer Reviewer Name** | |  | **e-mail** |  | | | |
| **Scientific Committee Approval Date** | | 13/06/2023 | **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** | 2 |

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| **Module Aims, Learning Outcomes and Indicative Contents**  **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية** | |
| **Module Objectives**  **أهداف المادة الدراسية** | 1. To know about different types of lines & use of different types of pencils in an Engineering Drawing 2. To know about different types of projection 3. To know projection of points, straight lines, solids etc. 4. To know development of different types of surfaces. 5. To know about isometric projection. Basics of dimensioning, Lettering& representation of lines. Different lines used for representation of different Engineering Sections. 6. To know different angle of projection. 7. To develop a knowledge and Understand of both manual drawing and features of Auto CAD. 8. To create, edit and print a variety of technical drawings using CAD system. |
| **Module Learning Outcomes**  **مخرجات التعلم للمادة الدراسية** | At the end of this course the students will be able to:  1- Get information about the important tools for engineering drawing. This will give student basic knowledge of technical drawings professions and means of communications to others.  2- Learning how to draw the shapes, angles and lines and others which is essential for engineer  3- Understand the main idea of using dimension for engineering drawing  4- Familiarize with different drawing equipment, technical standards and procedures for construction of geometric figures. This will give students ability to draw three dimension objects on the paper and to draw the pectoral drawings.  5- Explain the principle of projection  6-Explain the principle of sectioning  7-Explain the principles of engineering geometry and isometric views as they apply to engineering drawings  8-Learning the main idea from assembly and detail drawing  9- Identify the important tools used to create technical drawings in CAD  10-Apply basic CAD concepts to develop and construct accurate 2D geometry through creation of basic geometric constructions.  11-Apply elements of mechanical drafting such as layers, dimensions, drawing formats, and 2D figures in projects with a focus on ANSI industry standards. |
| **Indicative Contents**  **المحتويات الإرشادية** | Indicative content includes the following. |

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| **Learning and Teaching Strategies**  **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, assignments and by using computers to draw handmade complicated drawings that are interesting to the students. |

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| **Student Workload (SWL)**  **الحمل الدراسي للطالب محسوب لـ 15 اسبوعا** | | | |
| **Structured SWL (h/sem)**  **الحمل الدراسي المنتظم للطالب خلال الفصل** | 108 | **Structured SWL (h/w)**  **الحمل الدراسي المنتظم للطالب أسبوعيا** | 7 |
| **Unstructured SWL (h/sem)**  **الحمل الدراسي غير المنتظم للطالب خلال الفصل** | 8 | **Unstructured SWL (h/w)**  **الحمل الدراسي غير المنتظم للطالب أسبوعيا** |  |
| **Total SWL (h/sem)**  **الحمل الدراسي الكلي للطالب خلال الفصل** | **100** | | |

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| **Module Evaluation**  **تقييم المادة الدراسية** | | | | | |
| **As** | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Class work** | 4 | 10% (20) | Continuous | LO #1 to #8 |
| **Practical** | 3 | 5% (10) | Continuous | All |
| **Lab. / Tutorial** | 2 | 15% (15) | Continuous | All |
| **Report** | 0 | 0% |  |  |
| **Summative assessment** | **Midterm Exam** | 2hr | 30% (30) | 6,13 | All |
| **Final Exam** | 3hr | 40% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) |  |  |

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| **Delivery Plan (Weekly Syllabus)**  **المنهاج الاسبوعي العملي** | |
| **Week** | **Material Covered** |
| **Week 1** | Introduction to engineering drawing and its uses as engineering language in industry, Drawing Instruments , Types of Engineering Tools and Their Uses |
| **Week 2** | Lines - definition and applications |
| **Week 3** | Engineering Operations (Geometrical figures) : types of angle and triangle, |
| **Week 4** | Engineering Operations :Geometrical figures - Polygon, square, rectangle, and circle |
| **Week 5** | Engineering Operations : Practice of ellipse |
| **Week 6** | Dimensions: definition, types of dimensioning, arrow heads and leaderline, Types of arrowhead. Leader Line with text, Practice of dimensioning |
| **Week 7** | Projection : projection of views using first or third angle projection methods |
| **Week 8** | projection of views |
| **Week 9** | projection of views |
| **Week 10** | Development of lateral surfaces of solids with cut-outs and holes |
| **Week 11** | Sectional views |
| **Week 12** | Sectional views |
| **Week 13** | Lost views |
| **Week 14** | Lost views |
| **Week 15** | Isometric drawing, |
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| **Delivery Plan (Weekly Lab. Syllabus)**  **المنهاج الاسبوعي للمختبر (الاوتوكاد)** | |
| **Week** | **Material Covered** |
| **Week 1** | Introduction to basic CAD concepts using AutoCAD |
| **Week 2** | Use AutoCAD Draw Commands  1.Line Command 2.Cartesian Coordinate System 3.Orthogonal Lines 4.Polar Tracking. |
| **Week 3** | 5. Circles 6. Arc Command7. SPline Command 8. Explode Command 9. Polygon 10. Rectangle 11. Spline Donut 13Ellipse |
| **Week 4** | Use AutoCAD Edit commands. 1.The Move Command 2.The Copy Command 3.The Offset Command |
| **Week 5** | 4.The Extend Command 5. Trim Command  6.The Erase Command 7 .The Zoom Command 8 .The Pan Command |
| **Week 6** | 9 .The Mirror Command 10 .The Rotate Command 11 .The Scale Command |
| **Week 7** | Create/edit basic block |
| **Week 8** | Create isometric drawings in 2D AutoCAD |
| **Week 9** | Use of polar and circle array |
| **Week 10** | Introduction to dynamic blocks |
| **Week 11** | Create/edit basic block |
| **Week 12** | Create and use templates which will set the drawing environment ready for your projects, and an understanding of the benefits of using templates. |
| **Week 13** | Use a layering system and different linetype styles and assign lineweights |
| **Week 14** | Practical CAD drawing exercises |
| **Week 15** | Practical CAD drawing exercises |
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| **Learning and Teaching Resources**  **مصادر التعلم والتدريس** | | |
|  | **Text** | **Available in the Library?** |
| **Required Texts** | A Textbook of Engineering Drawing: for Undergraduate Engineering Students Paperback – June 23, 2020  by Addisu Dagne Zegeye (Author)  Textbook of Engineering Drawing with AutoCad 4th edn Paperback by Venkata Reddy (Author) | NO |
| **Recommended Texts** | A Textbook of Engineering Drawing: Along with an Introduction to AutoCAD by Lal Roop (Author) | No |
| **Websites** | <https://www.youtube.com/watch?v=UzZpMOHvtNg> | |

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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. | | | | |