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|  | <p align="center"> <b>Ministry of Higher Education and<br/>Scientific Research - Iraq</b><br/> <b>Al-Naji University</b><br/> <b>College of Engineering</b><br/> <b>AI Engineering Department</b> </p> |  |
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## MODULE DESCRIPTION FORM

### نموذج وصف المادة الدراسية

| Module Information                 |                            |                               |                                                                                                                                                                                                                                          |
|------------------------------------|----------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| معلومات المادة الدراسية            |                            |                               |                                                                                                                                                                                                                                          |
| Module Title                       | <b>Engineering Drawing</b> |                               | Module Delivery                                                                                                                                                                                                                          |
| Module Type                        | <b>B</b>                   |                               | <input type="checkbox"/> Theory<br><input checked="" type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |
| Module Code                        | CEA1104                    |                               |                                                                                                                                                                                                                                          |
| ECTS Credits                       | <b>5</b>                   |                               |                                                                                                                                                                                                                                          |
| SWL (hr/sem)                       | <b>125</b>                 |                               |                                                                                                                                                                                                                                          |
| Module Level                       | 1                          | Semester of Delivery          |                                                                                                                                                                                                                                          |
| Administering Department           | Artificial Intelligence    | College                       | College of Engineering                                                                                                                                                                                                                   |
| Module Leader                      | Huda Saad Aldeen           | e-mail                        | huda.saaduldeen@alnaji-uni.edu.iq                                                                                                                                                                                                        |
| Module Leader's Acad. Title        | Lecturer                   | Module Leader's Qualification |                                                                                                                                                                                                                                          |
| Module Tutor                       |                            | e-mail                        |                                                                                                                                                                                                                                          |
| Peer Reviewer Name                 |                            | e-mail                        |                                                                                                                                                                                                                                          |
| Scientific Committee Approval Date |                            | Version Number                | 1.0                                                                                                                                                                                                                                      |

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

| <b>Module Aims, Learning Outcomes and Indicative Contents</b><br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>Module Objectives</b><br>أهداف المادة الدراسية                                                                         | <ol style="list-style-type: none"> <li>1) Student studying and understanding the engineering drawing using Computer via AutoCAD.</li> <li>2) Teaching and Learning the Fundamentals of Engineering Drawing as Related to Artificial Intelligence and Robotics engineering.</li> <li>3) Learning the right ways of engineering drawing using computer and to practice at AutoCAD in addition for Artificial Intelligence and Robotics engineering.</li> <li>4) Enhancing the student experience in recognizing drawing.</li> <li>5) Simple create, edit and print a variety of technical drawings using an AutoCAD.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية                                                          | <ol style="list-style-type: none"> <li>1) Describe the reasons why traditional pencil drawings are being replaced by CAD software.</li> <li>2) AutoCAD Skill: Obtain a thorough understanding of AutoCAD software, including its fundamental commands and the tools required for expert 2D drawing.</li> <li>3) Describe AutoCAD's menu bar and toolbars, as well as commands and user interfaces.</li> <li>4) Using Drawing Instructions: Learn to make use of a variety of AutoCAD drawing commands for ellipses, polygons, circles, arcs, lines, and other geometric shapes, in order to produce precise and accurate two-dimensional drawings.</li> <li>5) Learn Editing and Modification Techniques: Learn how to edit and modify sketches using functions like erase, trim, expand, mirror, and lengthen offset, chamfer, fillet, and further pertinent instruments to enhance and modify the design as necessary.</li> <li>6) Enhancing students' theoretical, practical, and creative skills in a variety of Artificial Intelligence and Robotics design methodologies.</li> </ol> |
| <b>Indicative Contents</b><br>المحتويات الإرشادية                                                                         | <ul style="list-style-type: none"> <li>• Navigating over the User Interface</li> <li>• Making Simple Drawings</li> <li>• Working with Objects</li> <li>• Putting Inquiry and Drawing Organization Commands into Practice</li> <li>• Creating Solids</li> <li>• Creating Meshes</li> <li>• Creating Surfaces</li> <li>• Creating Complex Solids &amp; Surfaces</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| <b>Learning and Teaching Strategies</b><br>استراتيجيات التعلم والتعليم |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <b>Strategies</b>                                                      | <p>The main strategy that will be implemented in the delivery of this module will focus on development student engagement in the exercises, while simultaneously enhancing and broadening their critical thinking abilities. This objective will be accomplished through lectures, interactive tutorials, and the incorporation of straightforward experiments that include engaging sampling activities tailored to the interests of the students.</p> |

| Student Workload (SWL)                                                         |     |                                                                           |      |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|------|
| الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا                                        |     |                                                                           |      |
| <b>Structured SWL (h/sem)</b><br>الحمل الدراسي المنتظم للطالب خلال الفصل       | 63  | <b>Structured SWL (h/w)</b><br>الحمل الدراسي المنتظم للطالب أسبوعيا       | 4.2  |
| <b>Unstructured SWL (h/sem)</b><br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 87  | <b>Unstructured SWL (h/w)</b><br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4.83 |
| <b>Total SWL (h/sem)</b><br>الحمل الدراسي الكلي للطالب خلال الفصل              | 150 |                                                                           |      |

| Module Evaluation     |              |             |                  |                    |                           |
|-----------------------|--------------|-------------|------------------|--------------------|---------------------------|
| تقييم المادة الدراسية |              |             |                  |                    |                           |
|                       |              | Time/Number | Weight (Marks)   | Week Due           | Relevant Learning Outcome |
| Formative assessment  | Quizzes      | 2           | 10% (10)         | 7 and 12           | LO #1 to #4 and #5, #6    |
|                       | Assignments  | 5           | 20% (20)         | 4 ,6 ,9 ,11 and 13 | LO #1 to #3 and #4 to #6  |
|                       | Practice/lab | 1           | 10% (10)         | Continuous         | All                       |
| Summative assessment  | Midterm Exam | 2hr         | 10% (10)         | 8                  | LO #1 to #5               |
|                       | Final Exam   | 3hr         | 50% (50)         | 16                 | All                       |
| Total assessment      |              |             | 100% (100 Marks) |                    |                           |

| Delivery Plan (Weekly Syllabus) |                                                                                |
|---------------------------------|--------------------------------------------------------------------------------|
| المنهاج الاسبوعي النظري         |                                                                                |
|                                 | Material Covered                                                               |
| <b>Week 1</b>                   | The use of CAD in engineering drawing and Description of menu Bar and toolbars |
| <b>Week 2</b>                   | How to draw Line, point and Rectangle and its orders                           |
| <b>Week 3</b>                   | How to draw Pentagon, Circle, Ellipse and Arc and its orders                   |
| <b>Week 4</b>                   | Description of editing commands: copy, cut, move,-----etc.                     |
| <b>Week 5</b>                   | Description of modify commands: trim, extend, offset----- etc.                 |
| <b>Week 6</b>                   | Description of modify commands: (continue)                                     |
| <b>Week 7</b>                   | Description of layers.                                                         |
| <b>Week 8</b>                   | Midterm Exam                                                                   |
| <b>Week 9</b>                   | Description of dimensioning and text                                           |

|                |                                        |
|----------------|----------------------------------------|
| <b>Week 10</b> | Description of array                   |
| <b>Week 11</b> | Description of array: (continue)       |
| <b>Week 12</b> | Description of Hatch                   |
| <b>Week 13</b> | Description of Hatch: (continue)       |
| <b>Week 14</b> | Description of Block                   |
| <b>Week 15</b> | Preparatory week before the final Exam |
| <b>Week 16</b> | <b>Final Exam</b>                      |

| <b>Delivery Plan (Weekly Lab. Syllabus)</b><br>المنهاج الاسبوعي للمختبر |                                               |
|-------------------------------------------------------------------------|-----------------------------------------------|
|                                                                         | <b>Material Covered</b>                       |
| <b>Week 1</b>                                                           | menu Bar and toolbars                         |
| <b>Week 2</b>                                                           | Line, point and Rectangle                     |
| <b>Week 3</b>                                                           | Pentagon, Circle, Ellipse and Arc             |
| <b>Week 4</b>                                                           | editing commands: copy, cut, move, ----- etc. |
| <b>Week 5</b>                                                           | modify commands                               |
| <b>Week 6</b>                                                           | modify commands                               |
| <b>Week 7</b>                                                           | Quiz(1)<br>Layers.                            |
| <b>Week 8</b>                                                           | Midterm Exam                                  |
| <b>Week 9</b>                                                           | Description of dimensioning and text          |
| <b>Week 10</b>                                                          | polar array                                   |
| <b>Week 11</b>                                                          | Rectangular array                             |
| <b>Week 12</b>                                                          | Quiz(2)<br>Hatch                              |
| <b>Week 13</b>                                                          | selecting objects                             |
| <b>Week 14</b>                                                          | Block                                         |
| <b>Week 15</b>                                                          | Final Exam                                    |

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

|                          | Text                                                                                                 | Available in the Library? |
|--------------------------|------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Required Texts</b>    | Engineering Drawing and Graphic Technology, By: French & Vierk , 12th edition, 1978<br>AutoCAD, 2021 | pdf                       |
| <b>Recommended Texts</b> | Engineering Drawing, ©2005 by Wuttet Taffesse, Laikemariam Kassa                                     | pdf                       |
| <b>Websites</b>          |                                                                                                      |                           |

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