



## MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

| Module Information                 |                                   |                               |   |
|------------------------------------|-----------------------------------|-------------------------------|---|
| معلومات المادة الدراسية            |                                   |                               |   |
| Module Title                       | COMPUTER APPLICATION              |                               | Module Delivery   |
| Module Type                        | SUPPLEMENT                        |                               | <input checked="" type="checkbox"/> Theory<br>Lecture<br><input checked="" type="checkbox"/> Lab<br><input type="checkbox"/> Tutorial<br><input checked="" type="checkbox"/> Practical<br><input checked="" type="checkbox"/> Seminar |
| Module Code                        | ATU23036                          |                               |   |
| ECTS Credits                       | 4                                 |                               |   |
| SWL (hr/sem)                       | 100                               |                               |   |
| Module Level                       | 2                                 | Semester of Delivery          | 1   |
| Administering Department           | Electrical Engineering Techniques | College                       | AL-Mustaqbal University   |
| Module Leader                      | سلوان سعود هاتف                   | e-mail                        | <a href="mailto:salwan.saud.hatif@uomus.edu.iq">salwan.saud.hatif@uomus.edu.iq</a>  |
| Module Leader's Acad. Title        | مدرس مساعد                        | Module Leader's Qualification | ماجستير   |
| Module Tutor                       | Name ()                           | e-mail                        | E-mail  |
| Peer Reviewer Name                 | Name                              | e-mail                        | E-mail  |
| Scientific Committee Approval Date | 25/1/2025                         | Version Number                | 1   |

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

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

## Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

|   |   |
|---|---|
| Module Objectives<br>أهداف المادة الدراسية                      | Students will learn the principle use of computer program, solve the function and equation using command of matlab program.   |
| Module Learning Outcomes<br>مخرجات التعلم للمادة الدراسية       | <p>Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.</p> <ol style="list-style-type: none"> <li>1. Operations solution on matrices</li> <li>2. Operations solution on vectors</li> <li>3. Solve Linear equation by direct method</li> <li>4. Solve Linear equation by least square</li> <li>5. Solve Non linear equation</li> <li>6. Solve 2nd order Linear Differential equation</li> <li>7. Mathematical process (integral, differential and limits) for functions</li> <li>8. To learn draw 2D,3D</li> <li>9. Properities and increase accuracy of draw</li> <li>10. Find the roots by Newton Raphson method</li> <li>11. Solve equation by Laplace with MATLAB</li> <li>12. Solve equation by Laplace inverse with MATLAB</li> </ol>  |
| Indicative Contents<br>المحتويات الإرشادية                      | <p>Indicative content includes the following.</p> <p><u>Part A - Fundamentals of the computer hardware and software</u><br/>Definition of computer and its parts, method of operation, types of memories, type of system and programs used (word, excel, powerpoint).</p> <p><u>Part B – Solve function and equation by matlab program</u><br/>Introduction for MATLAB Program, Mathematical process on matrices ,Mathematical process on vectors, Linear equation by direct method, Linear equation by least square<br/>Non linear equation, 2nd order Linear Differential equation ,Mathematical process (integral, differential and limits) for functions<br/>Draw 2D, 3D, Properities and increase accuracy of draw, Newton Raphson method for roots, Invisible instructions ,Laplace with MATLAB, Laplace inverse with MATLAB.</p> |
| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم |   |
| Strategies  | Type something like: 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 .

### 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 | 37  | <b>Unstructured SWL (h/w)</b><br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 2.46 |
| <b>Total SWL (h/sem)</b><br>الحمل الدراسي الكلي للطالب خلال الفصل              | 100 |   |      |

### Module Evaluation

تقييم المادة الدراسية

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

### Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

|               | Material Covered                 |
|---------------|----------------------------------|
| <b>Week 1</b> | Introduction for MATLAB Program  |
| <b>Week 2</b> | Mathematical process on matrices |
| <b>Week 3</b> | Mathematical process on vectors  |
| <b>Week 4</b> | Linear equation by direct method |

|                |  |
|----------------|--|
| <b>Week 5</b>  | Linear equation by least square  |
| <b>Week 6</b>  | Nonlinear equation   |
| <b>Week 7</b>  | 2nd order Linear Differential equation                                 |
| <b>Week 8</b>  | Mathematical process (integral, differential and limits) for functions |
| <b>Week 9</b>  | Draw 2D,3D   |
| <b>Week 10</b> | Properties and increase accuracy of draw                               |
| <b>Week 11</b> | Newton Raphson method for roots  |
| <b>Week 12</b> | Invisible instructions   |
| <b>Week 13</b> | Laplace with MATLAB  |
| <b>Week 14</b> | Laplace inverse with MATLAB  |
| <b>Week 15</b> | <b>Final exam</b>  |

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

|                | <b>Material Covered</b>  |
|----------------|--|
| <b>Week 1</b>  | Introduction for MATLAB Program  |
| <b>Week 2</b>  | Mathematical process on matrices                                       |
| <b>Week 3</b>  | Mathematical process on vectors  |
| <b>Week 4</b>  | Linear equation by direct method                                       |
| <b>Week 5</b>  | Linear equation by least square  |
| <b>Week 6</b>  | Non linear equation  |
| <b>Week 7</b>  | 2nd order Linear Differential equation                                 |
| <b>Week 8</b>  | Mathematical process (integral, differential and limits) for functions |
| <b>Week 9</b>  | Draw 2D,3D, Properties and increase accuracy of draw                   |
| <b>Week 10</b> | Newton Raphson method for roots  |
| <b>Week 11</b> | Invisible instructions   |
| <b>Week 12</b> | Laplace with MATLAB  |
| <b>Week 13</b> | Laplace inverse with MATLAB  |
| <b>Week 14</b> | Review   |
| <b>Week 15</b> |  |

### Learning and Teaching Resources

| مصادر التعلم والتدريس |  |                           |
|-----------------------|--|---------------------------|
|                       | Text                                   | Available in the Library? |
| Required Texts        | كتاب الماتلاب للمهندسين<br>عدنان شاهين | No                        |
| Recommended Texts     | كتاب الماتلاب<br>عصام سرحان            | No                        |
| Websites              |  |                           |

| Grading Scheme<br>مخطط الدرجات   |                  |                     |          |                                       |
|--|------------------|---------------------|----------|---------------------------------------|
| Group  | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(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<br>(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  |
|  |                  |                     |          |                                       |
| <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. |                  |                     |          |                                       |