# MODULE DESCRIPTION FORM

# نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Microprocessors** | | | **Module Delivery** | |
| **Module Type** | **C** | | | ☒ **Theory**<br>☒ **Lecture**<br>☒ **Lab**<br>☐ **Tutorial**<br>☐ **Practical**<br>☐ **Seminar** | |
| **Module Code** | **CSDC120** | | | | |
| **ECTS Credits** | **6** | | | | |
| **SWL (hr/sem)** | **150** | | | | |
| **Module Level** | | UGI | **Semester of Delivery** | | 2 |
| **Administering Department** | | CSIT | **College** | Type College Code | |
| **Module Leader** | Name | | **e-mail** | E-mail | |
| **Module Leader's Acad. Title** | | Professor | **Module Leader's Qualification** | | Ph.D. |
| **Module Tutor** | Name (if available) | | **e-mail** | E-mail | |
| **Peer Reviewer Name** | | Name | **e-mail** | E-mail | |
| **Scientific Committee Approval Date** | | 01/06/2023 | **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 Objectives**<br>أهداف المادة الدراسية | 1. The student will be able to understand and understand the mechanics of their algorithmic data repair problems in terms of their degree of complexity.<br>2. Trees, how to build them in C++, self-recall, and how to deal with them<br>3.. that the student be able to understand the working mechanics of algorithms for data structures<br>4.sorting algorithm |
| **Module Learning Outcomes**<br>مخرجات التعلم للمادة الدراسية | This article is based on knowledge<br>Learn to program in C++ in a professional way |
| **Indicative Contents**<br>المحتويات الإرشادية | |

| Learning and Teaching Strategies<br>استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | Understand code and algorithms and implement them in different ways and new steps |

| Student Workload (SWL)<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 93 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 6 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 57 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | **100** | | |

| Module Evaluation<br>تقييم المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5 and 10 | LO #1, #2 and #10, #11 |
| | **Assignments** | 2 | 10% (10) | 2 and 12 | LO #3, #4 and #6, #7 |
| | **Projects / Lab.** | 1 | 5% (5) | Continuous | All |

| | | | | | |
|---|---|---|---|---|---|
| | **Report** | 1 | 5% (5) | 13 | LO #5, #8 and #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 20% (20) | 7 | LO #1 - #7 |
| | **Final Exam** | 3hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

| **Delivery Plan (Weekly Syllabus)**<br>المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to micro processor |
| **Week 2** | Evolution from 8080/8085 to 8086 |
| **Week 3** | Pipelining, Registers |
| **Week 4** | ADD instruction:, mov instruction: |
| **Week 5** | INTRODUCTION TO PROGRAM SEGMENTS |
| **Week 6** | Data segment, |
| **Week 7** | Mid-term Exam |
| **Week 8** | Extra segment (ES)<br>, Memory map of the IBM PC, What is a stack |
| **Week 9** | A few more words about segments in the 80x86<br>, Overlapping, Flag register |
| **Week 10** | Flag register con., Flag register and ADD instruction<br>Use of the zero flag for looping |
| **Week 11** | Use of the zero flag for looping con., 80x86 Addressing Modes A,B,C,D |
| **Week 12** | 80x86 Addressing Modes E,F,G, Segment overrides |
| **Week 13** | CONTROL TRANSFER INSTRUCTIONS, FAR and NEAR |
| **Week 14** | Unconditional jumps, statements |
| **Week 15** | CALL & Assembly language subroutines |
| **Week 16** | **Preparatory week before the final Exam** |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Eum8086-1 |
| **Week 2** | Eum8086-2 |

| | |
|---|---|
| **Week 3** | MOV + ADD instruction |
| **Week 4** | SUB instruction |
| **Week 5** | Push +POP instruction |
| **Week 6** | Flag register ,jump |
| **Week 7** | Flag register |
| **Week 8** | **Arduino uno board** |
| **Week 9** | **Arduino** uno PORT |
| **Week 10** | **Arduino** C Language & Instruction |
| **Week 11** | led Blinking |
| **Week 12** | Led Blinking&<br>PUSH button |
| **Week 13** | Potentiometer |
| **Week 14** | Photo resistor as light sensor |

## Learning and Teaching Resources
مصادر التعلم والتدريس

| | Text | Available in the Library? |
|---|---|---|
| **Required Texts** | Introduction to 8086 Assembly Language Programming , Joe Carthy, UCD | Yes |
| **Recommended Texts** | | |
| **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.