**COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.  |

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| University of Baghdad | 1. Teaching Institution |
| College of Engineering/ Electronics and Communications Department | 2. University Department/Centre |
| Computer architecture/ 207 ECA | 3. Course title/code |
| DSD, Embedded Systems | 4. Programme(s) to which it contributes |
| In class face-to-face mode | 5. Modes of Attendance offered |
| 1st-2nd / 2015-2016 | 6. Semester/Year |
| 4 hrs per week/ 120 hrs total | 7. Number of hours tuition (total) |
| 3/3/2016 | 8. Date of production/revision of this specification  |
| 9. Aims of the Course |
| Provide the student with information on the microprocessor to knuckle machine language and Assembly issues. And link the microprocessor with memory and external and internal devices |
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| 10· Learning Outcomes, Teaching ,Learning and Assessment Methode  |
| 1. Knowledge and Understanding

A1. Basic Concepts of microprocessorA2.A3.A4.A5. A6 .  |
|  B. Subject-specific skillsB1. Programming written in low level languageB2. Interfacing microprocessor with outside worldB3. |
|  Teaching and Learning Methods |
| 1- Lectures.2- Tutorials.3- Homework and Assignments.4- Tests and Exams.5- In-Class Questions and Discussions. |
|  Assessment methods  |
| 1. Quizzes: 10%
2. 1st term exam: 10%
3. 2nd term exam: 10%
4. Lab exam 30%
5. Final exam: 40%
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| C. Thinking Skills C1.C2.C3.C4.  |
|  Teaching and Learning Methods  |
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|  Assessment methods |
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| D. General and Transferable Skills (other skills relevant to employability and personal development) D1.D2.D3.D4.  |

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| 11. Course Structure |
| Assessment Method |  TeachingMethod | Unit/Module or Topic Title | ILOs | Hours | Week |
| Quiz/Exam | Lectures and lab | General architecture of computer |  | 4 | 1 |
| Quiz/Exam |  | General architecture of A microcomputer |  | 4 | 2 |
| Quiz/Exam | Lectures and lab | Data types,Types of Microprocessors,Number Systems |  | 4 | 3 |
| Quiz/Exam |  | Computer languagesMachine language, Assembly language,high- level language |  | 4 | 4 |
| Quiz/Exam | Lectures and lab | Overview of 8085 microprocessormain features, programmable registers, |  | 4 | 5 |
| Quiz/Exam | Lectures and lab | Accumulator, general –purpose registers, Flags, Program Counter, Stack Pointer |  | 4 | 6 |
| Quiz/Exam | Lectures and lab | 8086 microprocessorFeatures of 8086 microprocessor |  | 4 | 7 |
| Quiz/Exam | Lectures and lab | Architecture of 8086 microprocessorBus Interface Unit [BIU],Execution Unit [EU] |  | 4 | 8 |
| Quiz/Exam | Lectures and lab | Register Organization, General Purpose Registers, Segment Registers |  | 4 | 9 |
| Quiz/Exam | Lectures and lab | Pointers and Index Registers, Flag Register, Bus Operation |  | 4 | 10 |
| Quiz/Exam | Lectures and lab | Memory Segmentation, Generation of 20-bit Address |  | 4 | 11 |
| Quiz/Exam | Lectures and lab | 8086 instruction set and Assembly language program |  | 4 | 12 |
| Quiz/Exam | Lectures and lab | Addressing modes |  | 4 | 13 |
| Quiz/Exam | Lectures and lab | 8086 INSTRUCTION |  | 4 | 14 |
| Quiz/Exam | Lectures and lab | Data transfer instructions |  | 4 | 15 |
| Quiz/Exam | Lectures and lab | Arithmetic instructions |  | 4 | 16 |
| Quiz/Exam | Lectures and lab | Logic instructions |  | 4 | 17 |
| Quiz/Exam | Lectures and lab | Shift instructions |  | 4 | 18 |
| Quiz/Exam | Lectures and lab | Flag-control instructions |  | 4 | 19 |
| Quiz/Exam | Lectures and lab | compare instruction |  | 4 | 20 |
| Quiz/Exam | Lectures and lab | control flow and jump instructions |  | 4 | 21 |
| Quiz/Exam | Lectures and lab | subroutines instruction |  | 4 | 22 |
| Quiz/Exam | Lectures and lab | loops instructions |  | 4 | 23 |
| Quiz/Exam | Lectures and lab | String instructions |  | 4 | 24 |
| Quiz/Exam | Lectures and lab | 8086 micro processing unit Minimum – mode and maximum- mode system |  | 4 | 25 |
| Quiz/Exam | Lectures and lab | Minimum – mode interface signal |  | 4 | 26 |
| Quiz/Exam | Lectures and lab | Maximum – mode interface signal |  | 4 | 27 |
| Quiz/Exam | Lectures and lab | System clock |  | 4 | 28 |
| Quiz/Exam | Lectures and lab | Bus cycle and time status |  | 4 | 29 |
| Quiz/Exam | Lectures and lab | Memory interface circuits |  | 4 | 30 |
| Quiz/Exam | Lectures and lab | Types of input/output |  | 4 | 31 |
| Quiz/Exam | Lectures and lab | Input/output data transfers, instruction |  | 4 | 32 |

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| 12. Infrastructure |
| The 8088 and 8086 microprocessors programming, interfacing, software, hardware, and applicationsWalter A. Triebel, Avtar Singh | Required reading:· CORE TEXTS· COURSE MATERIALS· OTHER |
| None | Special requirements (include for example workshops, periodicals, IT software, websites) |
| None | Community-based facilities(include for example, guestLectures , internship , field studies) |

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| 13. Admissions |
| According to ministry requirements | Pre-requisites |
| 10 | Minimum number of students |
| 50 | Maximum number of students |