**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 |
| Electronics and communication | 2. University Department/Centre |
| Digital fundamentals | 3. Course title/code |
| Embedded systems, Digital system design | 4. Programme(s) to which it contributes |
| In class | 5. Modes of Attendance offered |
| year | 6. Semester/Year |
| Three hours per week in the 1st term/two hours per week with 4 hours logic lab. | 7. Number of hours tuition (total) |
| 1/5/2016 | 8. Date of production/revision of this specification |
| 9. Aims of the Course | |
| To understand and apply basic concepts and applications of Digital fundamentals and sequential circuits .Students will be apple to understand and design variable circuits such as security systems, timers and other circuits. Understand the main units that computers nowadays built from | |
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| 10· Learning Outcomes, Teaching ,Learning and Assessment Methode |
| 1. Knowledge and Understanding   A1.logic gates and Boolean algebra  A2.digital arithmetic  A3.decoders ,encoders ,and multiplexers  A4.flip flopse  A5. Counters and registers  A6 . |
| B. Subject-specific skills  B1.the course knowledge can be used to manage digital circuits and use it in real life, build security system digital display ,arithmetic logic unit for computers  B2.  B3. |
| Teaching and Learning Methods |
| Lectures, simulations, graphics and analyzing using variety of programs. Sheets and solutions of questions. Discussion of several issues together. Comparing result obtained with logical explanation from real life |
| Assessment methods |
| Exams, homework ,questions and answers in lectures |
| C. Thinking Skills  C1. suggest many different cases and suggest suitable solutions for these issues  C2.group work on issues with real life application  C3.test the students with variety types of questions  C4 |
| Teaching and Learning Methods |
| Tests, sheets, projects, Lab work |
| Assessment methods |
| Evaluation according to the student’s answer of a suggested problems |

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| D. General and Transferable Skills (other skills relevant to employability and personal development)  D1.Search through resources and books  D2.search through internet and papers  D3.  D4. |

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| 11. Course Structure | | | | | |
| Assessment Method | Teaching  Method | Unit/Module or Topic Title | ILOs | Hours | Week |
| Homework, tests | lectures | Logic gates and Boolean algebra |  |  | 5 |
| Homework ,tests | lectures | Digital arithmetic |  |  | 5 |
| Homework ,tests | lectures | Decoders and encoders |  |  | 5 |
| Homework ,tests | lectures | Multiplexer and demultiplexer |  |  | 5 |
|  |  | Flip flops |  |  | 5 |
|  |  | counters |  |  | 5 |
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| 12. Infrastructure | |
| Digital Fundamentals by: Thomas L. Floyed | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER |
| Simulation programs. multisum and atanua | Special requirements (include for example workshops, periodicals, IT software, websites) |
| Lab course and experiments | Community-based facilities  (include for example, guest  Lectures , internship , field studies) |

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| 13. Admissions | |
|  | Pre-requisites |
|  | Minimum number of students |
|  | Maximum number of students |