**TEMPLATE FOR COURSE SPECIFICATION**

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

**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. | |
| Al-Maarif University College | **1. Teaching Institution** |
| Computer Engineering Techniques | **2. University Department/Centre** |
| Real Time System Design | **3. Course title/code** |
| Bachelor in Computer Engineering Techniques | **4. Programme(s) to which it Contributes** |
| Face-to-face and online presence | **5. Modes of Attendance offered** |
| Year | **6. Semester/Year** |
| 120 | **7. Number of hours tuition (total)** |
| 22.06.2021 | **8. Date of production/revision of this specification** |
| **9. Aims of the Course** | |
| * The course aims to familiarize the student with the principles used in designing an advanced system by relying on an electronic calculator to deal with it simultaneously. | |

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| **10· Learning Outcomes, Teaching ,Learning and Assessment Method** |
| **A. Knowledge and Understanding**  A1. Recognize the types of real time  A2. Recognize the types of signs |
| **B. Subject-specific skills**  B1. Explains the process of converting digital signals to digital signals and back |
| **Teaching and Learning Methods** |
| * The direct method is through lectures * Practical application in the laboratory * The subjective method by preparing research papers and discussing them collectively |
| **Assessment methods** |
| * Feedback from students * Daily and quarterly exams * Preparing scientific reports and assignments |
| **C. Thinking Skills**  C1. Adoption of control theories and their relationship to various engineering systems  C2. Providing the student with the skill and ability to analyze control systems to achieve the scientific purpose |
| **Teaching and Learning Methods** |
| * Knowledge of questions and inquiries distinctive depth and accuracy. * Simulate the student towards understanding the cause and cause. * Increase digital sense of expression. * Brainstorming. |
| **Assessment methods** |
| * Individualizing part of the exam questions that require depth of thinking, explanation and accuracy of observation. * Student participation in the classroom. * extra-curricular duties |

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| **11. Course Structure** | | | | | |
| **Assessment Method** | **Teaching Method** | **Unit/Module or Topic Title** | **ILOs** | **Hours** | **Week** |
|  |  | Definition of RTS |  | 4 | 1 |
|  |  |  | 4 | 2 |
|  |  |  | 4 | 3 |
|  |  | Signals, Systems, Specification |  | 4 | 4 |
|  |  |  | 4 | 5 |
|  |  | Analog computer components, Systems |  | 4 | 6 |
|  |  |  | 4 | 7 |
|  |  |  | 4 | 8 |
|  |  | ADC, DAC:( Definition, Types, Specifications, Errors, C/Cs and Interfacing choosing). |  | 4 | 9 |
|  |  |  | 4 | 10 |
|  |  |  | 4 | 11 |
|  |  | Introduction to Digital systems |  | 4 | 12 |
|  |  | Basic interfacing devices |  | 4 | 13 |
|  |  |  | 4 | 14 |
|  |  | Data Transfer controlling |  | 4 | 15 |
|  |  | Un programmable interfacing devices |  | 4 | 16 |
|  |  | Programmable interfacing devices [ 8-bit compatible, General purpose, Timers, Peripheral controller] |  | 4 | 17 |
|  |  |  | 4 | 18 |
|  |  |  | 4 | 19 |
|  |  |  | 4 | 20 |
|  |  |  | 4 | 21 |
|  |  | Interrupts [Introduction, Types (hardware and software) Controller 8259A], Handshaking and interrupts methods |  | 4 | 22 |
|  |  |  | 4 | 23 |
|  |  |  | 4 | 24 |
|  |  |  | 4 | 25 |
|  |  |  | 4 | 26 |
|  |  | DMA, Serial Interfacing [ Introduction , Standards, Types, Controller |  | 4 | 27 |
|  |  |  | 4 | 28 |
|  |  |  | 4 | 29 |
|  |  |  | 4 | 30 |

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| **D. General and Transferable Skills (other skills relevant to employability and personal development)**  D1. Improve debating skills  D2. Raising research perceptions and transferring students from the stage of education to learning |

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| **12. Infrastructure** | |
| * Real-Time Systems Design And Analysis by Phillip A. Laplante | Required reading:  · CORE TEXTS  · COURSE MATERIALS  · OTHER |
| * E-Learning / The official page of the College of Knowledge | Special requirements (include for example workshops, periodicals, IT software, websites) |
| * Guest Lectures * Internship | Community-based facilities  (include for example, guest  Lectures , internship , field studies) |

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| 13. Admissions | |
| None | Pre-requisites |
| 8 | Minimum number of students |
| 100 | Maximum number of students |