**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** |
| Engineering Analysis | **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** | |
| * Enabling the student to deal with advanced mathematics and what covers the need for it for the rest of the academic courses, to solve electrical circuits and other complex calculations. | |

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| **10· Learning Outcomes, Teaching ,Learning and Assessment Method** |
| **A. Knowledge and Understanding**  A1. Familiarity with how to solve mathematical problems related to electrical circuits  A2. Familiarity with how to solve satellites for digital signals  A3. Learn to solve statistics problems and dilemmas  A4. Familiarity with how to deal with probabilities  A5. The approximate solution and the laws for reaching the ideal solutions in engineering calculations |
| **B. Subject-specific skills**  B1. It gives the student the ability to design and implement electronic circuits |
| **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. Opening the way for students to think logically about problems that require software solutions that contribute to accelerating the finding of solutions |
| **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** |
|  |  | Laplace transform, Properties, Theorems and Applications |  | 4 | 1 |
|  |  |  | 4 | 2 |
|  |  |  | 4 | 3 |
|  |  |  | 4 | 4 |
|  |  |  | 4 | 5 |
|  |  |  | 4 | 6 |
|  |  |  | 4 | 7 |
|  |  | Z-transform, Properties, Theorems and Applications |  | 4 | 8 |
|  |  |  | 4 | 9 |
|  |  |  | 4 | 10 |
|  |  |  | 4 | 11 |
|  |  |  | 4 | 12 |
|  |  |  | 4 | 13 |
|  |  |  | 4 | 14 |
|  |  | Probability and set notation, Law of Probability, Independent events.  Statistics(graphical representation, measure of dispersion) |  | 4 | 15 |
|  |  |  | 4 | 16 |
|  |  |  | 4 | 17 |
|  |  |  | 4 | 18 |
|  |  |  | 4 | 19 |
|  |  | Numerical computation |  | 4 | 20 |
|  |  |  | 4 | 21 |
|  |  |  | 4 | 22 |
|  |  | Newton –raphson method |  | 4 | 23 |
|  |  | Numerical solution of ordinary differential equation |  | 4 | 24 |
|  |  | Euler's method |  | 4 | 25 |
|  |  | Matrices(matrix operation) |  | 4 | 26 |
|  |  | Related matrices |  | 4 | 27 |
|  |  | Solution of system of equation |  | 4 | 28 |
|  |  | Cayley-hamilton theorem |  | 4 | 29 |
|  |  |  | 4 | 30 |

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| **D. General and Transferable Skills (other skills relevant to employability and personal development)**  D1. Develop the student's ability to use multiple sources of the curriculum.  D2. Develop the student's ability to deal with modern technologies related to the course vocabulary.  D3. Develop the student's ability to face problems and dilemmas and find appropriate solutions to them.  D4. Develop the student's ability to translate academic information into practical reality |

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| **12. Infrastructure** | |
| * Handbook of Mathematics for engineers and scientists/ Andrel D. Polyanin | 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 |