**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** |
| Computer Networks Fundamentals | **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 basic types of networks, how to connect them, and how information is transmitted through the network, in addition to the protocols used through networks | |

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| **10· Learning Outcomes, Teaching ,Learning and Assessment Method** |
| **A. Knowledge and Understanding**  A1. Recognize computer networks  A2. Learn about the different types of networks and how to connect them  A3. Learn about the types of layers and how they work |
| **B. Subject-specific skills**  B1. Explains network connectivity and its operation  B2. Distinguish the types of cables used in networks |
| **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** |
|  |  | Introduction, and classify the computer networks according to application, size, transmission technology. |  | 4 | 1 |
|  |  |  | 4 | 2 |
|  |  |  | 4 | 3 |
|  |  | Connection-Oriented Versus Connectionless Service, and service primitives |  | 4 | 4 |
|  |  | The ISO reference Model, and TCP/IP Reference Model. |  | 4 | 5 |
|  |  |  | 4 | 6 |
|  |  | Metropolitan Area Networks, Wide Area Networks, Internetworks, and VPNs |  | 4 | 7 |
|  |  | Digital signal ( size of :text files, image files, voice files, and videos files) |  | 4 | 8 |
|  |  | Bandwidth-Limited Signals, The Maximum Data R ate of a channel |  | 4 | 9 |
|  |  | Guided transmission media, and wireless transmission |  | 4 | 10 |
|  |  | Communication satellites |  | 4 | 11 |
|  |  | Digital modulation and multiplexing : Baseband, pass band, FDM, TDM, and CDM |  | 4 | 12 |
|  |  |  | 4 | 13 |
|  |  | Public switched telephone network |  | 4 | 14 |
|  |  | Cable television |  | 4 | 15 |
|  |  | DATA LINK LAYER DESIGN ISSUES: Framing, Error Control, And Flow Control |  | 4 | 16 |
|  |  |  | 4 | 17 |
|  |  |  | 4 | 18 |
|  |  | Elementary Data Link Protocols |  | 4 | 19 |
|  |  |  | 4 | 20 |
|  |  | Sliding Window Protocols |  | 4 | 21 |
|  |  |  | 4 | 22 |
|  |  | Network layer(store-and-forward packet switching) |  | 4 | 23 |
|  |  | Network layer  Network layer (Implementation of connection-Oriented service) |  | 4 | 24 |
|  |  |  | 4 | 25 |
|  |  |  | 4 | 26 |
|  |  | Network layer (Routing Algorithms)  Network layer (Broadcast Routing) |  | 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** | |
| * Textbook :Data communication * Textbook :Network security | 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 |