Bachelor of Science (Honors) in Computer Engineering

# Program Structure

| Course Title | Credit Hour |
|---|---|
| **Semester 1** | |
| Introduction to Engineering | 3 |
| Chemistry I | 3 |
| Calculus I | 3 |
| Arabic Language I | 2 |
| English Language I | 2 |
| Religious Studies I | 2 |
| Sudanese Studies | 2 |
| Engineering Drawing I | 3 |
| **Semester 2** | |
| Introduction to ICDL I | 3 |
| Physics I | 3 |
| Calculus II | 3 |
| Electrical Materials & Components | 3 |

| Course Title | Credit Hour |
|---|---|
| Engineering Drawing II | 3 |
| Arabic Language II | 2 |
| English Language II | 2 |
| Religious Studies II | 2 |
| **Semester 3** | |
| Industrial Management | 2 |
| Arabic Language III | 2 |
| Linear Algebra and Matrix Theory | 3 |
| English Language III | 2 |
| Micro Economics | 2 |
| Material Science | 3 |
| Religious Studies III | 2 |
| Electricity & Magnetism | 3 |
| **Semester 4** | |
| Basic Training | 3 |
| Computer Programming I(C++) | 3 |
| Discrete Mathematics | 3 |

| Course Title | Credit Hour |
|---|---|
| Communication Skills for Engineering Professionals | 2 |
| Circuit Theory 1 | 3 |
| Digital System I | 3 |
| Engineering Mechanics (Statics) | 3 |
| **Semester 5** | |
| Differential Equations | 3 |
| Circuit Theory II | 3 |
| Digital System II | 3 |
| Electronics 1 | 3 |
| Signals & Systems | 3 |
| Data Structure | 3 |
| Engineering Economics | 2 |
| **Semester 6** | |
| Basic Tools in Computer Systems Modelling | 3 |
| Introduction in Control Systems | 3 |
| Electronics II | 3 |
| Environmental Studies | 2 |

| Course Title | Credit Hour |
|---|---|
| Computer Organization | 3 |
| Probability and Statistics | 3 |
| Electrical Power Engineering | 3 |
| Computer Visualization in Engineering | 2 |
| **Semester 7** | |
| Control Systems Design and Simulation | 3 |
| Microelectronics Technology | 3 |
| Computer Architecture | 3 |
| Computer Programming II (Visual Basic) | 3 |
| Image Processing | 3 |
| Electrical Instrumentation and Measurements | 3 |
| Electronics III | 3 |
| Electromagnetic Theory | 3 |
| **Semester 8** | |
| Numerical Analysis | 3 |
| Software Engineering | 2 |
| Computer System & Assembly Language | 3 |

| Course Title | Credit Hour |
|---|---|
| Real Time Operating Systems | 3 |
| Mechanics of Materials | 3 |
| Design Project | 3 |
| Introduction to Analog & Digital Communication Theory | 3 |
| **Semester 9** | |
| Microprocessor and Interfacing | 3 |
| Introduction to Artificial Intelligence | 2 |
| Final Year Project I | 3 |
| Security & Cryptography | 2 |
| Computer Networks | 3 |
| Transmission Systems | 4 |
| Applications in Manufacturing Technologies | 4 |
| Principles VLSI System Design | 3 |
| **Semester 10** | |
| Pattern Recognition and Data Acquisition System | 2 |
| Microcontroller and Application | 3 |
| Robotics and Vision System | 3 |

| Course Title | Credit Hour |
| --- | --- |
| Parallel Processing | 3 |
| Final Year Project II | 2 |
| Computer Aided Design of Circuits and Systems | 4 |
| **Total Credit Hour 207** | |