

Program Structure

Course Title	Credit Hours
Semester 1	
Arabic Language I	2
English Language I	2
Religious Studies I	2
Sudanese Studies	2
Calculus I	3
Chemistry I	3
Physics I	3
Engineering Drawing I	3
Semester 2	
Arabic Language II	2
English Language II	2
Religious Studies II	2

Course Title	Credit Hou
Introduction to Engineering	3
Calculus II	3
Engineering Drawing II	3
Electricity & Magnetism	3
Mechanics (Dynamics)	3
Introduction to ICDL I	3
Semester 3	
Religious Studies III	2
Digital System I	3
Material Science	3
Circuit Theory 1	3
Arabic Language III	2
Linear Algebra and Matrix Theory	3
English Language III	2
Structural Programming with C	3
Semester 4	
Communication Skills for Engineering Professionals	2

Course Title	Credit Hou
Semiconductor Physics and Devices	3
Differential Equations	3
Physics II	3
Digital System II	3
Circuit Theory II	3
Analysis & Design of Algorithms	3
Special Functions	2
Semester 5	
Programming Language II(VB)	3
Discrete Mathematics	3
Electronics 1	3
Signals & Systems	3
Complex Variables / Vector Analysis	3
Industrial Management	2
Nano 1: Introduction to Nanoscience and Nanofabrication	3
Semester 6	
Digital Signal Processing	3

Course Title	Credit Hou
Analog Communications	3
Statistics and Probability	3
Nano II. Nano-Electronics	3
Numerical Methods	3
Basic Training	3
Electromagnetic I	3
Electronics II	3
Semester 7	
Digital Communications	3
Control Theory	3
Electrical Power System	3
Computer and Assembly Language	3
Microprocessor and Interfacing	3
Engineering Economics	2
Electronics III	3
Semester 8	
Introduction to Power Electronics	3

Course Title	Credit Hou
Nano III: Nano/Micro-electromechanical Systems (N/MEMS)	3
Digital Control System	3
Integrated Circuits Fabrications	3
Principles VLSI System Design	3
Computer Organization	3
Robotics	2
Semester 9	
Final Year Project I	3
Industrial Training (Field trip)	2
Neural Network and Fuzzy Logic	3
Advanced Power Electronics	3
Nano IV: Nanoscale Engineering Applications	3
CAD of Circuits and Systems	3
Semester 10	
Wave Propagation and Interface	3
Final Year Project II	2
Embedded System Design	3

Course Title	Credit Hour
Total Credit Hour 196	