



Sample Brief Course Description

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| Course title | Digital Electronics |
| Course code | ECE 345 |
| College | Engineering |
| Department / Program | Biomedical Engineering |
| Year/ Level | 4/11 |
| Course Type | A. <input type="checkbox"/> University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Others b. <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective |
| Credited Hours | 6 |
| Contact Hours | (LT: 4, LB: 4, TR: 0) |
| Pre-requisites (if any) | ECE 242 |
| Co-requisites (if any) | --- |
| Course description | The course includes Introduction to Digital Systems, Number Systems and Codes, Logic Gates, Boolean Algebra, Combinational Circuits, Sequential Circuits, Shift Registers and Counters, Programmable Logic, Memory and Storage. |
| Course Main Objectives | <ul style="list-style-type: none">• Demonstrate a basic understanding of digital terminology, digital components, and systems.• Distinguish between digital and analog systems. |



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| Learning Outcomes | Knowledge and Understanding:--- <ol style="list-style-type: none">1. Explain the principles of analog-to-digital (AD) - and digital-to-analog (DA) conversion.2. Describe the structure of a logic gate.3. Explain the principles of programmable circuits.4. Program a PLD type Field-Programmable Gate Array (FPGA). |
| | Skills:--- <ol style="list-style-type: none">1. Perform base 2, 8, 16 and BCD-code (binary-coded decimal) calculations.2. Design a minimal combinatorial logic circuit that solves binary logical tasks.3. Design a minimal sequential circuit that solves binary logical tasks.4. Design synchronous networks with sequential flow charts. |
| | Values:--- <ol style="list-style-type: none">1. Communicate effectively and write lab report. |