

Subject	Digital Systems I	Course Code	CT117	Theoretical	3 hrs / wk
Semester	2	Prerequisite	None	Practical	3 hrs / wk

Program Learning Components

Week 1-5	<p>1. Understanding the various types of Binary Arithmetic and Boolean algebra.</p> <p>2. To introduce the concept of basic logic gates.</p>	Resources	Practical
	<ul style="list-style-type: none"> • To understand the: Binary arithmetic. Boolean algebra. • Comprehend fully the concept of: -basic logic gates. [and, or, not, nand, nor, ex-or, exnor]. 	<p>-Lesson Plan -Chalk board -Comprehensive workbook of control engineering and systems and data sheets.</p>	<p>To be able to design and Implement combinations of logic circuits.</p>
Week	<p>3. Introducing Boolean Algebra and minimization</p> <p>4. Techniques. Designing combinations of logic circuits.</p>	Resources	Practical
6-9	<p>Comprehension of: Boolean algebra and its associated theorems.</p> <p>To understand the: Logic minimization using Boolean theorems and K-Map</p> <p>To understanding the functional logic unit such as: Encoders, decoders, multiplexers, demultiplexers,</p>	<p>-Lesson Plan. -Chalk board. -Comprehensive workbook of control engineering and systems and data sheets.</p>	<p>Supervise the laboratory and support students in their practical work.</p>

	Half Adder, Full Adder.....etc		
Week	5. Understanding and ability to design Sequential circuits and analysis.	Resources	Practical
10-14	<p>To understanding the: Basic unit of sequential circuits.</p> <p>Comprehension of the design and analysis process for: synchronous logic design. Asynchronous counters& registers. *Parallel registers, shift registers *Ripple counter, up – down counter Int. ROM, Ram, Pla, Prom, EPROM.</p>	<p>-Lesson Plan. -Chalk board. -Comprehensive workbook of control engineering and systems and data sheets.</p>	<p>Supervise the laboratory and support students in their practical work.</p>

Course Assessment:

Course Work	Mid-Term Tests	Final Exam Practical	Final Examination
10	30	20	40

NOTE: Course Work may include assignments, projects and practical activities.