4	2	1.6			Semi-conductor Diode; construction , operation . Forward and Reverse bias of diode. Diode characteristics
4	3	1.7			DC resistance, AC resistance.
Diode Applications					
6	1	202	Diode Applications		Diode as a logic gate ; OR-gate, AND gate.
	2	2.6			
	3				
6	1	2.7			Diode as a rectifier; Half-wave Rectifier.
6	2	2.8			Full-Wave rectifier; Bridge rectifier.
	3				
Bipolar Jnction Transistors					
	1	3.1	Bipolar Junction		Introduction
		3.2	Transistors		Transistor construction.
7	2	3.3			Transistor operation.
7	3	3.4			Transistor configuration.
		3.6			Common Emitter. Transistor Parameters. $\alpha.\beta$.
Transistor Applications and DC Bias					
8	1	4.2	Transistor Applications and DC Bias		Transistor characteristics curves.
8	2	4.3			Operating regions. DC load line
8	3	4.4			Fixed bias circuit.
9	1	4.5			Transistor Logic Gates.
9	2 3	4.8			NOT gate, AND gate NAND gate, OR gate, NOR gate.
Binary System (Floyed)					
10	1	2.1	Binary Systems		Decimal numbers.
		2.2			Binary numbers.
		2.3			Decimal to binary conversion.
		2.4			Binary arithmetic.
10	2	2.5			PS and 2's complement of binary numbers.
10	3	2.8			Octal Numbers.
		2.9			Hexadecimal numbers.
					Number base conversion.
11	1	2.6			Signed numbers.
11	2	2.7	Binary Systems (Continued)		Arithmetic operations with signed numbers.
11	3	2.10			Digital Codes; BCD, Gray, X-3, ASCII.
		2.11			
Boolean Algebra and Logic Gates (Mano)					
11	1	2.1 2.2	Boolean Algebra and Logic Gates		Basic Definitions. Axiomatic definitions of Boolean algebra.
11	2	2.3			Basic theorems and properties of Boolean algebra. De Morgan's theorem.
11	3	2.2.4			Boolean functions. Algebraic manipulation, complement of a function.
12	1	2.5			Canonical and standard forms; Minterms and Maxterms. Conversion between canonical forms.
12	2	2.7			Canonical and standard forms; Minterms and Maxterms. Conversion between canonical forms.
12	3				Digital Logic Gates AND, NAND, OR, NOR, X-NOR.
Families of Logic circuits					

Course Outline 104104 Electronic Physics

13	1	7.6	Families of Logic	Basic Logic Families : DTL, TTL
13	2	7.7	Circuits	ECL
13	3	7.8		Parameters: Speed-Power Product. Input and Output current-Fan out.

References:

1. "Electronic Devices and Circuit Theory" by Robert Boylstad and Louis Nashelsky 6th Edition, Prentice Hall.
2. "Physics for Scientists and Engineers" by R. A. Serway, and R. J. Beichner, 5th Edition, Saunders College Publishing, (2000).
3. Digital Fundamentals by Floyed 5th Edition.
4. Introduction to Digital Circuits by Theodore F. Bogart, JR. Macmillan/McGraw-Hill.
5. Digital Design by M. Mano.
6. Basic Electronics for Scientists by James J. Brophy, Third Edition, Mcgraw-Hill.

Assessment:

Assessment Method	% Grade	Date
First Exam	25	
Second Exam	25	
Class Activites	10	
Final Exam	40	

Course Outline 104104 Electronic Physics