

Marks	Grade Point	Letter Grade	Marks	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	0-39	0.00	F



Daffodil Polytechnic Institute, Institute Code: 50238

Mark Distribution (for 150 Marks)			
Theory Marks		Practical Marks	
Midterm	20	PC	25
Class test	10	PF	25
Quiz test	10	-	-
Final	60	-	-
Total	100	-	50
Time Distribution (90min)			
	Particular	Time	
Greeting with students		5 Min	
Previous class review		10 Min	
Present class lecture		60 Min	
Feedback		10 Min	
Attendance		5 Min	

Lesson Plan – Academic session: August to December 2023

Subject Teacher : Sarower Hossain Sumon (Jr. Instructor)

Subject Name : Basic Electronics

Subject Code : 25912

Technology : Civil

Semester : 2nd

Reference Book : Basic Electronics (Publisher: HOK & R.S)

eLearning Course Link :

Subject Aims:

Electronic devices have become an important part of our day-by-day life. Now a days it is difficult for us to live without electronic device. We live in a generation that uses electronics and smart technologies. Where robots and artificial intelligence is capable of doing human works in all technological equipment with more ease and efficiency. Operation of all machines, devices and equipment are controlled by electronic device and circuits. This subject covers only such topics which will enable the diploma engineers to identify and maintenance the electronics parts.

1 | Page

Subject Outcome:

1. Describe soldering.
2. Determine the value of Capacitor & Resistor using numeric and color code.
3. Describe Semiconductor and Semiconductor Diode.
4. Describe Rectifier circuits
5. Explain Construction and characteristics of PNP and NPN Transistor.
6. Explain the construction and operation of Single and Multi stage Amplifiers.

Lecture	Chapter/ Exam / Industrial Visit	Learning Area	Learning Outcome	Class/Lab Supporting Equipment's
01	Chapter 01 SOLDERING AND COLOR CODE	1.1 Define soldering. 1.2 List the materials of soldering. 1.3 C 1.4 Mention the properties of a good soldering joint. 1.5 Describe the active and passive components used in 1.6 Mention the function of resistor, capacitor and inductor in electronic circuits. 1.7 Describe the procedure of determining the value of Capacitor, & Resistor using numeric and color code.	1. Our student can understand soldering 2. Get feedback.	1. Soldering 2. DC power Supply, Function generator, Oscilloscope, Analog Electronics Trainer, 3. Resin, Soldering lead, Soldering tip, Fixable wire https://www.youtube.com/watch?v=KEInqQ85ZdQ

02	Chapter-02 SEMICONDUCTOR	2.1 Define conductor, semiconductor and insulator. 2.2 Describe semiconductor with atomic structure. 2.3 Describe the effect of temperature on conductivity of Semiconductor. 2.4 Classify Semiconductor.	1. Student know about semiconductor 2. About know Classify of Semiconductor	Soldering DC power Supply, Function generator, Oscilloscope, Analog Electronics Trainer, Photo Diode, Resistor, Capacitor, Transistor, LED, Zener Diode, Photo Diode. Tunne https://www.youtube.com/watch?v=zI1eGTV
03	Chapter-03 SEMICONDUCTOR DIODE	3.1 Define PN junction diode 3.2 Describe the formation of PN junction. 3.3 Explain forward and reverse bias in PN junction. 3.4 Explain the forward and reverse Voltage-Current (VI) characteristics curve of PN junction diode. 3.5 Define load line, static resistance, (iii) dynamic resistance, 3.6 Define forward breakdown voltage, (v) Peak inverse voltage (PIV) and (vi) Reverse breakdown voltage. 3.7 Describe the specification of PN Junction diode.	1. Our student can explain forward and reverse bias in PN junction. 2. Our students are able to Explain forward and reverse bias in PN junction. 3. Get feedback.	Zener Diode, Photo Diode, Tunnel diode, Varactor diode, Schottky diode, Step-Recovery diode, PIN diode, L https://www.youtube.com/watch?v=xXMt86D_3go
Assignment-01		Assignment on lecture 01 - 03	To build up their confidence level & increase creativity on chapter- 01 - 03	Must be submitted within the next two lecture.

04	Chapter-04 SPECIAL DIODES	4.1 Define Zener Diode. 4.2 Describe the operation of the Zener diode. 4.3 Explain Volt-Ampere (VI) characteristics of Zener diode. 4.4 Describe the application of Zener diode in, voltage stabilization, meter protection and peak clipper circuits. 4.5 Describe the construction, operation and application of Tunnel diode, Varactor diode,	1. Our student knows about Define Zener Diode. 2. They can Classify and explain of construction, operation and application of Tunnel diode, Varactor diode, 3. Get feedback.	Zener Diode, Photo Diode, Tunnel diode, Varactor diode, Schottky diode, Step-Rec overy diode, PIN diode, L https://www.youtube.com/watch?v=JdL3DnnFHxw
Lab Report-01		Solder & de-solder of electronic components and wires	1. Student know about soldering practically.	Must be submitted within the next two Lab classes.

05	Quiz Test-01 & Class Test-1 (Result will be published within the next two classes)	Diode Semiconductor Amplifier	*To build up their confidence level in chapter-4,5 & 6	Projector, Internet.
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06	Chapter-05 DC POWER SUPPLY	5.1 Define dc power supply 5.2 Describe the importance of dc power supply . 5.3 Compare regulated and unregulated power supply. 5.4 Describe the operation of a typical regulated dc power supply with block diagram. 5.5 Define rectifier and rectification. 5.6 Explain the operation of half wave, full wave and bridge rectifier circuit. 5.7 Determine the ripple factor, efficiency and TUF of half wave, full wave and bridge rectifier. 5.8 Explain the operation of capacitor; inductor-capacitor and pi (π) filter circuit. 5.9 Solve problem related to ripple factor, efficiency	1 Define dc power supply 2 Explain the operation of half wave, full wave and bridge rectifier circuit.	ZenerDiode,Photo Diode.Tunnel diode,Varactor diode,Schottky diode,Step-Rec overy diode, PIN diode, L https://www.youtube.com/watch?v=iH754j7OMVM
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Assignment-02	Assignment on lecture 04– 09	To build up their confidence level & increase creativity on chapter- 04- 09	Must be submitted within the next two lecture.
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07	Chapter-07 Transistor Characteristics	7.1 Describe three basic transistor configuration (CB, CC, CE) circuits. 7.2 Explain the characteristics curve of CB, CC and CE transistor configurations. 7.3 Describe current amplification factors α, β and . 7.4 Establish the relation among α, β and . 7.5 Solve problem related to I_E, I_C, I_B, α, β and	1. Describe three basic transistor configuration (CB, CC, CE) circuits. 2. Explain the characteristics curve of CB, CC and CE transistor configurations	ZenerDiode,Photo Diode.Tunnel diode,Varactor diode,Schottky diode,Step-Rec overy diode, PIN diode, L https://www.youtube.com/watch?v=G-BvuL5IDLw
08	Chapter-08 TRANSISTOR BIASING AND STABILIZATION	8.1 Define load line, Operating point, stability and stabilization. 8.2 State the biasing rule of the transistor. 8.3 Describe faithful amplification. 8.4 Describe the methods of drawing DC load lines. 8.5 Explain the leakage current in CB & CE circuits. 8.6 List the factors affecting stability of Q-points. 8.7 Describe various methods of transistor biasing. 8.8 Determine the stability factor of various transistor biasing circuits. 8.9 Solve problem related to components values, Q-Points and stability factor.	1. Define load line, Operating point, stability and stabilization.	ZenerDiode,Photo Diode.Tunnel diode,Varactor diode,Schottky diode,Step-Rec overy diode, PIN diode, L https://www.youtube.com/watch?v=cOvUJJMjLAU

Lab Report-02	Determine the values of different resistors capacitors and inductor.	Students can easily solve transistor math and transistor configuration and shows practically	Must be submitted within the next two Lab classes.
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09	Class Text-02 And Quiz Test-02 (Result will be published within the next two classes)	Difference mathematical problem in text.	*To build up their confidence level in chapter-4,5 & 6	Projector, Internet. And text book
10	Chapter-09 SINGLE STAGE TRANSISTOR AMPLIFIER	9.1 Define amplifier and single stage amplifier. 9.2 Mention the types of amplifiers. 9.3 Explain operation of transistor as amplifier with graphical demonstration. 9.4 Describe the operation of voltage divider biased CE amplifier circuit. 9.5 Explain the phase reversal of the CE amplifier. 9.6 Draw DC and AC equivalent circuit of voltage divider biased CE amplifier circuit. 9.7 Determine the AC equivalent load resistance of the CE amplifier circuit. 9.8 Determine voltage and power gain of the CE amplifier circuit. 9.9 Solve problem related to voltage and power gain where β and input resistance of the transistor are given	*to know about SINGLE STAGE TRANSISTOR AMPLIFIER	ZenerDiode,Photo Diode.Tunnel diode,Varactor diode,Schottky diode,Step-Rec overy diode, https://www.youtube.com/watch?v=4U_dwuRu6SA

11	Chapter-10 MULTISTAGE TRANSISTOR AMPLIFIER	10.1 Define Multi stage amplifier. 10.2 Describe role of capacitor in single stage amplifier. 10.3 Describe gain, decibel gain frequency response, half power point, 3db point and bandwidth. 10.4 Mention the advantages of dB gain. 10.5 Describe the operation of RC coupled, Transformer coupled and direct coupled multistage amplifier. 10.6 Explain the frequency response of RC coupled, Transformer coupled and direct coupled	To know about MULTISTAGE TRANSISTOR AMPLIFIER	Zener Diode, Photo Diode, Tunnel diode, Varactor diode, Schottky diode, Step-Recovery diode, https://www.youtube.com/watch?v=vDePe-if1gs

Lab Report-03		03. Sketch forward and reverse characteristics curves of semiconductor diode.	Students knows about semi conductor diodes configuration and shows wave curve practically	Must be submitted within the next two Lab classes.
15	Model test:01 chapter:1-5		Our students will be ready for exam.	Pen, pencil, eraser, calculator

6 | Page

Mid Term Exam

21	Quiz text-04 Math solving (Result will be published within the next two classes)	Difference mathematical problem in text.	*To build up their confidence level in chapter-07	Projector, Internet, Text book
25	Class test-04 Math solving (Result will be published within the next two classes)	Difference mathematical problem in text.	*To build up their confidence level in chapter-1-5	Projector, Internet. Text book

7 | Page

8 | Page

9 | Page

Assignment-03	Assignment on lecture chapter:-5-10	To build up their confidence level & increase creativity on chapter-5-10	Must be submitted within the next two lecture.
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31	Model test:02 Chapter:5-10	Our students will be ready for the exam.	Pen, pencil, eraser, calculator, scale.
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