VIDHYADEEP UNIVERSITY
Holy Flame of Knowledge

FIRST-YEAR DIPLOMA ENGINEERINGSYLLABUS

Semester: 1st

Course Code:002203111 **Type of Course: ESC-2**

Course Name: BASICS OF DIGITAL ELECTRONICS

Course Prerequisites: Basic knowledge of **Basics of Digital Electronics.**

COURSE OBJECTIVE(S):

Theengineeringtechnologists (i.e.engineeringdiplomaholders)havetouse/maintainvarioustypes of equipment which are electronically operated and controlled. For using/maintainingsuch equipment, the fundamental principles of electronics and electrical are to be applied inmany situations to arrive at the probable solutions to many of the broadly defined problemswhich they will face during their career as technologists. Therefore, the knowledge about thefunctionsofvariousbasicelectronicsdevicesandtheassociatedcircuitsincludingtheassociated practical skills acquired through the laboratory will help the student when she/hewill be working with electronically controlled/operated equipment or electronic circuits. Thiscourse is therefore so designed that the students will be able to apply the principles of digitalelectronics when required.

TEACHING & EXAMINATION SCHEME:

Teaching Scheme (Hrs/Week)				Examination Scheme					
				SEE		CA			Total
Theory	Tutorial	Practical	Credit	Th	Pr	MSE	PLE	LA	
3	0	0	3	60	00	20	20	00	100

Th: Theory; Pr: Practical; FA: Final Assessment; CAT: Continuous Assessment Theory; CAP: Continuous Assessment Practical;

*TOTAL Theory Hours: No. of Th. and Tut.Hrs/Week*15 = 45*

COURSE CONTENT(S):

Unit No.	Content	Hours	Weightage (%)
1	**Binary Systems:** ● DemonstrateNumbersystemsandbinarycodes ● Convert Number systems and its complements ● Binary codes	10	20%
2	**Binary Logic and Boolean Algebra:** ● Explain Binary Logic ● List and explain working of Logic Gates ● Interpret Boolean postulates, laws and theorems ● Simplify Boolean expression	12	30%

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3	**Boolean Function Implementation:** ● Define constructor &destructor ● Develop program usingconstructoranddestructor	8	20%
4	**Basic Combinational circuits:** ● Explain Basic Combinational circuits ● Arithmetic and Logical Combinational Circuits ● Data transmission combinational circuits.	8	15%
5	**Basic Sequential circuits:** ● Explain Basic Sequential circuits ● Flip-flops	7	15%
	TOTAL	**45**	**100%**

Text Book(s):

Title of the Book	Author(s)	Publication
Basic OF Digital Electronics		Atulprakashan

Reference Book(s):

Sr. No.	TitleofBook	Author	Publication with place, year and ISBN
1	DigitallogicandComputer Design	ManoMMorris	PearsonpublicationLatestEdition ISBN:81-203-0417-9
2	ModernDigitalElectronics	JainRP	TataMacgrowhillLatestEdition
3	DigitalElectronicPrincipals	MalvinoandLitch	TataMacgrowhillLatestEdition
4	FundamentalsofDigital Circuits	Anandkumar	Prentice-hallof IndiaLatestEdition

Web Material Link(s):

a) https://snap.berkeley.edu/snap/snap.html
b) https://scratch.mit.edu/download/scratch2
c) https://nptel.ac.in/courses/106/105/106105151/
d) https://www.programiz.com/cpp-programming
e) https://www.codecademy.com/learn/learn-c-plus-plus
f) https://www.tutorialspoint.com
g) www.w3schoolscom
h) https://www.udemy.com/topic/c-plus-plus/
i) https://www.udacity.com/course/c-for-programmers--ud210

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Equivalent/Corresponding Course on NPTEL (SWAYAM):

NPTEL course on

COURSE EVALUATION:

Sr. No.	Activity	Marks	Weightage
1	Semester End Examination (External Th)	60	60%
2	Internal Examination	40	40%
2(a)	Mid Semester Examination	20	
2(b)	Attendance	10	
2(c)	Assessment Types (Any One from 2(c).1 to 2(c).7)	10	
2(c).1	Subject (Course) based Mini-Project		
2(c).2	Industry/Site Visit & Report		
2(c).3	Assignment		
2(c).4	Seminar		
2(c).5	Case Study		
2(c).6	Surprise Class Quiz		
2(c).7	Design Exercise		
2(c).7	Presentation		
2(d)	Practical (if Applicable)		

* For 4 Credit Subjects

1 Credit = 25 Marks
Theory: 3 Credits = 75 Marks
Practicals: 1 Credit = 25 Marks
SEE Evaluation will be of 100 marks and converted to 50 Marks (75 Th + 25 Pr)
CA Evaluation will be of 100 Marks and converted to 50 Marks. (75 Th + 25 Pr)

Distribution of Marks for Theory Evaluation as per Bloom's Taxonomy Level:

Level	Remember	Understand	Apply	Analyse	Evaluate	Create
% Weightage	20%	10%	10%	15%	10%	20%

COURSE OUTCOMES:(Limited it to 4 to 6)

The practical exercises, the underpinning knowledge and the relevant soft skills associated with this competency are to be developed in the student to display the following COs:

Sr. No.	CO Statement

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CO-1	Perform conversion of given number between various types of number
CO-2	Apply Boolean algebra for circuit optimization
CO-3	Optimize given Boolean expression with K-map
CO-4	Elaborate various types of Combinational circuits
CO-5	Recognize Flip-flops as Sequential circuits.