



Integrated Bachelor – Masters Programme

B.Sc.-M.Sc. (Electronics) Semester II

Course Code	IS02CELE51	Title of the Course	Analog and Digital Electronics-II
Total Credits of the Course	02	Hours per Week	02

Course Objective	To make students familiar with the (i) Fundamental concepts of Analog and Digital Electronic Circuits. (ii) Applications of Analog and digital circuits. (iii) Design of Combinational Logic Circuits.
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Course Content		
UNIT	Description	Weightage* %
1	Transformer Types and its Rating - Diode Circuits and its Applications: Limiters, Clippers, Clampers, Voltage Multiplier- Diode Rectifier : Half wave, Full Wave, Bridge Rectifier – Filter Circuits : RC Filter, LC Filter, IC Voltage Regulator – Transistor as an Amplifier : Transistor Currents and biasing Circuits, Numericals.	50
2	Binary CODES : BCD Code, Gray Code, Error detection and Correction Code, Alphaneumeric Codes- Introduction to Karnaugh Map: Expansion of a Boolean expression to SOP and POS form– Analysis and Design of Combinational Logic Circuits: Introduction, Adder, Subtractor, Decoder, Encoder, Multiplexer, Demultiplexer, Binary Comparator – Sequential Logic Circuits : Flip-Flops, Counters, Registers, Tristate registers.	50

Teaching-Learning Methodology	Traditional Classroom teaching with use of Multimedia facility in the classroom. Use of Computer Tool for live demonstration and Problem / design based approach. Question-Answer and evaluation through Assignments
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SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))
Syllabus with effect from the Academic Year 2022-2023

Evaluation Pattern		
Sr. No	Details of Evaluations	Weightage* %
1	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2	Internal Continuous Assessment in the form of Practical, Viva Voce, Quizzes, Seminars, Assignments, Attendance (as per CBCS R6.8.3)	15%
3	University Examination	70%

Course Outcome. Having completed this course, the learner will be able to	
1	Understand fundamental concepts of Analog and Digital circuits.
2.	Know and Implement Applications of Discrete components.
3.	Design Simple Analog and Digital circuits.
4.	Analyse different combinational and sequential logic circuits.

Suggested References:	
Sr. No.	References
1	Integrated Circuits K.R.Botkar, Khanna Publishers
2	Electronic Principles Malvino, McGraw Hill Publishers.
3	Basic electronics Sadasiva Biswal, Atlantic Publication.
4	Basic Electronics D.P.Kothari, I.J.Nagrath, McGraw Hill Education Private Limited
5	Electronic Devices and Circuits David A.Bell, Oxford University Press.
6	Fundamentals of Digital Circuits A.Anandkumar, Prentice hall of India, New Delhi
7	Digital Principles and Applications Donald Leach, A.P.Malvino, Tata McGraw Hill Publication
8	Digital Logic and Computer Design M.Morris Mano, Pearson India Education Pvt.Ltd.
9	Modern Digital Electronics R.P.Jain, TMH Publication
10	Digital Electronics :Principles and Integrated Circuits Anil K.Maini, Wiley India Pvt.Ltd.
11	Digital Principles and Circuits C.B.Agrawal, Himalaya Publishing House





On-line resources to be used if available as reference material

On line resources:

1. <https://pages.uoregon.edu/rayfrey/DigitalNotes.pdf>
2. <http://ddegjust.ac.in/studymaterial/mca-3/ms-03.pdf>
3. <http://universe.bits-pilani.ac.in/uploads/Digital%20Logic.pdf>
4. https://mrcet.com/downloads/digital_notes/ECE/II%20Year/ANALOG%20CIRCUITS.pdf
5. http://www.electronics.teipir.gr/personalpages/papageorgas/download/2/shmeiwseis/ELECTRONIC_COMPONENTS/varistor/Analog_Electronics.pdf
6. <https://swayam.gov.in/>

