



GU/Acad –PG/BoS- CDT /2025-26/599

Date: 28.11.2025

CIRCULAR

The syllabus of the Change of Discipline Test (CDT) for **Master of Science in Electronics** Programme, approved by the Academic Council in its meeting held on 7th November 2025 is attached.

The Dean/Vice-Dean (Academic) of the School of Physical and Applied Sciences and the Principals of all the affiliated Colleges are requested to take note of the above and bring the contents of this Circular to the notice of all concerned, including students aspiring to pursue the Master's Programmes.

(Ashwin V. Lawande)
Deputy Registrar – Academic

To,

1. The Dean, School of Physical and Applied Sciences, Goa University.
2. The Vice-Dean (Academic), School of Physical and Applied Sciences, Goa University.
3. Principals of all the affiliated Colleges.

Copy to:

1. Controller of Examinations, Goa University.
2. Assistant Registrar (Admissions), Goa University.
3. Assistant Registrar Examinations (UG/PG), Goa University.
4. Director, Directorate of Internal Quality Assurance, Goa University for uploading the Syllabus on the University website.



GOA UNIVERSITY

SYLLABUS FOR CHANGE OF DISCIPLINE TEST (CDT) **FOR MASTER OF SCIENCE IN ELECTRONICS PROGRAMME**

Effective from AY: 2026-27

Modules	Content
Module 1:	P-N Junctions
	Diode theory, forward and reverse-biased junctions, reverse-bias breakdown, load line analysis, diode applications - Limiters, clippers, clampers, voltage multipliers, half wave & full wave rectification.
Module 2:	Bipolar Junction Transistors and Field-Effect Transistors
	BJT Transistor Modeling, Common emitter fixed bias, Voltage divider bias, Emitter follower configuration. Darlington connection-DC bias; Field Effect Transistors: Construction and Characteristics of JFETs, Transfer Characteristics, Depletion type MOSFET, Enhancement type MOSFET, JFET small signal model, Fixed bias configuration, Self bias configuration, Voltage divider configuration, Common Gate configuration. Source-Follower Configuration.
Module 3:	Amplifiers and Regulators
	Amplifier: Small Signal BJT amplifiers, AC equivalent circuit, hybrid, re model and their use in amplifier design. Class A, B, AB, C and D stages, Op-Amp Basics, practical Op-Amp circuits, differential and Common mode operation, Inverting & Non Inverting Amplifier, differential and cascade amplifier, Op-Amp applications. Voltage regulators: Discrete transistor voltage regulation - Series and Shunt Voltage regulators.
Module 4:	Number Systems, Boolean Algebra and Digital circuits
	Decimal, binary, octal, hexadecimal number system and conversion. Binary logic functions, Boolean laws, truth tables, theorems, realization of switching functions using logic gates, Digital integrated circuits: Logic levels, propagation delay time, power dissipation fan-out and fan-in, noise margin, logic families and their characteristics TTL, LSTTL CMOS and ECL integrated circuits and their performance comparison, open collector and tristate gates and buffers.
Module 5:	Communication
	Analog Communication Schemes – Modern communication system scheme, Information source, and input transducer, Transmitter, Channel or Medium,

	Noise, Receiver, Multiplexing, Types of communication systems. Types of modulation – AM , FM, Digital Modulation Schemes: Advantages of digital communication over analog communication, sampling theorem crosstalk, aliasing, time division multiplexing, PAM, PWM and PPM, ASK, FSK, PSK,
References /Readings:	1. A.P. Malvino, Electronic Principles, Tata Mcgraw Hill Publications. 2. Robert L. Boylestad & Louis Nashelsky, Electronic Devices & Circuit Theory 3. R P Jain, ‘Modern Digital Electronics’, Tata McGraw Hill, 4th Edition. 4. George Keneddy, ‘Electronics Communication Systems’, McGraw Hill Education; 5th edition, 2011

