ADAMAS UNIVERSITY

PURSUE EXCELLENCE

KOLKATA

B. Tech in Electronics Engineering and VLSI Design

Program Structure

For

Students in Admitted in Academic Session 2026-27

Semester I

Serial No.	Courses	L	T	P	C
1	Physics (Introduction to Electromagnetic Theory)	3	1	0	4
2	Physics Laboratory	0	0	2	1
3	Mathematics - 1	3	1	0	4
	Basic Electrical Engineering	2	0	0	2
4	Basic Electrical Engineering Laboratory	0	0	2	1
5	Programming (Python)	1	0	4	3
6	Engineering Design Thinking	0	0	2	1
7	Communication Skills	2	1	0	3
8	Environmental Studies	2	0	0	2
	Total				**21**

Semester II

Serial No.	Courses	L	T	P	C
1	Chemistry for Semiconductor	3	0	0	3
2	Digital Electronics LAB	0	0	2	1
3	Mathematics - 2	3	1	0	4
4	Digital Electronics	3	0	0	3
5	Electronic Devices-I	0	0	4	2
6	Linux and Scripting	2	0	0	2
7	AI for Engineers	3	0	0	3
8	Human Values and Professional Ethics	2	0	0	2
	Total				**20**

Semester III

Serial No.	Courses	L	T	P	C
1	Analog Electronic Circuits	3	0	0	3
2	Analog Electronic Circuits Laboratory	0	0	2	1
3	Electronic Devices-II	3	0	0	3
4	Data Structures and algorithm	3	0	0	3
5	Data Structures and Algorithm Lab	0	0	2	1
6	Group Mini Project-1	0	0	4	3
8	Signals & Systems and DSP architectures	3	0	0	3
9	Circuit Theory and Introduction to Control Systems	3	0	0	3
	Total				**20**

Semester IV

Serial No.	Courses	L	T	P	C
1	CMOS Digital Design	3	0	0	3
3	Computer Architecture	3	0	0	3
4	VLSI Technology	3	0	0	3
5	Digital Signal Processing	3	0	0	3
6	Verilog HDL Lab	0	0	2	1
7	Group Mini Project-2	0	0	4	3
8	Photonics chip Design	3	0	0	3
9	Photonics Lab	0	0	2	1
	Total				**20**

Semester V

Serial No.	Courses	L	T	P	C
1	CMOS Analog & Mixed Signal IC Design	3	0	0	3
2	Embedded Systems	3	0	0	3
3	VLSI (CAD + PDK)	3	0	0	3
4	Embedded Systems Lab	0	0	2	1
5	FPGA Design, Verification	3	0	0	3
6	Group Mini Project -3	0	0	4	3
7	Numerical Techniques	2	0	2	3
8	Analog and Mixed Signal IC Design and Layout Lab	0	0	3	2
9	Quantum Technology	3	0	0	3
	Total				**24**

Semester VI

Serial No.	Courses	L	T	P	C
1	Physical Design & STA	3	0	0	3
2	DFT & Testing	3	0	0	3
3	Post-Silicon Validation	3	0	0	3
4	Elective1 (Low Power VLSI, RF IC Design, MEMS, FPGA Systems, AI Hardware Accelerators, IC Packaging, Semiconductor Fabrication HEMT Devices: Theory and applications.)	3	0	0	3
5	Elective2 (Low Power VLSI, RF IC Design, MEMS, FPGA Systems, AI Hardware Accelerators, Semiconductor Fabrication / HEMT Devices: Theory and applications.)	3	0	0	3
6	Elective3 (Low Power VLSI, RF IC Design, MEMS, FPGA Systems, AI Hardware Accelerators, Semiconductor Fabrication / HEMT Devices: Theory and applications.)	3	0	0	3
7	Internship	0	0	4	2
	Total				**20**

Semester VII

Serial No.	Courses	L	T	P	C
1	Advanced Electives	3	0	0	3
2	Open Elective-1	3	0	0	3
3	Open Elective-2	3	0	0	3
4	Capstone Project Phase-I	0	0	8	4
5	Industry Internship	0	0	4	2
6	IC Packaging	3	0	0	3
	Total				18

Semester VIII

Serial No.	Courses	L	T	P	C
1	Capstone Project Phase-II (Tape-out / FPGA Prototype / AI Accelerator)/ Internship	0	0	36	18
	Total				18

Total Credits: 161

Program Electives:

Low Power VLSI, RF IC Design, MEMS, FPGA Systems, AI Hardware Accelerators, Semiconductor Fabrication, HEMT Devices: Theory and applications.