



ALBERTIAN INSTITUTE OF SCIENCE AND TECHNOLOGY
(AUTONOMOUS)

B. Tech Curriculum-2026

Semester I to VIII

Electrical and Electronics Engineering

Branch Code: EE

University Road, South Kalamassery, Kalamassery, Kochi, Kerala 682022

FIRST SEMESTER (July-December)														
45 hours Compulsory Induction Program and UHV														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs./Week
						L	T	P	R		CIA	ESE		
1	A	A103MAT01	BSC	GC	Mathematics for Electrical Science-1	3	0	0	0	4.5	40	60	3	3
2	B	A103PHT02	BSC	GC	Physics for Electrical Science	3	0	2	0	5.5	40	60	4	5
3	C	A103EST03	ESC	GC	Engineering Graphics and Computer Aided Drawing.	2	0	2	0	4	40	60	3	4
4	D	A103EST04	ESC	GC	Introduction to Electrical & Electronics Engineering (part 1: Electrical Engineering)	2	0	0	0	3	20	30	2+2=4	4
					(Part 2: Electronics Engineering)	2	0	0	0	3	20	30		
5	E	A103EST05	ESC	IC	Algorithmic Thinking with Python	3	0	2	0	5.5	40	60	4	5
6	I*	A103HWT06	HWP	IC	Health and Wellness	1	0	1	0	0	50	0	1	2
7	L	A103ESL07	ESC	GC	Basic Electrical and Electronics Engineering Workshop	0	0	2	0	1	50	50	1	2
8	G	A103SED08	SEC	IC	Skill Enhancement Course: AI for Professionals	Online Course				3			-1	
Total										29.5			21	25
Bridge Course (Mathematics) *:										Total 15 Hrs.				

*No Grade Points will be awarded for the Online courses and I slot courses

SECOND SEMESTER (January-June)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs./Week
						L	T	P	R		CIA	ESE		
1	A	A203MAT01	BSC	GC	Mathematics for Electrical Science-2	3	0	0	0	4.5	40	60	3	3
2	B	A203CYT02	BSC	GC	Chemistry for Electrical Science	3	0	2	0	5.5	40	60	4	5
3	C	A203EST03	ESC	GC	Engineering Mechanics	3	0	0	0	4.5	40	60	3	3
4	D	A203EST04	ESC	GC	Programming in C	3	0	2	0	5.5	40	60	4	5
5	E	A203PCT05	PC	PC	Measurements and Instrumentation	3	1	0	0	5	40	60	4	4
6	F	A203EST06	ESC	IC	Engineering Entrepreneurship & IPR	3	0	0	0	4.5	60	40	3	3
7	I*	A103HMT07	HMC	IC	Life Skills and Professional Communication	2	0	1	0	3.5	100	0	1	3
8	L	A203ESL08	ESC	GC	IT Workshop	0	0	2	0	1	50	50	1	2
Total										34			23	28

*No Grade Points will be awarded for the Online courses and I slot courses

• L-T-P-R: Lecture-Tutorial-Practical-Project

• SS (Self Study) Hours = $1.5L + 0.5T + 0.5P + R$

CIA: Continuous Internal Assessment, ESE: End Semester Examination

THIRD SEMESTER (July-December)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs./ Week
						L	T	P	R		CIA	ESE		
1	A	A303MAT01	BSC	GC	Mathematics for Electrical Science - 3	3	0	0	0	4.5	40	60	3	3
2	B	A303PCT02	PC	PC	Circuits and Networks	3	1	0	0	5	40	60	4	4
3	C	A303PCT03	PC	PC	DC Machines and Transformers	3	1	0	0	5	40	60	4	4
4	D	A303PBT04	PC-PBL	PB	Analog Electronics	3	0	0	1	5.5	60	40	4	4
5	E	A303EST05	ESC	GC	Introduction to Artificial Intelligence and Data Science	3	1	0		5	40	60	4	4
6	F	A303HMT06	HMC	IC	Engineering Ethics and Sustainable Development	2	0	0	0	3	50	50	2	2
7	L	A303PCL07	PCL	PC	Circuits and Measurements Lab	0	0	3	0	1.5	50	50	2	3
8	Q	A303PCL08	PCL	PC	Analog Electronics Lab	0	0	3	0	1.5	50	50	2	3
9	R/M		VAC		Remedial/Minor Course	3	1	0	0	5			4*	4*
Total										31/36			25/29*	27/31*
Bridge Course for Lateral Entry Students: Total 15 Hrs.														

FOURTH SEMESTER (January-June)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs./ Week
						L	T	P	R		CIA	ESE		
1	A	A403MAT01	BSC	GC	Mathematics for Electrical Science - 4	3	0	0	0	4.5	40	60	3	3
2	B	A403PCT02	PC	PC	Synchronous and Induction Machines	3	1	0	0	5	40	60	4	4
3	C	A403PCT03	PC	PC	Power Electronics and Drives	3	1	0	0	5	40	60	4	4
4	D	A403PBT04	PC-PBL	PB	Digital Electronics	3	0	0	1	5.5	60	40	4	4
5	E	A403PET1X	PE	PE	PE-1	3	0	0	0	4.5	40	60	3	3
6	F	A403HMT06	HMC	IC	Economics for Engineers	2	0	0	0	3	50	50	2	2
7	L	A403PCL07	PCL	PC	DC Machines and Transformers Lab	0	0	3	0	1.5	50	50	2	3
8	Q	A403PCL08	PCL	PC	Power Electronics and Drives Lab	0	0	3	0	1.5	50	50	2	3
9	R/M/H		VAC		Remedial/Minor/Honours Course	3	1	0	0	5			4*	4*
Total										31/36			24/28*	26/30*

PROGRAM ELECTIVE I : A404PET1X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	A403PET11	Electronic Instrumentation	3-0-0-0	3	3
	A403PET12	Renewable Energy Sources	3-0-0-0		3
	A403PET13	Mathematics for Machine Learning	3-0-0-0		3
	A403PET14	Theory of Computation	3-0-0-0		3
	A403PET15	Computer Organization	3-0-0-0		3
	A403PET16	Solid State Devices	3-0-0-0		3
	A403PET17	Illumination Technology	3-0-0-0		3
	A403PET18	Object Oriented Programming	3-0-0-0		3

FIFTH SEMESTER (July-December)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs./ Week
						L	T	P	R		CIA	ESE		
1	A	A503PCT01	PC	PC	Power Generation, Transmission and Protection	3	1	0	0	5	40	60	4	4
2	B	A503PCT02	PC	PC	Electromagnetic Theory	3	1	0	0	5	40	60	4	4
3	C	A503PCT03	PC	PC	Signals & Systems	3	0	0	0	4.5	40	60	3	3
4	D	A503PBT04	PC-PBL	PB	Microprocessor and Embedded Systems	3	0	0	1	5.5	60	40	4	4
5	E	A503PET2X	PE	PE	PE-2	3	0	0	0	4.5	40	60	3	3
6	I*	A503HMT06	HMC	IC	Constitution of India (MOOC)	-	-	-	-	2	-	-	1	-
7	L	A503PCL07	PCL	PC	AC Machines Lab	0	0	3	0	1.5	50	50	2	3
8	Q	A503PCL08	PCL	PC	Microprocessor and Embedded Systems Lab	0	0	3	0	1.5	50	50	2	3
9	R/M/H		VAC		Remedial/Minor/Honours Course	3	1	0	0	5			4*	4*
	S ₅ /S ₆	Industrial Visit (Maximum 12 Days are permitted, Not Exceeding more than 6 Working Days) /Industrial Training												
Total										30/35			23/27*	24/28*

**No Grade Points will be awarded for the MOOC course and I slot course.*

Industrial Training:

Students who are not participating in the industrial visit must attend industrial training during that period.

PROGRAM ELECTIVE 2: A503PET2X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	A503PET21	Energy Storage Systems	3-0-0-0	3	3
	A503PET22	Electric Vehicles	3-0-0-0		3
	A503PET23	Digital System Design	3-0-0-0		3
	A503PET24	Software Engineering	3-0-0-0		3
	A503PET25	Data Structures	3-0-0-0		3
	A503PET26	Introduction to Machine Learning	3-0-0-0		3
	A503PET27	Computer Network Systems	3-0-0-0		3

SIXTH SEMESTER (January-June)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs/ Week
						L	T	P	R		CIA	ESE		
1	A	A603PCT01	PC	PC	Control Systems	3	1	0	0	4.5	40	60	4	4
2	B	A603PCT02	PC	PC	Electrical System Design and Estimation	3	0	0	0	4.5	40	60	3	3
3	C	A603PET3X	PE	PE	PE-3	3	0	0	0	4.5	40	60	3	3
4	D	A603PBT04	PC-PBL	PB	Power System Analysis	3	0	0	1	5.5	60	40	4	4
5	E	A603EST05	ESC	GC	Design Thinking and Product Development(Electrical Science)	2	0	0	0	3	40	60	2	2
6	F	A603OET1X	OE/ILE	OE/IE	OE/ILE-1	3	0	0	0	4.5	40	60	3	3
7	P	A603PWQ07	PWS	PC	Mini Project: Socially Relevant Project	0	0	0	3	3	50	50	2	3
8	L	A603PCL08	PCL	PC	Control Systems Lab	0	0	3	0	1.5	50	50	2	3
9	Q	A603PCL09	PCL	PC	Power Systems Lab	0	0	2	0	1	50	50	1	2
10	R/M/H		VAC		Remedial/Minor/Honours Course	3	0	0	0	4.5			3*	3*
	S5/S6	Industrial Visit (Maximum of 12 Days are permitted, Not Exceeding more than 6 Working Days) /Industrial Training												
Total										32/36			23/26*	26/29*

Note: Open Electives are such courses which will be offered by other departments. Like CSE department students have to opt open electives from ECE/ME/EEE etc. departments.

Industrial Training:

Students who are not participating in the industrial visit must attend industrial training during that period.

PROGRAM ELECTIVE 3: - A603PET3X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
C	A603PET31	Digital protection of power systems	3-0-0-0	3	3
	A603PET32	Operating Systems	3-0-0-0		3
	A603PET33	High Voltage Engineering	3-0-0-0		3
	A603PET34	Internet of Things	3-0-0-0		3
	A603PET35	Digital Signal Processing	3-0-0-0		3
	A603PET36	Cloud Computing	3-0-0-0		3
	A603PET37	Optimization Techniques	3-0-0-0		3

OPEN ELECTIVE 1: A603OET1X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
F	A603OET11	Introduction to Control Systems	3-0-0-0	3	3
	A603OET12	Energy Management	3-0-0-0		3
	A603OET13	Renewable Energy Systems	3-0-0-0		3

SEVENTH SEMESTER (July-December)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs/ Week
						L	T	P	R		CIA	ESE		
1	A	A703PET4X	PE	PE	PE-4 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
2	B	A703PET5X	PE	PE	PE-5 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
3	C	A703OET2X	OE/ ILE	OE/ ILE	OE/ILE-2 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
4	I*	A703HET1X	HMC	IE	Elective (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	2	2
5	S	A703PWS05	PWS	PC	Seminar	0	0	3	0	1.5	50	0	2	3
6	P	A703PWP06/ A703PWK06	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months)	0	0	0	8	8	100	0	4	8
7	R/H		VAC		Remedial/Honours Course	3	0	0	0	4.5			3*	3*
Total										26/ 31			17/20*	22/25*

*No Grade Points will be awarded for the I slot courses

*Students can opt for the internship either in the 7th or 8th semester.

* Option 1: Work on a Project in the institute/department under the mentorship of faculty members.

Option 2: Full semester Internship in an Industry/organization (7th or 8th semester)

Note: Open Electives are such courses which will be offered by other departments.

PROGRAM ELECTIVE 4: A703PET4X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	A703PET41	Power System Operation and Control	3-0-0-0	3	3
	A703PET42	Energy Management and Auditing	3-0-0-0		3
	A703PET43	Special Electrical Machines	3-0-0-0		3
	A703PET44	Discrete Time Control Systems	3-0-0-0		3
	A703PET45	Digital Image Processing	3-0-0-0		3

PROGRAM ELECTIVE 5: A703PET5X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	A703PET51	Power Quality	3-0-0-0	3	3
	A703PET52	Nonlinear Control Systems	3-0-0-0		3
	A703PET53	Deep Learning	3-0-0-0		3
	A703PET54	Computer Vision	3-0-0-0		3

OPEN ELECTIVE 2: A703OET2X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
C	A703OET21	Design of Solar PV systems	3-0-0-0	3	3
	A703OET22	Hybrid and Electric Vehicles	3-0-0-0		3
	A703OET23	Introduction to Energy Storage Systems	3-0-0-0		3

Slot I: HMC Elective	
1	Project Management: Planning, Execution, Evaluation and Control
2	Proficiency course in French. (MOOC) (B1 level)
3	Proficiency Course in German (B1 Level). (MOOC)
4	Proficiency Course in Spanish (B1 Level) (MOOC)
5	Introduction to Japanese Language and Culture (N5 level). (MOOC)

EIGHTH SEMESTER (January-June)														
Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs/ Week
						L	T	P	R		CIA	ESE		
1	A	A803PET6X	PE	PE	PE-6 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
2	B	A803OET3X	OE/ ILE	OE/ ILE	OE/ILE-3 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
3	I*	A803HET03	HMC	IC	Organizational Behavior and Business Communication (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	1	2
4	P	A803PWP04 A803PWK04 A803PWJ04	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months) Option 3: Major Project Phase -II (For the students who have not opted for internship in S7/S8)	0	0	0	8	8	100	0	4	8
Total										20			11	16

*No Grade Points will be awarded for the I slot courses

* Option 2: Full semester Internship in an Industry/organization (7th or 8th semester)

PROGRAM ELECTIVE 6: A803PET6X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	A803PET61	Smart Grid Technologies	3-0-0-0	3	3
	A803PET62	HVDC and FACTS	3-0-0-0		3
	A803PET63	Mechatronic Systems	3-0-0-0		3
	A803PET64	Electronic Communication	3-0-0-0		3

OPEN ELECTIVE 3: A803OET3X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	A803OET31	Introduction to Robotics	3-0-0-0	3	3
	A803OET32	PLC and Automation	3-0-0-0		3
	A803OET33	Mechatronic Systems and Control	3-0-0-0		3