



ALBERTIAN INSTITUTE OF SCIENCE AND TECHNOLOGY
(AUTONOMOUS)

B-Tech Curriculum -2026

Semester I to VIII

Mechanical Engineering

Branch Code: ME

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	A102MAT01	BSC	GC	Mathematics for Physical Science-1	3	0	0	0	4.5	40	60	3	3
2	B	A102PHT02	BSC	GC	Physics for Physical Science	3	0	2	0	5.5	40	60	4	5
3	C	A102EST03	ESC	GC	Engineering Mechanics	3	0	0	0	4.5	40	60	3	3
4	D	A102EST04	ESC	GC	Introduction to Mechanical Engineering & Civil Engineering (Part1: Mechanical Engineering)	2	0	0	0	3	20	30	2+2=4	4
					(Part 2: Civil Engineering)	2	0	0	0	3	20	30		
5	E	A102EST05	ESC	IC	Algorithmic Thinking with Python	3	0	2	0	5.5	40	60	4	5
6	I*	A102HWT06	HWP	IC	Health and wellness	1	0	1	0	0	50	0	1	2
7	L	A102ESL07	ESC	GC	Engineering Workshop	0	0	2	0	1	50	50	1	2
8	G	A102SED08	SEC	IC	Skill Enhancement Course – AI for Professional	Online Course				3			1	
Total										30./33			21	24/25
Bridge Course (Mathematics) :										Total 15 Hrs.				

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

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	A202MAT01	BSC	GC	Mathematics for Physical Science-2	3	0	0	0	4.5	40	60	3	3
2	B	A202CYT02	BSC	GC	Chemistry for Physical Science	3	0	2	0	5.5	40	60	4	5
3	C	A202EST03	ESC	GC	Engineering Graphics and Computer Aided Drawing	2	0	2	0	4	40	60	3	4
4	D	A202EST04	ESC	GC	Basic 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	A202MET05	PC	PC	Material Science and Engineering	3	1	0	0	5	40	60	4	4
6	F	A202EST06	ESC	IC	Engineering Entrepreneurship & IPR	3	0	0	0	4.5	60	40	3	3
7	I*	A202HMC07	HMC	IC	Life Skills and Professional Communication								1	3
						2	0	1	0	3.5	100	0		
8	L	A202ESL08	ESC	GC	Basic Electrical and Electronics Engineering workshop	0	0	2	0	1	50	50	1	2
Total										34			23	28/28

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

- L-T-P-R: Lecture-Tutorial-Practical-Project
- SS (Self Study) Hours= 1.5L+0.5 T+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	A302MAT01	BSC	GC	Mathematics for Physical Science-3	3	0	0	0	4.5	40	60	3	3
2	B	A302PCT02	PC	PC	Mechanics of Solids	3	1	0	0	5	40	60	4	4
3	C	A302PCT03	PC	PC	Fluid Mechanics and Machinery	3	1	0	0	5	40	60	4	4
4	D	A302PCT04	PC - PBL	PB	Manufacturing Processes	3	0	0	1	5.5	60	40	4	4
5	E	A302EST05	ESC	GC	Introduction to Artificial Intelligence and Data Science	3	1	0	0	5	40	60	4	4
6	F	A302HUT06	HMC	IC	Engineering Ethics and Sustainable Development	2	0	0	0	3	50	50	2	2
7	L	A302PCL07	PCL	PC	Computer Aided Machine Drawing & Modelling	0	0	3	0	1.5	50	50	2	3
8	Q	A302PCL08	PCL	PC	Materials Testing 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*

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	A402MAT01	BSC	GC	Mathematics for Physical Science-4	3	0	0	0	4.5	40	60	3	3
2	B	A402PCT02	PC	PC	Machine Tools and Metrology	3	1	0	0	5	40	60	4	4
3	C	A402PCT03	PC	PC	Engineering Thermodynamics	3	1	0	0	5	40	60	4	4
4	D	A402PCT04	PC-PBL	PB	Mechanics of Machinery	3	0	0	1	5.5	60	40	4	4
5	E	A402PET1X	PE	PE	Elective-1	3	0	0	0	4.5	40	60	3	3
6	F	A402HMT06	HMC	IC	Economics for Engineers	2	0	0	0	3	50	50	2	2
7	L	A402PCL07	PCL	PC	Fluid Mechanics and Hydraulic Machines Lab	0	0	3	0	1.5	50	50	2	3
8	Q	A402PCL08	PCL	PC	Manufacturing Technology 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*

Note: Economics for Engineers and Engineering Ethics and Sustainable Development shall be offered in both S3 and S4. Institutions can advise students belonging to about 50% of the number of branches in the Institution to opt for Economics for Engineers in S3 and Engineering Ethics & Sustainable Development in S4 and vice versa.

PROGRAM ELECTIVE I: A4MEE0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	A402PET11	Turbo Machinery	3-0-0-0	3	3
	A402PET12	Nuclear Energy	3-0-0-0		3
	A402PET13	Composite Materials	3-0-0-0		3
	A402PET14	Components of Intelligent Systems	3-0-0-0		3
	A402PET15	Advanced Metal Joining Techniques	3-0-0-0		3
	A402PET16	Technology Management	3-0-0-0		3
	A402PET17	Supply Chain and Logistics Management	3-0-0-0		3
		Advanced Mechanics of Solids	3-0-0-0		5/3

Note : Level 5 courses in the B. Tech curriculum carry a total of 5 credits, consisting of 3 credits for the Programme Elective and 2 additional credits. The additional 2 credits shall be awarded only if the student meets the eligibility conditions specified in the B. Tech. -2026 regulations. If those conditions are not fulfilled, the student will receive only 3 credits for the course.

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	A502PCT01	PC	PC	Dynamics of Machinery	3	1	0	0	5	40	60	4	4
2	B	A502PCT02	PC	PC	Advanced Manufacturing Engineering	3	1	0	0	5	40	60	4	4
3	C	A502PCT03	PC	PC	Heat and Mass Transfer	3	0	0	0	4.5	40	60	3	3
4	D	A502PBT04	PC-PBL	PB	Management for Engineers	3	0	0	1	5.5	60	40	4	4
5	E	A502PET2X	PE	PE	Elective-2	3	0	0	0	4.5	40	60	3	3
6	I*	A502HMT06	HMC	IC	Constitution Of India (MOOC)	-	-	-	-	2	-	-	1	-
7	L	A502PCL07	PCL	PC	Thermal Engineering Lab-1	0	0	3	0	1.5	50	50	2	3
8	Q	A502PCL08	PCL	PC	Mechanical Engineering 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.

PROGRAM ELECTIVE 2: A5MEE0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	A502PET21	Computational Fluid Dynamics	3-0-0-0	3	3
	A502PET22	Design for Manufacture and Assembly	3-0-0-0		3
	A502PET23	Computer Aided Design and Analysis	3-0-0-0		3
	A502PET24	Additive Manufacturing	3-0-0-0		3
	A502PET25	Energy Economics and Policy	3-0-0-0		3
	A502PET26	Human Resources Management	3-0-0-0		3
	A502PET27	Operations Research	3-0-0-0		3
		Instrumentation and Control Systems	3-0-0-0		5/3

SIXTH SEMESTER (January-June)														
Sl. No:	Slot	Course Code	Course	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs/ Week
						L	T	P	R		CIA	ESE		
1	A	A602PCT01	PC	PC	Industrial and Systems Engineering	3	0	0	0	4.5	40	60	3	3
2	B	A602PCT02	PC	PC	Machine Design	3	0	0	0	4.5	40	60	3	3
3	C	A602PET3X	PE	PE	Elective-3	3	0	0	0	4.5	40	60	3	3
4	D	A602PCT04	PC-PBL	PB	Thermal Engineering	3	0	0	1	5.5	60	40	4	4
5	E	A602EST05	ESC	GC	Design Thinking and Product Development (Physical Science)	2	0	0	0	3	40	60	2	2
6	F	A602OET1X	OE/IE LE	OE/IE	Open Elective/Industry Linked Elective-1	3	0	0	0	4.5	40	60	3	3
7	P	A602PWQ07	PWS	PC	Mini Project: Socially Relevant Project	0	0	0	3	3	50	50	2	3
8	L	A602PCL08	PCL	PC	Computer Aided Design and Analysis Lab	0	0	3	0	1.5	50	50	2	3
9	Q	A602PCL09	PCL	PC	Thermal engineering Lab-2	0	0	2	0	1	50	50	1	2
10	R/ M/ H		VAC		Remedial/Minor/Honours Course	3	1	0	0	5			4*	4*
	S5/ S6	Industrial Visit (Maximum of 12 Days are permitted, Not Exceeding more than 6 Working Days) /Industrial Training												
Total										32/ 37			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.

PROGRAM ELECTIVE 3: A6MEE0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
C	A602PET31	Power Plant Engineering	3-0-0-0	3	3
	A602PET32	Compressible Fluid Flow	3-0-0-0		3
	A602PET33	Industrial Tribology	3-0-0-0		3
	A602PET34	Finite Element Methods	3-0-0-0		3
	A602PET35	Nondestructive Testing	3-0-0-0		3
	A602PET36	Industrial Safety Engineering	3-0-0-0		3
	A602PET37	Marketing Management	3-0-0-0		3
		Advanced Materials	3-0-0-0		5/3

OPEN ELECTIVE 1: A6MEN0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	A602OET11	Introduction to Business Analytics	3-0-0-0	3	3
	A602OET12	Quantitative Techniques for Engineers	3-0-0-0		3
	A602OET13	Automotive Technology	3-0-0-0		3
	A602OET14	Renewable Energy Engineering	3-0-0-0		3
	A602OET15	Quality Engineering and Management	3-0-0-0		3
	A602OET16	Additive Manufacturing	3-0-0-0		3
	A602OET17	Solar Energy Conservation Systems	3-0-0-0		3

SEVENTH SEMESTER (July-December)														
S I. N o:	Slot	Course Code	Course	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs/ Week
						L	T	P	R		CIA	ESE		
1	A	A702PET4X	PE	PE	Elective-4 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
2	B	A702PET5X	PE	PE	Elective-5 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
3	C	A702OET2X	O E/ IL E	OE/IE	Open Elective/Industry Linked Elective-2 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
4	I*	A702HETIX/	HMC	UE	University Elective (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	2	2
5	S	A702PWS05	PS	PC	Seminar	0	0	3	0	1.5	50	0	2	3
6	P	A702PWP06/ A702PWK06	PS	PC	Option 1: Major Project Option 2: Internship (4-6 Months)	0	0	0	12	12	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

*The students can take the internship option either in 7th or in 8th semester.

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

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

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

PROGRAM ELECTIVE 4: A7MEE0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	A702PET41	Gas Turbine and Jet Propulsion	3-0-0-0	3	3
	A702PET42	Automobile Engineering	3-0-0-0		3
	A702PET43	Design of Machine Elements	3-0-0-0		3
	A702PET44	Failure Analysis and Design	3-0-0-0		3
	A702PET45	Lean Manufacturing	3-0-0-0		3
	A702PET46	Reliability Engineering	3-0-0-0		3
	A702PET47	Robotics	3-0-0-0		3
		Mechatronics	3-0-0-0		5/3

PROGRAM ELECTIVE 5: A7MEE0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	A702PET51	Refrigeration and Air Conditioning	3-0-0-0	3	3
	A702PET52	Acoustics and noise Control	3-0-0-0		3
	A702PET53	Aerospace Engineering	3-0-0-0		3
	A702PET54	Renewable Energy Engineering	3-0-0-0		3
	A702PET55	Mobile Robotics	3-0-0-0		3
	A702PET56	Flexible Manufacturing Systems	3-0-0-0		3
	A702PET57	Quality Engineering and Management	3-0-0-0		3
		Optimization Techniques	3-0-0-0		5/3

OPEN ELECTIVE 2: A7MEN0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	A702OET21	Engineering Materials	3-0-0-0	3	3
	A702OET22	Robotics	3-0-0-0		3
	A702OET23	Finite Element Methods	3-0-0-0		3
	A702OET24	Nondestructive Testing	3-0-0-0		3
	A702OET25	Engineering Instruments and Measurements	3-0-0-0		3
	A702OET26	Computational Heat Transfer	3-0-0-0		3
	A702OET27	Power Plant Engineering	3-0-0-0		3

SL. No	Course Code	Slot I: HMC Elective
1	A702MEHUE11	Project Management: Planning, Execution, Evaluation and Control
2	A702MEHUE 12	Proficiency course in French. (MOOC) (B1 level)
3	A702MEHUE13	Proficiency Course in German (B1 Level). (MOOC)
4	A702MEHUE14	Proficiency Course in Spanish (B1 Level) (MOOC)
5	A702MEHUE15	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	A802PET6X	PE	PE	Elective-6 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
2	B	A802OET3X	OE/IL E	OE/IE	Open Elective/Industry Linked Elective-3 (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	3	0	0	0	4.5	40	60	3	3
3	I*	A802HMT2X	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	A802PWP04/ A802PWK04 AE02PWJ04	PS	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	12	12	100	0	4	8
5	R/H		VAC		Project: Honours Course	0	0	0	4	4			4*	4
Total										24/ 28			11/15*	16/20

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

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

PROGRAM ELECTIVE 6: A8MEE0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	A802PET61	Cryogenic Engineering	3-0-0-0	3	3
	A802PET62	Pressure Vessel and Piping Design	3-0-0-0		3
	A802PET63	Hybrid and Electric Vehicles	3-0-0-0		3
	A802PET64	Micro and Nano Manufacturing	3-0-0-0		3
	A802PET65	Advanced Numerical Control in Manufacturing	3-0-0-0		3
	A802PET66	Metal Additive Manufacturing	3-0-0-0		3
	A802PET67	Nanotechnology	3-0-0-0		3
		Aircraft Design	3-0-0-0		5/3

OPEN ELECTIVE 3: A8MEN0X					
SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	A802OET31	Industrial Hydraulics and Automation	3-0-0-0	3	3
	A802OET32	3D Printing and Tooling	3-0-0-0		3
	A802OET33	Numerical Techniques Engineering	3-0-0-0		3
	A802OET34	Business Organization and Development	3-0-0-0		3
	A802OET35	World Class Manufacturing	3-0-0-0		3
	A802OET36	Micro Electro Mechanical Systems	3-0-0-0		3
	A802OET37	Product Design and Innovation	3-0-0-0		3