APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

(A State Government University)

B. Tech Curriculum-2024

Semester I to VIII

Applied Electronics and Instrumentation

Branch Code: AE

(Group B)

Ambady Nagar , Sreekaryam

Thiruvananthapuram- 695016

FIRST SEMESTER (July-December): Group B														
10 Days 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	GYMAT101	BSC	GC	Mathematics for Electrical Science-1	3	0	0	0	4.5	40	60	3	3
2	B S1/ S2	GBPHT121	BSC	GC	Physics for Electrical Science	3	0	2	0	5.5	40	60	4	5
		GXCYT122			Chemistry for Electrical Science									
3	C	GMEST103	ESC	GC	Engineering Graphics and Computer Aided Drawing.	2	0	2	0	4	40	60	3	4
4	D	GXEST104	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	F	UCEST105	ESC	UC	Algorithmic Thinking with Python	3	0	2	0	5.5	40	60	4	5
6	L	GXESL106	ESC	GC	Basic Electrical and Electronics Engineering Workshop	0	0	2	0	1	50	50*	1	2
7	I** S1/ S2	UCHWT127	PW	UC	Health and Wellness	1	0	1	0	0	50	0	1	2/3
		UCHUT128	HMC		Life Skills and Professional Communication	2	0	1	0	3.5	100	0		
8	S_1/ S_2	UCSEM129	SEC	UC	Skill Enhancement Course: Digital 101(NASSCOM)	MOOC***				2			-	
Total										**30/ 32**			**20**	**25/ 26**
Bridge Course (Mathematics or Introduction to Computer Science) *: Total 15 Hrs.														

SECOND SEMESTER (January-June): Group B														
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	GYMAT201	BSC	GC	Mathematics for Electrical Science-2	3	0	0	0	4.5	40	60	3	3
2	B S1/ S2	GBPHT121	BSC	GC	Physics for Electrical Science	3	0	2	0	5.5	40	60	4	5
		GXCYT122			Chemistry for Electrical Science									
3	C	GXEST203	ESC	GC	Foundations of Computing: From Hardware Essentials to Web Design	3	0	0	0	4.5	40	60	3	3
4	D	GXEST204	ESC	GC	Programming in C	3	0	2	0	5.5	40	60	4	5
5	E	PCECT205	PC	PC	Network Theory	3	1	0	0	5	40	60	4	4
6	F	UCEST206	ESC	UC	Engineering Entrepreneurship & IPR	3	0	0	0	4.5	40	60	3	3
7	I** S1/ S2	UCHWT127	PW	UC	Health and Wellness	1	0	1	0	0	50	0	1	2/3
		UCHUT128	HMC		Life Skills and Professional Communication	2	0	1	0	3.5	100	0		
8	L	GXESL208	ESC	GC	IT Workshop	0	0	2	0	1	50	50*	1	2
	S_1/ S_2	UCSEM129	SEC	UC	Skill Enhancement Course: Digital 101(NASSCOM)	MOOC***							1	
Total										**34**			**24**	**27/ 28**

** Internal evaluation by college*

***Valuation for HMC courses will be done at college level, Question papers will be provided by the University.*

****No Grade Points will be awarded for the MOOC courses, I slot courses and bridge courses.*

- 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

Note: *Physics, Chemistry, Health and Wellness & Life Skill and Professional Communication can be offered in both Semester 1 (S1) and Semester 2 (S2). Institutions are encouraged to guide approximately 50% of their branches to choose between Physics* ***or*** *Chemistry (Slot B) and Health and Wellness* ***or*** *Life Skill and Professional Communication (Slot I) in Semester 1.*

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Digital 101 (NASSCOM)		
Sl. No:	**Technologies Covered**	**Hours**
1	Artificial intelligence and Big Data Analytics (AI/BDA)	11
2	Internet of Things (IoT)	2.5
3	Cyber Security	2.5
4	Block Chain	2.5
5	Robotic Process Automation	1.5
6	Augmented Reality and Virtual Reality (AR and VR)	2.5
7	Cloud Computing	2.5
8	3 D Printing and Modelling	2
9	Web, Mobile Dev and Marketing	2
10	Responsible AI	1
	Total Hours	**30**

Skill Enhancement Course: *Digital 101 is an introductory Massive Open Online Course (MOOC) offered by NASSCOM. It is designed to provide students with foundational knowledge and skills in digital technologies, preparing them for further studies and careers in the digital domain. By incorporating the Digital 101 course into the curriculum, KTU ensures that all students gain valuable digital skills early in their academic journey, enhancing their readiness for advanced courses and future careers in technology.*

Course Registration and Completion*:*

- *Students have the flexibility to register and complete the Digital 101 course either in their first semester (S1) or second semester (S2).*
- *The credit for this course (1 credit) will be officially recorded in the second semester grade card.*

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	GYMAT301	BSC	GC	Mathematics for Electrical Science-3	3	0	0	0	4.5	40	60	3	3
2	B	PCAET302	PC	PC	Electronic Devices and Circuits	3	1	0	0	5	40	60	4	4
3	C	PCAET303	PC	PC	Transducers and Measurements	3	1	0	0	5	40	60	4	4
4	D	PBECT304	PC-PBL	PB	Logic Circuit Design	3	0	0	1	5.5	60	40	4	4
5	F	GNEST305	ESC	GC	Introduction to Artificial Intelligence and Data Science	3	1	0	0	5	40	60	4	4
6	G S3/S4	UCHUT346	HMC	UC	Economics for Engineers	2	0	0	0	3	50	50	2	2
		UCHUT347			Engineering Ethics and Sustainable Development									
7	L	PCAEL307	PCL	PC	Transducers and Measurements Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCECL308	PCL	PC	Logic Circuit Design 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	GBMAT401	BSC	GC	Mathematics for Electrical Science-4	3	0	0	0	4.5	40	60	3	3
2	B	PCECT402	PC	PC	Signals and Systems	3	1	0	0	5	40	60	4	4
3	C	PCECT403	PC	PC	Linear Integrated Circuits	3	1	0	0	5	40	60	4	4
4	D	PBECT404	PC-PBL	PB	Microcontrollers	3	0	0	1	5.5	60	40	4	4
5	E	PEAET41N	PE	PE	PE-1	3	0	0	0	4.5	40	60	3	3
6	G S3/S4	UCHUT346	HMC	UC	Economics for Engineers	2	0	0	0	3	50	50	2	2
		UCHUT347			Engineering Ethics and Sustainable Development									
7	L	PCAEL407	PCL	PC	Analog Circuits and Simulation Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCECL408	PCL	PC	Microcontrollers 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: *Engineering Economics 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 Engineering Economics in S3 and Engineering Ethics &Sustainable Development in S4 and vice versa.*

PROGRAM ELECTIVE I: PEAET41N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	PEAET411	Communication Engineering	3-0-0-0	3	3
	PEAET412	Solid State Devices	3-0-0-0		3
	PEAET413	Optical Instrumentation	3-0-0-0		3
	PEAET414	Data Structures and Algorithms	3-0-0-0		3
	PEECT415	**Digital Systems and VLSI Design**	**3-0-0-0**		**5/3**
	PEAET495	**Machine Learning**	**3-0-0-0**		**5/3**

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	PCAET501	PC	PC	Control System Theory	3	1	0	0	5	40	60	4	4
2	B	PCAET502	PC	PC	Process Dynamics and Control	3	1	0	0	5	40	60	4	4
3	C	PCAET503	PC	PC	Power Electronics	3	0	0	0	4.5	40	60	3	3
4	D	PBECT504	PC-PBL	PB	Digital Signal Processing	3	0	0	1	5.5	60	40	4	4
5	E	PEAET52N	PE	PE	PE-2	3	0	0	0	4.5	40	60	3	3
6	I*	UCHUM506	HMC	UC	Constitution of India (MOOC)	-	-	-	-	2	-	-	1	-
7	L	PCAEL507	PCL	PC	Process Control Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCAEL508	PCL	PC	Linear Integrated Circuits and Simulation 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: PEAET52N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	PEAET521	Data Communication	3-0-0-0	3	3
	PEAET522	Modern Processor Architecture	3-0-0-0		3
	PEAET523	Soft Computing	3-0-0-0		3
	PEAET524	Optimization Techniques	3-0-0-0		3
	PEAET526	Biomedical Instrumentation	3-0-0-0		3
	PEAET525	**VLSI System Design**	**3-0-0-0**		**5/3**
	PEAET595	**Robotics and Automation**	**3-0-0-0**		**5/3**

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	PCAET601	PC	PC	Electric Drives and Control	3	1	0	0	5	40	60	4	4
2	B	PCAET602	PC	PC	Industrial Instrumentation	3	0	0	0	4.5	40	60	3	3
3	C	PEAET63N	PE	PE	PE-3	3	0	0	0	4.5	40	60	3	3
4	D	PBAET604	PC-PBL	PB	Logic and Distributed Control System	3	0	0	1	5.5	60	40	4	4
5	F	GXEST605	ESC	GC	Design Thinking and Product Development	2	0	0	0	3	40	60	2	2
6	O	OEAET6N /IEAET61N	OE/ILE	OE/IE	OE/ILE-1	3	0	0	0	4.5	40	60	3	3
7	L	PCAEL607	PCL	PC	Power Electronics Lab	0	0	3	0	1.5	50	50	2	3
8	P	PCAEP608	PWS	PC	Mini Project: Socially Relevant Project	0	0	0	3	3	50	50	2	3
9	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***	**25/28***

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: PEAET63N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
C	PEAET631	CMOS Circuit Design	3-0-0-0	3	3
	PEAET632	Instrumentation for Agriculture	3-0-0-0		3
	PEAET633	Discrete Control Systems	3-0-0-0		3
	PEAET634	Automotive Electronics	3-0-0-0		3
	PEAET636	Biomedical Imaging	3-0-0-0		3
	PEAET635	**Digital Image Processing**	**3-0-0-0**		**5/3**
	PEAET695	**Embedded System Design**	**3-0-0-0**		**5/3**

OPEN ELECTIVE 1: OEAET61N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	OEAET611	Transducers and Measurements	3-0-0-0	3	3
	OEAET612	Biomedical Engineering	3-0-0-0		3
	OEAET613	Microcontrollers	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	PEAET74N/ PEAEM74N	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	PEAET75N/ PEAEM75N	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	O	OEAET72N /IEAET72N/ OEAEM72N	OE/ ILE	OE/IE	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*	UEHUT704/ UEHUM70N	HM C	UE	Elective (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	2	2
5	S	PCAES705	PWS	PC	Seminar	0	0	3	0	1.5	50	0	2	3
6	P	PCAEP706/ PCAEI706	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months)	0	0	0	8	8	100	0	4	8
Total										**26**			**17**	**22**

**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: PEAET74N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	PEAET741	Electronic Design Automation	3-0-0-0	3	3
	PEAET742	Electric Vehicles and Renewable Technologies	3-0-0-0		3
	PEAET743	Non-linear Control Systems	3-0-0-0		3
	PEAET744	Mobile Robotics	3-0-0-0		3
	PEAET746	Cryptography	3-0-0-0		3
	PEAET745	**Computer Vision**	**3-0-0-0**		**5/3**
	PEAET795	**Instrumentation System Design**	**3-0-0-0**		**5/3**

PROGRAM ELECTIVE 5: PEAET75N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	PEAET751	Power Plant Instrumentation	3-0-0-0	3	3
	PEAET752	Low Power VLSI	3-0-0-0		3
	PEAET753	Linear Algebra in AI and ML	3-0-0-0		3
	PEAET754	Real-Time Operating Systems	3-0-0-0		3
	PEAET756	Wireless Sensor Networks	3-0-0-0		3
	PEAET755	**Pattern Recognition**	**3-0-0-0**		**5/3**
	PEAET785	**Internet of Things based System Design**	**3-0-0-0**		**5/3**

OPEN ELECTIVE 2: OEAET72N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	OEAET721	Internet of Things	3-0-0-0	3	3
	OEAET722	MEMS	3-0-0-0		3
	OEAET723	Embedded 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	PEAET86N/ PEAEM86N	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	O	OEAET83N /IEAET83N/ OEAEM83N	OE/ILE	OE/IE	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*	UEHUT803/ UEHUM803	HMC	UC	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	PCAEP806/ PCAEI806/ PCAEJ806	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: PEAET86N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	PEAET861	Instrumentation in Petrochemical Industries	3-0-0-0	3	3
	PEAET862	Industry 4.0	3-0-0-0		3
	PEAET863	Aerospace Instrumentation	3-0-0-0		3
	PEAET864	MEMS and Nanoelectronics	3-0-0-0		3
	PEAET866	Wavelets and Multirate Analysis	3-0-0-0		3
	PEAET865	**Deep Learning**	**3-0-0-0**	**3**	**5/3**
	PEAET895	**Mechatronics**	**3-0-0-0**		**5/3**

OPEN ELECTIVE 3: OEAET83N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	OEAET831	Introduction to Mechatronics	3-0-0-0	3	3
	OEAET832	Industry 4.0	3-0-0-0		3
	OEAET833	Virtual Instrumentation	3-0-0-0		3

HMC Courses			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S1/S2**	Life Skills and Professional Communication	1
2	**S3/S4**	Engineering Economics	2
3		Engineering Ethics and Sustainable Development	2
4	**S5**	Constitution Of India. (MOOC)	1
5	**S7**	Elective (Project Management/Foreign Languages)	2
6	**S8**	Organizational Behavior and Business Communication	1
Total Credits			**9**

BSC Courses			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S1**	Group Specific Mathematics-1	3
2	**S1/S2**	Physics for Engineers	4
3		Chemistry for Engineers	4
4	**S2**	Group Specific Mathematics-2	3
5	**S3**	Group Specific Mathematics-3	3
6	**S4**	Group Specific Mathematics-4	3
Total Credits			**20**

ESC Courses (Group B)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S1**	Engineering Graphics and Computer Aided Drawing	3
2		Introduction to Electrical and Electronics Engineering	4
3		Algorithmic Thinking with Python	4
4		Basic Electrical and Electronics Engineering Workshop	1
5	**S2**	Foundations of Computing: From Hardware Essentials to Web Design	3
6		Programming in C	4
7		Engineering Entrepreneurship and IPR	3
8		IT Workshop	1
9	**S3**	Introduction to Artificial Intelligence and Data Science	4
10	**S6**	Design Thinking and Creativity	2
Total Credits			**29**

Program Core Courses (PC)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S2**	Network Theory	4
2	**S3**	Electronic Devices and Circuits	4
3		Transducers and Measurements	4
4		Transducers and Measurements Lab	2
5		Logic Circuit Design Lab	2
6	**S4**	Signals and Systems	4
7		Linear Integrated Circuits	4
8		Analog Circuits and Simulation Lab	2
9		Microcontrollers Lab	2
10	**S5**	Control System Theory	4
11		Process Dynamics and Control	4
12		Power Electronics	3
13		Process Control Lab	2
14		Linear Integrated Circuits and Simulation Lab	2
15	**S6**	Electric Drives and Control	4
16		Industrial Instrumentation	3
17		Power Electronics Lab	2
Total Credits (Theory -10, Lab-7)			**52**

Programme Core-Project Based Learning (PBL)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S3**	Logic Circuit Design	4
2	**S4**	Microcontrollers	4
3	**S5**	Digital Signal Processing	4
4	**S6**	Logic and Distributed Control System	4
Total Credits			**16**

Programme Elective Courses (PE)			
Sl. No:	**Semester**	**Course Type**	**Credits**
1	**S4**	PE-1	3
2	**S5**	PE-2	3
3	**S6**	PE-3	3
4	**S7**	PE-4	3
5		PE-5	3
6	**S8**	PE-6	3
Total Credits			**18**

Open Elective Courses/Industry Elective(OE/IEL)			
Sl. No:	**Semester**	**Course Type**	**Credits**
1	**S6**	OE/ILE-1	3
2	**S7**	OE/ILE-2	3
3	**S8**	OE/ILE-3	3
Total Credits			**9**

Project/ Internship and Seminar			
Sl. No:	**Semester**	**Course Type**	**Credits**
1	**S6**	Mini Project	2
2	**S7**	Seminar	2
3		Major Project/Internship	4
4	**S8**	Major Project/Internship/Research Project	4
Total Credits			**12**

Activity Points				
Sl. No.	**Group**	**Courses**	**Credits**	**Minimum Credit Requirements**
1	I	NSS, NCC, NSO (National Sports Organization)	1 (40 Points)	3 Credits (One credit from each Group)
2		Arts/Sports/Games		
3		Union/Club Activities		
4	II	English Proficiency Certification (TOFEL, IELTS, BEC etc.)	1 (40 Points)	
5		Aptitude Proficiency Certification (GRE, CAT, GMAT etc.)/ Valid Gate Score.		
6		Short Term Internship (Minimum 2 weeks), Clinical Exposure/Training (Minimum 2 weeks), Conferences/Paper Presentation/ Workshop Activities/ Professional Body Activities, Participation in University level/State Level/ National Level Hackathons		
7	III	Journal Publication, Patents, Start-Up, Innovation, Winners of National/ International Level Hackathons	1 (40 Points)	
8		**Skilling Certificates** (Approved by the University)		

- ***Students are required to acquire a minimum of 120 activity points, with at least 40 points per group, to fulfill the curriculum requirement of 3 activity credits.***
- ***For B. Tech Lateral Entry students, 30 points per group are required. A minimum of 90 activity points must be acquired to obtain the 3 activity credits mandated by the curriculum.***

Course classifications of the B. Tech Programmes and Overall Credit Structure			
Sl. No	**Category**	**Code**	**Credits**
1	Humanities and Social Sciences including Management Courses	HMC	9
2	Basic Science Courses	BSC	20
3	Engineering Science Courses	ESC	29
4	Programme (Professional) Core Courses	PCC	52
5	Programme (Professional) Core Courses-Project Based Learning	PBL	16
6	Programme Elective Courses	PEC	18
7	Open Elective Courses/Industry Linked Elective	OEC/ILE	9
8	Mini Project,Project Work/Internship and Seminar	PWS	12
9	Health and Wellness	HWP	1
10	Skill Enhancement Courses (Digital 101)	SEC	1
11	Mandatory Student Activities	MSA	3
Total Credits			**170**