APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

(A State Government University)

B. Tech

Curriculum (2024)- Semester I to VIII

Electronics & Computer Engineering

Branch Code: ER

(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 / GXCYT122	BSC	GC	Physics for Electrical Science / Chemistry for Electrical Science	3	0	2	0	5.5	40	60	4	5
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	HWP	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.														

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 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

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**

***Note**: Physics, Chemistry, Health and Wellness and Life skill and Professional Communication shall be offered in both S1 and S2.*

Institutions can advise students belonging to about 50% of the number of branches in the Institution to opt for Physics/ Health and Wellness in SI and Chemistry/ Life Skills and Professional Communication in S2 & vice versa.

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 / GXCYT122	BSC	GC	Physics for Electrical Science / Chemistry for Electrical Science	3	0	2	0	5.5	40	60	4	5
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	PCERT205	PC	PC	Digital Electronics	3	1	0	0	5	40	60	4	4
6	F	UCEST206	ESC	UC	Engineering Entrepreneurship & IPR	3	0	0	0	4.5	60	40	3	3
7	I* S1/ S2	UCHWT127	HWP	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**

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

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	PCERT302	PC	PC	Data Structures	3	1	0	0	5	40	60	4	4
3	C	PCERT303	PC	PC	Digital System Design Using Verilog	3	1	0	0	5	40	60	4	4
4	D	PBERT304	PC-PBL	PB	Electronic Devices and Circuits	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		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	PCERL307	PCL	PC	Data Structures Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCERL308	PCL	PC	Digital System 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	PCERT402	PC	PC	Computer Organization and Architecture	3	1	0	0	5	40	60	4	4
3	C	PCERT403	PC	PC	Computer Networks	3	1	0	0	5	40	60	4	4
4	D	PBERT404	PC-PBL	PB	Integrated Circuits	3	0	0	1	5.5	60	40	4	4
5	E	PEERT41N	PE	PE	PE-1	3	0	0	0	4.5	40	60	3	3
6	GS3/S4	UCHUT346	HMC	UC	Economics for Engineers	2	0	0	0	3	50	50	2	2
		UCHUT347			Engineering Ethics and Sustainable Development									
7	L	PCERL407	PCL	PC	Computer Networking Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCERL408	PCL	PC	Integrated Circuits 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: PEERT 41N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	PEERT 411	Communication Engineering	3-0-0-0	3	3
	PEERT 412	Basic VLSI Design	3-0-0-0		3
	PEERT 413	Biomedical Signals and Transducers	3-0-0-0		3
	PEERT 414	Foundations of Machine Learning	3-0-0-0		3
	PEERT 416	Object Oriented Programming Using Java	3-0-0-0		3
	PEERT 415	Java Programming & Application development	**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. -2024 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	PCERT501	PC	PC	Digital Signal Processing	3	1	0	0	5	40	60	4	4
2	B	PCERT502	PC	PC	Theory of Computation	3	1	0	0	5	40	60	4	4
3	C	PCERT503	PC	PC	Microcontrollers and Interfacing	3	0	0	0	4.5	40	60	3	3
4	D	PBERT504	PC-PBL	PB	Database Management Systems	3	0	0	1	5.5	60	40	4	4
5	E	PEERT52N	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	PCERL507	PCL	PC	Digital Signal Processing Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCERL508	PCL	PC	Database Management 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: PEERT 52N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
E	PEERT 521	Wireless Sensor Networks	3-0-0-0	3	3
	PEERT 522	CMOS VLSI Design	3-0-0-0		3
	PEECT 523	Sensors and Actuators	3-0-0-0		3
	PEERT 524	Cloud Computing	3-0-0-0		3
	PEERT 526	Python for Machine Learning	3-0-0-0		3
	PEERT 525	Computational Fundamentals for Machine Learning	**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	PCERT601	PC	PC	Operating Systems	3	1	0	0	5	40	60	4	4
2	B	PCERT602	PC	PC	Data Communication and Networking	3	0	0	0	4.5	40	60	3	3
3	C	PEERT63N	PE	PE	PE-3	3	0	0	0	4.5	40	60	3	3
4	D	PBERT604	PC-PBL	PB	Embedded Systems and IoT	3	0	0	1	5.5	60	40	4	4
5	F	GYEST605	ESC	GC	Design Thinking and Product Development (Group Specific Syllabus)	2	0	0	0	3	40	60	2	2
6	O	OEERT61N /IEERT61N	OE/ ILE	OE/IE	OE/ILE-1	3	0	0	0	4.5	40	60	3	3
7	L	PCERL607	PCL	PC	Embedded Systems and IoT Lab	0	0	3	0	1.5	50	50	2	3
8	P	PCERP608	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: PEERT 63N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
C	PEERT 631	Network and Linear Control Systems	3-0-0-0	3	3
	PEERT 632	Micro-Electro-Mechanical-Systems	3-0-0-0		3
	PEERT 633	Foundations of Data Science	3-0-0-0		3
	PEERT 634	Compiler Design	3-0-0-0		3
	PEERT 636	Algorithm Analysis and Design	3-0-0-0		3
	PEERT 635	Design & Analysis of Algorithms	3-0-0-0		5/3

OPEN ELECTIVE 1: OEERT 61N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	OEERT611	Basics of Analog and Digital Communication	3-0-0-0	3	3
	OEERT612	Robotics and Automation	3-0-0-0		3
	OEERT613	Object Oriented Concepts	3-0-0-0		3
	OEERT614	Internet of Things	3-0-0-0		3
	OEERT615	Introduction to Artificial Intelligence	3-0-0-0		3

SEVENTH SEMESTER (July-December)

Sl. No	Slot	Course Code	Course [illegible]	Course Category	Course Title (Course Name)	Credit Structure				SS	Total Marks		Credits	Hrs/ Week
						L	T	P	R		CIA	ESE		
1	A	PEERT74N / PEERM74N	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	PEERT75N/ PEERM75N	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	OEERT72N /IEERT72N/ OEERM72N	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	HMC	UE	Elective (Internship Students: Self Study/MOOC Approved by the University/Online Classes)	2	0	0	0	3	50	50	2	2
5	S	PCERS705	PWS	PC	Seminar	0	0	3	0	1.5	50	0	2	3
6	P	PCERP706/ PCERI706	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: PEERT 74N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	PEERT 741	Image Processing	3-0-0-0	3	3
	PEECT 742	Deep Learning	3-0-0-0		3
	PEECT 743	Robotics and Automation	3-0-0-0		3
	PEERT 744	Nano electronics	3-0-0-0		3
	PEERT 746	Block Chain Technologies	3-0-0-0		3
	PEERT 745	**Network Security**	3-0-0-0		5/3

PROGRAM ELECTIVE 5: PEERT 75N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
B	PEERT 751	Web Programming	3-0-0-0	3	3
	PEERT 752	Low Power VLSI Design	3-0-0-0		3
	PEECT 753	Real Time Operating Systems	3-0-0-0		3
	PEERT 754	Client Server Architecture	3-0-0-0		3
	PEECT 756	Speech and Audio Processing	3-0-0-0		3
	PEERT 755	**Neural Networks & Deep Learning**	3-0-0-0		5/3

OPEN ELECTIVE 2: OEERT 72N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	OEERT 721	Sensors and Instrumentation	3-0-0-0	3	3
	OEERT 722	Biomedical Instrumentation	3-0-0-0		3
	OEERT 723	Embedded System Design and Applications	3-0-0-0		3
	OEERT 724	Digital Image Processing	3-0-0-0		3
	OEERT 725	Concepts in Machine Learning	3-0-0-0		3

SL. No	Course Code	Slot I: HMC Elective
1	UEHUT704	Project Management: Planning, Execution, Evaluation and Control
2	UEHUM701	Proficiency course in French. (MOOC) (B1 level)
3	UEHUM702	Proficiency Course in German (B1 Level). (MOOC)
4	UEHUM703	Proficiency Course in Spanish (B1 Level) (MOOC)
5	UEHUM704	Introduction to Japanese Language and Culture (N5 level). (MOOC)

EIGHT 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	PEERT86N / PEERM86N	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	OEERT83N /IEERT83N/ OEERM83N	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	PCERP806/ PCERI806/ PCERJ806	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: PEERT 86N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
A	PEERT 861	PLC and Data Acquisition Systems	3-0-0-0	3	3
	PEERT 862	Electronic Product Design	3-0-0-0		3
	PEERT 863	System Software	3-0-0-0		3
	PEECT 864	Cyber Security	3-0-0-0		3
	PEERT 866	Cryptography and Network Security	3-0-0-0		3
	PEERT 865	**Cyber Forensics**	3-0-0-0		5/3

OPEN ELECTIVE 3: OEERT 83N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
O	OEERT 831	Biomedical Signal Processing	3-0-0-0	3	3
	OEERT 832	Hybrid and Electric Vehicles	3-0-0-0		3
	OEERT 833	Fundamentals of Computer Networks	3-0-0-0		3
	OEERT 834	Cloud Computing and Applications	3-0-0-0		3
	OEERT 835	Introduction to Deep Learning	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**	Economics for Engineers	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			
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**	Digital Electronics	4
2	**S3**	Data Structures	4
3		Digital System Design Using Verilog	4
4		Data Structures Lab	2
5		Digital System Design Lab	2
6	**S4**	Computer Organization and Architecture	4
7		Computer Networks	4
8		Computer Networking Lab	2
9		Integrated Circuits Lab	2
10	**S5**	Digital Signal Processing	4
11		Theory of Computation	4

12		Microcontrollers and Interfacing	3
13		Digital Signal Processing Lab	2
14		Database Management Systems Lab	2
15		Operating Systems	4
16	**S6**	Data Communication and Networking	3
17		Embedded Systems and IoT Lab	2
Total Credits (Theory -10, Lab-7)			**52**

Program Core-Project Based Learning (PBL)			
Sl. No:	**Semester**	**Course Area**	**Credits**
1	**S3**	Electronic Devices & Circuits	4
2	**S4**	Integrated Circuits	4
3	**S5**	Database Management Systems	4
4	**S6**	Embedded Systems & IoT	4
Total Credits			**16**

Program 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**