



**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

**(A State Government University)**

**B. Tech**

**Curriculum (2024)- Semester I to VIII**

**Branch Name: Chemical Engineering**

**Branch Code: CH**

**(Group C)**

**Ambady Nagar, Sreekaryam**

**Thiruvananthapuram- 695016**

FIRST SEMESTER (July-December):Group C														
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 Physical Science-1	3	0	0	0	4.5	40	60	3	3
2	B S1/ S2	GZPHT121	BSC	GC	Physics for Physical Science	3	0	2	0	5.5	40	60	4	5
		GCCYT122			Chemistry for Physical Science									
3	C	GCEST103	ESC	GC	Engineering Mechanics	3	0	0	0	4.5	40	60	3	3
4	D	GCEST104	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	F	UCEST105	ESC	UC	Algorithmic Thinking with Python	3	0	2	0	5.5	40	60	4	5
6	L	GCESL106	ESC	GC	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	S1/ S2	UCSEM129	SEC	UC	Skill Enhancement Course: Digital 101(NASSCOM)	MOOC				2			-	
Total										30/ 32			20	24/ 25
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 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
<b>Total Hours</b>		<b>30</b>

**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.

SECOND SEMESTER (January-June):Group C														
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 Physical Science-2	3	0	0	0	4.5	40	60	3	3
2	B S1/ S2	GZPHT121	BSC	GC	Physics for Physical Science	3	0	2	0	5.5	40	60	4	5
		GCCYT122			Chemistry for Physical Science									
3	C	GCEST203	ESC	GC	Engineering Graphics and Computer Aided Drawing	2	0	2	0	4	40	60	3	4
4	D	GZEST204	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	PCCHT205	PC	PC	Process Calculations	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	GZESL208	ESC	GC	Basic Electrical and Electronics Engineering workshop	0	0	2	0	1	50	50	1	2
	S1/ S2	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 Physical Science-3	3	0	0	0	4.5	40	60	3	3
2	B	PCCHT302	PC	PC	Particle Technology	3	1	0	0	5	40	60	4	4
3	C	PCCHT303	PC	PC	Chemical Engineering Thermodynamics	3	1	0	0	5	40	60	4	4
4	D	PBCHT304	PC-PBL	PB	Fluid and Particle Mechanics	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	PCCHL307	PCL	PC	Chemical Technology and Environmental Engineering Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCCHL308	PCL	PC	Fluid and Particle Mechanics 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 (Mathematics/Engineering Subjects):      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	GCMAT401	BSC	GC	Mathematics for Physical Science-4	3	0	0	0	4.5	40	60	3	3
2	B	PCCHT402	PC	PC	Heat Transfer Operations	3	1	0	0	5	40	60	4	4
3	C	PCCHT403	PC	PC	Mass Transfer Operation-I	3	1	0	0	5	40	60	4	4
4	D	PBCHT404	PC-PBL	PB	Environmental Engineering	3	0	0	1	5.5	60	40	4	4
5	E	PECHT41N	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	PCCHL407	PCL	PC	Particle Technology Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCCHL408	PCL	PC	Heat Transfer Operations 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: PECHT41N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>E</b>	PECHT411	Energy Engineering	3-0-0-0	<b>3</b>	<b>3</b>
	PECHT412	Material Science	3-0-0-0		<b>3</b>
	PECHT413	Total Quality Management	3-0-0-0		<b>3</b>
	PECHT414	Process Instrumentation	3-0-0-0		<b>3</b>
	PECHT416	Introduction to data analysis	3-0-0-0		<b>3</b>
	PECHT417	Electrochemical Engineering	3-0-0-0		<b>3</b>
	<b>PECHT415</b>	<b>Fluidization Engineering</b>	3-0-0-0		<b>5/3</b>

*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	PCCHT501	PC	PC	Mass Transfer Operation-II	3	1	0	0	5	40	60	4	4
2	B	PCCHT502	PC	PC	Chemical Technology	3	1	0	0	5	40	60	4	4
3	C	PCCHT503	PC	PC	Chemical Reaction Engineering	3	0	0	0	4.5	40	60	3	3
4	D	PBCHT504	PC-PBL	PB	Chemical Engineering Design-I	3	0	0	1	5.5	60	40	4	4
5	E	PECHT52N	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	PCCHL507	PCL	PC	Chemical Reaction Engineering Lab	0	0	3	0	1.5	50	50	2	3
8	Q	PCCHL508	PCL	PC	Mass Transfer Operation 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 <sub>5</sub> /S <sub>6</sub>	Industrial Visit (Maximum 12 Days are permitted, Not Exceeding more than 6 Working Days) /Industrial Training												
<b>Total</b>										<b>30/35</b>			<b>23/27*</b>	<b>24/28*</b>

*\*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: PECHT 52N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>E</b>	PECHT521	Biochemical Engineering	3-0-0-0	<b>3</b>	<b>3</b>
	PECHT522	Oil and Natural Gas Engineering	3-0-0-0		<b>3</b>
	PECHT523	Polymer Technology	3-0-0-0		<b>3</b>
	PECHT524	Project Engineering	3-0-0-0		<b>3</b>
	PECHT526	Numerical Methods for Process Engineers	3-0-0-0		<b>3</b>
	PECHT527	Corrosion Engineering	3-0-0-0		<b>3</b>
	<b>PECHT525</b>	<b>Mathematical Methods in Process Engineering</b>	3-0-0-0		<b>5/3</b>

**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	PCCHT601	PC	PC	Chemical Engineering Design-II	3	1	0	0	5	40	60	4	4
2	B	PCCHT602	PC	PC	Transport Phenomena	3	0	0	0	4.5	40	60	3	3
3	C	PECHT63N	PE	PE	PE-3	3	0	0	0	4.5	40	60	3	3
4	D	PBCHT604	PC-PBL	PB	Process Dynamics and Control	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	OECHT61N /IECHT61N	OE/ILE	OE/IE	OE/ILE-1	3	0	0	0	4.5	40	60	3	3
7	L	PCCHL607	PCL	PC	Process Simulation Lab	0	0	3	0	1.5	50	50	2	3
8	P	PCCHP608	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	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.

**PROGRAM ELECTIVE 3: PECHT 63N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>C</b>	PECHT631	Process Modelling and Simulation	3-0-0-0	<b>3</b>	<b>3</b>
	PECHT632	Petroleum Refinery Engineering	3-0-0-0		<b>3</b>
	PECHT633	Heterogeneous reactions and Catalysis	3-0-0-0		<b>3</b>
	PECHT634	Fuel Cell Technology	3-0-0-0		<b>3</b>
	PECHT636	Process Utility and Piping Engineering	3-0-0-0		<b>3</b>
	PECHT637	Fertilizer Technology	3-0-0-0		<b>3</b>
	<b>PECHT635</b>	<b>Computational Fluid Dynamics</b>	3-0-0-0		<b>5/3</b>

**OPEN ELECTIVE 1: OECHT 61N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>O</b>	OECHT611	Process utilities	3-0-0-0	3	3
	OECHT612	Polymer Science & Engineering	3-0-0-0		3
	OECHT613	Pollution control in Process Industries	3-0-0-0		3
	OECHT614	Energy Engineering and management	3-0-0-0		3
	OECHT615	Petroleum Refining Technology	3-0-0-0		3
	OECHT616	Hydrogen Energy: Production, Storage, Transportation and Safety	3-0-0-0		3
	OECHT617	Environmental Impact Assessment	3-0-0-0		3

**SEVENTH SEMESTER (July-December)**

Sl. No:	Slot	Course Code	Course Type	Course Category	Course Title (Course Name)	Credit Structure					Total Marks		Credits	Hrs/ Week
						L	T	P	R	SS	CIA	ESE		
1	A	PECHT74N / PECHM74N	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	PECHT75N/ PECHM75N	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	OECHT72N /IECHT72N/ OECHM72N	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	PCCHS705	PS	PC	Seminar	0	0	3	0	1.5	50	0	2	3
6	P	PCCHP706/ PCCHI706	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*
<b>Total</b>										<b>26/31</b>			<b>17/20*</b>	<b>22/25*</b>

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

\*Students can opt for the internship either in the 7<sup>th</sup> or 8<sup>th</sup> 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 (7<sup>th</sup> or 8<sup>th</sup> semester)

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

**PROGRAM ELECTIVE 4: PECHT 74N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>A</b>	PECHT741	Petrochemical Technology	3-0-0-0	<b>3</b>	<b>3</b>
	PECHT742	Composite Materials	3-0-0-0		<b>3</b>
	PECHT743	Safety Engineering of Process Plants	3-0-0-0		<b>3</b>
	PECHT744	Process Automation	3-0-0-0		<b>3</b>
	PECHT746	Advanced Heat and Mass Transfer	3-0-0-0		<b>3</b>
	PECHT747	Food Processing and Technology	3-0-0-0		<b>3</b>
	<b>PECHT745</b>	Process Integration	3-0-0-0		<b>5/3</b>

**PROGRAM ELECTIVE 5: PECHT 75N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>B</b>	PECHT751	Drugs And Pharmaceuticals Technology	3-0-0-0	<b>3</b>	<b>3</b>
	PECHT752	Nonconventional Petroleum Resources	3-0-0-0		<b>3</b>
	PECHT753	Nanomaterials and Nano technology	3-0-0-0		<b>3</b>
	PECHT754	Quantitative Risk Assessment	3-0-0-0		<b>3</b>
	PECHT756	Novel Separation Process	3-0-0-0		<b>3</b>
	PECHT757	Economics & Management of Chemical Industries	3-0-0-0		<b>3</b>
	<b>PECHT755</b>	<b>Process Optimization</b>	3-0-0-0		<b>5/3</b>

**OPEN ELECTIVE 2: OECHT 72N**

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>O</b>	OECHT721	Fuel Cell Technology	3-0-0-0	<b>3</b>	<b>3</b>
	OECHT722	Advanced materials	3-0-0-0		<b>3</b>
	OECHT723	Process Safety Engineering	3-0-0-0		<b>3</b>
	OECHT724	Industrial Instrumentation	3-0-0-0		<b>3</b>
	OECHT725	Advanced waste water treatment	3-0-0-0		<b>3</b>
	OECHT726	Air Pollution Control	3-0-0-0		<b>3</b>
	OECHT727	Design of Experiments	3-0-0-0		<b>3</b>

**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	PECHT86N / PECHM86N	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	OECHT83N / IECHT83N / OECHM83N	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	PCCHP806/ PCCHI806/ PCCHJ806	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 an Industry/organization (7<sup>th</sup> or 8<sup>th</sup> semester)

#### PROGRAM ELECTIVE 6: PECHT 86N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>A</b>	PECHT861	Solid Waste Management	3-0-0-0	<b>3</b>	<b>3</b>
	PECHT862	Hydrogen Energy: Production, Storage, Transportation and Safety	3-0-0-0		<b>3</b>
	PECHT863	Colloid and Interfacial Science	3-0-0-0		<b>3</b>
	PECHT864	Process Safety Management	3-0-0-0		<b>3</b>
	PECHT866	AI-ML Application in Chemical Engineering	3-0-0-0		<b>3</b>
	PECHT867	Process Systems Engineering	3-0-0-0		<b>3</b>
	<b>PECHT865</b>	Design and Analysis of Experiments	3-0-0-0		<b>5/3</b>

#### OPEN ELECTIVE 3: OECHT 83N

SLOT	COURSE CODE	COURSES	L-T-P-R	HOURS	CREDIT
<b>O</b>	OECHT831	Environment Management Systems	3-0-0-0	<b>3</b>	<b>3</b>
	OECHT832	Fuel Engineering	3-0-0-0		<b>3</b>
	OECHT833	Nanomaterials and Nano technology	3-0-0-0		<b>3</b>
	OECHT834	Bioprocess Engineering	3-0-0-0		<b>3</b>
	OECHT835	Fire Engineering	3-0-0-0		<b>3</b>
	OECHT836	Waste to Energy Technology	3-0-0-0		<b>3</b>
	OECHT837	Non-Conventional Energy Systems	3-0-0-0		<b>3</b>

HMC Courses			
Sl. No:	Semester	Course Area	Credits
1	S1/S2	Life Skills and Professional Communication	1
2	S3	Economics for Engineers	2
3	/S4	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	Mathematics for Physical Science-1	3
2	S1/S2	Physics for Physical Science	4
3		Chemistry for Physical Science	4
4	S2	Mathematics for Physical Science-2	3
5	S3	Mathematics for Physical Science-3	3
6	S4	Mathematics for Physical Science-4	3
Total Credits			20

ESC Courses (Group C)			
Sl. No:	Semester	Course Area	Credits
1	S1	Engineering Mechanics	3
2		Introduction to Mechanical Engineering/ Civil Engineering	4
3		Algorithmic Thinking with Python	4
4		Engineering Workshop	1
5	S2	Engineering Graphics and Computer Aided Drawing	3
6		Basic Electrical and Electronics Engineering	4
7		Engineering Entrepreneurship and IPR	3
8		Basic Electrical and Electronics Engineering Workshop	1
9	S3	Introduction to Artificial Intelligence and Data Science	4
10	S6	Design Thinking and Creativity	2
Total Credits			29

Programme Core Courses (PC)			
Sl. No:	Semester	Course Area	Credits
1	S2	Process Calculations	4
2	S3	Particle Technology	4
3		Chemical Engineering Thermodynamics	4
4		Chemical Technology and Environmental Engineering Lab	2
5		Fluid and Particle Mechanics Lab	2
6		Heat Transfer Operations	4
7	S4	Mass Transfer Operation-I	4
8		Particle Technology Lab	2
9		Heat Transfer Operations Lab	2
10		Mass Transfer Operation-II	4
11	S5	Chemical Technology	4
12		Chemical Reaction Engineering	3
13		Chemical Reaction Engineering Lab	2
14		Mass Transfer Operation Lab	2
15	S6	Chemical Engineering Design-II	4
16		Transport Phenomena	3
17		Process Simulation Lab	2
Total Credits (Theory -10, Lab-7)			52

Programme Core-Project Based Learning (PBL)			
Sl. No:	Semester	Course Area	Credits
1	S3	Fluid and Particle Mechanics	4
2	S4	Environmental Engineering	4
3	S5	Chemical Engineering Design-I	4
4	S6	Process Dynamics and Control	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
<b>Total Credits</b>			<b>170</b>