R25 Course Structure - BTech CSE CS Program																
Parent	**Sub**	**Course Code**	**Level**	**Course Title**	**Abb**	**L**	**T**	**P**	**S**	**I**	**C**	**CH**	**PRE-REQ**	**S/NS**	**MOOCS**	**EVAL**
Semester - 1																
FC	BSC	25PHY1001	100	Engineering Physics	EPY	3	0	2	0	0	4	5				
FC	BSC	25CHE1001	100	Engineering Chemistry	ECH	3	0	0	0	0	3	3				
UC	AEC	25ENG1001	100	English for Academic and Professional Growth	EAP	3	0	2	0	0	4	5				
FC	BSC	25MAT1001	100	Discrete Mathematics	DMS	3	1	0	0	0	4	4				
FC	ESC	25CSE1101	100	Problem Solving and Computer Programming through C	PSC	2	0	4	0	0	4	6				
FC	ESC	25EEC1101	100	Fundamentals of Electrical and Electronics Engineering	FEE	3	0	0	0	0	3	3				
FC	ESC	25CSE1001	100	IT Workshop [Engg Chem comb]*	IWK	0	0	2	0	0	1	2				
UC	HAS	25HAS1201	100	Introduction to Sustainability, SDGs and Innovation	SSI	0	0	0	2	0	1	2				
UC	VAC	25VAC1001	100	Induction Program	IDP	1	0	0	0	0	0	1				
Total for Sem -1						**15**	**1**	**8**	**2**	**0**	**20**	**26**				
Semester - 2																
FC	BSC	25PHY1001	100	Engineering Physics	EPY	3	0	2	0	0	4	5				
FC	BSC	25CHE1001	100	Engineering Chemistry	ECH	3	0	0	0	0	3	3				
FC	BSC	25MAT1002	100	Probability and Statistics	PST	3	1	0	0	0	4	4				
FC	ESC	25CSE1202	100	Digital Logic Design	DLD	3	1	0	0	0	4	4				
FC	ESC	25CSE1102	100	Data Structures through C	DSC	2	0	4	0	0	4	6	PSC			
FC	ESC	25CSE1103	100	Object Oriented Programming	OOP	0	0	4	2	0	3	6				
UC	AEC	25ENG1002	100	Joy of Communication: Oral Skills for Success	JOS	0	0	2	2	0	2	4				
FC	ESC	25CSE1001	100	IT Workshop [Engg Chem comb]*	IWK	0	0	2	0	0	1	2				
UC	HAS	25HAS1202	100	Design Thinking for Engineers	DTE	0	0	0	2	0	1	2	SSI			
Total for Sem -2						**11**	**2**	**12**	**6**	**0**	**22**	**31**				
FC	RPI	25CYS1901	100	Social Internship	SIP	0	0	0	0	3	1	0				
Semester - 3																
FC	BSC	25MAT1003	100	Linear Algebra and Calculus	LAC	3	1	0	0	0	4	4				
FC	SDD	25CSE2202	200	Automata and Compiler Design	ACD	3	0	2	0	0	4	5				
FC	SDD	25CSE2101	200	Programming through Java	PTJ	2	0	4	0	0	4	6				
FC	ESC	25CSE1203	100	Computer Organization and Architecture	COA	3	1	0	0	0	4	4				
FC	SDD	25CSE2102	200	Design and Analysis of Algorithms	DAA	3	0	2	0	0	4	5	DSC			
UC	SEC	25SDC1101	100	21st Century Skills: Quantitative Aptitude and Personal Effectiveness	QAP	0	0	0	2	0	1	2				
UC	SEC	25SDC2201	200	Competitive Programming Practicum	COP	0	0	0	2	0	1	2				
PC	SDC	25CSE2302	100	Front-End Development Foundations	FED	0	0	2	2	0	2	4		✓		
UC	HAS	25HAS2201	200	Customer Discovery and MVP Development	CUD	0	0	0	2	0	1	2	DTE			
Total for Sem -3						**14**	**2**	**10**	**8**	**0**	**25**	**34**				
Semester - 4																
FC	SDD	25CSE2201	200	Operating Systems	OPS	3	0	2	0	0	4	5				
FC	SDD	25CSE2401	200	Artificial Intelligence & Machine Learning	AML	4	0	2	0	0	5	6	LAC			
FC	SDD	25CSE2103	200	Database Management Systems	DBS	3	0	2	0	0	4	5				
FC	SDD	25CSE2601	200	Computer Networks	CNW	3	0	2	0	0	4	5				
FC	SDC	25CSE2303	200	Full Stack Application Development	FSD	0	0	4	2	0	3	6	FED			
UC	SEC	25SDC1102	100	21st Century Skills: Verbal Aptitude and Digital Literacy	VAE	0	0	0	2	0	1	2				
UC	VAC	25VAC110X/140X	100	Sports Bucket/Health and Wellness Bucket		0	0	0	2	0	0	2		✓		
UC	VAC	25VAC120X/130X	100	Professional Societies /Community Services Bucket												
UC	HAS	25HAS2202	200	Business Model Innovation & Early-Stage Venture Formation	BMI	0	0	0	2	0	1	2	CUD			
Total for Sem -4						**13**	**0**	**12**	**8**	**0**	**22**	**33**				
FC	RPI	25CYS2901	200	Technical Writing	TIP	0	0	0	0	3	1	0				
Semester - 5																
PC	SDD	25CSE3601	300	Cryptography and Network Security	CNS	3	0	0	2	0	4	5				
PC	SDD	25CSE3604	300	Foundations of Cyber Security	CSY	3	0	0	2	0	4	5				
PE	PE1	Refer PEs		Program Elective 1*		3	0	0	2	0	4	5				
OE	OE1	Refer OEs		Open Elective 1#		3	0	0	0	0	3	3				
UC	SEC	25SDC210X	200	Essential Employability Skills Bucket		0	0	0	2	0	1	2				
UC	SEC	25SDC3201	300	Code Challenge Accelerator Program	CAP	0	0	0	2	0	1	2				
UC	HAS	25HAS110X	100	Foreign Languages Bucket		0	0	2	0	0	1	2				
UC	VAC	25VAC110X/140X	100	Sports Bucket/Health and Wellness Bucket		0	0	0	2	0	0	2		✓		
UC	VAC	25VAC120X/130X	100	Professional Societies /Community Services Bucket												
UC	HAS	25HAS3201	300	Investor Readiness and Scaling Ventures	INM	0	0	0	2	0	1	2	BMI			
Total for Sem -5						**12**	**0**	**2**	**14**	**0**	**19**	**28**				

Semester - 6																
FC	SDD	25CSE2301	200	Software Engineering	SWG	3	0	2	0	0	4	5				
PC	SDD	25CSE3607	300	Threat Intelligence	TTI	3	0	0	2	0	4	5				
PE	PE2	Refer PEs		Program Elective 2*		3	0	0	2	0	4	5				
PE	PE3	Refer PEs		Program Elective 3*		3	0	0	2	0	4	5				
UC	AEC	25ENG2001	200	English for Career Readiness	ECR	0	0	2	2	0	2	4				
FC	SDC	25CSE3402	300	Cloud and Devops Engineering	CDE	0	0	2	2	0	2	4	FSD		✓	
UC	VAC	25VAC1002	100	Indian Constitution	INC	2	0	0	0	0	0	2		✓		
UC	HAS	25HAS3202	300	Product Launch and Market Readiness	PLM	0	0	0	2	0	1	2	IRV			
Total for Sem -6						**14**	**0**	**6**	**12**	**0**	**21**	**32**				
FC	RPI	25CYS2902	200	Summer Internship	SUP	0	0	0	0	4	2	0				
Semester - 7																
PC	SDD	25CSE3608	300	Cyber Forensics	CFS	3	0	0	2	0	4	5				
PE	PE4	Refer PEs		Program Elective 4*		3	0	0	2	0	4	5				
OE	OE2	Refer OEs		Open Elective 2#		3	0	0	0	0	3	3				
FC	SDC	25CSE3403	300	Cloud based AI/ML Specialization	CAM	0	0	2	2	0	2	4	CDE		✓	
UC	VAC	25VAC1003	100	Universal Human Values - II	UHV	2	0	0	0	0	0	2				
UC	HAS	25HAS4201	400	Post-Launch Growth & Venture Management	PVM	0	0	0	2	0	1	2	PLM			
FC	RPI	25CYS3901	300	Capstone Project - 1/Internship-1	IN1	0	0	0	0	5	5	5				
Total for Sem -7						**11**	**0**	**2**	**8**	**5**	**19**	**26**				
Semester - 8																
OE	OE3	Refer OEs		Open Elective 3#		3	0	0	0	0	3	3				
UC	VAC	25VAC1004	100	Environmental Studies	EVS	2	0	0	0	0	0	2				
FC	RPI	25AML4901	400	Capstone Project - 2/Internship-2/Research	IN2	0	0	0	0	10	10	10				
Total for Sem -8						**5**	**0**	**0**	**0**	**10**	**13**	**15**				
Total credits and contact hours for BTech CSE AIML program						**95**	**5**	**52**	**58**	**25**	**165**	**225**				

CREDITS DISTRIBUTION and SU vs AICTE vs UGC

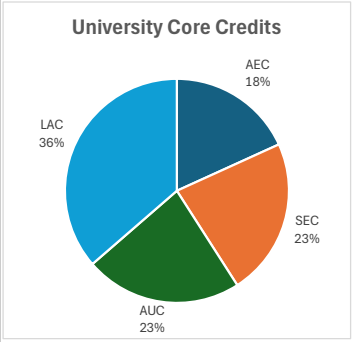
Category	Abbr	Sub Category	Abbr	Credits	Courses	Total
University Core	UC	Ability Enhancment Courses	AEC	8	3	21
		Skill Enhancement Courses	SEC	5	5	
		Audit Courses	VAC	0	8	
		Humanities and Social Sciences	HAS	8	8	
Faculty Core	FC	Basic Sciences	BSC	19	5	61
		Engineering Sciences	ESC	23	7	
		Research, Project and Internship	RPI	19	5	
Program Core	PC	Standard Courses	SDD	49	12	58
		Skill Development	SDC	9	4	
Program Electives	PE	BIO/UIX/BKC/IOT/DRT/General	PE1	4	1	16
		BIO/UIX/BKC/IOT/DRT/General	PE2	4	1	
		BIO/UIX/BKC/IOT/DRT/General	PE3	4	1	
		BIO/UIX/BKC/IOT/DRT/General	PE4	4	1	
Open Electives	OE	BT/CE/MECH/EE/IE/MGM	OE1	3	1	9
		BT/CE/MECH/EE/IE/MGM	OE2	3	1	
		BT/CE/MECH/EE/IE/MGM	OE3	3	1	
Total Credits for BTech CSE CS					**64**	**165**

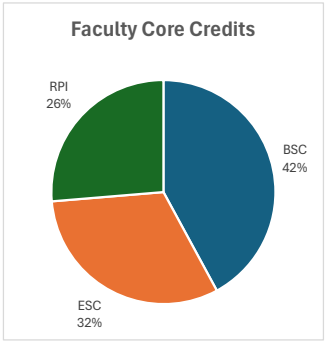
Cat vs Credits %		
Cat	Credits	%
UC	21	13
FC	61	37
PC	58	35
PE	16	10
OE	9	5

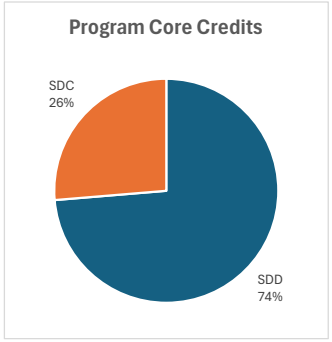
SU vs AICTE vs UGC				
Cat	SU	AICTE	UGC	
HAS	21	16	AEC	8
BSC	19	23	SEC	9
ESC	23	29	HAS	9
PC	58	59	BSC+ESC+PC+PE(Major+Minor)	112
PE	16	12		
OE	9	9		
RPI	19	15	RPI	16
VAC	-	-	VAC+OE	6
	165	163		160

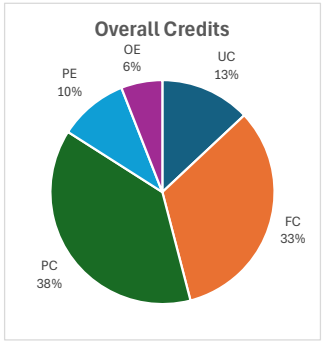
HAS = AEC + SEC +HAS

AICTE	https://www.aicte.gov.in/sites/default/files/Updated-AICTE%20-%20UG%20CSE.pdf
AICTE Cy Sec Minor	https://www.aicte-india.org/sites/default/files/Model_Curriculum/Cyber%20Security%20Minor%20Degree_Dec_2020-3.pdf
UGC	https://www.ugc.gov.in/e-book/FYUGP/mobile/index.html









1.**University Core**: Fundamental courses mandated by the university to provide a broad and essential foundation across disciplines.
2.**Faculty Core**: Core courses specific to a faculty, aimed at building foundational knowledge in the respective academic domain.
3.**Program Core**: Mandatory courses tailored to a specific program, focusing on essential knowledge and skills within the field of study.
4.**Professional Electives**: Specialized elective courses offering advanced knowledge and skills related to the professional domain.
5.**Open Electives**: Flexible elective courses chosen by students from a wide range of disciplines to explore diverse interests.
6.**Ability Enhancement Courses**: Courses designed to improve essential communication, reasoning, and analytical skills, enhancing overall academic and professional competency.
7.**Skill Enhancement Courses**: Practical-focused courses aimed at building technical, vocational, and soft skills relevant to employability and career growth.
8.**Audit Courses**: Mandatory non-credit courses undertaken voluntarily for knowledge enhancement without impacting grades or GPA.
9.**Liberal Arts**: Courses in humanities, social sciences, and creative arts, promoting critical thinking, design thinking, innovation and holistic education.
10.**Basic Sciences**: Foundational science courses that provide the basic principles and theories essential for advanced learning.
11.**Engineering Sciences**: Core engineering courses covering fundamental concepts and applications across various technical disciplines.
12.**Research, Project and Internship**: Academic initiatives combining research, project work, and internships to foster practical problem-solving skills.

13.**Skill Development**: Industry-aligned courses that enhance professional, technical, and employability skills in students.

Note:	***PE****	*May opt from any one/multiple segment(s)/general PEs from the offered list of courses by the Dept/School*
	OE#	*May opt from any one/multiple categories Oes from the offered list of courses by the Dept/School*
ABB.	**PRE-REQ**	*Pre-Requisite*
	S/NS	*Satisfactory/Not Satisfactory*
	MOOCS	*Courses/Global Certifications approved by BoS*
	EVAL	*Evaluation Pattern for Courses*