B.Tech. (CSE) Course Scheme

Academic Year 2025-2026

Department of Computer Science & Engineering

School of Engineering and Technology

Central University of Rajasthan

NH-8 Jaipur- Ajmer Highway, Bandarsindri
Kishangarh -
305817 District-
Ajmer,

Program Outcomes

PO1-Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2-Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3-Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4-Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5-Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6-The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7-Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8-Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9-Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10-Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11-Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12-Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Scheme of B.Tech. (CSE)

	Department Specific Course (DSC)	Department Specific Elective (DSE)	Skill enahcancement Course	Ability enhance/value added courses (AEC)	Total
Sem1	20	-	-	-	20
Sem2	20	-	-	-	20
Sem 3	20	-	-	-	20
Sem 4	16	-	-	4	20
Sem 5	8	-	12	-	20
Sem 6	8	-	12	-	20
Sem 7	-	8	4	8	20
Sem 8	-	8	-	12	20
	92 (57.5%)	16 (10%)	28 (17.5%)	28 (15%)	160

First Year

		SEMESTER I					
S.No	**Course Code**	**Nature of the Course**	**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	4.5CSE01	DSC	Engineering Mathematics-I	3	1	0	4
2	4.5CSE02	DSC	Engineering Physics	3	0	2	4
3	4.5CSE03	DSC	Basic Electrical Engineering	3	0	2	4
4	4.5CSE04	DSC	English (Communication and Writing)	3	1	0	4
5	4.5CSE05	DSC	Engineering Graphics & Design	3	0	2	4
		Total Credits					**20**

		SEMESTER II					
S.No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	4.5CSE06	DSC	Engineering Mathematics-II	3	1	0	4
2	4.5CSE07	DSC	Introduction to Programming	3	0	2	4
3	4.5CSE08	DSC	Basic Electronics Engineering	3	1	0	4
4	4.5CSE09	DSC	Engineering Chemistry	3	0	2	4
5	4.5CSE10	DSC	Workshop Practice	3	0	2	4
6	4.5CSE11	DSC	UHV*	3	1	0	4*
		Total Credits					**20**

*UHV is mandatory audit course and every student has to complete the course however the credits earned shall not effecting the overall credits of the degree

Second Year

			SEMESTER III				
S. No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	5CSE01	DSC	Discrete Mathematics	3	1	0	4
2	5CSE02	DSC	Computer Organization	3	1	0	4
3	5CSE03	DSC	Theory of Computation	3	1	0	4
4	5CSE04	DSC	Object Oriented Programming	3	0	2	4
5	5CSE05	DSC	Data Structures and Algorithms	3	0	2	4
			Total Credits				**20**

			SEMESTER IV				
S.No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	5CSE06	VAC	Principles and Practices of Management	3	1	0	4
2	5CSE07	DSC	Design and Analysis of Algorithms	3	0	2	4
3	5CSE08	DSC	Operating Systems	3	0	2	4
4	5CSE09	DSC	System Software	3	0	2	4
5	5CSE10	DSC	Digital Systems Design	3	0	2	4
			Total Credits				**20**

Third Year

			SEMESTER V				
S. No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	5.5CSE01	DSC	Computer Networks	3	0	2	4
2	5.5CSE02	SEC	Compiler Design	3	0	2	4
3	5.5CSE03	DSC	Database Management Systems	3	0	2	4
4	--	SEC	Open Elective-I	3	0	2	4
5	5.5CSE05	SEC	Industrial Training-I[#]	0	0	8	4
			Total Credits				**20**

			SEMESTER VI				
S. No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	5.5CSE06	DSC	Data Communication	3	1	0	4
2	5.5CSE07	DSC	Cryptography and Network Security	3	0	2	4
3	5.5CSE08	SEC	Software Engineering	3	0	2	4
4	5.5CSE09	SEC	Machine Learning	3	0	2	4
5	--	SEC	Open Elective-II	3	0	2	4
			Total Credits				**20**

Fourth Year

			SEMESTER VII				
S. No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	6CSE01	SEC	Project Design	3	0	2	4
2	--	DSE	Program elective I	3	1	0	4
3	--	DSE	Program elective II	3	1	0	4
4	6CSE02	AEC	Project/Dissertation–I	0	0	8	4
5	6CSE03	AEC	Industrial Training-II[#]	0	0	8	4
			Total Credits				**20**

			SEMESTER VIII				
S. No	**Course Code**		**Course Name**	**L**	**T**	**P**	**Credits**
				Hours/week			
1	--	DSE	Program Elective-III/ SSR/MOOCs	3	1	0	4
2	--	DSE	Program elective IV/ SSR/MOOCs/	3	1	0	4
4	6CSE04	AEC	Project/Dissertation-II	0	0	24	12
			Total Credits				**20**

Total Credits are: 20+20+20+20+20+20+20+20=160

6-8 weeks Internships is mandatory to earn the credits for the Internships.

Note:

List of electives is enclosed and can be chosen from. New electives may be added as per requirement. Detailed syllabus of each course shall be circulated separately.

List of electives/open electives

1.	6CSE31	Data warehousing and Data Mining
2.	6CSE32	Advanced Computer Architecture
3.	6CSE33	Advanced Database Management Systems
4.	6CSE34	Security Audit
5.	6CSE35	Digital Forensics
6.	6CSE36	Advanced Software Engineering
7.	6CSE37	Big Data Analytics
8.	6CSE38	Cloud Computing
9.	6CSE39	Embedded System Design
10.	6CSE40	Artificial Neural Networks
11.	6CSE41	Software Testing Techniques
12.	6CSE42	Delay Tolerant Networks
13.	6CSE43	Network Simulation
14.	6CSE44	Human Computer Interaction
15.	6CSE45	Wireless and Ad Hoc Networks
16.	6CSE46	Language Processors
17.	6CSE47	Parallel Computing
18.	6CSE48	Soft Computing
19.	6CSE49	Machine Learning
20.	6CSE50	Security Engineering
21.	6CSE51	Information Retrieval Systems
22.	6CSE52	Distributed Systems
23.	6CSE53	System Programming
24.	6CSE54	Security and Privacy
25.	6CSE55	Unix Network Programming
26.	6CSE56	Computer Graphics
27.	6CSE57	Operation Research
28.	6CSE58	Graph Theory
29.	6CSE59	E-Commerce
30.	6CSE60	Pattern Recognition
31.	6CSE61	Number Theory
32.	6CSE62	Advanced Topics in Compiler Design
33.	6CSE63	Advanced Topics in Computer Architecture
34.	6CSE64	System Software
35.	6CSE65	Deep Learning
36.	6CSE66	Digital Image Processing
37.	6CSE67	System Design
38.	6CSE68	Computer Vision
39.	6CSE69	Natural language processing and applications
40.	6CSE70	Information Retrieval
41.	6CSE71	Large language models