

Bachelor of Technology (B.Tech.) in Computer Science and Engineering with Specialization in Cloud Computing

1. Department Mission Statement	
	To impart knowledge in cutting edge Computer Science and Engineering technologies in par with industrial standards.
	To collaborate with renowned academic institutions to uplift innovative research and development in Computer Science and Engineering and its allied fields to serve the needs of
	To demonstrate strong communication skills and possess the ability to design computing systems individually as well as part of a multidisciplinary teams.
	To instill societal, safety, cultural, environmental, and ethical responsibilities in all professional activities
	To produce successful Computer Science and Engineering graduates with personal and professional responsibilities and commitment to lifelong learning

2. Program Education Objectives (PEO)	
	Graduates will be able to perform in technical/managerial roles ranging from design, development, problem solving to production support in software industries and R&D sectors.
	Graduates will be able to successfully pursue higher education in reputed institutions.
	Graduates will have the ability to adapt, contribute and innovate new technologies and systems in the key domains of Computer Science and Engineering.
	Graduates will be ethically and socially responsible solution providers and entrepreneurs in Computer Science and other engineering disciplines.
	Graduates will possess skills to design computing systems based on Cloud computing.
	Graduates will have the ability to develop tools incorporating the skills acquired in cloud computing domain.

Program Structure: Bachelor of Technology (B.Tech.) in Computer Science and Engineering with Specialization in Cloud Computing

1. Humanities & Social Sciences including Management Courses (H)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	English	2	0	2	3
	Foreign language	2	0	2	3
	General Aptitude	0	0	2	1
	Management Principles for Engineers	2	0	0	2
	Social Engineering	2	0	0	2
	Employability Skills & Practices	0	0	2	1
	Total Learning Credits				12

2. Basic Science Courses (B)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Physics: Semiconductor Physics	3	1	2	5
	Chemistry	3	1	2	5
	Calculus and Linear Algebra	3	1	0	4
	Advanced Calculus and Complex Analysis	3	1	0	4
	Transforms and Boundary Value Problems	3	1	0	4
	Probability and Queueing Theory	3	1	0	4
	Discrete Mathematics for Engineers	3	1	0	4
	Biology	2	0	0	2
	Total Learning Credits				32

3. Engineering Science Courses (S)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Engineering Graphics and Design	1	0	4	3
	Basic Electrical and Electronics Engineering	3	1	2	5
	Programming for Problem Solving	3	0	4	5

	Civil and Mechanical Engineering Workshop	1	0	4	3
	Analog and Digital Electronics	3	0	2	4
	Computer Communications	2	0	2	3
	Total Learning Credits				23

4. Professional Core Courses (C)

Course Code	Course Title	Hours/Week			
		L	T	P	C
	Data Structures and Algorithms	3	0	2	4
	Object Oriented Design and Programming	3	0	2	4
	Computer Organization and Architecture	3	0	2	4
	Design and Analysis of Algorithms	3	0	2	4
	Operating Systems	3	0	2	4
	Software Engineering and Project Management	3	0	2	4
	Advanced Programming Practice	3	0	2	4
	Formal Language and Automata	3	0	0	3
	Computer Networks	3	0	2	4
	Database Management Systems	3	0	2	4
	Compiler Design	3	0	2	4
	Artificial Intelligence	3	0	2	4
	Comprehension	0	1	0	1
	Total Learning Credits				48

5. Professional Elective Courses (E) (Any 6 Elective Courses)

Course Code	Course Title	Hours/Week			
		L	T	P	C
	Communication Systems Engineering	3	0	0	3
	Digital Communication Systems	3	0	0	3
	Principles of Cloud Computing	3	0	0	3
	Distributed Operating Systems	3	0	0	3
	Data Centric Networks	3	0	0	3
	Web Application Development	3	0	0	3
	Cloud Architecture	3	0	0	3
	Wireless Sensor Networks	3	0	0	3
	High Performance Computing	3	0	0	3
	Software Defined Networks	3	0	0	3

	Network Design and Management	3	0	0	3
	Cloud Application Development	3	0	0	3
	Cloud Security	3	0	0	3
	Big Data Essentials	3	0	0	3
	Cloud Strategy Planning and Management	3	0	0	3
	Total Learning Credits				18

6. Open Elective Courses (O)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	IT Infrastructure Management	3	0	0	3
	Mobile Application Development	3	0	0	3
	System Modeling and Simulation	3	0	0	3
	Free and Open Source Softwares	3	0	0	3
	Android Development	3	0	0	3
	Data Analysis using Open Source Tool	3	0	0	3
	IOS Development	3	0	0	3
	Total Learning Credits				12

7. Project Work, Seminar, Internship In Industry / Higher Technical Institutions (P)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Massive Open Online Course - I	0	0	2	1
	Industrial Training-I				
	Seminar - I				
	Massive Open Online Course - II	0	0	2	1
	Industrial Training-II				
	Seminar - II				
	Minor Project	0	0	6	3
	Internship (4-6 weeks)				
	Project	0	0	20	10
	Semester Internship				
	Total Learning Credits				15

8. Mandatory Courses (M)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Professional Skills and Practices	0	0	2	0
	Competencies in Social Skills	0	0	2	0
	Entrepreneurial Skill Development				
	Critical and Creative Thinking Skills	0	0	2	0
	Business Basics for Entrepreneurs				
	Analytical and Logical Thinking Skills	0	0	2	0
	Entrepreneurship Management				
	Constitution of India	1	0	0	0
	Value Education	1	0	1	0
	Physical and Mental Health using Yoga	0	0	2	0
	NSS	0	0	2	0
	NCC				
	NSO				
	Indian Traditional Knowledge	1	0	0	0
	Indian Art Form	0	0	2	0
	Environmental Science	1	0	0	0
	Total Learning Credits				0

Bachelor of Technology (B.Tech.) in Computer Science and Engineering with Specialization in Cloud Computing (4 years) Curriculum

Semester - I					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	English	2	0	2	3
	Calculus and Linear Algebra	3	1	0	4
	Physics: Semiconductor Physics	3	1	2	5
	Engineering Graphics and Design	1	0	4	3
	Basic Electrical and Electronics Engineering	3	1	2	5
	Professional Skills & Practices	0	0	2	0
	Constitution of India	1	0	0	0
	Physical and Mental Health using Yoga	0	0	2	0
	Total Learning Credits				20

Semester - II					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Foreign Language	2	0	2	3
	Advanced Calculus and Complex Analysis	3	1	0	4
	Chemistry	3	1	2	5
	Programming for Problem Solving	3	0	4	5
	Civil and Mechanical Engineering Workshop	1	0	4	3
	General Aptitude	0	0	2	1
	Value Education	1	0	1	0
	NCC / NSS / NSO	0	0	2	0
	Total Learning Credits				21

Semester - III					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Transforms and Boundary Value Problems	3	1	0	4
	Biology	2	0	0	2
	Analog and Digital Electronics	3	0	2	4
	Data Structures and Algorithms	3	0	2	4
	Object Oriented Design and Programming	3	0	2	4
	Computer Organization and Architecture	3	0	2	4
	Management Principles for Engineers	2	0	0	2
	Competencies in Social Skills	0	0	2	0
	Entrepreneurial Skill Development				
	Total Learning Credits				24

Semester - IV					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Probability and Queueing Theory	3	1	0	4
	Computer Communications	2	0	2	3
	Design and Analysis of Algorithms	3	0	2	4
	Operating Systems	3	0	2	4
	Software Engineering and Project Management	3	0	2	4
	Advanced Programming Practice	3	0	2	4
	Social Engineering	2	0	0	2

	Critical and Creative Thinking Skills	0	0	2	0
	Business Basics for Entrepreneurs				
	Environmental Science	1	0	0	0
	Total Learning Credits				25

Semester - V					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Discrete Mathematics for Engineers	3	1	0	4
	Formal Language and Automata	3	0	0	3
	Computer Networks	3	0	2	4
	Professional Elective – 1	3	0	0	3
	Professional Elective – 2	3	0	0	3
	Open Elective – 1	3	0	0	3
	Open Elective – 2	3	0	0	3
	MOOC / Industrial Training / Seminar 1	0	0	2	1
	Analytical and Logical Thinking Skills	0	0	2	0
	Entrepreneurship Management				
	Indian Traditional Knowledge	1	0	0	0
	Total Learning Credits				24

Semester - VI					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Database Management Systems	3	0	2	4
	Compiler Design	3	0	2	4
	Artificial Intelligence	3	0	2	4
	Comprehension	0	1	0	1
	Professional Elective – 3	3	0	0	3
	Professional Elective – 4	3	0	0	3
	Open Elective – 3	3	0	0	3
	MOOC / Industrial Training / Seminar 2	0	0	2	1
	Employability Skills and Practices	0	0	2	1
	Indian Art Form	0	0	2	0
	Total Learning Credits				24

Semester - VII					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Professional Elective -5	3	0	0	3
	Professional Elective - 6	3	0	0	3
	Open Elective - 4	3	0	0	3
	Minor Project	0	0	6	3
	Internship (4-6 weeks)				
	Total Learning Credits				12

Semester - VIII					
Course Code	Course Title	Hours/Week			
		L	T	P	C
	Project	0	0	20	10
	Semester Internship				
	Total Learning Credits				10