B.E. / B. Tech in Computer Science and Business Systems

Course Curriculum for Version 1: 180 Credits and Theory papers in first 7 semesters only

Year 1						
Semester 1			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
1.1	SH	Discrete Mathematics	3	0	0	3
1.2	SH	Introductory Topics in Statistics, Probability and Calculus	3	0	0	3
1.3	CS	Fundamentals of Computer Science+ Lab	2	1	2	4
1.4	SH	Principles of Electrical Engineering + Lab	3	0	2	4
1.5	SH	Physics for Computing Science+ Lab	3	0	2	4
1.6	SH	Business Communication & Value Science - I	2	1	2	4
		Total	16	2	8	22
Semester 2			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
1.7	SH	Linear Algebra	3	1	0	4
1.8	SH	Statistical Methods + Lab	3	1	0	4
1.9	CS	Data Structures and Algorithms + Lab	2	1	2	4
1.10	SH	Principles of Electronics + Lab	3	0	2	4
1.11	SH	Fundamentals of Economics	2	0	0	2
1.12	SH	Business Communication and Value Science – II	2	1	2	4
1.13		Environmental Sciences (Non-Credit)				
		Total	15	4	6	22
4 Weeks exchange program among the participating colleges*						

*   1. Exchange program is optional
       2. To be mutually decided between participating colleges
       3. TCS will have no role to play in the exchange program

Year 2						
Semester 3			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
2.1	CS	Formal Language and Automata Theory	3	1	2	5
2.2	CS	Computer Organization and Architecture	3	0	2	4
2.3	CS	Object Oriented Programming + Lab	3	0	2	4
2.4	CS	Computational Statistics + Lab	3	0	2	4
2.5	CS	Software Engineering + Lab	3	1	2	5
2.6	MS	Financial Management	3	0	0	3
2.7		Indian Constitution (Non-Credit)				
		Total	18	2	10	25
Semester 4			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
2.8	CS	Operating Systems + Lab (Unix)	3	0	2	4
2.9	CS	Database Management Systems + Lab	3	0	2	4
2.10	CS	Software Design with UML + Lab	3	0	2	4
2.11	IIE	Introduction to Innovation, IP Management and Entrepreneurship	3	0	0	3
2.12	IIE	Business Communication and Value Science – III	2	0	4	4
2.13	MS	Operations Research + Lab	2	0	2	3
2.14	MS	Marketing Research & Marketing Management	3	0	0	3
2.15		Essence of Indian Traditional Knowledge (Non-Credit)				
		Total	19	0	12	25
4 Weeks exchange program among the participating colleges*						

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Year 3						
Semester 5			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
3.1	CS	Design and Analysis of Algorithms + Lab	2	0	2	5
3.2	CS	Compiler Design + Lab (LEX & YACC)	3	0	2	5
3.3	MS	Fundamentals of Management	3	1	0	2
3.4	MS	Business Strategy	3	0	0	2
3.5	SH	Design Thinking	2	0	2	3
3.6		Elective I + Lab**	2	1	2	4
3.7		Elective II + Lab**	2	1	2	4
3.8		Mini Project	0	0	2	1
		Total	**17**	**3**	**12**	**26**
Semester 6			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
3.9	CS	Computer Networks + Lab	2	1	2	4
3.10	CS	Information Security + Lab	2	1	2	4
3.11	DS	Artificial Intelligence + Lab	2	0	4	4
3.12	MS	Financial and Cost Accounting	2	1	0	3
3.13	SH	Business Communication and Value Science – IV	2	0	2	3
3.14		Elective III + Lab**	2	1	2	4
3.15		Elective IV + Lab**	2	1	2	4
		Total	**14**	**5**	**14**	**26**
		Industrial Project (6 – 8 weeks)				

**Please refer to the Electives for details on the elective subjects offered

Year 4						
Semester 7			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
4.1	DTS	Usability Design of Software Applications + Lab	2	0	2	3
4.2	CS	IT Workshop Skylab / Matlab + Lab	3	0	4	4
4.3	MS	Human Resource Management	2	1	0	4
4.4		Elective V + Lab**	3	1	2	5
4.5		Elective VI + Lab**	3	0	4	5
4.6		Services Science & Service Operational Management + Lab	3	0	2	4
4.7		IT Project Management + Lab	3	0	0	3
		Total	**16**	**2**	**14**	**28**
Semester 8			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
4.8		Project Evaluation II	0	0	12	6
		Total	**0**	**0**	**12**	**6**

**   Please refer to the Electives for details on the elective subjects offered

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Electives

Please note: Students can select only one elective out of three options offered.

Year 3		
Semester 5		
Elective I	DTS	Conversational Systems
	DTS	Cloud, Microservices and Application
	DTS	Machine Learning
Elective II	SH	Behavioral Economics
	MS	Computational Finance and Modeling
	SH	Psychology
Semester 6		
Elective III	DTS	Robotics and Embedded Systems
	DTS	Modern Web Applications
	DS	Data Mining and Analytics
Elective IV	DTS	Enterprise Systems
	MS	Advance Finance
	DTS	Image Processing and Pattern Recognition

Year 4		
Semester 7		
Elective V	DS	Cognitive Science and Analytics
	DTS	Introduction to IoT
	DS	Cryptology
Elective VI	CS	Quantum Computation and Quantum Information
	DS	Advanced Social, Text and Media Analytics
	DTS	Mobile Computing