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

Course Curriculum for Version 2: 160 Credits and Theory papers in all 8 semesters

Year 1						
Semester 1			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
1.1	SH	Discrete Mathematics	3	1	0	4
1.2	SH	Introductory Topics in Statistics, Probability and Calculus	3	0	0	3
1.3	CS	Fundamentals of Computer Science + Lab	3	0	4	5
1.4	SH	Principles of Electrical Engineering + Lab	2	0	2	3
1.5	SH	Physics for Computing Science + Lab	2	0	2	3
1.6	SH	Business Communication and Value Science – I	1	0	2	2
		Total	**14**	**1**	**10**	**20**
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	0	2	4
1.9	CS	Data Structures and Algorithms + Lab	3	1	4	5
1.10	SH	Principles of Electronics + Lab	2	0	2	3
1.11	SH	Fundamentals of Economics	2	0	0	2
1.12	SH	Business Communication and Value Science – II	2	0	0	2
1.13		Environmental Sciences (Non-Credit)				
		Total	**15**	**2**	**8**	**20**
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	0	0	3
2.2	CS	Computer Organization and Architecture	3	0	4	5
2.3	CS	Object Oriented Programming + Lab	2	0	4	4
2.4	CS	Computational Statistics + Lab	3	0	2	4
2.5	CS	Software Engineering + Lab	3	0	2	4
2.6		Indian Constitution (Non-Credit)				
		Total	**14**	**0**	**12**	**20**
Semester 4			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
2.7	CS	Operating Systems + Lab (Unix)	3	0	2	4
2.8	CS	Database Management Systems + Lab	3	0	2	4
2.9	CS	Software Design with UML + Lab	2	0	2	3
2.10	IIE	Introduction to Innovation, IP Management and Entrepreneurship	3	0	0	3
2.11	IIE	Business Communication and Value Science – III	2	0	0	2
2.12	MS	Operations Research + Lab	2	0	2	3
2.13		Essence of Indian Traditional Knowledge (Non-Credit)				
		Total	**15**	**0**	**8**	**19**
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	3	0	4	5
3.2	CS	Compiler Design + Lab (LEX & YACC)	3	0	4	5
3.3	MS	Fundamentals of Management	2	0	0	2
3.4	MS	Business Strategy	2	0	0	2
3.5	SH	Design Thinking	2	1	2	4
3.6		Elective I + Lab**	2	0	2	3
3.7		Mini Project	0	0	2	1
		Total	**14**	**1**	**14**	**22**
Semester 6			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
3.8	CS	Computer Networks + Lab	3	0	4	5
3.9	CS	Information Security + Lab	3	0	2	4
3.10	DS	Artificial Intelligence + Lab	3	0	2	4
3.11	MS	Financial and Cost Accounting	2	0	0	2
3.12	SH	Business Communication and Value Science – IV	2	0	2	3
3.13		Elective II + Lab**	2	0	2	3
		Total	**15**	**0**	**12**	**21**
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	2	0	2	3
4.3	MS	Financial Management	3	0	0	3
4.4	MS	Human Resource Management	2	0	0	2
4.5		Elective III**	2	1	2	4
4.6		Elective IV + Lab**	2	1	2	4
4.7		Project Evaluation I	0	0	2	1
		Total	**12**	**2**	**12**	**20**
Semester 8			Teaching Scheme (Hours per week)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
4.8	MS	Services Science and Service Operational Management + Lab	3	0	2	4
4.9	MS	IT Project Management + Lab	2	0	2	3
4.10	MS	Marketing Research and Marketing Management	2	0	0	2
4.11		Elective V**	3	0	2	4
4.12		Elective VI + Lab**	3	0	2	4
4.13		Project Evaluation II	0	0	2	1
		Total	**13**	**0**	**10**	**18**

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

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
Semester 6		
Elective II	DTS	Robotics and Embedded Systems
	DTS	Modern Web Applications
	DS	Data Mining and Analytics

Year 4		
Semester 7		
Elective III	DS	Cognitive Science and Analytics
	DTS	Introduction to IoT
	DS	Cryptology
Elective IV	CS	Quantum Computation and Quantum Information
	DS	Advanced Social, Text and Media Analytics
	DTS	Mobile Computing
Semester 8		
Elective V	SH	Behavioral Economics
	MS	Computational Finance and Modeling
	SH	Psychology
Elective VI	DTS	Enterprise Systems
	MS	Advance Finance
	DTS	Image Processing and Pattern Recognition