CURRICULUM & SYLLABUS

CHOICE BASED CREDIT SYSTEM (CBCS)

FOR

BACHELOR OF TECHNOLOGY (B.Tech.)

(4 Year Undergraduate Degree Programme)

IN

COMPUTER SCIENCE AND ENGINEERING
IN COMPUTER SCIENCE & BUSINESS SYSTEMS IN ASSOCIATION WITH TCS
[w. e. f. 2021-2022]

FACULTY OF ENGINEERING AND TECHNOLOGY
SRM UNIVERSITY DELHI-NCR, SONEPAT
39, Rajiv Gandhi Education City, Sonepat
Haryana-13102

COURSE CURRICULUM
BACHELOR OF TECHNOLOGY
(COMPUTER SCIENCE AND ENGINEERING)
SPECIALIZATION: COMPUTER SCIENCE & BUSINESS SYSTEMS
DEGREE COURSE
PROGRAMME COURSES SRUCTURE SEMESTER WISE

SEMESTER – I

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL HOURS	
21PCC-CS401	Discrete Mathematics	SH	3	0	0	3	**3**
21CST103	Introductory Topics in Statistics, Probability and Calculus	SH	3	0	0	3	**3**
21CST105	Fundamentals of Computer Science	CS	2	1	0	3	**3**
21CST107	Principles of Electrical Engineering	SH	3	0	0	3	**3**
21CST109	Fundamentals of Physics	SH	3	0	0	3	**3**
21CST111	Business Communication & Value Science - I	SH	2	1	0	3	**3**
21CST105L	Fundamentals of Computer Science Lab	CS	0	0	2	2	**1**
21CST107L	Principles of Electrical Engineering Lab	SH	0	0	2	2	**1**
21CST109L	Fundamentals of Physics Lab	SH	0	0	2	2	**1**
21CST111L	Business Communication & Value Science - I Lab	SH	0	0	2	2	**1**
TOTAL			**16**	**2**	**8**	**26**	**22**

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SEMESTER – II

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL HOURS	
21CST102	Linear Algebra	SH	3	1	0	4	**4**
21CST104	Statistical Methods	SH	3	1	0	4	**4**
21PCC-CS301	Data Structures & Algorithms	CS	2	1	0	3	**3**
21CST106	Principles of Electronics	SH	3	0	0	3	**3**
21CST108	Fundamentals of Economics	SH	2	0	0	2	**2**
21CST110	Business Communication & Value Science – II	SH	2	1	0	3	**3**
21PCC-CS301 L	Data Structures & Algorithms Lab	CS	0	0	2	2	**1**
21CST106L	Principles of Electronics Lab	SH	0	0	2	2	**1**
21CST110L	Business Communication & Value Science – II Lab	SH	0	0	2	2	**1**
TOTAL			14	4	12	28	22

4 Weeks – Exchange Program among the Participating Institutes*
* Note:
1. Exchange Program is optional
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SEMESTER – III

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL HOURS	
21PCC-CS502	Formal Language and Automata Theory	CS	3	1	0	4	**4**
21PCC-CS402	Computer Organization & Architecture	CS	3	0	0	3	**3**
21PCC-CS503	Object Oriented Programming	CS	3	0	0	3	**3**
21CST305	Computational Statistics	CS	3	0	0	3	**3**
21CST307	Software Engineering	CS	3	1	0	4	**4**
21PCC-CS502L	Formal Language and Automata Theory Lab	CS	0	0	2	2	**1**
21PCC-CS402L	Computer Organization & Architecture Lab	CS	0	0	2	2	**1**
21PCC-CS503L	Object Oriented Programming Lab	CS	0	0	2	2	**1**
21CST305L	Computational Statistics Lab	CS	0	0	2	2	**1**
21CST307L	Software Engineering Lab	CS	0	0	2	2	**1**
21MST301	Financial Management	MS	3	0	0	3	**3**
TOTAL			**18**	**2**	**10**	**30**	**25**

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<u>SEMESTER – IV</u>

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL HOURS	
21PCC-CS403	Operating Systems	CS	3	0	0	3	**3**
21PCC-CS503	Database Management Systems	CS	3	0	0	3	**3**
21CST404	Software Design with UML	CS	3	0	0	3	**3**
21CST406	Introduction to Innovation, IP Management & Entrepreneurship	IIE	3	0	0	3	**3**
21CST408	Business Communication & Value Science – III	IIE	2	0	0	2	**2**
21CST410	Operations Research	MS	2	0	0	2	**2**
21CST412	Marketing Research & Marketing Management	MS	3	0	0	3	**3**
21PCC-CS403L	Operating Systems Lab (Unix)	CS	0	0	2	2	**1**
21PCC-CS503L	Database Management Systems Lab	CS	0	0	2	2	**1**
21CST404L	Software Design with UML Lab	CS	0	0	2	2	**1**
21CST408L	Business Communication & Value Science – III lab	IIE	0	0	4	4	**2**
21CST410L	Operations Research Lab	MS	0	0	2	2	**1**
TOTAL			**19**	**0**	**12**	**31**	**25**

4 Weeks – Exchange Program among the Participating Institutes*
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<u>SEMESTER – V</u>

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL HOURS	
21PCC-CS404	Design And Analysis of Algorithms	CS	2	0	0	2	**2**
21PCC-CS601	Compiler Design	CS	3	0	0	3	**3**
21CST501	Fundamentals of Management	MS	3	1	0	4	**4**
21CST503	Business Strategy	MS	3	0	0	3	**3**
21CST505	Design Thinking	SH	2	0	0	2	**2**
21CST3XXX	Elective I **	PE	2	1	0	3	**3**
21CST3XXX	Elective II**	PE	2	1	0	3	**3**
21PCC-CS404L	Design And Analysis of Algorithms Lab	CS	0	0	2	2	**1**
21PCC-CS601L	Compiler Design Lab (LEX & YACC)	CS	0	0	2	2	**1**
21CST505L	Design Thinking Lab	SH	0	0	2	2	**1**
21CST3XXX L	Elective I Lab**	PE	0	0	2	2	**1**
21CST3XXX L	Elective II** Lab	PE	0	0	2	2	**1**
21CST507	Mini Project	PC	0	0	2	2	**1**
TOTAL			**17**	**3**	**12**	**32**	**26**

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<u>SEMESTER – VI</u>

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL HOURS	
21PCC-CS602	Computer Networks	CS	2	1	0	3	**3**
21CST604	Information Security	CS	2	1	0	3	**3**
21CST606	Artificial Intelligence	DS	2	0	0	2	**2**
21CST608	Financial & Cost Accounting	MS	2	1	0	3	**3**
21CST610	Business Communication & Value Science – IV	SH	2	0	0	2	**2**
21CST3XXX	Elective III **	PE	2	1	0	3	**3**
21CST3XXX	Elective IV **	PE	2	1	0	3	**3**
21PCC-CS602L	Computer Networks Lab	CS	0	0	2	2	**1**
21CST604L	Information Security Lab	CS	0	0	2	2	**1**
21CST606L	Artificial Intelligence Lab	DS	0	0	4	4	**2**
21CST610L	Business Communication & Value Science – IV Lab	SH	0	0	2	2	**1**
21CST3XXX L	Elective III Lab**	PE	0	0	2	2	**1**
21CST3XXX L	Elective IV Lab**	PE	0	0	2	2	**1**
TOTAL			**14**	**5**	**14**	**33**	**26**

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SEMESTER – VII

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL	
21CST701	Usability Design of Software Applications	DTS	2	0	0	2	2
21PCC-CS302	IT Workshop Skylab / Matlab	CS	3	0	0	3	3
21CST4XXX	Elective V**	PE	2	1	0	3	3
21CST4XXX	Elective VI**	PE	3	1	0	4	4
21CST703	Services Science & Service Operational Management	MS	3	0	0	3	3
21CST705	IT Project Management	MS	3	0	0	3	3
21CST707	Human Resource Management	MS	3	0	0	3	3
21CST701 L	Usability Design of Software Applications	DTS	0	0	1	1	0.5
21PCC-CS302 L	IT Workshop Skylab / Matlab (PCC-CS 302) Lab	CS	0	0	1	1	0.5
21CST4XXX L	Elective V** Lab	PE	0	1	2	3	1
21CST4XXX L	Elective VI Lab**	PE	0	1	2	3	1
21CST703L	Services Science & Service Operational Management Lab	MS	0	0	4	4	2
21CST705 L	IT Project Management Lab	MS	0	0	2	2	1
TOTAL			19	4	12	35	27

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SEMESTER – VIII

COURSE CODE	COURSE	CATEGORY	HOURS PER WEEK				CREDITS
			L	T	P	TOTAL	
21CST801	Project Evaluation I	**PC**	**0**	**0**	**14**	**14**	**7**

* *To be monitored at the Institute Level*
**Teaching Load

LIST OF PROFRSSIONAL ELECTIVE COURSES

Subject Code	Course	Category	L	T	P	C
ELECTIVE-I						
21CST3101	Conversational Systems	DTS	2	1	2	4
21CST3103	Fundamentals of Cloud Application Development	DTS	2	1	2	4
21CST3105	Machine Learning	DTS	2	1	2	4
ELECTIVE-II						
21CST3107	Behavioral Economics	SH	2	1	2	4
21CST3109	Computational Finance & Modeling	MS	2	1	2	4
21CST3111	Psychology	SH	2	1	2	4
ELECTIVE-III						
21CST3102	Robotics and Embedded Systems	DTS	2	1	2	4
21CST3104	Modern Web Applications	DTS	2	1	2	4
21CST3106	Data Mining and Analytics	DS	2	1	2	4
ELECTIVE-IV						
21CST3108	Enterprise Systems	DTS	2	1	2	4
21CST3110	Advance Finance	MS	2	1	2	4
21CST3112	Image Processing and Pattern Recognition	DTS	2	1	2	4
ELECTIVE-V						
21CST4101	Cognitive Science & Analytics	DS	2	1	2	4
21CST4103	Introduction to IoT	DTS	2	1	2	4
21CST4105	Cryptology	DS	2	1	2	4
ELECTIVE-VI						
21CST4107	Quantum Computation & Quantum Information	CS	2	1	2	4
21CST4109	Advanced Social, Text and Media Analytics	DS	2	1	2	4
21CST4111	Mobile Computing	DTS	2	1	2	4