Proposed M. Sc. Computer Science Course Structure & Syllabus (CBCS)
(2018 onwards)
Total Credits – 96

Course Code	Courses		
	First Semester	**L-T-P**	**Credits**
MSCSC1001C04	Operating Systems	3-1-0	4
MSCSC1002C04	Data Structure and Algorithms	3-1-0	4
MSCSC1003C04	Computer Networks	3-0-1	4
MSCSC1004C04	Data Structure Lab	0-0-4	4
MSCSC*******	Elective – I (Within Dept.)	-	4
************	Elective – II (Outside Dept.)	-	4
Total Credits			**24**
	Second Semester		
MSCSC2001C04	Database Management System	3-0-1	4
MSCSC2002C04	Object Oriented Programming Methodology	3-0-1	4
MSCSC2003C04	Software Engineering	3-1-0	4
MSCSC*******	Elective – III (Within Dept.)	-	4
MSCSC*******	Elective – IV (Outside Dept.)	-	4
************	Elective – V (SWAYAM/Within Dept.)	-	4
Total Credits			**24**
	Third Semester		
MSCSC3001C04	Artificial Intelligence	3-1-0	4
MSCSC3002C04	Design & Analysis of Algorithms	3-0-1	4
MSCSC3003C04	Data Mining	3-1-0	4
MSCSC*******	Elective -VI (Within Dept.)	-	4
MSCSC*******	Elective-VII (Within Dept.)	-	4
************	Elective-VIII(Within Department)	-	4
************	Skill Based Course / Self Study / Non-Credit	-	Non-Credit
Total Credits			**24**
	Fourth Semester		
MSCSC4001C24	Project in Industry/Institute	-	24
Total Credits			**24**

Elective Basket (Within Dept.)

1ˢᵗSemester Elective Basket (Within Dept.)

Course Code	Course Title	Credits
MSCSC1001E04	Digital Logic and Design	4
MSCSC1002E04	Modeling and Simulation	4
MSCSC1003E04	Statistical Methods	4
MSCSC1004E04	Introduction to Microprocessors	4

2ⁿᵈ Semester Elective Basket (SWAYAM /Within Dept.)

Course Code	Course Title	Credits
MSCSC2001E04	Computer Organization	4
MSCSC2002E04	Natural Language Processing	4
MSCSC2003E04	Distributed Systems	4
MSCSC2004E04	Computer Graphics	4
MSCSC2005E04	Internet Technologies	4
MSCSC2006E04	Mobile Network Systems	4
MSCSC2007E04	Wireless Sensor Network	4
MSCSC2008E04	Next Generation Network	4
MSCSC2009E04	Compiler Design	4
************	Introduction to Internet of Things	4
************	Cloud Computing	4
************	Information Security-I	4

3ʳᵈ Semester Elective Basket (Within Dept.)

Course Code	Course Title	Credits
MSCSC3001E04	Big Data	4
MSCSC3002E04	Machine Learning	4
MSCSC3003E04	Advanced Computer Network	4
MSCSC3004E04	Cryptography and Network Security	4
MSCSC3005E04	Nature Inspired Computing Methods	4
MSCSC3006E04	Software Testing	4
MSCSC3007E04	Software Project Management	4
MSCSC3008E04	Soft Computing	4
MSCSC3009E04	Digital Image Processing	4

List of skill based / self-study courses (Non-Credit)

Course Code	Course Title	Credits
MSCSC3001S00	Communication Skill	Non-Credit
MSCSC3002S00	Latex	Non-Credit
MSCSC3003S00	Socket Programming using Python	Non-Credit

Elective Basket (Outside Dept./ Outside School)

1st Semester Elective Basket (Outside Dept.)

Course Code	Course Title	Credits
MTH***	Discrete Mathematics	4
MTH***	Linear Algebra	4
STS***	Distribution Theory and Nonparametric Statistics	4
STS***	Computing Intensive Statistical Methods - I	4

2nd Semester Elective Basket (Outside Dept./Outside School)

Course Code	Course Title	Credits
MTH***	Formal Languages and Automata Theory	4
MTH***	Numerical Analysis	4
MTH***	Graph Theory	4
MTH***	Number Theory	4
MTH***	Mathematical Cryptography	4
MTH***	Operation Research	4
STS***	Stochastic Processes	4
********	Swachcha Bharat Abhiyan	4
********	Disaster Management	4
********	Intellectual Property Rights	4
********	Consumer Affairs	4

Elective Basket for School

1ˢᵗ Semester - List of Courses Open for School

Course Code	Course Title	Credits
MSCSC1051E04	Programming in C	4
MSCSC1052E04	Introduction to IT	4
MSCSC1053E04	Fundamentals of Computers	4
MSCSC1054E04	Introduction to Data Structure and Algorithms	4

2nd Semester - List of Courses Open for School

Course Code	Course Title	Credits
MSCSC2051E04	Programming in C++	4
MSCSC2052E04	Introduction to Database	4
MSCSC2053E04	Introduction to Modeling and Simulation	4
MSCSC2054E04	Introduction to Digital Image Processing	4
MSCSC2055E04	Introduction to Artificial Intelligence	4
MSCSC2056E04	Introduction to Design & Analysis of Algorithms	4

Tentative M. Tech. Course Structure & Syllabus (CBCS)
(2018 onwards)
Total Credits – 96

Course Code	Courses		
	First Semester	**LTP**	**Credits**
MTCSC1001C04	Foundation of Computing Science	3-1-0	4
MTCSC1002C04	Advanced Data Structure & Algorithms	3-0-1	4
MTCSC1003C04	Advanced Computer Networks	3-0-1	4
MTCSC1004C04	Machine Learning Techniques	3-1-0	4
MTCSC*******	Elective – I (Within Dept.)	-	4
MTCSC*******	Elective – II (Within Dept./SWAYAM)	-	4
MTCSC*******	Seminar-1		Non-Credit
Total Credits			**24**
	Second Semester		
MTCSC2001C04	Modeling & Simulation	3-1-0	4
MTCSC2002C04	Distributed System	3-1-0	4
MTCSC2003C04	High Performance Computer Architecture	3-1-0	4
MTCSC*******	Elective-III (Within Dept.)	-	4
MTCSC*******	Elective-IV (Within Dept.)	-	4
************	Elective-V (SWAYAM/Outside Dept. / Within Dept.)	-	4
MTCSC*******	Seminar-2		Non-Credit
************	Skill Based Course / Self Study / Non-Credit	-	Non-Credit
Total Credits			**24**
	Third Semester		
MTCSC3001C04	Research Methodology (SWAYAM/Within Dept. /Outside Dep.)	3-1-0	4
MTCSC3001C20	Dissertation (Continued in 4th Semester)		20
Total Credits			**24**
	Fourth Semester		
MTCSC4001C24	Dissertation		24
Total Credits			**24**

1st Semester Elective Basket (Within Dept.)

Course Code	Course Title	Credits
MTCSC1001E04	Data Mining	4
MTCSC1002E04	Complier Design	4
MTCSC1003E04	Internet Technologies	4
MTCSC1004E04	Advanced Software Engineering	4
MTCSC1005E04	Artificial Intelligence	4
MTCSC1006E04	Digital Signal Processing	4
MTCSC1007E04	Digital Image Processing	4
MTCSC1008E04	Statistical Methods	4
MTCSC1009E04	Mobile Network Systems	4
MTCSC1010E04	Wireless Sensor Networks	4

2ndSemester Elective Basket (Within Dept.)

MTCSC2001E04	Software Testing	4
MTCSC2002E04	Next Generation Network	4
MTCSC2003E04	Cryptography & Network Security	4
MTCSC2004E04	Natural Language Processing	4
MTCSC2005E04	Information Retrieval	4
MTCSC2006E04	Nature Inspired Computing Methods	4
MTCSC2007E04	Big Data	4
MTCSC2008E04	Software Project Management	4
MTCSC2009E04	Advanced Computer Architecture	4
MTCSC2010E04	Speech Processing and Recognition	4

2nd Semester Elective Basket (SWAYAM /Outside Dept.)

Course Code	Course Title	Credits
MTH***	Operations Research	4
MTH***	Linear Model and Regression Analysis	4
MTH***	Number Theory	4
MTH***	Mathematical Cryptography	4
STS***	Stochastic Processes	4
STS***	Computing Intensive Statistical Methods -I	4
*********	Introduction to Internet of Things (SWAYAM)	4
*********	Quantum Computing (SWAYAM)	4
*********	Information Security-I (SWAYAM)	4
*********	Cloud Computing (SWAYAM)	4
*********	Deep Learning (SWAYAM)	4
*********	Data Science for Engineers (SWAYAM)	4
*********	Advanced Graph Theory (SWAYAM)	4

List of skill based / self-study courses (Non-Credit)

Course Code	Course Title	Credits
MTCSC2001S00	Communication Skill	Non-Credit
MTCSC2002S00	Latex	Non-Credit
MTCSC2003S00	Socket Programming using Python	Non-Credit