

## BCA Detail Syllabus (CBCS Pattern) 2015

### BCA SEMESTER 1

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT0101C	Fundamentals of IT - I	3-1-0	4	4	100
INFT0102C	Environmental Studies	3-0-0	3	3	100
INFT0103C	Mathematics	3-1-0	4	4	100
INFT0104P	English and Functional Communication	3-1-0	4	4	100
INFT0105P	Soft Skill & Communication Laboratory	0-0-2	2	4	100
INFT0106P	Computer Fundamental Lab	0-0-2	2	4	100
<b>Total Credits</b>	<b>3 Theory, 3 Laboratories</b>	<b>12-1-4</b>	<b>19</b>	<b>23</b>	<b>600</b>

### BCA SEMESTER 2

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT0201C	Fundamentals of IT- II	3-0-0	3	3	100
INFT0202C	ICT Workshop	0-0-2	2	4	100
INFT0203C	Basic Electronics	3-1-0	4	4	100
INFT0204C	C Programming	3-1-0	4	4	100
INFT0205P	Electronics Laboratory	0-0-2	2	4	100
INFT0206P	C Programming Laboratory	0-0-2	2	4	100
<b>Total Credits</b>	<b>4 Theory, 2 Laboratories</b>	<b>9-2-6</b>	<b>17</b>	<b>23</b>	<b>600</b>

### BCA SEMESTER 3

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT0301C	Computer Organization	3-1-0	4	4	100
INFT0302C	Data Structures & Algorithm	3-1-0	4	4	100
INFT0303C	Operating System	3-1-0	4	4	100
INFT0304P	Data Structures & Algorithm Laboratory	0-0-3	3	6	100
INFT0305P	Introduction to Unix/ Linux Laboratory	0-0-2	2	4	100
<b>Total Credits</b>	<b>3 Theory, 2 Laboratories</b>	<b>9-3-5</b>	<b>17</b>	<b>22</b>	<b>500</b>

## BCA Detail Syllabus (CBCS Pattern) 2015

### BCA SEMSTER 4

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
<b>INFT0401C</b>	Fundamentals of Software Engineering	3-0-0	3	3	100
<b>INFT0402C</b>	Database Management Systems	3-1-0	4	4	100
<b>INFT0403P</b>	Elective I Laboratory	0-0-2	2	4	100
<b>INFT0404P</b>	Database Management Systems Lab	0-0-2	2	4	100
<b>INFT04**E</b>	Elective I	3-1-0	4	4	100
<b>INFT04**E</b>	Elective II	3-1-0	4	4	100
<b>Total Credits</b>	<b>4 Theory, 2 Laboratories</b>	<b>12-3-4</b>	<b>19</b>	<b>24</b>	<b>600</b>

### BCA SEMESTER 5

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT0501C	Introduction to OOPS	3-0-0	3	3	100
<b>INFT0502C</b>	Data Communication and Computer Networks	3-0-0	3	3	100
<b>INFT0503C</b>	Web Technology	3-0-0	3	3	100
<b>INFT0504P</b>	Computer Network Laboratory	0-0-2	2	4	100
<b>INFT0505P</b>	Web Technology Laboratory	0-0-2	2	4	100
INFT0506P	OOP Lab	0-0-2	2	4	100
INFT05**E	Elective III (Common Elective)	3-1-0	4	4	100
<b>Total Credits</b>	<b>4 Theory, 3 Laboratories</b>	<b>11-2-6</b>	<b>19</b>	<b>25</b>	<b>700</b>

### BCA SEMESTER 6

Course Code:	Course Title	L-T-P/S	Credits	Hours	Marks
<b>INFT0601P</b>	Project and Viva Voce	0-0-16	16	--	400
<b>INFT0602P</b>	Seminar	0-0-2	2	4	100
<b>INFT06**E</b>	Elective IV	4-0-0	4	4	100
<b>Total Credits</b>	<b>1 Project, 1 Theory, 1 Seminar</b>	<b>0-0-18</b>	<b>22</b>	<b>8</b>	<b>600</b>

# BCA Detail Syllabus (CBCS Pattern) 2015

## CHOICE BASED ELECTIVES

### SEMESTER 4: ELECTIVE I

Course	Course Title	Credits	Semester No
INFT0401E	Computer Architecture	4	4
INFT0402E	Microprocessor	4	4

### SEMESTER 4: Elective II

Course	Course Title	Semester	Credits
INFT0403E	Computer Graphics	4	4
INFT0404E	Data Mining and Data Warehousing	4	4
INFT0405E	Discrete Mathematics	4	4
INFT0406E	Image Processing	4	4
INFT0407E	Sensor Networks	4	4
INFT0408E	Software Project Management	4	4

### SEMESTER 5: Elective III (Common Elective)

Course	Course Title	Credits	Semester
INFT0501E	Yoga	4	5
INFT0502E	Music	4	5
INFT0503E	Fine Arts	4	5
INFT0504E	Communicative English	4	5
INFT0505E	NSS	4	5

### SEMESTER 6: Elective IV

Course	Course Title	Credits	Semester
INFT0601E	Advanced Website Designing	4	5
INFT0602E	Advanced DBMS	4	5
INFT0603E	Computer Vision	4	5
INFT0604E	Cryptography	4	5
INFT0605E	Formal Language and Automata Theory	4	5
INFT0606E	Mobile Computing	4	5
INFT0607E	Pattern Recognition	4	5

## MCA Detail Syllabus (CBCS Pattern) 2015

### MCA SEMESTER 1

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT0701C	Mathematical Foundations of Computer Applications	3-0-0	3	3	100
INFT0702C	Programming in C	3-1-0	4	4	100
INFT0703C	Computer Organization & Assembly Language Programming	3-1-0	4	4	100
INFT0704P	Programming in C Laboratory	0-0-3	3	6	100
INFT0705P	Assembly Language Programming Laboratory	0-0-3	3	6	100
<b>Total Credits</b>	<i>3 Theory, 2 Laboratories</i>	<i>9-2-6</i>	<b>17</b>	<b>23</b>	<b>500</b>

### MCA SEMESTER 2

Course Code	Course Title	L-T-P	Credits	Hours	Mark
INFT0801C	Data Structures & Algorithm	3-0-0	3	3	100
INFT0802C	Operating System	3-0-0	3	3	100
INFT0803F	Computer Skill III (Java Programming)	4-0-0	4	4	100
INFT0804P	Data Structures & Algorithm Laboratory	0-0-2	2	4	100
INFT0805P	Unix Laboratory	0-0-2	2	4	100
INFT0806P	Computer Skill III (Java Programming) Lab	0-0-2	2	4	100
INFT08**E	Elective I (Non Departmental Elective)	3-0-0	3	3	100
<b>Total Credits</b>	<i>3 Theory, 3 Laboratories</i>	<i>13-0-6</i>	<b>19</b>	<b>25</b>	<b>700</b>

### MCA SEMESTER 3

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT0901C	Database Management Systems	3-0-0	3	3	100
INFT0902C	Object Oriented Programming	3-1-0	4	4	100
INFT0903C	Data Communication & Computer Network	3-1-0	4	4	100
INFT0904P	Object Oriented Programming Laboratory	0-0-2	2	4	100
INFT0905P	Computer Network Laboratory	0-0-2	2	4	100
INFT0906P	Database Management Systems Laboratory	0-0-2	2	4	100
INFT09**E	Elective II	3-0-0	3	3	100
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<i>12-3-8</i>	<b>20</b>	<b>26</b>	<b>700</b>

### MCA SEMESTER 4

Course Code:	Course Title	L-T-P	Credits	Hours	Mark
INFT1001C	Software Engineering	3-1-0	4	4	100
INFT1002C	Web Technology	3-1-0	4	4	100
INFT1004P	Web Technology Laboratory	0-0-2	2	4	100
INFT1005P	Application Development Lab	0-0-2	2	4	100
INFT10**E	Elective III	3-0-0	3	3	100
INFT10**E	Elective IV	3-0-0	3	3	100
INFT1006P	Lab for Elective	0-0-1	1	2	100
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<i>12-4-8</i>	<b>19</b>	<b>24</b>	<b>700</b>

## MCA Detail Syllabus (CBCS Pattern) 2015

### MCA SEMESTER 5

Course Code	Course Title	L-T-P	Credits	Hours	Mark
<b>INFT1101C</b>	Information System Security	3-1-0	4	4	100
<b>INFT11**E</b>	Elective V	3-0-0	3	3	100
<b>INFT11**E</b>	Elective VI	3-0-0	3	3	100
<b>INFT11**E</b>	Common Elective VII	2-1-0	3	3	100
<b>INFT1101P</b>	Seminar & Technical Writing	0-0-2	2	4	100
<b>INFT1102P</b>	Project Phase I	0-0-3	3	6	100
<b>Total Credits</b>	<i>4 Theory Courses, 2 Laboratories</i>	11-2-5	<b>18</b>	<b>23</b>	<b>700</b>

### MCA SEMESTER 6

Course Code:	Course Title	L-T-P/S	Credits	Marks
<b>INFT1201P</b>	Project and Viva Voce	0-0-18	10	500
<b>Total Credits</b>	<i>1 Project and Viva Voce</i>	0-0-18	<b>10</b>	<b>500</b>

### CHOICE BASED ELECTIVES

#### SEMESTER 2: Elective I (Non Departmental)

Course Code	Course Title	Credits	Semester
<b>INFT0801E</b>	Accounting and Financial Management	3	2
<b>INFT0802E</b>	Business Management	3	2
<b>INFT0803E</b>	Entrepreneurship Development	3	2
<b>INFT0804E</b>	Organization Behavior	3	2

#### SEMESTER 3: Elective II

Course Code	Course Title	Credits	Semester
<b>INFT0901E</b>	Digital logic and Basic Electronics	3	3
<b>INFT0902E</b>	Internet Technology	3	3
<b>INFT0903E</b>	Discrete Mathematical Structures	3	3
<b>INFT0904E</b>	Numerical Methods	3	3

#### SEMESTER 4: Elective III

Code	Subject	Credit	Semester
<b>INFT1001E</b>	Adhoc& Sensor Networks	3	4
<b>INFT1002E</b>	Distributed Computing	3	4
<b>INFT1003E</b>	Formal Language and automata Theory	3	4
<b>INFT1004E</b>	Soft Computing	3	4

## MCA Detail Syllabus (CBCS Pattern) 2015

### SEMESTER 4: Elective IV

Code	Subject	Credit	Semester
INFT1005E	Image Processing	3	4
INFT1006E	Data Mining and Data Warehousing	3	4
INFT1007E	Network Synthesis	3	4
INFT1008E	Advanced Networking	3	4
INFT1009E	Software Project Management	3	4

### SEMESTER 5: Elective V

Code	Subject	L-T-P	Credits
INFT 1101E	TCP/IP Network Programming	3-0-0	3
INFT 1102E	Information Retrieval and Web Mining	3-0-0	3
INFT 1103E	Advances in Database	3-0-0	3
INFT 1104E	Artificial Intelligence	3-0-0	3

### SEMESTER 5: Elective VI

Code	Subject	L-T-P	Credits
INFT 1105E	Multimedia Technology	3-0-0	3
INFT 1106E	Pattern Recognition	3-0-0	3
INFT 1107E	Object Oriented Analysis and Design	3-0-0	3
INFT 1108E	Cloud Computing	3-0-0	3
INFT 1109E	Digital Signal Processing	3-0-0	3

### SEMESTER 5: Elective VII (Common Elective)

Code	Subject	L-T-P	Credits
INFT 1110E	Soft Skill for MCA	2-1-0	3
INFT 1111E	Yoga	2-1-0	3
INFT 1112E	Music	2-1-0	3
INFT 1113E	Fine Arts	2-1-0	3
INFT 1114E	Communicative English	2-1-0	3
INFT 1115E	NSS	2-1-0	3

# Course Structure for Master of Computer Application (MCA)

(Effective for batches admitted from Session 2019-20)

Note.: C –Core, E- Elective, P – Practical, L- Lectures, T- Tutorial ;

## MCA SEMESTER 1

Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA0701C	Mathematical Foundations of Computer Applications	3-0-0	3	3	100	
MCA0702C	Programming in C	3-1-0	4	4	100	Yes
MCA0703C	Computer Organization & Assembly Language Programming	3-1-0	4	4	100	
MCA0704C	Programming in C Laboratory	0-0-3	3	6	100	
MCA0705C	Assembly Language Programming Laboratory	0-0-3	3	6	100	
<b>Total Credits</b>	<i>3 Theory, 2 Laboratories</i>	<i>9-2-6</i>	<i>17</i>	<i>23</i>	<i>500</i>	

## MCA SEMESTER 2

Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
CSK-III	Computer Skill-III	4-0-0	4	4	100	
CSK-III L	Computer Skill-III Lab	0-0-2	2	4	100	
MCA0801C	Data Structures & Algorithm	3-0-0	3	3	100	Yes
MCA0802C	Operating System	3-0-0	3	3	100	Yes
MCA0803C	Data Structures & Algorithm Laboratory	0-0-2	2	4	100	
MCA0804C	Unix Laboratory	0-0-2	2	4	100	
	Open Elective (Non Departmental)	2-0-0	2	2	100	
<b>Total Credits</b>	<i>3 Theory, 3 Laboratories</i>	<i>12-0-6</i>	<i>18</i>	<i>24</i>	<i>700</i>	

## MCA SEMESTER 3

Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA0901C	Database Management Systems	3-1-0	4	4	100	Yes
MCA0902C	Object Oriented Programming	3-1-0	4	4	100	Yes
MCA0903C	Data Communication & Computer Network	3-1-0	4	4	100	
MCA0904C	Database Management Systems Laboratory	0-0-2	2	4	100	
MCA0905C	Object Oriented Programming Laboratory	0-0-2	2	4	100	
MCA0906C	Computer Network Laboratory	0-0-2	2	4	100	
MCA00XXE	Elective I	3-0-0	3	3	100	
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<i>12-3-6</i>	<i>21</i>	<i>27</i>	<i>700</i>	

## MCA SEMESTER 4

Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA1001C	Software Engineering	3-1-0	4	4	100	
MCA1002C	Web Technology	3-1-0	4	4	100	
MCA1003C	Web Technology Laboratory	0-0-2	2	4	100	
MCA1004C	Application Development Lab	0-0-2	2	4	100	
MCA00XXE	Elective II	3-0-0	3	3	100	
MCA00XXE	Elective III	3-0-0	3	3	100	
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<i>12-4-8</i>	<i>18</i>	<i>22</i>	<i>600</i>	

## MCA SEMESTER 5

Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA1101C	Information System Security	3-1-0	4	4	100	
MCA1102C	Seminar & Technical Writing	0-0-2	2	4	100	N/A
MCA1103C	Project Phase I	0-0-3	3	6	100	N/A
MCA00XXE	Elective IV	3-0-0	3	3	100	
MCA00XXE	Elective V	3-0-0	3	3	100	
	Open Elective (Non Departmental)	4-0-0	4	4	100	
<b>Total Credits</b>	<i>4 Theory Courses, 2 Laboratories</i>	<i>12-2-5</i>	<i>19</i>	<i>24</i>	<i>700</i>	

## MCA SEMESTER 6

Course Code:	Course Title	L-T-P/S	Credits	Marks	MOOC
MCA1201C	Project and Viva Voce	0-0-18	10	500	N/A
	<i>1 Project and Viva Voce</i>	<i>0-0-18</i>	<i>10</i>	<i>500</i>	

**Total Credit= 103, Core Credit= 76 (Theory=41, Practical=35), Foundation=6, Elective= 21 (Departmental Elective= 15, Non Departmental Elective= 06)**

**ELECTIVE SUBJECTS (DEPARTMENTAL) (15 Credits)**

Course Code	Course Title	L-T-P	Credits	MOOC
MCA0001E	Adhoc & Sensor Networks	3-0-0	3	Yes
MCA0002E	Advanced Networking	3-0-0	3	
MCA0003E	Advances in Database	3-0-0	3	
MCA0004E	Artificial Intelligence	3-0-0	3	Yes
MCA0005E	Cloud Computing	3-0-0	3	Yes
MCA0006E	Cryptography and Network Security	3-0-0	3	
MCA0007E	Data Mining	3-0-0	3	Yes
MCA0008E	Data Science	3-0-0	3	Yes
MCA0009E	Deep Learning	3-0-0	3	Yes
MCA0010E	Digital logic and Basic Electronics	3-0-0	3	
MCA0011E	Digital Signal Processing	3-0-0	3	Yes
MCA0012E	Discrete Mathematical Structures	3-0-0	3	
MCA0013E	Distributed Computing	3-0-0	3	
MCA0014E	Formal Language and Automata Theory	3-0-0	3	Yes
MCA0015E	Image Processing	3-0-0	3	Yes
MCA0016E	Information Retrieval and Web Mining	3-0-0	3	
MCA0017E	Internet of Things	3-0-0	3	Yes
MCA0018E	Internet Technology	3-0-0	3	
MCA0019E	Machine Learning	3-0-0	3	Yes
MCA0020E	Multimedia Technology	3-0-0	3	
MCA0021E	Natural Language Processing	3-0-0	3	Yes
MCA0022E	Network Synthesis	3-0-0	3	
MCA0023E	Numerical Methods	3-0-0	3	Yes
MCA0024E	Object Oriented Analysis and Design	3-0-0	3	
MCA0025E	Pattern Recognition	3-0-0	3	
MCA0026E	Social Networks	3-0-0	3	Yes
MCA0027E	Soft Computing	3-0-0	3	Yes
MCA0028E	Software Project Management	3-0-0	3	
MCA0029E	Speech and Natural Language Processing	3-0-0	3	Yes
MCA0030E	TCP/IP Network Programming	3-0-0	3	

**OPEN ELECTIVE (NON-DEPARTMENTAL) SUBJECTS (6 Credits)**

\* As offered by other departments of Tripura University in respective semester under CBCS.



## Proposed Curriculum & Syllabus

### M.Tech in Information Technology

(Effective for batches admitted in session 2019-20 onwards)

Note.: C –Core, E- Elective, P – Practical, L- Lectures, T- Tutorial ;

#### M.Tech (IT) SEMESTER 1

Course Code	Course Title	L-T-P	Credits	Mark	MOOC
IT0901C	Probability and Random Process	3-0-0	3	100	Yes
IT0902C	Computer Networks and Internet Protocol	3-0-0	3	100	
IT0903C	Research Methodology and IPR	2-0-0	2	100	
IT0904C	Laboratory I (Based on Cores)	0-0-4	2	100	
IT0905C	Laboratory II (Based on Electives)	0-0-4	2	100	
IT00XXE	Elective I	3-0-0	3	100	
IT00XXE	Elective II	3-0-0	3	100	
<b>Total Credits</b>	<i>5 Theory, 2 Laboratories</i>	<i>14-0-8</i>	<b>18</b>	<b>700</b>	

#### M.Tech (IT) SEMESTER 2

Course Code:	Course Title	L-T-P	Credits	Mark	MOOC
CSK-III	Computer Skill- III (As per CBCS)	3-1-0	4	100	Yes
IT1001C	Data Structures and Algorithm	3-0-0	3	100	Yes
IT1002C	Laboratory III (Based on Cores)	0-0-4	2	100	
IT1003C	Laboratory IV (Based on Electives)	0-0-4	2	100	
IT1004C	Mini Project with Seminar	0-0-4	2	100	
IT00XXE	Elective III	3-0-0	3	100	
IT00XXE	Elective IV	3-0-0	3	100	
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<i>12-1-12</i>	<b>19</b>	<b>700</b>	

#### M.Tech (IT) SEMESTER 3

Course Code:	Course Title	L-T-P	Credits	Mark	MOOC
IT1101C	Thesis Report Interim I	0-0-10	5	100	
IT1102C	Thesis Seminar Interim I (Presentation and Viva)	0-0-10	5	100	
IT00XXE	Elective V	3-0-0	3	100	
	Open Elective (Other Department)	4-0-0	4	100	
<b>Total Credits</b>	<i>2 Theory, 2 Laboratories</i>	<i>7-0-20</i>	<b>17</b>	<b>400</b>	

#### M.Tech (IT) SEMESTER 4

Course Code:	Course Title	L-T-P	Credits	Mark	MOOC
IT1201C	Thesis Report Interim II	0-0-16	8	400	
IT1202C	Thesis Seminar Interim II (Presentation and Viva)	0-0-16	8	400	
<b>Total Credits</b>	<i>2 Laboratories</i>	<i>0-0-32</i>	<b>16</b>	<b>800</b>	

**Total Credit= 70**

Foundation=4; Core=47 (Theory: 11, Practical: 36), Elective= 19 (Departmental: 15, Other Department:4)

#### Open Elective (Non-Departmental) (04 Credits)

\* As offered by other departments of Tripura University in respective semester under CBCS.

**ELECTIVE SUBJECTS**

<b>Course Code</b>	<b>Course Title</b>	<b>L-T-P</b>	<b>Credits</b>	<b>Availability as MOOC</b>
IT0001E	Adhoc and Sensor Networks	3-0-0	3	Yes
IT0002E	Advanced Graph Theory	3-0-0	3	Yes
IT0003E	Advanced Microprocessor	3-0-0	3	
IT0004E	Artificial Intelligence	3-0-0	3	Yes
IT0005E	Bioinformatics	3-0-0	3	Yes
IT0006E	Cloud Computing	3-0-0	3	Yes
IT0007E	Compiler Design	3-0-0	3	Yes
IT0008E	Computational Geometry	3-0-0	3	Yes
IT0009E	Computational Systems Biology	3-0-0	3	Yes
IT0010E	Computer Architecture	3-0-0	3	Yes
IT0011E	Cryptography and Network Security	3-0-0	3	Yes
IT0012E	Data Mining	3-0-0	3	Yes
IT0013E	Data Science	3-0-0	3	Yes
IT0014E	Deep Learning	3-0-0	3	Yes
IT0015E	Digital Signal Processing	3-0-0	3	Yes
IT0016E	Distributed System	3-0-0	3	Yes
IT0017E	Embedded Systems	3-0-0	3	Yes
IT0018E	Image Processing	3-0-0	3	Yes
IT0019E	Information Theory and Coding Techniques	3-0-0	3	Yes
IT0020E	Internet of Things	3-0-0	3	Yes
IT0021E	Knowledge Representation and Reasoning	3-0-0	3	Yes
IT0022E	Machine Learning	3-0-0	3	Yes
IT0023E	Medical Electronics	3-0-0	3	
IT0024E	Mobile Computing	3-0-0	3	Yes
IT0025E	Modern Digital Communication Techniques	3-0-0	3	Yes
IT0026E	Modern Digital System Design	3-0-0	3	
IT0027E	Multimedia processing	3-0-0	3	Yes
IT0028E	Natural Language Processing	3-0-0	3	Yes
IT0029E	Pattern Recognition	3-0-0	3	Yes
IT0030E	Social Network	3-0-0	3	Yes
IT0031E	Soft Computing	3-0-0	3	Yes
IT0032E	Software Engineering	3-0-0	3	Yes
IT0033E	Switching Circuits and Logic Design	3-0-0	3	Yes
IT0034E	Theory of Computation	3-0-0	3	Yes
IT0035E	Web Technology	3-0-0	3	



**DEPARTMENT OF INFORMATION TECHNOLOGY/सूचनाप्रौद्योगिकीविभाग**  
**त्रिपुराविश्वविद्यालय /TRIPURA UNIVERSITY**

**Course Structure for Master of Computer Application (MCA)-2 years**  
 (Effective for batches admitted from Session 2020-21)

MCA SEMESTER I						
Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA0101C	Mathematical Foundations of Computer Applications	3-0-0	3	3	100	Yes*
MCA0102C	Programming in C	3-0-0	3	3	100	Yes*
MCA0103C	Computer Organization & Assembly Language Programming	3-0-0	3	3	100	Yes*
CSK III	Computer Skill-III	4-0-0	4	4	100	Yes
MCA0104C	Programming Laboratory	0-0-2	2	4	100	N/A
MCA0105C	Assembly Language Laboratory	0-0-2	2	4	100	N/A
<b>Total Credits</b>	<i>4 Theory, 2 Laboratories</i>	<b>13-0-4</b>	<b>17</b>	<b>21</b>	<b>600</b>	

MCA SEMESTER II						
Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA0201C	Software Engineering	3-0-0	3	3	100	Yes*
MCA0202C	Data Structures & Algorithm	3-0-0	3	3	100	Yes*
MCA0203C	Operating System	3-0-0	3	3	100	Yes*
-----	Open Elective (Non-Departmental)	4-0-0	4	4	100	----
MCA0204C	Data Structures & Algorithm Laboratory	0-0-2	2	4	100	N/A
MCA0205C	Software Development Laboratory	0-0-2	2	4	100	N/A
MCA0206C	Seminar & Technical Writing	0-0-2	2	4	100	N/A
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<b>13-0-6</b>	<b>19</b>	<b>25</b>	<b>700</b>	

MCA SEMESTER III						
Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA0301C	Database Management Systems	3-0-0	3	3	100	Yes*
MCA0302C	Data Communication & Computer Network	3-0-0	3	3	100	Yes*
MCA00XXE	Elective I	3-0-0	3	3	100	Yes*
MCA00XXE	Elective II	3-0-0	3	3	100	Yes*
MCA0303C	Database Management Systems Laboratory	0-0-2	2	4	100	N/A
MCA0304C	Computer Network Laboratory	0-0-2	2	4	100	N/A
MCA0305C	Project Phase I	0-0-2	2	4	100	N/A
<b>Total Credits</b>	<i>4 Theory, 3 Laboratories</i>	<b>12-0-7</b>	<b>18</b>	<b>24</b>	<b>700</b>	

MCA SEMESTER IV						
Course Code	Course Title	L-T-P	Credits	Hours	Mark	MOOC
MCA0401C	Project and Viva Voce	0-0-16	08	16	400	N/A
MCA00XXE	Elective III	3-0-0	3	3	100	Yes*
MCA00XXE	Elective IV	3-0-0	3	3	100	Yes*
<b>Total Credits</b>	<i>2 Theory, 1 Laboratories</i>	<b>6-0-20</b>	<b>14</b>	<b>22</b>	<b>600</b>	

Total Credit= 68, Core Credit= 48 (Theory=24, Practical=24), Foundation=4, Elective= 16 (Departmental Elective= 12, Non-Departmental Elective= 04)

NB: If Semester-IV Project done outside department (in Industry) the Elective III and IV may be completed via taking extra electives in Semester III or Credit Transfer from MOOCs as per TU norms

Yes\*: If available online in the particular semester but as per TU credit transfer norms

**ELECTIVE SUBJECTS (DEPARTMENTAL) (12 Credits) to be completed in 2nd year (Semester III/IV)**

Course Code	Course Title	L-T-P	Credits	MOOC
MCA0001E	Adhoc & Sensor Networks	3-0-0	3	Yes*
MCA0002E	Advanced Networking	3-0-0	3	Yes*
MCA0003E	Advances in Database	3-0-0	3	Yes*
MCA0004E	Artificial Intelligence	3-0-0	3	Yes*
MCA0005E	Cloud Computing	3-0-0	3	Yes*
MCA0006E	Cryptography and Network Security	3-0-0	3	Yes*
MCA0007E	Data Mining	3-0-0	3	Yes*
MCA0008E	Data Science	3-0-0	3	Yes*
MCA0009E	Deep Learning	3-0-0	3	Yes*
MCA0010E	Digital logic and Basic Electronics	3-0-0	3	Yes*
MCA0011E	Digital Signal Processing	3-0-0	3	Yes*
MCA0012E	Discrete Mathematical Structures	3-0-0	3	Yes*
MCA0013E	Distributed Computing	3-0-0	3	Yes*
MCA0014E	Formal Language and Automata Theory	3-0-0	3	Yes*
MCA0015E	Image Processing	3-0-0	3	Yes*
MCA0016E	Information Retrieval and Web Mining	3-0-0	3	Yes*
MCA0017E	Internet of Things	3-0-0	3	Yes*
MCA0018E	Internet Technology	3-0-0	3	Yes*
MCA0019E	Machine Learning	3-0-0	3	Yes*
MCA0020E	Multimedia Technology	3-0-0	3	Yes*
MCA0021E	Natural Language Processing	3-0-0	3	Yes*
MCA0022E	Network Synthesis	3-0-0	3	Yes*
MCA0023E	Numerical Methods	3-0-0	3	Yes*
MCA0024E	Object Oriented Analysis and Design	3-0-0	3	Yes*
MCA0025E	Pattern Recognition	3-0-0	3	Yes*
MCA0026E	Social Networks	3-0-0	3	Yes*
MCA0027E	Soft Computing	3-0-0	3	Yes*
MCA0028E	Software Project Management	3-0-0	3	Yes*
MCA0029E	Speech and Natural Language Processing	3-0-0	3	Yes*
MCA0030E	TCP/IP Network Programming	3-0-0	3	Yes*
MCA0031E	Web Technology	3-0-0	3	Yes*
MCA0032E	Information System Security	3-0-0	3	Yes*
MCA0033E	Advanced SoC Design	3-0-0	3	Yes*
MCA0034E	Advanced Computer Architecture	3-0-0	3	Yes*
MCA0035E	Embedded Linux	3-0-0	3	Yes*
MCA0036E	Graphics and Mobile Gaming	3-0-0	3	Yes*
MCA0037E	Introduction to Robotics Systems	3-0-0	3	Yes*
MCA0038E	Embedded Systems Design	3-0-0	3	Yes*
MCA0039E	Object Oriented Programming in C++	3-0-0	3	Yes*
MCA0040E	Programming in Python	3-0-0	3	Yes*

- Elective Subjects (Departmental): 12 Credits, Open Elective (Non-Departmental) Subjects: 4 Credits
- Yes\*: If available online in the particular semester but as per TU credit transfer norms