

## Teaching and Evaluation Scheme Second Year B. Tech. (Computer Engineering)

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit
			L	T	P	MSE	CA	ESE	
<b>Semester III</b>									
1	BTBSC301	Engineering Mathematics -III	3	1	-	20	20	60	4
2	BTCOC302	Discrete Mathematics	2	1	-	20	20	60	3
3	BTCOC303	Data Structures	2	1	-	20	20	60	3
4	BTCOC304	Computer Architecture & Organization	2	1	-	20	20	60	3
5	BTCOC305	Digital Electronics & Microprocessors	2	1	-	20	20	60	3
6	BTHMC306	Basic Human Rights	2	-	-	-	50	-	Audit
7	BTCOL307	Python Programming	1	-	2	-	60	40	2
8	BTCOL308	HTML and Javascript	1	-	2	-	60	40	2
8	BTCOL309	Data Structures Lab	-	-	2	-	60	40	1
9	BTCOL310	Digital Electronics & Microprocessor Lab	-	-	2	-	60	40	1
✓ 10	BTCOF311	Field Training / Internship/Industrial Training Evaluations	-	-	-	-	-	100	1
<b>Total</b>			<b>15</b>	<b>5</b>	<b>8</b>	<b>100</b>	<b>390</b>	<b>560</b>	<b>23</b>
<b>Semester IV</b>									
1	BTCOC401	Design & Analysis of Algorithms	2	1	-	20	20	60	3
2	BTCOC402	Probability & Statistics	2	1	-	20	20	60	3
3	BTCOC403	Operating System	2	1	-	20	20	60	3
4	BTCOE404	<b>Elective-I</b> A) Object Oriented Programming in C++ B) Object Oriented Programming in Java	2	1	-	20	20	60	3
5	BTCOE405	<b>Elective-II</b> A) Numerical Methods B) Physics of Engineering Materials C) Soft Skills and Personality Development	2	1	-	20	20	60	3
6	BTXXC406	Product Design Engineering	2	-	-	20	20	60	2
7	BTCOL407	Design & Analysis of Algorithms Lab	-	-	2	-	60	40	1
8	BTCOL408	Introduction to Data Science with R	1	-	2	-	60	40	2
9	BTCOL409	Object Oriented Programming Lab	-	-	2	-	60	40	1
10	BTCOL410	Operating System Lab	-	-	2	-	60	40	1
11	BTCOF411	Field Training / Internship/Industrial Training (minimum 4 weeks which can be completed partially in first semester and second Semester or in at one time.)						100	Credits to be evaluated at in V Sem.
<b>Total</b>			<b>13</b>	<b>5</b>	<b>8</b>	<b>120</b>	<b>360</b>	<b>620</b>	<b>22</b>

**Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**Board of Studies in Computer Science and Engineering**  
**Curriculum structure of TE CSE/IT**  
**PART-I**

Sub Code	Semester-I	Contact Hrs/Week				Examination Scheme						Duration of The Theory Examination
	Subject	L	T	P	Total	CT	TH	TW	PR	Total	credits	
CSE301	Operating Systems	4	--	--	4	20	80	--	--	100	4	3 Hrs
CSE302	Theory of Computation	4	--	--	4	20	80	--	--	100	4	3.Hrs
CSE303	Database Management Systems	4	--	--	4	20	80	--	--	100	4	3 Hrs
CSE304	Programming in JAVA	4	--	--	4	20	80	--	--	100	4	3Hrs
CSE341	Elective -I	4	--	--	4	20	80	--	--	100	4	3 Hrs
CSE342												
CSE343												
CSE321	Lab 1: Database Management Systems	--	--	2	2	--	--	--	50	50	1	
CSE322	Lab 2: Programming in JAVA	--	--	2	2	--	--	--	50	50	1	
CSE323	Lab 3: Elective -I	--	--	2	2	--	--	50	--	50	1	
CSE324												
CSE325												
CSE326	Lab 4: Software Development Lab-I (ASP.NET using C#)	--	--	2	2	--	--	--	50	50	1	
BSH305	Communication Skills-II	2	--	--	2	--	--	50	--	50	2	
	<b>Total</b>	<b>22</b>	<b>--</b>	<b>8</b>	<b>30</b>	<b>100</b>	<b>400</b>	<b>100</b>	<b>150</b>	<b>750</b>	<b>26</b>	

Sr. No.	Course Code	Course Title	Weekly Teaching hrs			Evaluation Scheme			Credit
			L	T	P	MSE	CA	ESE	
<b>Semester V</b>									
1	BTCOC501	Database Systems	3	1	-	20	20	60	4
2	BTCOC502	Theory of Computations	3	1	-	20	20	60	4
3	BTCOC503	Machine Learning	3	1	-	20	20	60	4
4	BTCOE504	<b>Elective-III</b> (A) Introduction to Research (B) Cyber Laws (C) <b>Open Elective offered by other departments</b>	2	-	-	20	20	60	2
5	BTCOE505	<b>Elective-IV</b> (A) Economics & Management (B) Business Communication	2	-	-	20	20	60	2
6	BTCOC506	Competitive Programming-I	1 <sup>st</sup>	-	2	-	60	40	2
7	BTCOL507	Database System Laboratory	-	-	2	-	60	40	1
8	BTCOL508	Machine Learning Laboratory	-	-	2	-	60	40	1
9	BTCOS509	Seminar	-	-	2	-	60	40	1
10	BTCOF411	Internship/Industrial Training	-	-	-	-	60	40	1
<b>TOTAL</b>			<b>14</b>	<b>3</b>	<b>8</b>	<b>100</b>	<b>400</b>	<b>500</b>	<b>22</b>

Sr. No.	Course Code	Course Title	Weekly Teaching hrs			Evaluation Scheme			Credit
			L	T	P	MSE	CA	ESE	
<b>Semester VI</b>									
1	BTCOC601	Compiler Design	3	1	-	20	20	60	4
2	BTCOC602	Computer Networks	3	1	-	20	20	60	4
3	BTCOE603	<b>Elective-V</b> (A) Human Computer Interaction (B) Artificial Intelligence (C) Object-Oriented Analysis Design	2	1	-	20	20	60	3
4	BTCOE604	<b>Elective-VI</b> (A) Geographic Information System (B) Biology (C) Internet of Things	2	-	-	20	20	60	2
5	BTCOE605	<b>Open Elective-VII</b> (A) Development Engineering (B) National Social Service (C) Consumer Behaviour	2	-	-	20	20	60	2
6	BTCOC606	Competitive Programming-II	1	-	2	-	60	40	2
7	BTCOL607	(A) Mobile Application Development	1	-	2	-	60	40	2
		(B) Internet of Things Laboratory							
8	BTCOL608	Computer Networks Laboratory	-	-	2	-	60	40	1
9	BTCOF609	Filed Training / Internship / Industrial Training (Credit to be evaluated in VII Sem.)	-	-	-	-	-	-	*
<b>TOTAL</b>			<b>14</b>	<b>3</b>	<b>6</b>	<b>100</b>	<b>280</b>	<b>420</b>	<b>20</b>

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Semester - VII

Sr. No.	Course Code	Course Title	Weekly Teaching hrs			Evaluation Scheme			Credit
			L	T	P	CA	MSE	ESE	
1	BTCOC701	Software Engineering	3	-	-	20	20	60	3
2	BTCOE702	<b>Elective - VIII</b> (A) Big Data Analytics (B) Distributed System (C) Fundamental of Digital Image Processing	3	-	-	20	20	60	3
3	BTCOE703	<b>Elective - IX</b> (A) Cloud Computing (B) Business Intelligence (C) Natural Language Processing	3	-	-	20	20	60	3
4	BTCOE704	<b>Open Elective - X</b> (A) Blockchain Technology (B) Computer Graphics (C) Embedded Systems (D) Design Thinking	3	-	-	20	20	60	3
5	BTCOL705	Full Stack Development (LAMP / MEAN)	1	-	2	60	-	40	2
6	BTCOL706	System Administration	1	-	2	60	-	40	2
7	BTCOL707	Elective – VIII Lab	-	-	2	60	-	40	1
8	BTCOL708	Elective – IX Lab	-	-	2	60	-	40	1
9	BTCOP709	Project phase - I	-	-	2	60	-	40	1
10	BTCOF609	Field Training / Internship / Industrial Training	-	-	-	-	-	50	1
<b>TOTAL</b>			<b>14</b>	<b>-</b>	<b>10</b>	<b>380</b>	<b>80</b>	<b>490</b>	<b>20</b>

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Semester – VIII

Sr. No.	Course Code	Course Title	Weekly Teaching hrs			Evaluation Scheme			Credit
			L	T	P	CA	MSE	ESE	
1	BTCOE801	Elective – XI #	3	-	-	20	20	60	3
2	BTCOE802	Open Elective – XII #	3	-	-	20	20	60	3
3	BTCOE803	Project phase - II (In-house) <sup>s</sup> / Internship and project in the Industry	-	-	24	60	-	40	12
<b>TOTAL</b>			<b>6</b>	<b>-</b>	<b>24</b>	<b>100</b>	<b>40</b>	<b>160</b>	<b>18</b>

# These subjects are to be studied on self-study mode using SWAYAM/ NPTEL. The list of self-study online courses is given below.

**The list of self-study online courses**

BTCOE801: Elective – XI #	BTCOE802: Open Elective – XII #
(A) Deep Learning	(A) Introduction to Industry 4.0 and Industrial Internet of Things
(B) Social Networks	(B) Cryptography and Network Security ##
(C) Randomized Algorithms ##	(C) Model Checking

\* Six months of Internship and Project in the industry.

\$ This is for those students who are not doing Internship and project in the Industry, they can do project in the department.

## Digital contents should be developed by University for the subjects:

1. Randomized Algorithm
2. Cryptography and Network Security

**Department of Computer Engineering**  
**Master of Technology (Computer Engineering)**

Sr No	Code	Course Name	Teaching Scheme				Examination Scheme			
			L	P	T	CR	IA	MSE	ESE	OR
<b>Semester I</b>										
1	MTCE1101	Computer Algorithms	3		1	4	20	20	60	100
2	MTCE1102	Machine Learning	3		1	4	20	20	60	100
3	MTCE1103	Advanced Computer Networks	3		1	4	20	20	60	100
4	MTCE1104	Elective I	3			3	20	20	60	100
5	MTCE1105	Elective II	3			3	20	20	60	100
6	MTCE1106	Communication Skill	2			2	25		25	50
7	MTCE1107	Software Lab I		4		2	25		25	50
		Total	17	4	3	22	150	100	300	600
<b>Semester II</b>										
1	MTCE1201	Data Science	3		1	4	20	20	60	100
2	MTCE1202	Software Architecture	3		1	4	20	20	60	100
3	MTCE1203	Elective III	3			3	20	20	60	100
4	MTCE1204	Elective IV	3			3	20	20	60	100
5	MTCE1205	Elective V	3			3	20	20	60	100
7	MTCE1207	Software Lab II		4		2	50		50	100
8	MT CE1208	Seminar I		4		2	50		50	100
		Total	15	8	2	21	200	100	300	700
<b>Semester III</b>										
1	MTCE2101	Project Management and Intellectual Property Rights (Self Study)				2	50		50	100
3	MTCE2103	Project- I				10	50		50	100
		Total				12	100		100	200
<b>Semester IV</b>										
1	MTCE2201	Project-II				20	100		100	200
		Total				20	100		100	200

**Faculty of Engineering and Technology**  
Tentative Structure for ME (COMPUTER SCIENCE AND INFORMATION TECHNOLOGY)

Sub	Semester - I	Contact Hrs/Week				Examination Scheme (Marks)						Credit
		L	T	P	Total	CT	TH	TW	P	Total	Duration of Theory Examination	
Part - I												
1	Information Theory and Coding	3	1	-	4	20	80	-	-	100	3 Hrs.	4
2	Advanced Operating System	3	1	-	4	20	80	-	-	100	3 Hrs.	4
3	Advanced Computer Networks	3	1	-	4	20	80	-	-	100	3 Hrs.	4
4	Advanced Data Mining	3	1	-	4	20	80	-	-	100	3 Hrs.	4
5	Elective - I	3	1	-	4	20	80	-	-	100	3 Hrs.	4
6	UNP Lab.	-	-	4	4	-	-	50	-	50	-	2
7	Data Mining Lab.	-	-	2	2	-	-	-	50	50	-	1
8	Seminar.	-	-	2	2	-	-	-	50	50	-	1
Total of Part - I		15	5	8	28	100	400	50	100	650		24

L: Lecture hours per week      T: Tutorial Hours per week      P: Practical hours per week  
 CT: Class Test      TH: University Theory Examination      TW: Termwork  
 P: Practical / Oral Examination

**Elective - I**

1. Advanced Digital Communication.
2. Information Retrieval.
3. System Simulation Modeling.

*Chase*