Shri Tuljabhavani Temple Trust's
SHRI TULJABHAVANI COLLEGE OF ENGINEERING,
TULJAPUR – 413601 Dist. : Osmanabad
E-mail : stbcet@gmail.com Website : www.stbcet.org.in

AQAR Report data for A.Y. 2022-23

1.2.1 Number of Programmes in which Choice Based Credit System (CBCS)/ elective course system has been implemented		
Sr. No.	Description of Attachment	Page No.
1	Course Structure of Degree Program B.Tech Civil Engineering	Page 01 to 08
2	Course Structure of Post Graduate Degree Program M.Tech WRE	Page 09 to 12
3	Course Structure of Degree Program B.Tech Mechanical Engg.	Page 13 to 20
4	Course Structure of Post Graduate Degree Program M.Tech Mechanical Engg.	Page 21 to 25
5	Course Structure of Degree Program B.Tech E&TC Engineering	Page 26 to 30
6	Course Structure of Post Graduate Degree Program M.Tech E&TC Engg.	Page 31 to 32
7	Course Structure of Degree Program B.Tech CSE Engineering	Page 33 to 38

Dr. Babasaheb Ambedkar Technological University, Lonere

(Established as a University of Technology in the State of Maharashtra)
(Under Maharashtra Act No. XXIX of 2014)
P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra
Telephone and Fax. : 02140 - 275142
www.dbatu.ac.in

Curriculum for Undergraduate Degree Programme
S.Y. B. Tech. in Civil Engineering

With effect from AY 2021-22

Dr. Babasaheb Ambedkar Technological University
Lonere 402 103, Dist- Raigad, Maharashtra, INDIA

Teaching & Evaluation Scheme for Second Year B. Tech. Civil Engg.

Semester- III

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BSC 5	BTBS301	Mathematics – III	3	1	-	20	20	60	100	4
ESC 8	BTCVES302	Mechanics of Solids	3	1	-	20	20	60	100	4
PCC 1	BTCVC303	Building Construction & Drawing	2	1	-	20	20	60	100	3
PCC 2	BTCVC304	Hydraulics -I	3	1	-	20	20	60	100	4
PCC 3	BTCVC305	Surveying	2	1	-	20	20	60	100	3
HSSMC2	BTHM306	Soft Skill Development	2	-	-	50	-	-	50	Audit
LC 1	BTCVL 307	Solid Mechanics Laboratory	-	-	2	20	-	30	50	1
LC 2	BTCVL 308	Hydraulics-I Laboratory	-	-	2	20	-	30	50	1
LC 3	BTCVL 309	Surveying Laboratory	-	-	2	20	-	30	50	1
Internship	BTES210P	Internship –I Evaluation (From Sem II)	-	-	-	-	-	50	50	Audit
		Total	**15**	**05**	**06**	**210**	**100**	**440**	**750**	**21**

Semester- IV

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
PCC 4	BTCVC401	Building Planning and Drawing	2	-	-	20	20	60	100	2
PCC 5	BTCVC402	Environmental Engineering	2	-	-	20	20	60	100	2
PCC 6	BTCVC403	Structural Mechanics - I	2	1	-	20	20	60	100	3
PCC 7	BTCVC404	Water Resources Engineering	3	-	-	20	20	60	100	3
PCC 8	BTCVC405	Hydraulics - II	2	1	-	20	20	60	100	3
PCC 9	BTCVC406	Engineering Geology	2	1	-	20	20	60	100	3
LC 4	BTCVL407	Building Planning and CAD Lab.	-	-	2	20	-	30	50	1
LC 5	BTCVL408	Environmental Engg. Lab.	-	-	2	20	-	30	50	1
LC 6	BTCVL409	HE-II Lab.	-	-	2	20	-	30	50	1
Internship	BTCVP410	Field Training / Internship/Industrial Training (minimum of 4 weeks training in Summer Vacation after Semester IV and appear at examination in Semester V)	-	-	-	-	-	-	-	To be evaluated in V Sem
		Total	**13**	**03**	**06**	**180**	**120**	**450**	**750**	**19**

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Draft Copy of Curriculum for Undergraduate Degree Programme

B. Tech. in Civil Engineering

Third Year

With effect from AY 2022-2023

Dr. Babasaheb Ambedkar Technological University, Lonere

Teaching & Evaluation Scheme for Third Year B Tech Civil Engg.

Semester- V										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 10	BTCVC501	Design of Steel Structures	2	1	-	20	20	60	100	3
PCC 11	BTCVC502	Geotechnical Engineering	3	1	-	20	20	60	100	4
PCC 12	BTCVC503	Structural Mechanics –II	2	1	-	20	20	60	100	3
PCC 13	BTCVC504	Concrete Technology	2	-	-	20	20	60	100	2
HSSMC3	BTHM505	Project Management	3	-	-	20	20	60	100	3
PEC I	BTCVPE506	A. Advanced Environmental Engg. B. Applied Geology C. Hydraulic Engineering Design D. Advanced Water Resources E. Geomatics F. Town and Urban Planning G. Material, Testing and Evaluation H. Construction Economics & Finance	3	-	-	20	20	60	100	3
ESC10	BTCVES507	Software applications in Civil Engineering	2	-	-	50	-	-	50	Audit
LC 7	BTCVL508	SDD of Steel Structures Lab.	-	-	2	20	-	30	50	1
LC 8	BTCVL509	Geotechnical Engineering Lab.	-	-	2	20	-	30	50	1
LC 9	BTCVL510	Concrete Technology Lab.	-	-	2	20	-	30	50	1
Internship	BTCVP410	Internship – 2 Evaluation	-	-	-	-	-	-	-	Audit
		Total	**17**	**3**	**6**	**230**	**120**	**450**	**800**	**21**

Semester- VI									
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 14	BTCVC601	Design of RC Structures	3	1	-	20	20	60	100	4
PCC 15	BTCVC602	Foundation Engineering	3	1	-	20	20	60	100	4
PCC 16	BTCVC603	Transportation Engineering	3	-	-	20	20	60	100	3
PEC 2	BTCVPE604	A. Industrial Waste Treatment B. Managerial Techniques C. Open Channel Flow D. Water Power Engineering E. Ground Improvement Techniques F. Structural Audit G. Intelligent Transportation Systems H. Plastic Analysis of Structures I. Numerical Methods in Civil Engg. J. Engineering Management	3	-	-	20	20	60	100	3
OEC 1	BTCVOE605	A. Environmental Impact Assessment B. Basic Human Rights C. Business Communication and Presentation Skills D. Composite Materials E. Experimental Stress Analysis F. Python Programming G. Operation Research H. Applications of Remote Sensing and Geographic Information Systems I. Civionics: Instrumentation & Sensor Technologies for Civil Engineering J. Planning for Sustainable Development K. Development Engineering	3	-	-	20	20	60	100	3
HSSMC4	BTHM606	Indian Constitution	2	-	-	50	-	-	50	Audit
LC 10	BTCVL607	SDD of RC Structures Lab.	-	-	2	20	-	30	50	1
LC 11	BTCVL608	Transportation Engineering Lab	-	-	2	20	-	30	50	1
Project	BTCVM609	Mini Project	-	-	2	20	-	30	50	1
Internship		**Mandatory (BTCVP610)** Field Training/ Internship/Industrial Training (minimum of 4 weeks training in Summer Vacation after Semester VI and appear at examination in Semester VII.)	-	-	-	-	-	-	-	Credits to be evaluated in VII Sem
Total			**17**	**2**	**6**	**210**	**100**	**390**	**700**	**20**

Course Structure
for Degree Programme
B. Tech. in Civil Engineering

with effect from AY 2018-19
(amended on 01 Jan 2020)

Dr. Babasaheb Ambedkar Technological University
Lonere 402 103, Dist- Raigad, Maharashtra, INDIA

Semester – VII

Sr. No.	Subject Code	Subject Title	Contact hours			Credit
			L	T	P	
01	BTCVC 701	Design of Concrete Structures II	2	1	-	3
02	BTCVC 702	Infrastructure Engineering	3	-	-	3
03	BTCVC 703	Water Resources Engineering	2	1	-	3
04	BTCVC 704	Professional Practices	2	1	-	3
05	CVE4	**Elective IV**	3	-	-	3
06	CVE5	**Elective V**	3	-	-	3
		Practical / Drawing and/or Design				
07	BTCVL707	Professional Practices Laboratory	-	-	2	1
08	BTCVL708	Design & Drawing of Steel Structures	-	-	4	2
09	BTCVP709	Project Stage-I	-	-	2	1
10	BTCVF710	Industrial Training	-	-	-	AU
		Sub-Total	15	3	08	
		Total		**26**		22
		Elective IV				
	BTCVE705A	Plastic Analysis and Design				
	BTCVE705B	Machine Foundations				
	BTCVE705C	Modern Surveying Techniques	-	-	-	
	BTCVE705D	Engineering Economics				
	BTCVE705E	Ground Improvement Techniques				
		Elective V				
	BTCVE706A	Advanced Structural Mechanics				
	BTCVE706B	Town and Urban Planning				
	BTCVE706C	Construction Economics & Finance				
	BTCVE706D	Intelligent Transportation Systems	-	-	-	
	BTCVE706E	Air Pollution Control				
	BTCVE706F	Tunneling and Underground Excavations				

BTCVC 701Design of Concrete Structures II

Teaching Scheme: (2 Lectures + 1 Tutorial) hours/week

Course Contents

Limit State Method for RC Structures

Module 1: **(6 Lectures)**

Limit State of Collapse (Torsion) - Types of torsion, behavior of R.C. rectangular sections subjected to torsion, Design of sections subjected to combined bending and Torsion

Module 2: **(6 Lectures)**

Analysis and design of axially and eccentrically loaded short columns (Circular and Rectangular), detailing of reinforcement, and construction of Interaction diagrams for uni-axial bending, concept of bi-axial bending

Prestressed Concrete

Module 3: **(5 Lectures)**

Introduction to prestressed concrete, concepts, types, systems and methods of pre stressing,

Module 4: **(5 Lectures)**

Semester – VIII

Sr. No.	Subject Code	Subject Title	Contact hours			Credit
			L	T	P	
01	BTCVC 801	Introduction to Earthquake Engineering	2	1		3
02	CVE6	**Elective VI**	3	-		3
03	CVE7	**Elective VII**	3	-		3
04	CVE8	**Elective VIII**	3	-		3
		Practical / Drawing and/or Design				
05	BTCVL805	Earthquake Engineering Laboratory	-	-	2	1
06	BTCVL806	Design and Drawing of RC Structures	-	-	4	2
07	BTCVF807	Self-Study Report based on field visit to Infrastructure Project Works	-	-	2	1
08	BTCVP808	Project Stage-II	-	-	8	4
		Sub-Total	11	1	16	
		Total	**28**			**20**
		Elective VI				
	BTCVE802A BTCVE802B BTCVE802C BTCVE802D BTCVE802E	Limit State Design of Steel Structures Construction Techniques Pavement Management System Composite Materials Disaster Preparedness & Planning Management	-	-	-	
		Elective VII				
	BTCVE803A BTCVE803B BTCVE803C BTCVE803D	Bridge Engineering Structural Audit Design of Hydraulic Structures Environmental Impact Assessment and Life Cycle Analyses	-	-	-	
		Elective VIII				
	BTCVE804A BTCVE804B BTCVE804C BTCVE804D BTCVE804E	Rock Mechanics Water Power Engineering Water Resources Economics Planning and Management Finite Element Method Repair & Rehabilitation of Structures	-	-	-	
		Overall Total	**50+168 = 218**			**127**

BTCVC 801Introduction to Earthquake Engineering

Teaching Scheme: (2 Lectures +1 Tutorial) hours/week

Course Contents

Module 1: **(5 Lectures)**

Elements of seismology: Terminology, structure of the earth, causes of an earthquake, seismic waves, magnitude and intensity, seismograph, strong motion earthquakes, Accelerogram, prominent earthquakes of India

Module 2: **(5 Lectures)**

Structural dynamics: Free and forced vibrations of single degree of freedom systems, un-damped and viscously damped vibrations, equations of motion, Duhamel integral

Module 3: **(6 Lectures)**

Response Spectrum Theory: construction of Design Response Spectrum, effect of foundation and structural damping on

Course Structure

For Post Graduate Degree Programme

M. Tech. in Civil Engineering
With Specialization in
Water Resources Engineering

Dr. Babasaheb Ambedkar Technological University

Lonere 402 103, Dist. - Raigad, Maharashtra, INDIA

First Semester

Sr. No.	Subject Code	Name of Subject	Hours /Week			Credit	Examination Scheme				
							Theory		CA	PR/ OR	Tota
			L	P	T		TH	MTE			
01	CVWRE101	Engineering Hydrology And Hydrological System	03	--	1	04	60	20	20	--	100
02	CVWRE102	Ground Water Hydrology	03	--	1	04	60	20	20	--	100
03	CVWRE103	Advanced Fluid Mechanics	03	--	1	04	60	20	20	--	100
04	CVWRE104	Communication Skills	02	--	--	02	--	--	25	25	50
05	CVWRE-L01	PG Lab-I	--	03	--	02	--	--	25	25	50
06	CVWRE-E1	Elective-I	03	--	--	03	60	20	20	--	100
07	CVWRE-E2	Elective-II	03	--	--	03	60	20	20	--	100
		Total for Semester I	**17**	**03**	**03**	**22**	**300**	**100**	**150**	**50**	**600**

Elective-I

CVWRE-E1-01: Water Application Systems

CVWRE-E1-02: Computational and Statistical Methods

Elective-II

CVWRE-E2-01: Water Supply Systems

CVWRE-E2-02: GIS in Water Resources Engineering

CVWRE-E2-03- Integrated River Basin Management

Second Semester

Sr. No.	Subject Code	Name of Subject	Hours /Week			Credit	Examination Scheme				
							Theory		CA	PR/ OR	Tot
			L	P	T		TH	MTE			
01	CVWRE201	Water Resources and Hydraulic Structures	03	--	1	04	60	20	20	--	100
02	CVWRE202	Water Resources Systems Planning &Management	03	--	1	04	60	20	20	--	100
03	CVWRE-S01	Seminar-I	--	04	--	02	--	--	50	50	100
04	CVWRE-L02	PG Lab-II or Mini -Project	--	04	--	02	--	--	50	50	100
05	CVWRE-E3	Elective-III (Departmental)	03	--	--	03	60	20	20	--	100
06	CVWRE-E4	Elective-IV (Departmental)	03	--	--	03	60	20	20	--	100
07	CVWRE-E5	Elective-V (Open)	03	--	--	03	60	20	20	--	100
		Total for Semester II	**15**	**08**	**02**	**21**	**300**	**100**	**200**	**100**	**700**

Elective-III

CVWRE-E3-01: Land and Water Management

CVWRE-E3-02: Artificial Intelligence Techniques

Elective- IV

CVWRE-E4-01: Environmental Impact Assessment

CVWRE-E4-02: Channel and River Hydraulics

Elective-V (Open)

CVWRE-E5-01: Water Power Engineering

CVWRE-E5-02: Climate Change

Third Semester

Sr. No.	Subject Code	Name of the subject	Hours/ Week			Credit	Examination scheme				
							Theory		CA	PR / OR	Total
			L	P	T		TH	Test			
1	CVSWR301	Project Management and Intellectual Property Rights (Self Study)*	--	--	--	02	--	--	50	50	100
2	CVWREPS1	Project Stage -I	--	--	--	10	--	--	50	50	100
		Total for Semester III	--	--	--	12	--	--	100	100	200

Fourth Semester

Sr. No.	Subject Code	Name of the subject	Hours/Week			Credit	Examination scheme				
							Theory		CA	PR/ OR	Total
			L	P	T		TH	Test			
1	CVWREPS2	Project Stage-II	--	--	--	20	--	--	100	100	200
		Total for Semester IV	--	--	--	20	--	--	100	100	200
GRAND TOTAL											1700

* Student may select this course either from NPTEL/MOOC pool or any other approved reputed source. The submission of course completion certificate is mandatory.

Course Structure for Semester I
B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich) (w.e.f. 2020-21)

Semester I										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Evaluation Scheme**				
			L	**T**	**P**	**CA**	**MSE**	**ESE**	**Total**	**No. of Credits**
	Mandatory	***Induction Program***	***3-weeks duration in the beginning of the semester***							
BSC1	BTBS101	Engineering Mathematics- I	3	1	-	20	20	60	100	4
BSC2	BTBS102	Engineering Physics	3	1	-	20	20	60	100	4
ESC1	BTES103	Engineering Graphics	2	-	-	20	20	60	100	2
HSSMC1	BTHM104	Communication Skills	2	-	-	20	20	60	100	2
ESC2	BTES105	Energy and Environment Engineering	2	-	-	20	20	60	100	2
ESC3	BTES106	Basic Civil and Mechanical Engineering	2	-	-	50	-	-	50	Audit
BSC3	BTBS107L	Engineering Physics Lab	-	-	2	60	-	40	100	1
ESC4	BTES108L	Engineering Graphics Lab	-	-	3	60	-	40	100	2
HSSMC2	BTHM109L	Communication Skills Lab	-	-	2	60	-	40	100	1
		Total	**14**	**2**	**7**	**330**	**100**	**420**	**850**	**18**

Course Structure for Semester II
B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich) (w.e.f. 2020-21)

Semester II									
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Evaluation Scheme**			
			L	**T**	**P**	**CA**	**MSE**	**ESE**	**Total**	**No. of Credits**
BSC4	BTBS201	Engineering Mathematics-II	3	1	-	20	20	60	100	4
BSC5	BTBS202	Engineering Chemistry	3	1	-	20	20	60	100	4
ESC5	BTES203	Engineering Mechanics	2	1	-	20	20	60	100	3
ESC6	BTES204	Computer Programming	3	-	-	20	20	60	100	3
ESC7	BTES205	Basic Electrical and Electronics Engineering	2	-	-	50	-	-	50	Audit
ESC8	BTES206L	Workshop Practice	-	-	4	60	-	40	100	2
BSC6	BTBS207L	Engineering Chemistry Lab	-	-	2	60	-	40	100	1
ESC9	BTES208L	Engineering Mechanics Lab	-	-	2	60	-	40	100	1
PROJ-1	BTES209P (IT– 1)	Field Training/Industrial Training (minimum of 4 weeks which can be completed partially in first semester and second Semester or in one semester itself)	-	-	-	-	-	-	-	To be evaluated in Sem III
	Mandatory	***NSS/NCC/Sports***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Audit**
		Total	**13**	**3**	**8**	**310**	**80**	**360**	**750**	**18**

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

HSSMC = Humanities and Social Science including Management Courses

Elective I

Sr. No	Course code	Course Name
1	BTMPE405A	Numerical Methods in Engineering
2	BTMPE405B	Sheet Metal Engineering
3	BTMPE405C	Fluid Machinery

Course Structure for Semester V
B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich) (2022-23)

Semester V										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				No. of Credits
			L	T	P	CA	MSE	ESE	Total	
PCC 8	BTMC 501	Heat Transfer	3	1	-	20	20	60	100	4
PCC 9	BTMC 502	Machine Design – I	3	1	-	20	20	60	100	4
PCC 10	BTMC 503	Theory of Machines- II	3	1	-	20	20	60	100	4
PEC 2	BTMPE 504A-C BTAPE504A,D	Elective-II	3	-	-	20	20	60	100	3
OEC 1	BTMOE 505A-D	Open Elective-I	3	-	-	20	20	60	100	3
PCC 11	BTMC 506	Applied Thermodynamics	3		-	20	20	60	100	3
PCC12	BTMCL 507	Mechanical Engineering Lab – III	-	-	6	60	-	40	100	3
PROJ-3	BTMI 408	IT – 2 Evaluation	-	-	-	-	-	100	100	1
		Total	**18**	**3**	**6**	**180**	**120**	**500**	**800**	**25**

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course
PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course
HSSMC = Humanities and Social Science including Management Courses

Elective II

Sr. No	Course code	Course Name
1	BTMPE504A	Refrigeration and Air conditioning
2	BTMPE504B	Steam and Gas Turbines
3	BTMPE504C	Engineering Tribology
4	BTAPE504A	Fundamentals of Automobile Design
5	BTAPE504D	Automobile Engineering

Open Elective I

Sr.No.	Course code	Course Name
1	BTMOE505A	Solar Energy
2	BTMOE505B	Renewable Energy Sources
3	BTMOE505C	Human Resource Management
4	BTMOE505D	Product Design Engineering

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Course Structure for Semester VI
B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich)
(2022-23)

Semester VI										
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Evaluation Scheme**				**No. of Credits**
			L	**T**	**P**	**CA**	**MSE**	**ESE**	**Total**	
PCC12	BTMC 601	Manufacturing Processes-II	3	1	-	20	20	60	100	4
PCC13	BTMC 602	Machine Design-II	3	1	-	20	20	60	100	4
PEC3	BTMPE 603A-C BTAPE 603C,E	Elective-III	3		-	20	20	60	100	3
PEC4	BTMPE 604A-D BTAPE 604B	Elective-IV	3		-	20	20	60	100	3
OEC2	BTMOE 605A-E	Open Elective-II	3	-	-	20	20	60	100	3
PCC14	BTMCL 606	Mechanical Engineering Lab – IV	-	-	6	60	-	40	100	3
PROJ-4	BTMS607	B Tech Seminar	-	-	2	60		40	100	1
PROJ-5	BTMP 608	Mini Project (TPCS)	-	-	2	60	-	40	100	1
PROJ-6	BTMI 609 (IT-3)	Field Training / Industrial Training (minimum of 4 weeks which can be completed partially in fifth semester and sixth semester or in one semester itself).	-	-	-	-	-	-	-	Credits to be evaluated in Sem VII
		Total	**15**	**2**	**10**	**280**	**100**	**420**	**800**	**22**

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course
PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course
HSSMC = Humanities and Social Science including Management Courses

Elective III:

Sr.No	Course code	Course Name
1	BTMPE603A	IC Engines
2	BTMPE603B	Mechanical Vibrations
3	BTMPE603C	Machine Tool Design
4	BTMPE603D	Engineering Metrology and Quality Control
5	BTAPE603C	Advance Automobile Design
6	BTAPE603E	E – Vehicles

Elective IV:

SrNo	Course code	Course Name
1	BTMPE604A	Process Equipment Design
2	BTMPE604B	Product Life Cycle Management
3	BTMPE604C	Finite Element Method
4	BTMPE604D	Robotics
5	BTAPE604B	Computational Fluid Dynamics

Open Elective II:

Sr.No	Course code	Course Name
1	BTMOE605A	Quantitative Techniques and Project Management
2	BTMOE605B	Nanotechnology
3	BTMOE605C	Energy Conservation and Management
4	BTMOE605D	Wind Energy
5	BTMOE605E	Introduction to Probability Theory and Statistics

B. Tech. Mechanical Engineering

Course Structure for Semester VII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC701	PCC 29	Mechatronics	2	1	--	20	20	60	100	3
BTMEC702	PCC 30	CAD/CAM	2	1	--	20	20	60	100	3
BTMEC703	PCC 31	Manufacturing Processes - III	2	1	--	20	20	60	100	3
BTMEC704A	PEC 2	Fluid Machinery	2	1	--	20	20	60	100	3
BTMEC704B		Industrial Engineering and Management								
BTMEC704C		Finite Element Method								
BTMEC704D		Surface Engineering								
BTMEC704E		Refrigeration and Air Conditioning								
BTAMC704C		Automobile Design (Product Design, PLM, CAE, Catia)								
BTMEC705A	OEC 5	Engineering Economics	3	--	--	--	--	--	--	Audit (AU/ NP)
BTMEC705B		Intellectual Property Rights								
BTMEC705C		Wind Energy								
BTMEC705D		Knowledge Management								
BTMEL706	PCC 32	Manufacturing Processes Lab - II	--	--	2	30	--	20	50	1
BTMEL707	PCC 33	Mechatronics Lab	--	--	2	30	--	20	50	1
BTMEL708	PCC 34	CAD/CAM Lab	--	--	2	30	--	20	50	1
BTMES709	Project 4	Seminar	--	--	2	30	--	20	50	1
BTMEF710	Project 5	Field Training /Internship/Industrial Training III	--	--	--	--	--	50	50	1
BTMEP711	Project 6	Project Stage-I**	--	--	6	30	--	20	50	3
		Total	11	4	14	230	80	390	700	20

***In case of students opting for Internship in the eighth semester, the Project must be industry-based.*

B. Tech. Mechanical Engineering

Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
Choose any two subjects from ANNEXURE-A#			-	-	--	20	20	60	100	3
			-	-	--	20	20	60	100	3
BTMEP803	Project 7	Project Stage-II or Internship and Project*	--	--	30	50	--	100	150	15
Total			--	--	30	90	40	220	350	21

** Six months of Internship in the industry*

[#] These subjects are to be studied on self –study mode using SWAYAM/NPTEL/Any other source

 # Student doing project in Industry will give NPTEL Examination/Examination conducted by the University i.e. CA/MSE/ESE

 # Students doing project in the Institute will have to appear for CA/MSE/ESE

ANNEXURE-A#
Recommendations of 8th Semester Courses in Self-study Mode from NPTEL/ SWYAM Platform

Sr No	Course Code	Course Name	Duration (Weeks)	Institute Offering Course	Name of Professor
1	BTMEC801A	Fundamentals of Automotive Systems	12 Weeks	IITM	Prof. C. S. Shankar Ram
2	BTMEC801B	Mechanics of Fiber Reinforced Polymer Composite Structures	12 Weeks	IITG	Prof. Debabrata Chakraborty
3	BTMEC801C	Explosions and Safety	12 Weeks	IITM	Prof. K. Ramamurthi
4	BTMEC801D	Material Characterization	12 Weeks	IITM	Prof. Sankaran.S
5	BTMEC801E	Dealing with materials data : collection, analysis and interpretation	12 Weeks	IISc	Prof. M P Gururajan

6	BTMEC801F	Non-Conventional Energy Resources	12 Weeks	IITM	Prof. Prathap Haridoss

Semester - VII

Mechatronics

BTMEC701	PCC 29	Mechatronics	2-1-0	3 Credits

Teaching Scheme:	**Examination Scheme:**
Lecture: 2 hrs/week Tutorial: 1 hr/week	Continuous Assessment: 20 Marks Mid Semester Exam: 20 Marks End Semester Exam: 60 Marks (Duration 03 hrs)

Pre-Requisites: None

Course Outcomes: At the end of the course, students will be able to:

CO1	Define sensor, transducer and understand the applications of different sensors and transducers
CO2	Explain the signal conditioning and data representation techniques
CO3	Design pneumatic and hydraulic circuits for a given application
CO4	Write a PLC program using Ladder logic for a given application
CO5	Understand applications of microprocessor and micro controller
CO6	Analyse PI, PD and PID controllers for a given application

Mapping of course outcomes with program outcomes

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	3	2				2	1		1
CO2	3	2			3	3	2				1	3
CO3	1	1		3	3	2	1		3		1	3
CO4	3	3	1	1	3		1	1	1			
CO5	3			1	3	2	3					2
CO6		3	3		3	3	1	1	3			2

Course Contents:

Unit 1: Introduction

Introduction to Mechatronic systems, elements, advantages; practical examples of Mechatronic systems.

Sensors and Transducers: Various types of sensors and transducers used in Mechatronic system such as pressure sensors, temperature sensors, velocity sensors, Acceleration sensors, proximity sensors, position sensors, force sensors, Optical encoders, Capacitive level sensor, tactile sensors, Selection of sensors.

MASTER OF TECHNOLOGY
(Mechanical Engineering)

Syllabus with effect from July 2018

Semester-I

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
							Theory		CA	PR/OR	Total
			L	T	P		TH	Test			
MMECH11	PCC	Engineering Thermodynamics	3	1	--	4	60	20	20	--	100
MMECH12	PCC	Machining and Forming Processes	3	1	--	4	60	20	20	--	100
MMECH13	PCC	Mechanical Vibrations	3	1	--	4	60	20	20	--	100
MDE14A	Elective I	Advanced Machine Design	3	--	--	3	60	20	20	--	100
MTE14B		Utilization of Solar Energy									
MTE14C		Advanced I.C. Engines									
MME14D		Additive Manufacturing									
MMECH15A	Elective II	Manufacturing Planning and Control	3	--	--	3	60	20	20	--	100

ME-XX15C		Hydraulic, Pneumatic and Fluidic Control										
MTE15D		Wind Energy										
MME15E		Finite Element Method										
BSH16	HSMC	Communication Skills	2	--	--	2	--	--	25	25	50	
MMECH17	PCC	Mechanical Engineering Lab	--	--	3	2	--	--	25	25	50	
Total			**17**	**3**	**3**	**22**	**300**	**100**	**150**	**50**	**600**	

Semester-II

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
							Theory		CA	PR/OR	Total
			L	T	P		TH	Test			
MMECH21	PCC	Advanced Fluid Mechanics and Heat Transfer	3	1	--	4	60	20	20	--	100
MMECH22	PCC	Mechanical Design Analysis	3	1	--	4	60	20	20	--	100
MMECH23A	Elective III	Numerical Methods and Computational Techniques	3	--	--	3	60	20	20	--	100
ME-XX23B		CAD- CAE									
MTE23B		Computational Fluid Dynamics									
MTE23C		Advanced Refrigeration									
MTE23D		Design of Heat Exchangers									
MTE23E		Alternative Fuels for I.C. Engines									
MTE24A	Elective IV	Steam and Gas Turbines	3	--	--	3	60	20	20	--	100
MME24B		Surface Engineering									
MTE24B		Cryogenic Engineering									

MMECH24C		Nanotechnology									
MME24F		World Class Manufacturing									
MOE25A	Elective V	Research Methodology	3	--	--	3	60	20	20	--	100
MOE25B		Design of Experiments									
MOE25C		Advanced Optimization Techniques									
MOE25D		Environmental Engineering and Pollution Control									
MOE25E		Soft Computing Techniques									
MOE25F		Manufacturing Automation									
MOE25G		Modeling and Simulation									
MMECH26	PCC	Seminar	--	4	--	2	--	--	50	50	100
MMECH27	PCC	Mini Project	--	--	4	2	--	--	50	50	100
		Total	**15**	**6**	**4**	**21**	**300**	**100**	**200**	**100**	**700**

Semester-III

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
							Theory		CA	PR/OR	Total
			L	T	P		TH	Test			
MMECH31	PCC	Project Management (Self Study Course)	--	--	--	2	--	--	50	50	100
		OR									
MMECH32		Intellectual Property Rights (Self Study Course)	--	--	--	2	--	--	50	50	100
MMECH33	PCC	Project Stage -I	---	--	--	10	--	--	50	50	100
		Total	---	--	--	**12**	--	--	**100**	**100**	**200**

Semester-IV

Course Code	Type of Course	Name of the Course	Hours/Week			Credit	Examination Scheme				
							Theory		CA	PR/OR	Total
			L	T	P		TH	Test			
MMECH41	PCC	Project Stage -II	---	--	--	20	--	--	100	100	200
		Total	---	--	--	**20**	--	--	**100**	**100**	**200**

Curriculum for Second Year

Semester III										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
BSC	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
PCC 1	BTETC302	Electronic Devices & Circuits	3	1	-	20	20	60	100	4
PCC 2	BTETC303	Digital Electronics	3	1	-	20	20	60	100	4
ESC	BTES304	Electrical Machines and Instruments	3	1	-	20	20	60	100	4
LC	BTETL305	Electronic Devices & Circuits Lab	-	-	2	60	-	40	100	1
LC	BTETL306	Digital Electronics Lab	-	-	2	60	-	40	100	1
Seminar	BTETS307	Seminar I	-	-	4	60	-	40	100	2
Internship	BTES211P	Internship – 1 Evaluation	-	-	-	-	-	-	-	Audit
		Total	**12**	**4**	**8**	**260**	**80**	**360**	**700**	**20**

Semester IV										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 3	BTETC401	Network Theory	3	1	-	20	20	60	100	4
PCC 4	BTETC402	Signals and Systems	3	1	-	20	20	60	100	4
HSSMC	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
BSC	BTBS404	Probability Theory and Random Processes	3	-	-	20	20	60	100	3
PEC 1	BTETPE405	(A) Numerical Methods and Computer Programming	3	1	-	20	20	60	100	4
		(B) Data Compression & Encryption								
		(C) Computer Organization and Architecture								
		(D) Introduction to MEMS								
		(E) Python Programming								
LC	BTETL406	Network Theory Lab & Signals and Systems Lab	-	-	4	60	-	40	100	2
Seminar	BTETS407	Seminar II	-	-	4	60	-	40	100	2
Internship	BTETP408 (Internship – 2)	Field Training /Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at onetime).	-	-	-	-	-	-	-	Audit (evaluation will be in V Sem.)
		Total	**15**	**3**	**8**	**220**	**100**	**380**	**700**	**22**

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course
PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course
HSSMC = Humanities and Social Science including Management Courses

Curriculum for Third Year

Semester V

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 5	BTETC501	Electromagnetic Field Theory	3	1	-	20	20	60	100	4
PCC 6	BTETC502	Digital Signal Processing	3	1	-	20	20	60	100	4
PCC 7	BTETC503	Analog Communication	3	1	-	20	20	60	100	4
PEC 2	BTETPE504	Group A	3	1	-	20	20	60	100	4
OEC 1	BTETOE505	Group B	3	1	-	20	20	60	100	4
LC	BTETL506	Digital Signal Processing Lab & Analog Communication Lab	-	-	4	60	-	40	100	2
Project	BTETM507	Mini Project – 1	-	-	4	60	-	40	100	2
Internship	BTETP408	Internship – 2 Evaluation	-	-	-	-	-	-	-	Audit
		Total	**15**	**5**	**8**	**220**	**100**	**380**	**700**	**24**

Semester VI

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 8	BTETC601	Antennas and Wave Propagation	3	1	-	20	20	60	100	4
PCC 9	BTETC602	Digital Communication	3	1	-	20	20	60	100	4
PEC 3	BTETPE603	Group A	3	1	-	20	20	60	100	4
OEC 2	BTETOE604	Group B	3	1	-	20	20	60	100	4
HSSMC	BTHM605	Employability and Skill Development	3	-	-	20	20	60	100	3
LC	BTETL606	Digital Communication Lab & Professional Elective Course 3 Lab	-	-	4	60	-	40	100	2
Project	BTETM607	Mini Project – 2	-	-	4	60	-	40	100	2
Internship	BTETP608 (Internship – 3)	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time).	-	-	-	-	-	-	-	Audit (evaluation will be in VII Sem.)
		Total	**15**	**4**	**8**	**220**	**100**	**380**	**700**	**23**

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course PEC = Professional Elective Course, OEC = Open Elective Course,
LC = Laboratory Course HSSMC = Humanities and Social Science including Management Courses.

Semester V

BTETPE504 Program Elective 2 (Group A)	**BTETOE505 Open Elective 1 (Group B)**
(A) Analog Circuits	(A) Control System Engineering
(B) Embedded System Design	(B) Artificial Intelligence and Machine learning
(C) Digital System Design	(C) Optimization Techniques
(D) Automotive Electronics	(D) Project Management and Operation Research
(E) Mixed Signal Design	(E) Augmented, Virtual and Mixed Reality
(F) Power Electronics	(F) Open Source Technologies

Semester VI

BTETPE603 Program Elective 3 (Group A)	**BTETOE604 Open Elective 2 (Group B)**
(A) Microprocessors and Microcontrollers	(A) IoT and Industry 4.0
(B) CMOS Design	(B) Deep Learning
(C) Nano Electronics	(C) Computer Network
(D) Advanced Digital Signal Processing	(D) Industrial Drives and Control
(E) Information Theory and Coding	(E) Robotics Design
(F) VLSI Signal Processing	(F) Patents and IPR
(G) VLSI Design & Technology	(G) Acoustic Engineering

B. Tech (Electronics & Telecommunication Engineering)

Proposed Curriculum for Semester VII [Final Year]

Sr. No.	Course Code	Type of Course	Course Title	Hours Per Week			Evaluation Scheme			Total Marks	Credits
				L	T	P	MSE	CA	ESE		
1	BTETC701	Professional Core Course 1	Digital Communication	3	0	0	20	20	60	100	3
2	BTETPE702	Program Elective 3	Group A	3	0	0	20	20	60	100	3
3	BTETPE703	Program Elective 4	Group B	3	0	0	20	20	60	100	3
4	BTETPE704	Program Elective 5	Group C	3	0	0	20	20	60	100	3
5	BTHM705	Humanities & Social Science including Management Courses	Financial Management	2	0	0	20	20	60	100	2
6	BTETL706	Program Elective 3 Lab		0	0	2	--	30	20	50	1
7	BTETL707	Program Elective 4 Lab		0	0	2	--	30	20	50	1
8	BTETL708	Program Elective 5 Lab		0	0	2	--	30	20	50	1
9	BTETP709	Project Part I		0	0	8	--	50	50	100	4
10	BTETF611	Field Training/ Internship/Industrial Training Evaluation		--	--	--	--	--	50	50	1
			Total	**14**	**0**	**14**	**100**	**240**	**460**	**800**	**22**

Program Elective- 5 (Group A)	**Program Elective- 5 (Group B)**	**Program Elective- 5 (Group C)**
(A) Microwave Theory & Techniques	(A) Embedded System Design	(A) Consumer Electronics
(B) RF Circuit Design	(B) Artificial Intelligence Deep learning	(B) Analog Integrated Circuit Design
(C) Satellite Communication	(C) VLSI Design & Technology	(C) Soft Computing
(D) Fiber Optic Communication	(D) Data Compression & Encryption	(D) Advance Industrial Automation-1
(E) Wireless Sensor Networks	(E) Big Data Analytics	(E) Mechatronics
(F) Mobile Computing	(F) Cyber Security	(F) Electronics in Smart City

B. Tech (Electronics & Telecommunication Engineering)

Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	MSE	CA	ESE	Total	
• Introduction to Internet of Things • Computer Vision and Image Processing • Biomedical Signal Processing • Industrial Automation and Control • Cryptography and Network Security • Digital IC Design # Student to opt any two subjects from above list			3	-	--	20*	20*	60*	100	3
			3	-	--	20*	20*	60*	100	3
BTMEP803	Project Part-II or Internship*		--	--	30	--	--	100	150	15
		Total	--	--				220	350	21

** Six months of Internship in the industry*

**Students doing project at institute will have to appear for CA/MSE/ESE*
** Student doing project at Industry will give NPTEL examination / Examination conducted byuniversity i.e. CA/MSE/ESE*
 # These subjects are to be studied on self –study mode using SWAYAM/NPTEL/Any other source#

Teacher who work as a facilitator for the course should be allotted 3 hrs/week load.

 # Project Load: 2hrs/week/project.

Mapping of Courses with MOOCs Platform SWYAM / NPTEL

No	Course Name	Duration (Weeks)	Institute Offering Course	Name of Professor
1	Introduction to internet of things	12	IIT Kharagpur	Prof. Sudip Misra
2	Computer Vision and Image Processing	12	IIT Gandhinagar	Prof. M. K. Bhuyan
3	Biomedical Signal Processing	12	IIT Kharagpur	Prof. Sudipta Mukhopadhyay
4	Industrial Automation and Control	12	IIT Kharagpur	Prof. Siddhartha Mukhopadhyay
5	Cryptography & Network Security	12	IIT Kharagpur	Prof. Sourav Mukhopadhyay
6	Digital IC Design	12	IIT Madras	Prof. Janakiraman

Dr. Babasaheb Ambedkar Technological University

Teaching and Examination Scheme for

M.Tech. (Electronics & Telecommunication Engineering) w.e.f. July 2017

Sr. No.	Course Code	Name of the Course	Hours/Week			Credit	Examination scheme				
							Theory		IA	PR/OR	TOTAL
			L	P	T		TH	Test			
First Semester											
01	MTETC101	Signal Theory	03	--	1	04	60	20	20	--	**100**
02	MTETC102	Radiation and Microwave Techniques	03	--	1	04	60	20	20	--	**100**
03	MTETC103	Signal Processing Algorithms & Applications	03	--	1	04	60	20	20	--	**100**
04	MTETE114	Elective-I	03	--	--	03	60	20	20	--	**100**
05	MTETE125	Elective-II	03	--	--	03	60	20	20	--	**100**
06	MTETC106	Communication Skills	02	--	--	02	--	--	25	25	**50**
07	MTETL107	PG Lab-I*	--	03	--	02	--	--	25	25	**50**
		Total for Semester I	**17**	**03**	**03**	**22**	**300**	**100**	**150**	**50**	**600**
Second Semester											
01	MTETC201	Estimation and Detection Theory	03	--	1	04	60	20	20	--	**100**
02	MTETC202	Information Theory and Coding	03	--	1	04	60	20	20	--	**100**
03	MTETE233	Elective-III	03	--	--	03	60	20	20	--	**100**
04	MTETE244	Elective- IV	03	--	--	03	60	20	20	--	**100**
05	MTETE255	Elective-V- (Open to all)	03	--	--	03	60	20	20	--	**100**
06	MTETS206	Seminar-I	--	04	--	02	--	--	50	50	**100**
07	MTETP207	Mini-Project	--	04	--	02	--	--	50	50	**100**
		Total for Semester II	**15**	**8**	**02**	**21**	**300**	**100**	**200**	**100**	**700**
Third Semester											
1	MTETC301	Project Management & Intellectual Property Rights (Self Study)#	--	--	--	02	--	--	50	50	**100**
2	MTETP302	Project-I	--	--	--	10	--	--	50	50	**100**
		Total for Semester III	**--**	**--**	**-**	**12**	**--**	**--**	**100**	**100**	**200**
Fourth Semester											
1	MTETP401	Project-II	--	--	--	20	--	--	100	100	**200**
		Total for Semester IV	**--**	**--**	**--**	**20**	**--**	**--**	**100**	**100**	**200**
GRAND TOTAL											**1700**

* PG Lab-I –Practical shall be based on courses of first semester.

Student has to choose this course either from NPTEL/MOOC pool and submission of course completion certificate is mandatory.

Elective-I

1. Artificial Neural Networks and Applications
2. Electromagnetic Interference and Compatibility
3. Mobile Communication
4. Fault Tolerant Systems
5. Analog and Mixed Signal Processing

Elective-II

1. RF and Millimeter Wave circuit Design
2. System On-Chip
3. Optical Fiber Communication
4. Statistical Signal Processing
5. Microelectronics

Elective-III

1. Multirate Digital Signal Processing
2. Embedded System Design
3. Wireless Sensor Network Design
4. VLSI and Microsystems
5. Numerical Methods in Electromagnetics

Elective-IV

1. Advanced Biomedical Signal Processing
2. Reconfigurable Computing
3. Digital VLSI Design
4. Radar Signal Processing
5. Electromagnetics, Antenna and Propagation

Elective-V (Open)

1. Internet of Things
2. Linear Algebra
3. Neural Networks in Embedded Applications
4. Research Methodology
5. Wavelet Transforms and its Applications

Semester –III (Second Year)

Proposed Scheme w.e.f. July – 2021

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
	BTCOC302	Discrete Mathematics	3	1	-	20	20	60	100	4
	BTCOC303	Data Structures	3	1	-	20	20	60	100	4
	BTCOC304	Computer Architecture & Organization	3	1	-	20	20	60	100	4
	BTCOC305	Elective –I (a) Object - oriented Programming in C++ (b) Object Oriented Programming in Java	3	1	-	20	20	60	100	4
	BTCOL306	Data Structures Lab & Object Oriented Programming Lab	-	-	4	60	-	40	100	2
	BTCOS307	Seminar – I	-		4	60	-	40	100	2
	BTES211P	Field Training / Internship / Industrial Training Evaluation	-	-	-	-	-	-	-	Audit
		TOTAL	**15**	**5**	**8**	**220**	**100**	**380**	**700**	**24**

Semester –IV (Second Year)
Proposed Scheme w.e.f. January – 2022

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC401	Design & Analysis of Algorithms	3	1	-	20	20	60	100	4
	BTCOC402	Operating Systems	3	1	-	20	20	60	100	4
	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
	BTBS404	Probability Theory and Random Processes	3	-	-	20	20	60	100	3
	BTES405	Digital Logic Design & Microprocessors	3	1	-	20	20	60	100	4
	BTCOL406	Operating Systems & Python Programming Lab	1*	-	4	60	-	40	100	3
	BTCOS407	Seminar – II			4	60	-	40	100	2
	BTCOF408	Field Training / Internship / Industrial Training Evaluation						-	-	Audit to be evaluated in V Sem.
TOTAL			**16**	**3**	**8**	**220**	**100**	**380**	**700**	**23**

*Note: Lecture should be conducted only for Python Programming

Semester –V (Third Year)

Proposed Scheme w.e.f. July – 2022

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC501	Database Systems	3	1	-	20	20	20	100	4
	BTCOC502	Theory of Computation	3	1	-	20	20	20	100	4
	BTCOC503	Software Engineering	3	1	-	20	20	20	100	4
	BTCOE504	Elective – II (A) Human computer Interaction (B) Numerical Methods	3	-	-	20	20	20	100	3
	BTHM505	Elective – III (A) Economics and Management (B) Business Communication	3	-	-	20	20	20	100	3
	BTCOL506	Database Systems & Software Engineering Lab	-	-	4	60	-	40	100	2
	BTCOM507	Mini-project – I	-	-	4	60	-	40	100	2
	BTCOF408	Field Training / Internship / Industrial Training Evaluation	-	-	-	-	-	-	-	Audit
TOTAL			**15**	**3**	**8**	**220**	**100**	**380**	**700**	**22**

Semester –VI (Third Year)

Proposed Scheme w.e.f. January – 2023

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC601	Compiler Design	3	1	-	20	20	60	100	4
	BTCOC602	Computer Networks	3	1	-	20	20	60	100	4
	BTCOC603	Machine Learning	3	1	-	20	20	60	100	4
	BTCOE604	Elective – IV (A) Geographic Information System (B) Internet of Things (C) Embedded Systems	3	-	-	20	20	60	100	3
	BTHM605	Elective – V (A) Development Engineering (B) Employability and Skill Development (C) Consumer Behaviour	3	-	-	20	20	60	100	3
	BTCOL606	Competitive Programming & Machine Learning Lab	1*	-	4	60	-	40	100	3
	BTCOM607	Mini-project – II	-	-	4	60	-	40	100	2
	BTCOF608	Field Training / Internship / Industrial Training	-	-	-	-	-	-	-	Audit to be Evaluated in VII Sem.
TOTAL			**16**	**3**	**8**	**220**	**100**	**380**	**700**	**23**

*Note: Lecture should be conducted only for Competitive Programming

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	**Elective - VIII** (A) Big Data Analytics (B) Distributed System (C) Fundamental of Digital Image Processing	3	-	-	20	20	60	3
3	BTCOE703	**Elective - IX** (A) Cloud Computing (B) Business Intelligence (C) Natural Language Processing	3	-	-	20	20	60	3
4	BTCOE704	**Open Elective - X** (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
		TOTAL	**14**	**-**	**10**	**380**	**80**	**490**	**20**

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) $ / Internship and project in the Industry	-	-	24	60	-	40	12
		TOTAL	**6**	**-**	**24**	**100**	**40**	**160**	**18**

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