1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Sr. No.	Name of the Course which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum	Course code	Branch	Description of courses
1	Basic Human Rights	BTHM304	Electrical Engineering	Realize the philosophical and cultural basis perspectives of human values,human duties & human rights. Understand the history of human rights in the world. Understand the concept of social structure,freedom & Democrocy.
2	Interpersonal Communication Skills and Self-Development for Engineers	BTHM3402	Information Technology	Acquire interpersonal communication skills. Develop the qualities like self-discipline, self-criticism and self-management. Have the qualities of time management and discipline.
3	Constitution of India	BTITHM406	Information Technology	To understand Fundamental Rights and Directive Principles, Composition and Structure of Parliament, Socialism of Constitution in India
4	Basic Human Rights	BTHM403	Computer Engineering	Understand the importance of groups and communities in the society. Realize the philosophical and cultural basis and historical perspectives of human rights. Understand the history of human rights. Learn to respect others caste, religion, Make them aware of their responsibilities towards the nation.

5	Economics & Management	BTHM505A	Computer Engineering	Engineering economics, previously known as engineering economy, is a subset of economics concerned with the use and "application of economic principles" in the analysis of engineering decisions. As a discipline, it is focused on the branch of economics known as microeconomics in that it studies the behaviour of individuals and firms in making decisions regarding the allocation of limited resources. Thus, it focuses on the decision making process, its context and environment. It is pragmatic by nature, integrating economic theory with engineering practice. But, it is also a simplified application of microeconomic theory in that it avoids a number of microeconomic concepts such as price determination, competition and demand/supply.
6	Business Communication	BTHM505B	Computer Engineering	Introduction, Definitions & Concepts, Communicative Competence. Intercultural Communication, Nonverbal Communication, Thought and Speech, Translation as Problematic Discourse. Barriers to Communication, Listening, Communication Rules, Communication Style.
7	Development Engineering	BTHM605A	Computer Engineering	Subject Development Engineering is based on humanitarian engineering, the application of engineering to improving the well-being of marginalized people and disadvantaged communities, usually in the developing world. Development Engineering under Humanitarian engineering typically focuses on programs that are affordable, sustainable, and based on local resources. Projects are typically community-driven and cross-disciplinary, and they focus on finding simple solutions to basic needs (such as close access to clean water; adequate heat, shelter, and sanitation; and reliable pathways to markets).

8	Employability and Skills Development	BTHM605B	Computer Engineering	Soft skills Vs hard skills, Skills to master, Interdisciplinary relevance, Global and national perspectives on soft skills, Resume, Curriculum vitae, How to develop an impressive resume, Different formats of resume Chronological, Functional, Hybrid, Job application or cover letter, Professional presentation planning, preparing and delivering presentation, Technical writing.
9	Energy Conservation and Management	BTMOE605C	Mechanical Engineering	General energy problem, Energy use patterns and scope of conservation. Energy Management Principles: Need, Organizing, Initiating and managing an energy management program
10	Soft Skills Development	BTHM306	Civil Engineering	To build the skills like team building so that they can work efficiently in groups. To provide knowledge of conflict management while working in large organizations. To imbibe qualities like manners & etiquettes co-ordination, mutual understanding while working in a group.
11	Indian Constitution	BTHM607	Civil Engineering	To understand Fundamental Rights and Directive Principles, Composition and Structure of Parliament, Socialism of Constitution in India
12	Communication Skills	BTHM104	First Year B.Tech	Introduction to Communication, Forms and functions of Communication, Barriers to Communication and overcoming them, Verbal and Non-verbal Communication Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Fast Reading, Strategies for Reading, Comprehension. Listening : Importance of Listening, Types of Listening, Barriers to Listening.
13	Communication Skills Lab.	BTHM109L	First Year B.Tech	Introduction to Phonemic symbols, Articulation of sounds in English with proper manner, Practice and exercises on articulation of sounds
14	Energy and Environment Engineering	BTES105	First Year B.Tech	Energy and environmental engineering is a branch of energy engineering which seeks to efficiently use energy and to maintain the environment. Energy engineers require knowledge across many disciplines.

Dr. Babasaheb Ambedkar Technological University, Lonere.

B.Tech (Electrical Engineering / Electrical Engineering (Electronics and Power)/ Electrical & Electronics Engg / Electrical & Power Engineering)

Curriculum of 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
PCC1	BTEEC302	**Electrical Machines-I**	3	1	-	20	20	60	100	4
PCC2	BTEEC303	Electrical and Electronics Measurement	3	1	-	20	20	60	100	4
HSSMC	BTHM304	Basic Human Rights	2	-	-					Audit
ESC	BTES305	**Engineering Material Science**	3	-	-	20	20	60	100	3
LC	BTEEL306	Electrical Machines-I Lab			2	60		40	100	1
LC	BTEEL307	Electrical and Electronics Measurement Lab			2	60		40	100	1
Project	BTEEP308	Mini Project-I			4	60		40	100	2
Internship	BTES211P	Internship-I Evaluation						50	50	1
			14	3	8	260	80	410	750	20

Semester IV

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC3	BTEEC401	**Network Theory**	3	1	-	20	20	60	100	4
PCC4	BTEEC402	**Power System**	3	1	-	20	20	60	100	4
PCC5	BTEEC403	Electrical Machine-II	3	1	-	20	20	60	100	4
BSC	BTBS404	Analog and Digital Electronics	3	-	-	20	20	60	100	3
PEC1	BTEEPE405	Group A	3	-	--	20	20	60	100	3
LC	BTEEL406	Network Theory Lab	-	-	2	30		20	50	1
LC	BTEEL407	Power System Lab	-	-	2	30		20	50	1
LC	BTEEL408	Electrical Machine-II Lab	-	-	2	30		20	50	1
LC	BTEEL409	Analog and Digital Electronics lab	-	-	2	30		20	50	1
Internship	BTEEP410	Internship-II (minimum of 4 weeks which can be completed partially in third or fourth semester or in at one time)	-	-	-	-	-	-	-	-
						220	100	380	700	22

Group-A

(A) Electromagnetic Field Theory

(B) **Signals and System**

(C) Advance Renewable Energy Sources

(D) **Electronic Devices and Circuits**
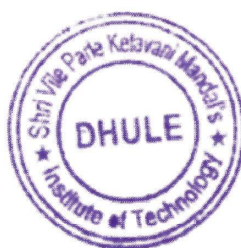
Dr. Babasaheb Ambedkar Technological University, Lonere.

B.Tech (Electrical Engineering / Electrical Engineering (Electronics and Power)/ Electrical & Electronics Engg / Electrical & Power Engineering)
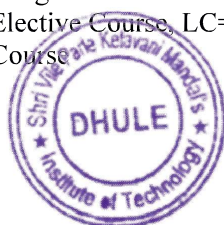
Curriculum for Semester V

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC4	BTEEC501	Power System Analysis	3	1	-	20	20	60	100	4
PCC5	BTEEC502	Microprocessor and Microcontroller	3	-	-	20	20	60	100	3
PCC6	BTEEC503	Power Electronics	3	1	-	20	20	60	100	4
PCC2	BTEEPLE504	Group B	3	-	-	20	20	60	100	3
OEC1	BTEEOE505	Group C	3	-	-	20	20	60	100	3
HSSMC	BTHM506	Foreign Language [#]	-	-	-	-	-	-	-	Audit
LC	BTEEL507	Power System Analysis Lab	-	-	2	60	-	40	100	1
LC	BTEEL508	Microprocessor and Microcontroller Lab	-	-	2	60	-	40	100	1
LC	BTEEL509	Power Electronics Lab	-	-	2	60	-	40	100	1
Project	BTEEPE510	Mini project-II	-	-	2	60	-	40	100	1
Internship	BTEEP410	Internship-II Evaluation	-	-	-	-	-	50	50	1
		Total	**15**	**2**	**10**	**340**	**100**	**510**	**950**	**22**

Semester VI

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
PCC7	BTEEC601	Switchgear and Protection	3	-	-	20	20	60	100	3
PCC8	BTEEC602	Electrical Machine Design	3	1	-	20	20	60	100	4
PCC9	BTEEC603	Control System Engineering	3	1	-	20	20	60	100	4
PEC3	BTEEPE604	Group D	3	-	-	20	20	60	100	3
OEC2	BTEEOE605	Group E	3	-	-	20	20	60	100	3
LC	BTEEL606	Switchgear and Protection Lab	-	-	2	60		40	100	1
LC	BTEEL607	Electrical Machine Design Lab	-	-	2	60		40	100	1
LC	BTEEL608	Control System Engineering Lab	-	-	2	60		40	100	1
Seminar	BTEEM609	Seminar	-	-	4	60		40	100	2
Internship	BTEEP610	Internship-III (minimum of 4 weeks which can be completed partially in third or fourth semester or in at one time)	-	-	-	-	-	-	-	Credits to be evaluated in VII sem.
		Total	**15**	**2**	**10**	**340**	**100**	**460**	**900**	**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 Course

 # Online NPTEL Course

B. Tech. Programme in Information Technology
Second Year B. Tech. (With effect from 2021-22)

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				
Semester III										
			L	T	P	CA	MSE	ESE	Total	Credit
BSC	BTBS301	Engineering Mathematics - III	3	1	-	20	20	60	100	4
HSSMC	BTHM3402	Interpersonal Communication Skills and Self-Development for Engineers	2	-	-	20	20	60	100	2
PCC	BTITC303*	Computer Architecture and Organization	3	1	-	20	20	60	100	4
PCC	BTITC304	Object Oriented Paradigm with C++	3	1	-	20	20	60	100	4
PCC	BTITC305	Data Structures and Applications	3	1	-	20	20	60	100	4
LC	BTITL306	Object Oriented Paradigm with C ++ Lab	-	-	2	60	-	40	100	1
	BTITL307	Data Structures and Applications Lab	-	-	2	60	-	40	100	1
Seminar	BTITS308	Seminar – I	-	-	-	60	-	40	100	2
Internship	Internship - I	Internship - I Evaluation	-	-	-	-	-	-	-	Audit
			14	4	4	280	100	420	800	22
Semester IV										
HSSMC	BTITHM401	Organizational Behavior	3	-	-	20	20	60	100	3
PCC	BTITC402	Probability and Statistics	3	1	-	20	20	60	100	4
PCC	BTITC403*	Discrete Mathematics	3	1	-	20	20	60	100	4
PCC	BTITC404	Design and Analysis of Algorithms	3	1	-	20	20	60	100	4
PEC	BTITPE405A BTITPE405B BTITPE405C	**Elective-I** Digital Logic and Microprocessor Web Technology Physics of Engineering Materials	2	1	-	20	20	60	100	3
HSSMC	BTITHM406	Constitution of India	2	-	-	-	-	50	50	Audit
LC	BTITL407	Design and Analysis of Algorithms Lab	-	-	2	60	-	40	100	1
	BTITL408	Elective- I Lab	-	-	2	60	-	40	100	1
Seminar	BTITS409	Seminar - II	-	-	-	60	-	40	100	2
Internship	Internship - II	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or at one time).	-	-	-	-	-	-	-	To be audited in V Sem.
			16	4	4	280	100	470	850	22

These courses are to be studied on self –study mode using SWAYAM/NPTEL/Any other source.
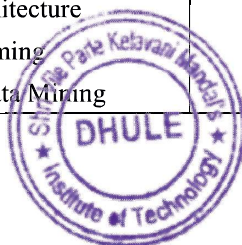BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course
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Third Year B. Tech. Information Technology Syllabus (With effect from 2022-23)

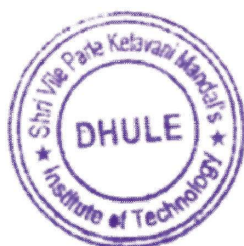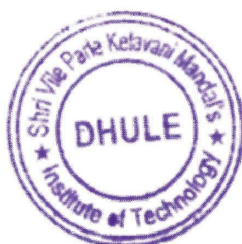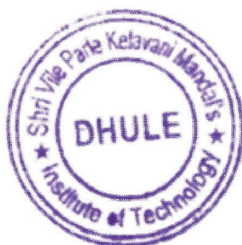| Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				
			L	T	P	CA	MSE	ESE	Total	Credits
Semester V										
PCC	BTITC501*	Software Engineering	3	1	-	20	20	60	100	4
PCC	BTITC502	Computer Networks and Internetworking Protocols	3	1	-	20	20	60	100	4
PEC	BTITPE503A BTITPE503B BTITPE503C BTITPE503D BTITPE503E BTITPE503F	**Elective- II** Embedded Systems IT Service Management Information Storage Management Network Management Data Visualization Virtual Reality	3	-	-	20	20	60	100	3
OEC	BTITOE504A BTITOE504B BTITOE504C BTITOE504D BTITOE504E BTITOE504F	**Elective- III** Theory of Computation Graph Theory Programming in Java Human Computer Interaction Game Theory 3D Printing and Design	3	-	-	20	20	60	100	3
LC	BTITL505	Computer Networks and Internetworking Protocols Lab	-	-	2	60	-	40	100	1
LC	BTITL506	Software Engineering and Elective- II Lab	-	-	4	60	-	40	100	2
Project	BTITP507	Mini Project - I	-	-	4	60	-	40	100	4
Internship	BTITF508	Internship – II Evaluation	-	-	-	-	-	-	-	Audit
			12	**2**	**10**	**260**	**80**	**360**	**700**	**21**
Semester VI										
PCC	BTITC601*	Operating Systems	3	1	-	20	20	60	100	4
PCC	BTITC602	Database Management Systems	3	1	-	20	20	60	100	4
PEC	BTITPE603A BTITPE603B BTITPE603C BTITPE603D BTITPE603E	**Elective- IV** Software Testing Data Storage Technologies & Networks Service Oriented Architecture Network Programming Data Warehousing & Data Mining	3	-	-	20	20	60	100	3

Category	Code	Course	L	T	P				Total	Credits
OEC	BTITOE604A BTITOE604B BTITOE604C BTITOE604D BTITOE604E	**Elective- V** Compiler Design Enterprise Resource Planning Decision Support Systems Software Project Management Introduction to Data Science	3	-	-	20	20	60	100	3
LC	BTITL605	Database Management Systems Lab	-	-	2	60	-	40	100	1
LC	BTITL606	Operating Systems and Elective-IV Lab	-	-	4	60	-	40	100	2
Project	BTITP607	Mini Project - II	-	-	4	60	-	40	100	4
Internship	Internship- III	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in fifth semester and sixth semester or at one time).	-	-	-	-	-	-	-	To be audited in VII Sem.
			12	2	10	260	80	360	700	21

* These courses are to be studied on self −study mode using SWAYAM/NPTEL/Any other source.

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Semester –III (Second Year)
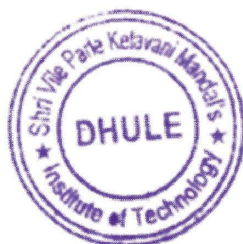## Proposed Scheme w.e.f. July – 2021

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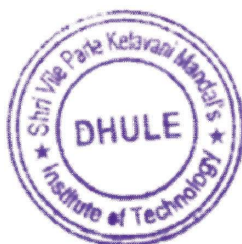
Course Structure for Semester III
B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich)
(2022-23)

Semester III										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				No. of Credits
			L	T	P	CA	MSE	ESE	Total	
BSC7	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
PCC1	BTMC302	Fluid Mechanics	3	1	-	20	20	60	100	4
PCC2	BTMC303	Thermodynamics	3	1	-	20	20	60	100	4
ESC10	BTMES304	Materials Science and Metallurgy	3	1	-	20	20	60	100	4
PCC3	BTMCL305	Machine Drawing and CAD Lab	-	-	4	60	-	40	100	2
PCC4	BTMCL306	Mechanical Engineering Lab – I	-	-	4	60	-	40	100	2
PROJ-2	BTES209P	IT – 1 Evaluation	-	-	-	-	-	100	100	1
		Total	12	4	8	200	80	420	700	21

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

Semester IV										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				No. of Credits
			L	T	P	CA	MSE	ESE	Total	
PCC 5	BTMC401	Manufacturing Processes – I	3	1	-	20	20	60	100	4
PCC 6	BTMC402	Theory of Machines-I	3	1	-	20	20	60	100	4
HSSMC3	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
ESC11	BTMES404	Strength of Materials	3	1	-	20	20	60	100	4
PEC 1	BTMPE405A-C	Elective-I	3	-	-	20	20	60	100	3
PCC7	BTMCL406	Mechanical Engineering Lab-II	-	-	4	60	-	40	100	2
PROJ-3	BTMI407	Field Training /Industrial Training (minimum of 4 weeks which can be completed partially in the third and fourth semester or in one semester itself)	-	-	-	-	-	-	-	Credits to be evaluated in Sem V
		Total	15	4	4	160	100	340	600	20
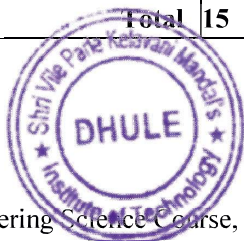
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PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course

HSSMC = Humanities and Social Science including Management Courses

Elective I

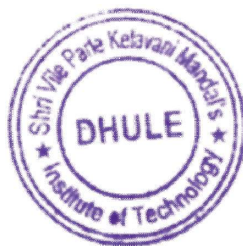| Sr. No	Course code	Course Name
1	BTMPE405A	Numerical Methods in Engineering
2	BTMPE405B	Sheet Metal Engineering
3	BTMPE405C	Fluid Machinery

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)

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:

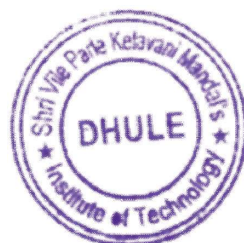| Sr.No	Course code	Course Name
1	BTMPE603A	IC Engines
2	BTMPE603B	Mechanical Vibrations
3	BTMPE603C	Machine Tool Design
4	BTMPE603D	Engineering Metrology and Quality Control
5	BTAPE603C	Advance Automobile Design
6	BTAPE603E	E – Vehicles

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

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

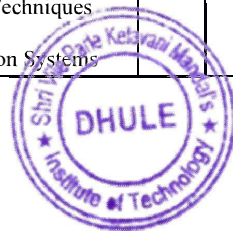| Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
		Semester- III								
BSC 5	BTBS301	Mathematics – III	3	1	-	20	20	60	100	4
ESC 8	BTCVES302	Mechanics of Solids	3	1	-	20	20	60	100	4
PCC 1	BTCVC303	Building Construction & Drawing	2	1	-	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

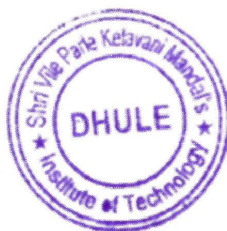| Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
		Semester- IV								
PCC 4	BTCVC401	Building Planning and Drawing	2	-	-	20	20	60	100	2
PCC 5	BTCVC402	Environmental Engineering	2	-	-	20	20	60	100	2
PCC 6	BTCVC403	Structural Mechanics - 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
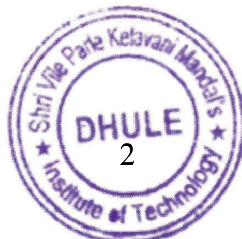
Teaching & Evaluation Scheme for Third Year B Tech Civil Engg. 2022-2023

Semester- V

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 10	BTCVC 501	Design of Steel Structures	2	1	-	20	20	60	100	3
PCC 11	BTCVC 502	Geotechnical Engineering	2	1	-	20	20	60	100	3
PCC 12	BTCVC 503	Structural Mechanics –II	2	1	-	20	20	60	100	3
PCC 13	BTCVC 504	Concrete Technology	2	-	-	20	20	60	100	2
ESC 9	BTCVES505	Artificial Intelligence (NPTEL/SWAYAM)	3	-	-	20	20	60	100	3
PEC 1	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	Geotechnical Engineering Lab.	-	-	2	20	-	30	50	1
LC8	BTCVL509	Concrete Technology Lab.	-	-	2	20	-	30	50	1
Internship	BTCVP410	Internship – 2 Evaluation	-	-	-	-	-	-	-	Audit
		Total	**16**	**3**	**4**	**210**	**120**	**420**	**750**	**19**

Semester- VI

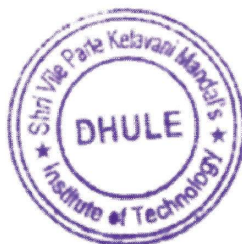| Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 14	BTCVC601	Design of RC Structures	2	1	-	20	20	60	100	3
PCC 15	BTCVC602	Foundation Engineering	2	1	-	20	20	60	100	3
HSSMC3	BTHM603	Project Management	3	-	-	20	20	60	100	3
PCC 16	BTCVC604	Transportation Engineering	3	-	-	20	20	60	100	3
PEC 2	BTCVPE605	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	3	-	-	20	20	60	100	3

			L	T	P					
		H. Plastic Analysis of Structures I. Numerical Methods in Civil Engg. J. Engineering Management								
OEC 1	BTCVOE606	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	BTHM607	Indian Constitution	2	-	-	50	-	-	50	Audit
LC 9	BTCVL608	SDD of Steel Structures Lab.	-	-	2	20	-	30	50	1
LC 10	BTCVL609	Transportation Engineering Lab	-	-	2	20	-	30	50	1
Project	BTCVM610	Mini Project	-	-	2	20	-	30	50	1
Internship	BTCVP611	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			**18**	**2**	**6**	**230**	**120**	**450**	**800**	**21**

Teaching and Evaluation Scheme for First Year B. Tech. (All Branches)

Group A

Course Code	Course Title	L	T	P	CA	MSE	ESE	Total	Credit
		Teaching Scheme			**Evaluation Scheme**				
Semester I									
Mandatory	**Induction Program**	**3-weeks duration in the beginning of semester.**							
BTBS101	Engineering Mathematics- I	3	1	-	20	20	60	100	4
BTBS102	Engineering Physics	3	1	-	20	20	60	100	4
BTES103	Engineering Graphics	2	-	-	20	20	60	100	2
BTHM104	Communication Skills	2	-	-	20	20	60	100	2
BTES105	Energy and Environment Engineering	2	-	-	20	20	60	100	2
BTES106	Basic Civil and Mechanical Engineering	2	-	-	50	-	-	50	Audit
BTBS107L	Engineering Physics Lab	-	-	2	60	-	40	100	1
BTES108L	Engineering Graphics Lab	-	-	4	60	-	40	100	2
BTHM109L	Communication Skills Lab.	-	-	2	60	-	40	100	1
		14	**2**	**8**	**330**	**100**	**420**	**850**	**18**
Semester II									
BTBS201	Engineering Mathematics-II	3	1	-	20	20	60	100	4
BTBS202	Engineering Chemistry	3	1	-	20	20	60	100	4
BTES203	Engineering Mechanics	2	1	-	20	20	60	100	3
BTES204	Computer Programming in C	3	-	-	20	20	60	100	3
BTES205	Workshop Practices	-	-	4	60	-	40	100	2
BTES206	Basic Electrical and Electronics Engineering	2	-	-	50	-	-	50	Audit
BTBS207L	Engineering Chemistry Lab	-	-	2	60	-	40	100	1
BTES208L	Engineering Mechanics Lab	-	-	2	60	-	40	100	1
BTES210S	Seminar	-	-	2	60	-	40	100	1
BTES211P	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in first semester and second Semester or in at one time).	-	-	-	-	-	-	-	Credits To be evaluated in III Sem.
		13	**3**	**10**	**430**	**80**	**440**	**950**	**19**
		27							

Teaching and Evaluation Scheme for First Year B. Tech. (All Branches)

Group B

Semester I								
Course Code	Course Title	Teaching Scheme			Evaluation Scheme				
		L	T	P	CA	MSE	ESE	Total	Credit
Mandatory	**Induction Program**	**3-weeks duration in the beginning of semester.**							
BTBS101	Engineering Mathematics- I	3	1	-	20	20	60	100	4
BTBS102	Engineering Chemistry	3	1	-	20	20	60	100	4
BTES103	Engineering Mechanics	2	1	-	20	20	60	100	3
BTES104	Computer Programming in C	3	-	-	20	20	60	100	2
BTES105L	Workshop Practices	-	-	4	60	-	40	100	2
BTES106	Basic Electrical and Electronics Engineering	2	-	-	50	-	-	50	Audit
BTBS107L	Engineering Chemistry Lab	-	-	2	60	-	40	100	1
BTES108L	Engineering Mechanics Lab	-	-	2	60	-	40	100	1
		13	**03**	**10**	**370**	**80**	**400**	**850**	**18**
			25						
Semester II									
BTBS201	Engineering Mathematics-II	3	1	-	20	20	60	100	4
BTBS202	Engineering Physics	3	1	-	20	20	60	100	4
BTES203	Engineering Graphics	2	-	-	20	20	60	100	2
BTHM204	Communication Skills	2	-	-	20	20	60	100	2
BTES205	Energy and Environment Engineering	2	-	-	20	20	60	100	2
BTES206	Basic Civil and Mechanical Engineering	2	-	-	50	-	-	50	Audit
BTBS207L	Engineering Physics Lab	-	-	2	60	-	40	100	1
BTES208L	Engineering Graphics Lab	-	-	3	60	-	40	100	2
BTHM209L	Communication Skills Lab.	-	-	2	60	-	40	100	1
BTES210S	Seminar	-	-	2	60	-	40	100	1
BTES211P	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in first semester and second Semester or in at one time)	-	-	-	-	-	-	-	Credits To be evaluated in III Sem.
		14	**02**	**09**	**390**	**100**	**460**	**950**	**19**
			26						