First Year Engir	eering Departm	ent													
Course Outcom	ie (CO)	Theory Subject		CO P	О Мар	ping									
Class	F. Y. B. Tech Se	em I		ı											
Year of Study	2020-21, 2021-	22, 2022-23,2023-24	Course	BTBS	5101 Er	ngineer	ing Ma	thema	tics						
Course Name	BTBS101 Engin	eering Mathematics	Name and	РО	РО	РО	PO4	РО	PO6	РО	PO8	PO9	PO1	РО	PO1
and Course			Course	1	2	3		5		7			0	11	2
Code			Code												
BTBS101_01	Apply the matr	ix technique (Linear algebra) to	BTBS101_01	3	2										
	find solutions o	of system of linear equations													
	arising in many	engineering problem													
BTBS101_02	Explain the cor	cept of partial derivatives and	BTBS101_02	3	2										
_	calculate the Ja	cobian function and its													
	properties and	their applications to													
	engineering pro	oblems.													
BTBS101_03	Evaluate multip	ole integrals and their	BTBS101_03	3	2										
_	applications to	area and volume by identifying													
	and tracing cur	ves in Cartesian, Polar and													
	parametric coc	ordinate systems.													
	I			1				1	_L						I
Class	F. Y. B. Tech Se	em I and II	Course	BTBS	102 Er	ngineer	ing Phy	sics .							
Year of Study	2020-21, 2021-	-22, 2022-23,2023-24	Name and	РО	РО	РО	PO4	РО	PO6	РО	PO8	PO9	PO1	РО	PO1
Course Name	BTBS102/BT	BS202 Engineering Physics	Course	1	2	3		5		7			0	11	2
and Course			Code												
Code															
BTBS102_01	_	lain basic laws, Principles and	BTBS102_01	2_01 2 2							2				
	ideas of physic	s related to Engineering													

BTBS102_02	Apply basic principles of oscillation, Ultrasonic, Optics laser, fibre optics, nuclear	BTBS102_02	2		1	1					1			2
BTBS102_03	Understand crystal structure, magnetic and super conducting properties of materials.	BTBS102_03	2		1	1					1			2
				•	•			•	•		•	•	•	,
Class	F. Y. B. Tech Sem I and II	Course	BTES	5103 Er	nginee	ring Gra	phics							
Year of Study	2020-21, 2021-22, 2022-23,2023-24	Name and Course Code	РО	РО	РО	PO4	РО	РО	РО	PO8	РО	РО	РО	PO1
Course Name and Course	BTES103/203 Engineering Graphics	, course coue	1	2	3		5	6	7		9	10	11	2
BTES103 _01	Understand basic concepts of engineering drawing and apply the concept of	BTES103 _01	3	2	1									
BTES103 _02	Understand and apply concept of projection to solve problems on projection of point and	BTES103 _02	3											
BTES103 _03	Understand and apply concept of projection to solve problems on projection of plane, Solid	BTES103 _03	3											
	1						1						1	
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTHM104 Co	mmu	nicatio	n Skill:	S								
Course Name	BTHM104/BTBS204 Communication Skills	Course	РО	РО	РО	PO4	РО	PO6	РО	PO8	PO9	РО	РО	PO1
and Course	,	Name and	1	2	3		5		7			10	11	2
BTHM104_01	Demonstrate LSRW skills and develop	BTHM104_0									2	3		2
	communicative competence in professional	1												
BTHM104_02	Apply phonetics in spoken English.	BTHM104_0									2	3		2
BTHM104_03	Make use of grammar correctly with accepted tone and style in technical and business	BTHM104_0 3									2	3		2

Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24		BTES	105 En	ergy a	nd Envi	ronme	nt Engi	neerin	g				
Course Name	BTES105/205 BTBS205 Energy and	Course	РО	PO2	РО	PO4	РО	PO6	РО	PO8	PO9	PO1	РО	PO1
and Course	Environment Engineering	Name and	1		3		5		7			0	11	2
BTES105_01	Identify and aware about Conventional and Renewable energy sources	BTES105_0 1			1				3					
BTES105_02	Know the principle of Energy conservation to implement the energy conservation techniques.	BTES105_0 2			1	3			2					
BTES105_03	Identify and control various sources of air, water and noise pollution and their effects.	BTES105_0 3			1			2	3					
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTES106 Bas	ic Civil	and M	echani	ical Eng	ineerir	ng						
Course Name	BTES106/206 Basic Civil and Mechanical	Course	РО	PO2	РО	PO4	РО	PO6	РО	PO8	PO9	PO1	РО	PO1
and Course	Engineering	Name and	1		3		5		7			0	11	2
BTES106_01	To understand principals of surveying in actual practice to prepare plan or map	BTES106_01	3					1						
BTES106_02	To understand concepts of building planning, building component and uses of building material	BTES106_02	3						1					
BTES106_03	Define and explain basic terms of thermodynamics, laws of thermodynamics and working of IC Engine & different power plants.	BTES106_03	3	0	0	0								
BTES106_04	Define and explain basic terms related to machine, mechanism, and engg. Materials and working of machine tools.	BTES106_04	3	3	3	3			1					

Class	F. Y. B. Tech Sem I and II		BTBS	201 En	gineer	ing Mat	hema	tics-II						
Year of Study	2020-21, 2021-22, 2022-23,2023-24	Course	РО	PO2	РО	PO4	РО	PO6	РО	PO8	PO9	PO1	РО	PO1
Course Name and Course	BTBS201 Engineering Mathematics-II	Name and Course Code	1		3		5		7			0	11	2
BTBS201_01	Discuss the need and use of complex variables to find roots ,to separate complex quantities and to establish relation between circular and hyperbolic functions	BTBS201_01	3	2										
BTBS201_02	Solve first and higher order differential equations and apply them as a mathematical modelling in electric and mechanical systems.	BTBS201_02	3	2										
BTBS201_03	Illustrate Fourier series representation of periodic functions over different intervals and understand the concept of vector differentiation and apply the principles of vector integration to transform line integral to surface integral, surface to volume integral &vice versa using Green's, Stokes and Gauss divergence theorems.	BTBS201_03	3	2										
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTBS202 Eng	gineerii	ng Cher	nistry									
Course Name and Course Code	BTBS 102/202 Engineering Chemistry	Course Name and Course Code	PO 1	PO2	PO 3	PO4	PO 5	PO6	PO 7	PO8	PO9	PO1 0	PO 11	PO1 2

BTBS202_01	To acquire and apply basic knowledge of Chemistry in technical fields.	BTBS202_01	3	2										
BTBS202_02	Bring adaptability to new developments in Engineering Chemistry and to acquire the skills	BTBS202_02	2	2	2									
BTBS202_03	To integrate pure Chemistry principles and fundamentals with Engineering Applications.	BTBS202_03	1	1										
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTES206 Bas	ic Elect	trical ar	nd Elec	tronics	Engine	eering						
Course Name	BTES106 /206 Basic Electrical and Electronics	Course	РО	PO2	РО	PO4	РО	PO6	РО	PO8	PO9	PO1	РО	PO1
and Course	Engineering	Name and	1		3		5		7			0	11	2
Code		Course												
		Code												
BTES206_01	Define basic concepts of electrical engineering.	BTES206_01	3	1										
BTES206_02	Explain devices used for energy storage and protection of electrical system	BTES206_02	1	2										
BTES206_03	Relate electrical and electronics domains and Define the operation of diodes and transistors.	BTES206_03		3										
BTES206_04	Explain digital electronics. Illustrate simple combinational and sequential logic circuits.	BTES206_04	2	2										
	I	l	ı			<u> </u>		<u>l</u>	l				l	1
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTES203 Eng	ineerir	ng Mec	hanics									

Course Name and Course Code	BTES103/203 Engineering Mechanics	Course Name and Course Code	PO 1	PO 2	PO 3	PO4	PO 5	PO6	PO 7	PO8	PO9	PO1 0	PO 11	PO1 2
BTES203_01	Apply the fundamental Laws of Engineering Mechanics	BTES203_0	1 3	2										
BTES203_02	Apply Conditions of static equilibrium to analyse given force system	BTES203_0	2 2	2										
BTES203_03	Compute the motion characteristics of a body/particle for a Rectilinear and Curvilinear Motion also Know and discuss relation between force and motion characteristics.	BTES203_0	3 3	1										
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	CP1204, B	TES104/	/204 "C	Comput	er Prog	rammi	ing in C	"					
Course Name and Course Code	CP1204, BTES104/204 "Computer Programming in C"	Course Name and Course	PO 1	PO 2	PO 3	PO4	PO 5	PO6	PO 7	PO8	PO9	PO1 0	PO 11	PO1 2
BTES204_01	Understand C programming environment.	BTES204_0	1 3	2							3			
BTES204_02	Understand problem solving skills or techniques.	BTES204_0	2 2	3	3							3		
BTES204_03	Apply logic to solve various problem statements.	BTES204_03												
	gineering Department	•	LABO			ECIFI	C OU	ТСОМ	ES (L	SO'S)	•	•	'	
	Y SPECIFIC OUTCOMES (LSO'S)		CO PO	Mappi	ng									
Class Year of Study	F. Y. B. Tech Sem I and II 2020-21, 2021-22, 2022-23,2023-24		CP1204	4L "Co	mputer	Progra	mmin	g in C						

Course Name	CP1204L "Computer Programming in C"	Course	РО	РО	PO	РО	РО	РО	РО	РО	РО	РО	РО	P
and Course		Name	1	2	3	4	5	6	7	8	9	10	11	O
Code		and												12
		Course Code												
BTES207 01	Develop the programs on the basic programming concepts	BTES2	2	2	1	-				1	1	1		2
DIE320/_01	Develop the programs on the basic programming concepts	07_01	2	2	1	-				1	1	1		2
BTES207_02	Understand the syntax and develop programs based on control structure	BTES2 07_02	2	2	1	1		1		1	1	1		2
BTES207_03	Demonstrate the knowledge of Derived data types and user defined function	BTES2 07_03	2	2	1	1		1		1	1	1		2
Class	F. Y. B. Tech Sem I and II													
Class	r. r. b. rech sem rand n													ļ
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTBS10	7L E1	ngine	ering I	Physic	s Lab							
Course Name	BTBS107L Engineering Physics Lab	Course	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	P
and Course		Name	1	2	3	4	5	6	7	8	9	10	11	О
Code		and												12
		Course												
DTDC107I 0	To do lo sul la successión de	Code BTBS1	12	1										2
BTBS107L_0	To study and demonstrate crystal structure, symmetry miller indices and light through optical fibre.	07L 01	2	1										2
BTBS107L 0	Students are expected to perform various experiments and	BTBS1	2		1		1			1				2
2	acquirers some basic knowledge and skills	07L_02	2		1		1			1				
BTBS107L_0	Students would be able to apply the concepts of physics in	BTBS1	2		1		1			1				1
3	various engineering branches.	07L_03												
Class	F. Y. B. Tech Sem I and II	BTES	8103 I	Engin	eerin	g Gra	phics							ļ
Year of Study	2020-21, 2021-22, 2022-23,2023-24													
Course Name	BTES108L Engineering Graphics Lab	Cours				P P				P	P	P	P	P
and Course		Name	;			0 (О	О	О	O	O
Code		and		1	2	3 4	5	6	7	8	9	10	11	12
		Code	se											
		Code												

BTES108L	Understand basic concept of engineering drawing and draw	BTES10	3	2	1									
_01	different polygons.	8L_01												
BTES108L	Solve the problems on orthographic projection, projection of	BTES10	3	0	0									
_02	point, line, plane and solid.	8L_02												
BTES108L_03	Solve the problems on section of solid and isometric	BTES10	3	0	0									
	projection.	8L_03												
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24		BT	HM10)4 Co	mmu	nicati	on Sk	tills					
Course Name	BTHM109L Communication Skills Lab	Course	P	P	P	P	P	P	P	P	P	P	P	P
and Course		Name	О	О	О	О	О	О	О	О	О	О	О	О
Code		and	1	2	3	4	5	6	7	8	9	10	11	12
		Course												
		Code												
BTHM109L_0	Demonstrate LSRW skills and develop communicative	BTHM1									2	3		2
1	competence in professional presentations.	09L_01												
BTHM109L_0	Apply phonetics in spoken English.	BTHM1									2	3		2
2		09L_02												
BTHM109L_0	Make use of grammar correctly with accepted tone and style	BTHM1									2	3		2
3	in technical and business communication.	09L_03												

Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTBS207L Engineering Chemistry Lab												
Course Name	BTBS207L Engineering Chemistry Lab	Course	P	P	P	P	P	P	P	P	P	P	P	P
and Course		Name	О	О	О	О	О	О	О	O	О	О	O	О
Code		and	1	2	3	4	5	6	7	8	9	10	11	1
		Course												2
		Code												
BTBS207L_0	To estimate the impurities present in water.	BTBS20												
1		7L_01												
BTBS207L_0	To exposed volumetric titrations acquirers some volumetric	BTBS20												
2	skills.	7L_02												

BTBS207L_0	Explain and demonstrate a few instrumental methods and	BTBS20												
3	chemical analysis.	7L_03												
G1	D.V.D.T. 1.0. I. 111	1												
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTES106	Basic	e Civi	l and	Mecl	nanica	ıl Eng	gineer	ing				
Course Name	BTES208L Engineering Mechanics Lab	Course	P	P	P	P	P	P	P	P	P	P	P	P
and Course		Name	О	О	О	О	О	О	О	O	О	О	О	О
Code		and	1	2	3	4	5	6	7	8	9	10	11	1
		Course												2
		Code												
BTES208L_01	Apply the fundamental Laws of Engineering Mechanics	BTES20	3	2										
		8L 01												
BTES208L 02	Apply Conditions of static equilibrium to analyse given force	BTES20	2	2										
_	system and also able to recognize centre of gravity.	8L_02												
BTES208L_03	Discuss relation between force and motion of body.	BTES20	3	1										
		8L_03												
Class	F. Y. B. Tech Sem I and II													
Year of Study	2020-21, 2021-22, 2022-23,2023-24	BTES205	Worl	kshop	pract	tice								
Course Name	BTES205 Workshop practice	Course	P	P	P	P	P	P	P	P	P	P	P	P
and Course		Name	О	О	О	О	О	О	О	O	О	О	О	О
Code		and	1	2	3	4	5	6	7	8	9	10	11	1
		Course												2
		Code												
BTES205 01	Students able to understand different tool & equipment for	BTES20	2	3	3									
_	work shop practice.	5_01												
BTES205 02	Students acquire skills for the preparation of different	BTES20	3	2	1							<u> </u>		
_	Carpentry/fitting/welding models.	5_02												
BTES205_03	Students able to understand the safety precaution in the workshop.	BTES20 5 03	2	3	2									

^{&#}x27;3' indicates strongly contribute, '2' indicates moderately contribute & amp;'1' indicates weakly contribute