



**SARVAJANIK
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Sarvajani University
Sarvajani College of Engineering and Technology
Chemical Engineering Department
Bachelor of Technology



SEMESTER 1 / SEMESTER 2											
Sr. No.	Category	Subject Code	Subject Name	Teaching Scheme (In Hours)			Total Credits	Total Hours	Evaluation Scheme (Marks)		
				L	T	P			CCE	SEE	Total
1	MC	BTMD27101	Induction Program	--	--	--	0	21 Days	--	--	0
2	HSMC	BTAS20101	Technical Communication	2	0	0	2	2	50	50	100
3	HSMC	BTAS20102	Technical Communication Lab	0	0	2	1	2	25	25	50
4	HSMC	BTAS20103	Universal Human Values	2	0	0	2	2	50	50	100
5	ESC	BTCH22101	Energy and Environmental Engineering	2	0	0	2	2	50	50	100
6	ESC	BTCH22102	Energy and Environmental Engineering Lab	0	0	2	1	2	25	25	50
7	ESC	BTCL22101	Civil Engineering Techniques	2	0	0	2	2	50	50	100
8	ESC	BTCL22102	Civil Engineering Techniques Lab	0	0	2	1	2	25	25	50
9	ESC	BTCH22101	Python Programming	2	0	0	2	2	50	50	100
10	ESC	BTCH22102	Python Programming Lab	0	0	2	1	2	25	25	50
11	ESC	BTEL22101	Basic Electrical Engineering	3	0	0	3	3	50	50	100
12	ESC	BTEL22102	Basic Electrical Engineering Lab	0	0	2	1	2	25	25	50
13	ESC	BTGN22101	Design Thinking	0	0	2	1	2	25	25	50
14	ESC	BTME22101	Engineering Graphics and Design	1	0	0	1	1	25	25	50
15	ESC	BTME22102	Engineering Graphics and Design Lab	0	0	4	2	4	50	50	100
16	ESC	BTME22103	Basic Mechanical Engineering	3	0	0	3	3	50	50	100
17	ESC	BTME22104	Basic Mechanical Engineering Lab	0	0	2	1	2	25	25	50
18	ESC	BTME22105	Manufacturing Practices and Workshop	0	0	2	1	2	25	25	50
19	ESC	BTCH22103	Chemical Engineering Workshop	0	0	2	1	2	25	25	50
20	BSC	BTAS21105	Mathematics – 1	3	1	0	4	4	50	50	100
21	BSC	BTAS21108	Physics - Introduction to Mechanics & Thermodynamics	2	0	0	2	2	50	50	100
22	BSC	BTAS21109	Physics - Introduction to Mechanics & Thermodynamics Lab	0	0	2	1	2	25	25	50
23	BSC	BTAS21201	Mathematics – 2	3	1	0	4	4	50	50	100
24	BSC	BTAS21101	Engineering Chemistry	2	0	0	2	2	50	50	100
25	BSC	BTAS21102	Engineering Chemistry Lab	0	0	2	1	2	25	25	50
TOTAL				27	2	26	42	55	900	900	1800





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SEMESTER 3											
Sr. No.	Category	Subject Code	Subject Name	Teaching Scheme (In Hours)			Total Credits	Total Hours	Evaluation Scheme (Marks)		
				L	T	P	C	H	CCE	SEE	Total
1	MC	BTMD27301	Indian Constitution	2	0	0	0	2	50	0	50
2	HSMC	BTAS20301	Fundamentals of Management for Engineers	3	0	0	3	3	50	50	100
3	ESC	BTCH22301	Chemical Engineering Thermodynamics-1	3	0	0	3	3	50	50	100
4	PCC	BTCH23301	Basic Calculations in Chemical Engineering	3	0	0	3	3	50	50	100
5	PCC	BTCH23302	Basic Calculations in Chemical Engineering Lab	0	0	2	1	1	25	25	50
6	PCC	BTCH23303	Fluid Flow Operations	3	0	0	3	3	50	50	100
7	PCC	BTCH23304	Fluid Flow Operations Lab	0	0	2	1	1	25	25	50
8	PCC	BTCH23305	General Chemical Technology	3	0	0	3	3	50	50	100
9	PCC	BTCH23306	General Chemical Technology Lab	0	0	2	1	1	25	25	50
10	PCC	BTCH23307	Heat Transfer Operations	3	0	0	3	3	50	50	100
11	PCC	BTCH23308	Heat Transfer Operations Lab	0	0	2	1	2	25	25	50
12	PCC	BTCH233##M	MOOC-1	3	0	0	3	3	50	50	100
			TOTAL	23	0	8	25	31	500	450	950

SEMESTER 4											
Sr. No.	Category	Subject Code	Subject Name	Teaching Scheme (In Hours)			Total Credits	Total Hours	Evaluation Scheme (Marks)		
				L	T	P	C	H	CCE	SEE	Total
1	MC	BTMD27601	IKS-1/ NEP course from online portal	2	0	0	0	2	50	00	50
2	BSC	BTAS21404	Numerical Methods in Chemical Engineering	3	0	0	3	3	50	50	100
3	BSC	BTAS21405	Numerical Methods in Chemical Engineering Lab	0	0	2	1	1	25	25	50
4	OEC	BTXX254##	Open Elective-1	3	0	0	3	3	50	50	100
5	PCC	BTCH23401	Chemical Engineering Thermodynamics-2	3	0	0	3	3	50	50	100
6	PCC	BTCH23402	Mass Transfer Operations-1	3	0	0	3	3	50	50	100
7	PCC	BTCH23405	Mass Transfer Operations -1 Lab	0	0	2	1	2	25	25	50
8	PCC	BTCH23406	Chemical Engineering Unit Operations	2	0	0	2	2	50	50	100
9	PCC	BTCH23407	Chemical Engineering Unit Operations Lab	0	0	2	1	2	25	25	50
10	PCC	BTCH23408	Chemical Engineering Lab	0	0	2	1	2	25	25	50
11	PCC	BTCH234##M	MOOC-2	3	0	0	3	3	50	50	100
12	PCC	BTCH234##M	MOOC-3	3	0	0	3	3	50	50	100
13	PROJ	BTMD26401	Summer Internship-1/Training/Project	-	-	-	-	-	-	-	-
			TOTAL	22	0	8	24	30	500	450	950



SEMESTER 5											
Sr. No.	Category	Subject Code	Subject Name	Teaching Scheme (In Hours)			Total Credits	Total Hours	Evaluation Scheme (Marks)		
				L	T	P			CCE	SEE	Total
1	MC	BTMD27701	IKS-2/ NEP course from online portal	2	0	0	0	2	50	00	50
2	HSMC	BTGN20501	Foundations of Research and Innovation	2	1	0	3	3	50	50	100
3	OEC	BTXX255##	Open Elective-2	3	0	0	3	3	50	50	100
4	PCC	BTCH23501	Chemical Reaction Engineering-1	3	0	0	3	3	50	50	100
5	PCC	BTCH23502	Chemical Reaction Engineering.-1 Lab	0	0	2	1	2	25	25	50
6	PCC	BTCH23503	Mass Transfer Operations -2	3	0	0	3	3	50	50	100
7	PCC	BTCH23504	Mass Transfer Operations -2 Lab	0	0	2	1	2	25	25	50
8	PCC	BTCH23505	Process Control	3	0	0	3	3	50	50	100
9	PCC	BTCH23506	Process Control Lab	0	0	2	1	2	25	25	50
10	PCC	BTCH23507	Chemical Engineering Plant Design and Economics	3	0	0	3	3	50	50	100
11	PEC	BTCH245##	Professional Elective-1	3	0	0	3	3	50	50	100
12	PEC	BTCH247##	Professional Elective-4	3	0	0	3	3	50	50	100
			TOTAL	26	1	6	27	33	525	475	1000

SEMESTER 6											
Sr. No.	Category	Subject Code	Subject Name	Teaching Scheme (In Hours)			Total Credits	Total Hours	Evaluation Scheme (Marks)		
				L	T	P			CCE	SEE	Total
1	OEC	BTXX256##	Open Elective-3	3	0	0	3	3	50	50	100
2	PCC	BTCH23601	Process Equipment Design	3	0	0	3	3	50	50	100
3	PCC	BTCH23602	Process Equipment Design Lab	0	0	2	1	2	25	25	50
4	PCC	BTCH23603	Chemical Reaction Engineering-2	3	0	0	3	3	50	50	100
5	PCC	BTCH23604	Chemical Reaction Engineering-2 lab	0	0	2	1	2	25	25	50
6	PCC	BTCH23605	Chemical Process simulation Lab	0	0	2	1	2	25	25	50
7	PEC	BTCH246xx	Professional Elective-2	2	0	0	2	2	50	50	100
8	PEC	BTCH246xx	Professional Elective-2 lab	0	0	2	1	2	25	25	50
9	PEC	BTCH246xx	Professional Elective-3	2	0	0	2	2	50	50	100
10	PEC	BTCH246xx	Professional Elective-3 Lab	0	0	2	1	2	25	25	50
11	PROJ	BTCH26601	Project Preliminaries	0	0	4	2	2	25	25	50
12	PCC	BTCH236##M	MOOC-4	3	0	0	3	3	50	50	100
13	PCC	BTCH236##M	MOOC-5	3	0	0	3	3	50	50	100
14	PROJ	BTMD26601	Summer Internship-2/Training/Project	-	-	-	-	-	-	-	-
			TOTAL	19	0	14	26	33	500	500	1000



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SEMESTER 7											
Sr. No.	Category	Subject Code	Subject Name	Teaching Scheme (In Hours)			Total Credits	Total Hours	Evaluation Scheme (Marks)		
				L	T	P			CCE	SEE	Total
1	PROJ	BTCH26701	Project	0	0	8	4	8	50	50	100
2	PROJ	BTCH26801	Internship /Project	0	0	24	12	24	100	100	200
			TOTAL	0	0	32	16	32	150	150	300





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List of Professional Elective courses				Teaching Scheme			Total Credits	Total Hours	Evaluation scheme		
Sr. No.	Category	Subject Code	Subject Name	L	T	P	C	H	CCE	SEE	Total
1	PEC-1	BTCH24501	Advanced Materials in Chemical Engineering	3	0	0	3	3	50	50	100
2		BTCH24502	Industrial Biotechnology	3	0	0	3	3	50	50	100
3		BTCH24503	Food and Pharma Technology	3	0	0	3	3	50	50	100
4	PEC-2	BTCH24611	Waste to Wealth	2	0	0	2	2	50	50	100
5		BTCH24612	Waste to Wealth Lab	0	0	2	1	2	25	25	50
6		BTCH24613	Petroleum Engineering & petrochemicals	2	0	0	2	2	50	50	100
7		BTCH24614	Petroleum Engineering & petrochemicals Lab	0	0	2	1	2	25	25	50
8		BTCH24615	Separation Processes	2	0	0	2	2	50	50	100
9		BTCH24616	Separation Processes Lab	0	0	2	1	2	25	25	50
10		BTCH24621	Wastewater Engineering	2	0	0	2	2	50	50	100
11	PEC-3	BTCH24622	Wastewater Engineering Lab	0	0	2	1	2	25	25	50
12		BTCH24623	Environmental Management System	2	0	0	2	2	50	50	100
13		BTCH24624	Environmental Management System Lab	0	0	2	1	2	25	25	50
14		BTCH24625	Chemical System Modelling	2	0	0	2	2	50	50	100
15		BTCH24626	Chemical System Modelling Lab	0	0	2	1	2	25	25	50
16		BTCH24711	Cleaner Production & Cleaner Technology	3	0	0	3	3	50	50	100
17	PEC-4	BTCH24712	Multi Component Distillation	3	0	0	3	3	50	50	100
18		BTCH24713	Evolving Energy Technologies	3	0	0	3	3	50	50	100

List of Open Elective courses				Teaching Scheme			Total Credits	Total Hours	Evaluation scheme		
Sr. No.	Category	Subject Code	Subject Name	L	T	P	C	H	CCE	SEE	Total
1	OEC-1	BTCH25401	Innovation and small scale startups	3	0	0	3	3	50	50	100
2	OEC-2	BTCH25501	Perfumery and cosmetics/oil extraction	3	0	0	3	3	50	50	100
3	OEC-3	BTCH25601	Nanotechnology and surface engineering	3	0	0	3	3	50	50	100





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List of Honor courses				Teaching Scheme			Total Credits	Total Hours	Evaluation scheme		
Sr. No.	Program Name	Subject Code	Subject Name	L	T	P	C	H	CCE	SEE	Total
1	Process Simulation	BTCH29411	Process Calculation using software	4	0	0	4	4	50	50	100
2		BTCH29511	Introduction to simulation software	4	0	0	4	4	50	50	100
3		BTCH29512	Process simulation lab-1	0	0	2	1	2	25	25	50
4		BTCH29611	Process modelling and simulation	4	0	0	4	4	50	50	100
5		BTCH29612	Process simulation lab-2	0	0	2	1	2	25	25	50
6		BTCH29711	Process optimization	4	0	0	4	4	50	50	100
				16	0	4	18	20	250	250	500
1	Environment Management System	BTCH29421	Introduction to Environment management System	4	0	0	4	4	50	50	100
2		BTCH29521	Air pollution control and Solid waste management	4	0	0	4	4	50	50	100
3		BTCH29522	Air pollution control and Solid waste management Lab	0	0	2	1	2	25	25	50
4		BTCH29621	Industrial wastewater Treatment and Management	4	0	0	4	4	50	50	100
5		BTCH29622	Industrial wastewater Treatment and Management Lab	0	0	2	1	2	25	25	50
6		BTCH29721	Environment management System Design	4	0	0	4	4	50	50	100
				16	0	4	18	20	250	250	500





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List of Minor courses				Teaching Scheme			Total Credits	Total Hours	Evaluation scheme		
Sr. No.	Program Name	Subject Code	Subject Name	L	T	P	C	H	CCE	SEE	Total
1	Green Technology and Sustainable Development	BTCH29451	Green Engineering and sustainability	4	0	0	4	4	50	50	100
2		BTCH29551	Green Energy	4	0	0	4	4	50	50	100
3		BTCH29552	Green Energy Lab	0	0	2	1	2	25	25	50
4		BTCH29651	Cleaner Production and Clean Technology	4	0	0	4	4	50	50	100
5		BTCH29652	Cleaner Production and Clean Technology Lab	0	0	2	1	2	25	25	50
6		BTCH29751	Green Catalyst	4	0	0	4	4	50	50	100
				16	0	4	18	20	250	250	500
1	Separation Technology	BTCH19461	Basics separation processes	4	0	0	4	4	50	50	100
2		BTCH19561	Membrane Separation Processes	4	0	0	4	4	50	50	100
3		BTCH19562	Membrane Separation Processes Lab	0	0	2	1	2	25	25	50
4		BTCH19663	Advanced Separation Techniques	4	0	0	4	4	50	50	100
5		BTCH19664	Advanced Separation Techniques Lab	0	0	2	1	2	25	25	50
6		BTCH19761	Bio separation Processes	4	0	0	4	4	50	50	100
				16	0	4	18	20	250	250	500

