CURRICULUM

OF

2017 UNDERGRADUATE ADMISSION BATCH

1. 1st YEAR (COMMON)

2. BIOTECHNOLOGY- B. TECH.

3. CIVIL ENGINEERING- B. TECH.

4. CHEMICAL ENGINEERING- B. TECH.

5. COMPUTER SCIENCE AND ENGINEERING- B. TECH.

6. ELECTRICAL ENGINEERING- B. TECH.

7. ELECTRONICS AND COMMUNICATION ENGINEERING- B. TECH.

8. INFORMATION TECHNOLOGY- B. TECH.

9. MECHANICAL ENGINEERING- B. TECH.

10. METALLURGICAL AND MATERIALS ENGINEERING- B. TECH.

11. BIOTECHNOLOGY- DUAL DEGREE B. TECH.- M. TECH.

12. CHEMICAL ENGINEERING- DUAL DEGREE B. TECH.- M. TECH.

13. OPEN ELECTIVE SUBJECT BASKETS
    (THE STUDENT CAN OPT ANY OPEN ELECTIVE SUBJECT(S) THAT ARE OFFERED IN A PARTICULAR SEMESTER, EXCEPT THE SUBJECT(S) WITH HIS/ HER OWN DEPARTMENT CODE)

14. DEPTH ELECTIVE SUBJECT BASKETS
    (THE STUDENTS PRIMARILY WILL OPT FROM THE DEPTH ELECTIVE SUBJECT(S) THAT ARE OFFERED IN A PARTICULAR SEMESTER BY HIS/ HER OWN DEPARTMENT. HOWEVER, A STUDENT CAN OPT FOR DEPTH ELECTIVE SUBJECT(S) THAT ARE OFFERED BY OTHER DEPARTMENT IN A PARTICULAR SEMESTER, WITH THE PERMISSION/ CONSENT FROM HIS/ HER HEAD OF THE DEPARTMENT AND THE CONCERNED TEACHER OF THAT SUBJECT)

15. CHEMISTRY- 5 YEAR INTEGRATED M. SC.

PLACED FOR COMPREHENSIVE APPROVAL IN THE UGAC MEETING DATED ____10/05/2019_____

APPROVED IN THE SENATE MEETING DATED __13/05/2019__ and published on ____30/05/2019_____

1st revision_ 27/06/2019; 2nd revision_ 19/11/2019

REVISIONS:

1st revision- 27/06/2019

Change of subject codes:	**4th SEM EE: ECS452 > ECS481**
	5th SEM EE: ECS551 > ECS581; EES552 > EES551; EES553 > EES552
	6th SEM BT: BTE619 > BTE618
Inclusion of elective subjects:	**5th SEM OPEN ELECTIVE: ESO541**

2nd revision- 19/11/2019

Correction of subject codes:	**5th SEM IT: CSS551 > ITS551; CSS552 > ITS552; CSS553 > ITS553**

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

First semester and second semester are common to all branches of Engineering and 5-year Integrated Chemistry programme. Some of the subjects are grouped for interchange between first and second semester for half of the students totalling credit unit 38 in first year (1st and 2nd semester combined).

L= Lecture hour/ week; T= Tutorial hour/ week; S= Sessional/ practical hour/ week

C= Subject credit point; H= Subject contact hour/ week.

Semester - I							
SI.	Code	Subject	L	T	S	C	H
1	MAC01	Mathematics - I	2	1	0	3.0	3
2	PHC01	Physics	2	1	0	3.0	3
3	CYC01	Chemistry	2	1	0	3.0	3
4	XEC01	Engineering Mechanics	2	1	0	3.0	3
5	ESC01	Environmental Science	2	0	0	2.0	2
6	BTC01	Life Science	2	0	0	2.0	2
7	PHS01	Physics Laboratory	0	0	2	1.0	2
8	CYS01	Chemistry Laboratory	0	0	2	1.0	2
9	WSS01	Workshop Practice	0	0	2	1.0	2
10	XES01	Co-curricular Activities - I	0	0	2	0.0	2
11	HSC01	Values and Ethics	0	0	0	0.0	0
		TOTAL	12	4	8	19.0	24
Semester - II							
SI.	Code	Subject	L	T	S	C	H
1	MAC02	Mathematics - II	2	1	0	3.0	3
2	CSC01	Introduction to Computing	2	1	0	3.0	3
3	ECC01	Basic Electronics	2	1	0	3.0	3
4	EEC01	Electrical Technology	2	1	0	3.0	3
5	MES01	Engineering Graphics	1	0	2	2.0	3
6	CSS01	Computing Laboratory	0	0	2	1.0	2
7	ECS01	Basic Electronics Laboratory	0	0	2	1.0	2
8	EES01	Electrical Technology Laboratory	0	0	2	1.0	2
9	HSS01	Professional Communication	1	0	2	2.0	3
10	XES02	Co-curricular Activities - II	0	0	2	0.0	2
		TOTAL	10	4	12	19.0	26

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

BIOTECHNOLOGY- B.TECH.

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CHC331	Process Calculation and Thermodynamics	3	1	0	4.0	4
3	BTC301	Cell biology and Genetics	3	1	0	4.0	4
4	BTC302	Microbiology and Bioprocess Technology	3	1	0	4.0	4
5	BTC303	Biochemistry and Enzyme Technology	3	0	0	3.0	3
6	BTS352	Biochemistry Laboratory	0	0	3	1.5	3
7	BTS 351	Microbiology Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	BTC401	Molecular Biology and Recombinant DNA Technology	3	1	0	4.0	4
2	CHC431	Unit Operation of Chemical Engineering- I	3	1	0	4.0	4
3	BTC402	Immunology	3	1	0	4.0	4
4	CSC431	Programming and Data Structure	3	0	0	3.0	3
5	YYO44*	Open Elective - 1	3	0	0	3.0	3
6	BTS451	Cell Biology and Genetics Laboratory	0	0	3	1.5	3
7	CHS481	Unit Operations of Chemical Engineering-I Laboratory	0	0	3	1.5	3
8	CSS481	Programming and Data Structure Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	BTC501	Biochemical Reaction Engineering and Bioreactor Design	3	1	0	4.0	4
2	BTC502	Cell and Tissue Culture	3	1	0	4.0	4
3	BTC503	Bioseparation and Biochemical Analysis	3	1	0	4.0	4
4	CHC531	Unit Operations of Chemical Engineering-II	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	BTS551	Immunology Laboratory	0	0	3	1.5	3
7	BTS552	Bioprocess Technology Laboratory	0	0	3	1.5	3
8	CHS581	Unit Operations of Chemical Engineering Laboratory- II	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	23.5	28

SI.	Code	Subject	L	T	S	C	H
Semester - VI							
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	BTC601	Bioinformatics	2	1	0	3.0	3
3	CSC631	Database Management System	2	1	0	3.0	3
4	CHC631	Process Control and Instrumentation	2	1	0	3.0	3
5	BTE610 --	Depth Elective - 1	3	0	0	3.0	3
6	BTE610 --	Depth Elective - 2	3	0	0	3.0	3
7	BTS651	Molecular Biology and rDNA Technology Laboratory	0	0	3	1.5	3
8	BTS652	Bioinformatics Laboratory	0	0	3	1.5	3
9	CSS681	Database Management System Laboratory	0	0	3	1.5	3
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

SI. No	Code	Subject	L	T	S	C	H
Semester - VII							
1	MSC731	Principles of Management	3	0	0	3.0	3
2	BTE710 --	Depth Elective - 3	3	0	0	3.0	3
3	BTE710 --	Depth Elective - 4	3	0	0	3.0	3
4	BTE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	BTS751	Bioseparation and Biochemical Analysis Laboratory	0	0	3	1.5	3
7	BTS752	Cell and Tissue Culture Laboratory	0	0	3	1.5	3
8	BTS753	Biochemical Reaction Engineering Laboratory	0	0	3	1.5	3
9	BTS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	BTS755	Project - I	0	0	3	1.0	3
		TOTAL	15	0	14	21.5	29

SI. No	Code	Subject	L	T	S	C	H
Semester - VIII							
1	BTE810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	BTS851	Project - II	0	0	15	5.0	15
5	BTS852	Project Seminar	0	0	0	1.0	0
6	BTS853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	22.5	23.5	22.5	21.5	16.0	166.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

CIVIL ENGINEERING- B.TECH.

SI.	Code	Subject	L	T	S	C	H
Semester - III							
SI.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CEC301	Solid Mechanics	3	1	0	4.0	4
3	CEC302	Fluid Mechanics	3	0	0	3.0	3
4	CEC303	Building Construction and Concrete Technology	3	1	0	4.0	4
5	ESC331	Geology for Civil Engineering	3	0	0	3.0	3
6	ESS381	Geology Laboratory for Civil Engineering	0	0	3	1.5	3
7	CES351	Fluid Mechanics and Strength of Material Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	3	6	21.0	24
Semester - IV							
SI.	Code	Subject	L	T	S	C	H
1	CEC401	Structural Analysis-I	3	1	0	4.0	4
2	CEC402	Design of Concrete Structures	3	1	0	4.0	4
3	CEC403	Surveying	3	0	0	3.0	3
4	CSC432	Data Structure	3	0	0	3.0	3
5	YYO44*	Open Elective - I	3	0	0	3.0	3
6	CES451	Structural Analysis Sessional-I	0	0	3	1.5	3
7	CES452	Design of Concrete Structures Sessional	0	0	3	1.5	3
8	CSS482	Data Structure Sessional	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	2	9	21.5	26
Semester - V							
SI.	Code	Subject	L	T	S	C	H
1	CEC501	Structural Analysis-II	3	1	0	4.0	4
2	CEC502	Design of Steel Structures	3	1	0	4.0	4
3	CEC503	Soil Mechanics	3	0	0	3.0	3
4	CEC504	Transportation Engineering	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	CES551	Structural Analysis Sessional-II	0	0	3	1.5	3
7	CES552	Design of Steel Structures Sessional	0	0	3	1.5	3
8	CES553	Transportation Engineering and Soil Mechanics Laboratory	0	0	3	1.5	3
9	CES554	Surveying Laboratory and Estimation Sessional	1	0	3	2.5	4
10	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	16	3	12	25.0	31

Semester - VI							
Sl.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CEC601	Water Resource Engineering	3	1	0	4.0	4
3	CEC602	Foundation Engineering	3	0	0	3.0	3
4	CEC603	Environmental Engineering	3	1	0	4.0	4
5	CEE610 --	Depth Elective - 1	3	0	0	3.0	3
6	CEE610 --	Depth Elective - 2	3	0	0	3.0	3
7	CES651	Environmental Engineering Laboratory and Computational Laboratory- I	0	0	3	1.5	3
8	CES653	Concrete Technology Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	18	2	6	23.0	26

Semester - VII							
Sl.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CEE710 --	Depth Elective - 3	3	0	0	3.0	3
3	CEE710 --	Depth Elective - 4	3	0	0	3.0	3
4	CEE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	CES751	Project - I	0	0	4	2.0	4
7	CES752	Structural Engineering Laboratory and Computational Laboratory -II	0	0	3	1.5	3
8	CES754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
		TOTAL	15	0	9	19.5	24

Semester - VIII							
Sl.	Code	Subject	L	T	S	C	H
1	CEE810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	CES851	Project - II	0	0	15	5.0	15
5	CES852	Project Seminar	0	0	0	1.0	0
6	CES853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	21.0	21.5	25.0	23.0	19.5	16.0	164.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

CHEMICAL ENGINEERING- B.TECH.

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CHC301	Process Calculations	3	1	0	4.0	4
3	CHC302	Chemical Engineering Thermodynamics	3	1	0	4.0	4
4	CHC303	Fluid Mechanics	3	1	0	4.0	4
5	CYC331	Chemistry - II	3	0	0	3.0	3
6	CYS381	Chemistry Laboratory- II	0	0	3	1.5	3
7	CHS351	Chemical Engineering Computing Laboratory- I	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CHC401	Heat Transfer	3	1	0	4.0	4
2	CHC402	Mechanical Operation	3	1	0	4.0	4
3	CHC403	Mass Transfer- I	3	1	0	4.0	4
4	MEC432	Mechanical Design of Equipment and Components	3	0	0	3.0	3
5	YYO44*	Open Elective - I	3	0	0	3.0	3
6	CHS451	Fluid Mechanics Laboratory	0	0	3	1.5	3
7	CHS452	Process Equipment Design- I Sessional	0	0	3	1.5	3
8	WSS481	Workshop Practice- II	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CHC501	Chemical Reaction Engineering	3	1	0	4.0	4
2	CHC502	Mass Transfer- II	3	1	0	4.0	4
3	CHC503	Chemical Process Technology	3	1	0	4.0	4
4	CHC504	Process Control and Instrumentation	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	CHS551	Heat Transfer Laboratory	0	0	3	1.5	3
7	CHS552	Mechanical Operations Laboratory	0	0	3	1.5	3
8	CHS553	Process Equipment Design- II Sessional	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	23.5	28

SI.	Code	Subject	L	T	S	C	H
Semester - VI							
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CHC601	Transport Phenomena	3	1	0	4.0	4
3	CHC602	Petroleum Refining and Petrochemicals	3	1	0	4.0	4
4	CHC603	Process Modelling and Simulation	3	0	0	3.0	3
5	CHE610 --	Depth Elective - 1	3	0	0	3.0	3
6	CHS651	Fuel Laboratory	0	0	3	1.5	3
7	CHS652	Reaction Engineering Laboratory	0	0	3	1.5	3
8	CHS653	Mass Transfer Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	2	9	21.5	26

SI.	Code	Subject	L	T	S	C	H
Semester - VII							
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CHE710 --	Depth Elective - 2	3	0	0	3.0	3
3	CHE710 --	Depth Elective - 3	3	0	0	3.0	3
4	CHE710 --	Depth Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	CHS751	Process Control and Instrumentation Laboratory	0	0	3	1.5	3
7	CHS752	Chemical Engineering Computing Laboratory- II	0	0	3	1.5	3
8	CHS753	Computer Aided Process Equipment Design Laboratory	0	0	3	1.5	3
9	CHS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	CHS755	Project - I	0	0	3	1.0	3
		TOTAL	15	0	14	21.5	29

SI.	Code	Subject	L	T	S	C	H
Semester - VIII							
SI.	Code	Subject	L	T	S	C	H
1	CHE810 --	Depth Elective - 5	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	CHS851	Project - II	0	0	15	5.0	15
5	CHS852	Project Seminar	0	0	0	1.0	0
6	CHS853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	22.5	23.5	21.5	21.5	16.0	165.0

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COMPUTER SCIENCE AND ENGINEERING- B.TECH.

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CSC301	Discrete Mathematics	3	0	0	3.0	3
3	CSC302	Digital Logic Design	3	0	0	3.0	3
4	CSC303	Data Structures and Algorithms	3	1	0	4.0	4
5	PHC331	Physics of Semiconductor Devices	3	0	0	3.0	3
6	PHS381	Semiconductor Devices Laboratory	0	0	3	1.5	3
7	CSS351	Digital Logic Design Laboratory	0	0	3	1.5	3
8	CSS352	Data Structures and Algorithms Laboratory	0	0	4	2.0	4
9	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	2	10	22.0	27

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CSC401	Computer Organization and Architecture	3	1	0	4.0	4
2	CSC402	Theory of Computation	3	0	0	3.0	3
3	CSC403	Design and Analysis of Algorithms	3	1	0	4.0	4
4	CSC404	Object Oriented Programming	2	0	0	2.0	2
5	CSC405	Signals and Systems	3	0	0	3.0	3
6	YYO44*	Open Elective - I	3	0	0	3.0	3
7	CSS451	Computer Organization Laboratory	0	0	3	1.5	3
8	CSS452	Object Oriented Programming Laboratory	0	0	3	1.5	3
9	CSS453	Signal Processing Laboratory	0	0	3	1.5	3
10	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	17	2	9	23.5	28

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CSC501	Operating Systems	3	0	0	3.0	3
2	CSC502	Database Management System	3	1	0	4.0	4
3	CSC503	Compiler Design	3	0	0	3.0	3
4	CSC504	Microcontroller based Systems	3	0	0	3.0	3
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	CSS551	Design and Analysis of Algorithms Laboratory	0	0	3	1.5	3
7	CSS552	Microcontroller based System Laboratory	0	0	3	1.5	3
8	CSS553	Operating Systems Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	1	9	20.5	25

SI.	Code	Subject	L	T	S	C	H
Semester - VI							
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CSC601	Software Engineering	3	0	0	3.0	3
3	CSC602	Data Communication and Computer Networks	3	1	0	4.0	4
4	CSE610 --	Depth Elective - 1	3	0	0	3.0	3
5	CSE610 --	Depth Elective - 2	3	0	0	3.0	3
6	CSS651	Compiler Laboratory	0	0	3	1.5	3
7	CSS652	Data Communication and Computer Networks Laboratory	0	0	3	1.5	3
8	CSS653	Database Management System Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	1	9	20.5	25

SI.	Code	Subject	L	T	S	C	H
Semester - VII							
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CSE710 --	Depth Elective – 3	3	0	0	3.0	3
3	CSE710 --	Depth Elective - 4	3	0	0	3.0	3
4	CSE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	CSS751	Software Engineering Laboratory	0	0	3	1.5	3
7	CSS752	Modelling and Simulation Laboratory	0	1	3	2.5	4
8	CSS753	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
9	CSS754	Project - I	0	0	3	1.0	3
		TOTAL	15	1	11	21.0	27

SI.	Code	Subject	L	T	S	C	H
Semester - VIII							
SI.	Code	Subject	L	T	S	C	H
1	CSE810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	CSS851	Project - II	0	0	15	5.0	15
5	CSS852	Project Seminar	0	0	0	1.5	0
6	CSS853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.5	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	23.5	20.5	20.5	21.0	16.5	162.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

ELECTRICAL ENGINEERING- B.TECH.

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	EEC301	Network Analysis and Synthesis	3	1	0	4.0	4
3	EEC302	Electrical and Electronics Measurements	3	1	0	4.0	4
4	ECC331	Analog Electronics	3	1	0	4.0	4
5	PHC332	Electromagnetic Field Theory	3	0	0	3.0	3
6	PHS382	Physics Laboratory	0	0	3	1.5	3
7	EES351	Electrical and Electronics Measurements Lab	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	EEC401	Power Systems - I	3	1	0	4.0	4
2	EEC402	Electrical Machines - I	3	1	0	4.0	4
3	EEC403	Digital Electronics	3	1	0	4.0	4
4	MEC431	Fluid and Thermal Engineering	3	0	0	3.0	3
5	YYO44*	Open Elective - I	3	0	0	3.0	3
6	EES451	Network Analysis and Synthesis Laboratory	0	0	3	1.5	3
7	ECS481	Analog Electronics Laboratory	0	0	3	1.5	3
8	MES481	Fluid and Thermal Engineering Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	EEC501	Electrical Machines - II	3	1	0	4.0	4
2	EEC502	Control Systems	3	1	0	4.0	4
3	EEC503	Power Systems - II	3	1	0	4.0	4
4	EEC504	Power Electronics	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	ECS581	Digital Electronics Laboratory	0	0	3	1.5	3
7	EES551	Control Systems Laboratory	0	0	3	1.5	3
8	EES552	Electrical Machines Laboratory - I	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	23.5	28

Semester - VI							
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	EEC601	Advanced Power Systems	3	1	0	4.0	4
3	EEC602	Microprocessor and Microcontroller	3	1	0	4.0	4
4	EEE610 --	Depth Elective - 1	3	0	0	3.0	3
5	EEE610 --	Depth Elective - 2	3	0	0	3.0	3
6	EES651	Electrical Machines - II Laboratory	0	0	3	1.5	3
7	EES652	Power Electronics Laboratory	0	0	3	1.5	3
8	EES653	Power System Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	2	9	21.5	26

Semester - VII							
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	EEE710 --	Depth Elective - 3	3	0	0	3.0	3
3	EEE710 --	Depth Elective - 4	3	0	0	3.0	3
4	EEE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	EES751	Microprocessor and Microcontroller Laboratory	0	0	3	1.5	3
7	EES752	Advanced Power System Laboratory	0	0	3	1.5	3
8	EES753	Electrical machine Design Laboratory	0	0	3	1.5	3
9	EES754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	EES755	Project - I	0	0	3	1.0	3
		TOTAL	15	0	14	21.5	29

Semester - VIII							
SI.	Code	Subject	L	T	S	C	H
1	EEE810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	EES851	Project - II	0	0	15	5.0	15
5	EES852	Project Seminar	0	0	0	1.0	0
6	EES853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	22.5	23.5	21.5	21.5	16.0	165.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

ELECTRONICS AND COMMUNICATION ENGINEERING- B.TECH.

SI.	Code	Subject	L	T	S	C	H
Semester - III							
SI.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	ECC301	Networks and Transmission Lines	3	1	0	4.0	4
3	ECC302	Electronic Devices and Circuits- I	3	1	0	4.0	4
4	ECC303	Signals and Systems	3	1	0	4.0	4
5	PHC331	Physics of Semiconductor Devices	3	0	0	3.0	3
6	PHS381	Semiconductor Devices Laboratory	0	0	3	1.5	3
7	ECS351	Electronic Devices and Circuits Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25
Semester - IV							
SI.	Code	Subject	L	T	S	C	H
1	ECC401	Analog Communication	3	1	0	4.0	4
2	ECC402	Digital Electronics	3	1	0	4.0	4
3	ECC403	Electromagnetic Engineering	2	1	0	3.0	3
4	EEC431	Control Systems	3	0	0	3.0	3
5	YYO44*	Open Elective - I	3	0	0	3.0	3
6	ECS451	Analog Communication Laboratory	0	0	3	1.5	3
7	ECS452	Digital Electronics Laboratory	0	0	3	1.5	3
8	EES481	Control Systems Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	21.5	26
Semester - V							
SI.	Code	Subject	L	T	S	C	H
1	ECC501	Digital Communication	3	1	0	4.0	4
2	ECC502	Microwave Engineering	2	1	0	3.0	3
3	ECC503	Microprocessors and Microcontrollers	3	1	0	4.0	4
4	ECC504	Electronic Devices and Circuits-II	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	ECS551	Digital Communication Laboratory	0	0	3	1.5	3
7	ECS552	Microwave Engineering Laboratory	0	0	3	1.5	3
8	ECS553	Microprocessors and Microcontrollers Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	22.5	27

Semester - VI							
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	ECC601	Antenna and Wave Propagation	3	1	0	4.0	4
3	ECC602	VLSI Design	3	0	0	3.0	3
4	ECC603	Digital Signal Processing	2	1	0	3.0	4
5	ECE611 --	Depth Elective - 1	3	0	0	3.0	3
6	ECE611 --	Depth Elective - 2	3	0	0	3.0	3
7	ECS651	Antenna and Wave Propagation Laboratory	0	0	3	1.5	3
8	ECS652	VLSI Design Laboratory	0	0	3	1.5	3
9	ECS653	Digital Signal Processing Laboratory	0	0	3	1.5	3
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	17	2	9	23.5	29

Semester - VII							
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	ECE711 --	Depth Elective - 3	3	0	0	3.0	3
3	ECE711 --	Depth Elective - 4	3	0	0	3.0	3
4	ECE711 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	ECS751	Computer Aided Design Laboratory	0	0	3	1.5	3
7	ECS752	Hardware Design Laboratory	0	0	3	1.5	3
8	ECS753	Advanced Communication Laboratory	0	0	3	1.5	3
9	ECS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	ECS755	Project - I	0	0	3	1.0	3
		TOTAL	15	0	14	21.5	29

Semester - VIII							
SI.	Code	Subject	L	T	S	C	H
1	ECE811 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	ECS851	Project - II	0	0	15	5.0	15
5	ECS852	Project Seminar	0	0	0	1.0	0
6	ECS853	Comprehensive Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	21.5	22.5	23.5	21.5	16.0	165.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

INFORMATION TECHNOLOGY- B. TECH.

SI.	Code	Subject	L	T	S	C	H
Semester - III							
SI.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	ITC301	Discrete Mathematics	3	0	0	3.0	3
3	ITC302	Digital Electronics	3	0	0	3.0	3
4	ITC303	Data Structures and Algorithms	3	1	0	4.0	4
5	PHC331	Physics of Semiconductor Devices	3	0	0	3.0	3
6	PHS381	Semiconductor Devices Laboratory	0	0	3	1.5	3
7	ITS351	Digital Electronics Laboratory	0	0	3	1.5	3
8	ITS352	Data Structures and Algorithms Laboratory	0	0	4	2.0	4
9	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	2	10	22.0	27
Semester - IV							
SI.	Code	Subject	L	T	S	C	H
1	ITC401	Computer Organization and Architecture	3	1	0	4.0	4
2	ITC402	Theory of Computation	3	0	0	3.0	3
3	ITC403	Algorithm Design & Analysis	3	1	0	4.0	4
4	ITC404	Object Oriented Technology	2	0	0	2.0	2
5	CSC405	Signals and Systems	3	0	0	3.0	3
6	YYO44*	Open Elective - I	3	0	0	3.0	3
7	ITS451	Computer Organization Laboratory	0	0	3	1.5	3
8	ITS452	Object Oriented Programming Laboratory	0	0	3	1.5	3
9	CSS453	Signal Processing Laboratory	0	0	3	1.5	3
10	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	17	2	9	23.5	28
Semester - V							
SI.	Code	Subject	L	T	S	C	H
1	ITC501	Operating Systems	3	0	0	3.0	3
2	ITC502	Database Management System	3	1	0	4.0	4
3	ITC503	Principles of Language Translation	3	0	0	3.0	3
4	ITC504	Microcontroller based Systems	3	0	0	3.0	3
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	ITS551	Algorithm Design Laboratory	0	0	3	1.5	3
7	ITS552	Microcontroller based System Laboratory	0	0	3	1.5	3
8	ITS553	Operating Systems Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	1	9	20.5	25

SI.	Code	Subject	L	T	S	C	H
Semester - VI							
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	ITC601	Software Engineering	3	0	0	3.0	3
3	ITC602	Computer Networks	3	1	0	4.0	4
4	ITE610 --	Depth Elective - 1	3	0	0	3.0	3
5	ITE610 --	Depth Elective - 2	3	0	0	3.0	3
6	ITS651	Compiler Laboratory	0	0	3	1.5	3
7	ITS652	Computer Networks Laboratory	0	0	3	1.5	3
8	ITS653	Database Management System Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	1	9	20.5	25

SI.	Code	Subject	L	T	S	C	H
Semester - VII							
1	MSC731	Principles of Management	3	0	0	3.0	3
2	ITE710 --	Depth Elective – 3	3	0	0	3.0	3
3	ITE710 --	Depth Elective - 4	3	0	0	3.0	3
4	ITE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	ITS751	Software Engineering Laboratory	0	0	3	1.5	3
7	ITS752	Modelling and Simulation Laboratory	0	1	3	2.5	4
8	ITS753	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
9	ITS754	Project - I	0	0	3	1.0	3
		TOTAL	15	1	11	21.0	27

SI.	Code	Subject	L	T	S	C	H
Semester - VIII							
1	ITE810 --	Departmental Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	ITS851	Project - II	0	0	15	5.0	15
5	ITS852	Project Seminar	0	0	0	1.5	0
6	ITS853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.5	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	23.5	20.5	20.5	21.0	16.5	162.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

MECHANICAL ENGINEERING- B.TECH.

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	MEC301	Solid Mechanics	3	1	0	4.0	4
3	MEC302	Theory of Machines and Mechanisms	3	1	0	4.0	4
4	MEC303	Fluid Mechanics	3	1	0	4.0	4
5	MEC304	Engineering Thermodynamics	3	0	0	3.0	3
6	PHC333	Physics of Engineering Materials	3	0	0	3.0	3
7	PHS383	Physics of Engineering Materials Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	18	4	3	23.5	25

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	MEC401	Design of Machine Element	3	1	0	4.0	4
2	MEC402	Casting, Forming and Welding	3	1	0	4.0	4
3	MEC403	Heat and Mass Transfer	3	0	0	3.0	3
4	EEC432	Electrical Machines	3	0	0	3.0	3
5	YYO44*	Open Elective - I	3	0	0	3.0	3
6	MES451	Solid Mechanics Laboratory	0	0	3	1.5	3
7	MES452	Fluid Mechanics Laboratory	0	0	3	1.5	3
8	MES453	Mechanism Laboratory	0	0	3	1.5	3
9	EES482	Electrical Machines Laboratory	0	0	3	1.5	3
10	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	2	12	23.0	29

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	MEC501	Machining and Machine Tools	3	1	0	4.0	4
2	MEC502	IC Engine and Gas Turbines	3	0	0	3.0	3
3	MEC503	Machine Design	3	1	0	4.0	4
4	MEC504	Dynamics of Machines	2	1	0	3.0	3
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	MES551	Design and Dynamics Laboratory	0	0	3	1.5	3
7	MES552	Heat Transfer Laboratory	0	0	3	1.5	3
8	MES553	CAD/CAM Laboratory	0	0	3	1.5	3
9	WSS581	Workshop Practice- II	0	0	3	1.5	3
10	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	14	3	12	23.0	29

SI.	Code	Subject	L	T	S	C	H
Semester - VI							
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	MEC601	Power Plant Engineering	2	1	0	3.0	3
3	MEC602	Industrial Engineering and Measurement	3	0	0	3.0	3
4	MEE610 --	Depth Elective - 1	3	0	0	3.0	3
5	MEE610 --	Depth Elective - 2	3	0	0	3.0	3
6	MES651	Engineering Measurement Laboratory	0	0	3	1.5	3
7	MES652	Power Generation Laboratory	0	0	3	1.5	3
8	MES653	Machine Design Sessional - I	0	0	3	1.5	3
9	MES654	Manufacturing Laboratory	0	0	3	1.5	3
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	14	1	12	21.0	27
Semester - VII							
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	MEE710 --	Depth Elective - 3	3	0	0	3.0	3
3	MEE710 --	Depth Elective - 4	3	0	0	3.0	3
4	MEE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	MES751	Hydraulic Machine Laboratory	0	0	3	1.5	3
7	MES752	Machine Design Sessional - II	0	0	3	1.5	3
8	MES753	Vocational Training / Summer Internship and Seminar	0	0	3	1.5	3
9	MES754	Project - I	0	0	3	1.0	4
		TOTAL	15	0	12	20.5	27
Semester - VIII							
SI.	Code	Subject	L	T	S	C	H
1	MEE810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	MES851	Project - II	0	0	15	5.0	15
5	MES852	Project Seminar	0	0	0	1.0	0
6	MES853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	23.5	23.0	23.0	21.0	20.5	16.0	165.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

METALLURGICAL AND MATERIALS ENGINEERING- B.TECH.

SI.	Code	Subject	L	T	S	C	H
Semester - III							
1	MAC331	Mathematics- III	3	1	0	4.0	4
2	MMC301	Metallurgical Thermodynamics and Kinetics	3	1	0	4.0	4
3	MMC302	Introduction of Metallurgy and Materials	3	1	0	4.0	4
4	MMC303	Non - Ferrous Process Metallurgy	3	1	0	4.0	4
5	ESC332	Economic Geology	3	0	0	3.0	3
6	ESS382	Economic Geology Laboratory	0	0	3	1.5	3
7	MMS351	Metallurgical Thermodynamics and Kinetics Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25
Semester - IV							
1	MMC401	Transport Phenomena in Metallurgical Processes	3	1	0	4.0	4
2	MMC402	Phase Transformation and Phase Equilibria	3	1	0	4.0	4
3	MMC403	Materials Characterization	3	1	0	4.0	4
4	YYO44*	Open Elective - I	3	0	0	3.0	3
5	CSC433	Data Structures	3	0	0	3.0	3
6	CSC483	Data Structures Laboratory	0	0	3	1.5	3
7	MMS451	Transport Phenomena Laboratory	0	0	3	1.5	3
8	MMS452	Phase Transformation and Phase Equilibria Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27
Semester - V							
1	MMC501	Manufacturing Processes	3	1	0	4.0	4
2	MMC502	Heat Treatment of Materials	3	1	0	4.0	4
3	MMC503	Fundamentals of Plastic Deformation and Strengthening of Materials	3	1	0	4.0	4
4	MMC504	Iron Making	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	MMS551	Manufacturing Processes Laboratory - I	0	0	3	1.5	3
7	MMS552	Heat Treatment of Materials Laboratory	0	0	3	1.5	3
8	MMS553	Plastic Deformation and Strengthening of Materials Laboratory	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	23.5	28

SI.	Code	Subject	L	T	S	C	H
Semester - VI							
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	MMC601	Steel Making	3	1	0	4.0	4
3	MMC602	Mechanical Working of Materials	3	0	0	3.0	3
4	MME610 --	Depth Elective - 1	3	0	0	3.0	3
5	MME610 --	Depth Elective - 2	3	0	0	3.0	3
6	MMS651	Mineral Beneficiation Laboratory	0	0	3	1.5	3
7	MMS652	Mechanical Working of Materials Laboratory	0	0	3	1.5	3
8	MMS653	Material Characterization Laboratory -I	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	1	9	20.5	25

SI.	Code	Subject	L	T	S	C	H
Semester - VII							
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	MME710 --	Depth Elective - 3	3	0	0	3.0	3
3	MME710 --	Depth Elective - 4	3	0	0	3.0	3
4	MME710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	MMS751	Manufacturing Processes Laboratory - II	0	0	3	1.5	3
7	MMS752	Material Characterization Laboratory -II	0	0	3	1.5	3
8	MMS753	Ferrous Process Metallurgy Laboratory	0	0	3	1.5	3
9	MMS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
10	MMS755	Project - I	0	0	3	1.0	3
		TOTAL	15	0	14	21.5	29

SI.	Code	Subject	L	T	S	C	H
Semester - VIII							
SI.	Code	Subject	L	T	S	C	H
1	MME810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	MMS851	Project - II	0	0	15	5.0	15
5	MMS852	Project Seminar	0	0	0	1.0	0
6	MMS853	Viva Voce	0	0	0	1.0	0
		TOTAL	9	0	15	16.0	24

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	TOTAL
Credit Unit	38.0	22.0	22.5	23.5	20.5	21.5	16.0	164.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

BIOTECHNOLOGY- DUAL DEGREE (B.TECH.-M.TECH.)

	Semester - III						
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CHC331	Process Calculation and Thermodynamics	3	1	0	4.0	4
3	BTC301	Cell biology and Genetics	3	1	0	4.0	4
4	BTC302	Microbiology and Bioprocess Technology	3	1	0	4.0	4
5	BTC303	Biochemistry and Enzyme Technology	3	0	0	3.0	3
6	BTS352	Biochemistry Laboratory	0	0	3	1.5	3
7	BTS 351	Microbiology Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25

	Semester - IV						
Sl.	Code	Subject	L	T	S	C	H
1	BTC401	Molecular Biology and Recombinant DNA Technology	3	1	0	4.0	4
2	CHC431	Unit Operation of Chemical Engineering- I	3	1	0	4.0	4
3	BTC402	Immunology	3	1	0	4.0	4
4	CSC431	Programming and Data Structure	3	0	0	3.0	3
5	YYO44*	Open Elective - 1	3	0	0	3.0	3
6	BTS451	Cell Biology and Genetics Laboratory	0	0	3	1.5	3
7	CHS481	Unit Operations of Chemical Engineering-I Laboratory	0	0	3	1.5	3
8	CSS481	Programming and Data Structure Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

	Semester - V						
Sl.	Code	Subject	L	T	S	C	H
1	BTC501	Biochemical Reaction Engineering and Bioreactor Design	3	1	0	4.0	4
2	BTC502	Cell and Tissue Culture	3	1	0	4.0	4
3	BTC503	Bioseparation and Biochemical Analysis	3	1	0	4.0	4
4	CHC531	Unit Operations of Chemical Engineering-II	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	BTS551	Immunology Laboratory	0	0	3	1.5	3
7	BTS552	Bioprocess Technology Laboratory	0	0	3	1.5	3
8	CHS581	Unit Operations of Chemical Engineering Laboratory- II	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	23.5	28

	Semester - VI						
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	BTC601	Bioinformatics	2	1	0	3.0	3
3	CSC631	Database Management System	2	1	0	3.0	3
4	CHC631	Process Control and Instrumentation	2	1	0	3.0	3
5	BTE610 --	Depth Elective - 1	3	0	0	3.0	3
6	BTE610 --	Depth Elective - 2	3	0	0	3.0	3
7	BTS651	Molecular Biology and rDNA Technology Laboratory	0	0	3	1.5	3
8	BTS652	Bioinformatics Laboratory	0	0	3	1.5	3
9	CSS681	Database Management System Laboratory	0	0	3	1.5	3
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

	Semester - VII						
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	BTE710 --	Depth Elective - 3	3	0	0	3.0	3
3	BTE710 --	Depth Elective - 4	3	0	0	3.0	3
4	BTE710 --	Depth Elective - 5	3	0	0	3.0	3
5	YYO74*	Open Elective - 4	3	0	0	3.0	3
6	BT1001	Advanced Bioprocess Engineering	3	1	0	4.0	4
7	BTS751	Bioseparation and Biochemical Analysis Laboratory	0	0	3	1.5	3
8	BTS752	Cell and Tissue Culture Laboratory	0	0	3	1.5	3
9	BTS753	Biochemical Reaction Engineering Laboratory	0	0	3	1.5	3
10	BTS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
11	BTS755	Project – I	0	0	3	1.0	3
		TOTAL	18	1	14	25.5	33

	Semester - VIII						
SI.	Code	Subject	L	T	S	C	H
1	BTE810 --	Depth Elective - 6	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	BT2002	Genomics , Proteomics and Bioinformatics	3	1	0	4.0	4
5	BT2003	Industrial Production of Biopharamceutical Product	3	1	0	4.0	4
6	BT2053	Structural Bioinformatics Laboratory	0	0	3	2.0	3
7	BTS855	Project – II	0	0	6	2.0	6
		TOTAL	15	2	9	21.0	31

SI.	Code	Subject	L	T	S	C	H
Semester - IX							
SI.	Code	Subject	L	T	S	C	H
1	BT9027	**Advanced rDNA Technology & Cellular Biotechnology**	3	1	0	4.0	4
2	BT1051	**Advanced Bioprocess Engineering Laboratory**	0	0	3	2.0	3
3	BT3055	**Major Project-I**	0	0	22	11.0	22
4	BT3056	**Major Project Seminar-I**	0	0	0	2.0	0
		TOTAL	8	0	22	19.0	29
Semester - X							
SI.	Code	Subject	L	T	S	C	H
1	BT4055	**Major Project-II**	0	0	22	11.0	22
2	BT4056	**Major Project Seminar-II and Viva Voce**	0	0	0	3.0	0
3	BT4057	**Comprehensive Viva Voce**	0	0	0	1.0	0
		TOTAL	4	0	22	15.0	22

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	IX	X	TOTAL
Credit Unit	38.0	22.0	22.5	23.5	22.5	25.5	21.0	19.0	15.0	209.0

CURRICULUM OF 2017 UNDERGRADUATE ADMISSION BATCH

CHEMICAL ENGINEERING- DUAL DEGREE (B.TECH.-M.TECH.)

Semester - III							
Sl.	Code	Subject	L	T	S	C	H
1	MAC331	Mathematics - III	3	1	0	4.0	4
2	CHC301	Process Calculations	3	1	0	4.0	4
3	CHC302	Chemical Engineering Thermodynamics	3	1	0	4.0	4
4	CHC303	Fluid Mechanics	3	1	0	4.0	4
5	CYC331	Chemistry - II	3	0	0	3.0	3
6	CYS381	Chemistry Laboratory- II	0	0	3	1.5	3
7	CHS351	Chemical Engineering Computing Laboratory- I	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (Optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25

Semester - IV							
Sl.	Code	Subject	L	T	S	C	H
1	CHC401	Heat Transfer	3	1	0	4.0	4
2	CHC402	Mechanical Operation	3	1	0	4.0	4
3	CHC403	Mass Transfer- I	3	1	0	4.0	4
4	MEC432	Mechanical Design of Equipment and Components	3	0	0	3.0	3
5	YYO44*	Open Elective - I	3	0	0	3.0	3
6	CHS451	Fluid Mechanics Laboratory	0	0	3	1.5	3
7	CHS452	Process Equipment Design- I Sessional	0	0	3	1.5	3
8	WSS481	Workshop Practice- II	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (Optional)	0	0	0	0.0	0
		TOTAL	15	3	9	22.5	27

Semester - V							
Sl.	Code	Subject	L	T	S	C	H
1	CHC501	Chemical Reaction Engineering	3	1	0	4.0	4
2	CHC502	Mass Transfer- II	3	1	0	4.0	4
3	CHC503	Chemical Process Technology	3	1	0	4.0	4
4	CHC504	Process Control and Instrumentation	3	1	0	4.0	4
5	YYO54*	Open Elective - 2	3	0	0	3.0	3
6	CHS551	Heat Transfer Laboratory	0	0	3	1.5	3
7	CHS552	Mechanical Operations Laboratory	0	0	3	1.5	3
8	CHS553	Process Equipment Design- II Sessional	0	0	3	1.5	3
9	XXS581	Co-curricular Activities - V (Optional)	0	0	0	0.0	0
		TOTAL	15	4	9	23.5	28

		Semester - VI					
SI.	Code	Subject	L	T	S	C	H
1	HSC631	Economics and Management Accountancy	3	0	0	3.0	3
2	CHC601	Transport Phenomena	3	1	0	4.0	4
3	CHC602	Petroleum Refining and Petrochemicals	3	1	0	4.0	4
4	CHC603	Process Modelling and Simulation	3	0	0	3.0	3
5	CH610--	Depth Elective - 1	3	0	0	3.0	3
6	CHS651	Fuel Laboratory	0	0	3	1.5	3
7	CHS652	Reaction Engineering Laboratory	0	0	3	1.5	3
8	CHS653	Mass Transfer Laboratory	0	0	3	1.5	3
9	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	2	9	21.5	26

		Semester - VII					
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CHE710 --	Depth Elective - 2	3	0	0	3.0	3
3	CHE710 --	Depth Elective - 3	3	0	0	3.0	3
4	CHE710 --	Depth Elective - 4	3	0	0	3.0	3
5	YYO74*	Open Elective - 3	3	0	0	3.0	3
6	CH1001	Advanced Fluid Dynamics	3	1	0	4.0	4
7	CHS751	Process Control and Instrumentation Laboratory	0	0	3	1.5	3
8	CHS752	Chemical Engineering Computing Laboratory- II	0	0	3	1.5	3
9	CHS753	Computer Aided Process Equipment Design Laboratory	0	0	3	1.5	3
10	CHS754	Vocational Training / Summer Internship and Seminar	0	0	2	1.0	2
11	CHS755	Project - I	0	0	3	1.0	3
		TOTAL	18	1	14	25.5	33

		Semester - VIII					
SI.	Code	Subject	L	T	S	C	H
1	CHE810 --	Depth Elective - 5	3	0	0	3.0	3
2	YYO84*	Open Elective - 4	3	0	0	3.0	3
3	YYO85*	Open Elective - 5	3	0	0	3.0	3
4	CH2001	Advanced Process Dynamics and Control	3	1	0	4.0	4
5	CH2002	Advanced Mass Transfer	3	1	0	4.0	4
6	CH2003	Advanced Heat Transfer	3	1	0	4.0	4
7	CHS855	Project – II	0	0	6	2.0	6
		TOTAL	18	3	6	23.0	27

		Semester - IX					
SI.	Code	Subject	L	T	S	C	H
1	CH1002	Environmental Engineering	3	1	0	4.0	4
2	CH1003	Advanced Process Modelling and Simulation	3	1	0	4.0	4
3	CH3055	Major Project-I	0	0	22	11.0	22
4	CH3056	Major Project Seminar-I	0	0	0	2.0	0
		TOTAL	6	2	22	21.0	30

		Semester - X					
SI.	Code	Subject	L	T	S	C	H
1	CH4055	Major Project-II	0	0	22	11.0	22
2	CH4056	Major Project Seminar-II and Viva Voce	0	0	0	3.0	0
3	CH4057	Grand Viva Voce	0	0	0	1.0	0
		TOTAL	4	0	22	15.0	22

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	IX	X	TOTAL
Credit Unit	38.0	22.0	22.5	23.5	21.5	25.5	23.0	21.0	15.0	212.0

2017 UNDERGRADUATE ADMISSION BATCH

OPEN ELECTIVE SUBJECT BASKETS

THE STUDENT CAN OPT ANY OPEN ELECTIVE SUBJECT(S) THAT ARE OFFERED IN A PARTICULAR SEMESTER, EXCEPT THE SUBJECT(S) WITH HIS/ HER OWN DEPARTMENT CODE.

Basket– 1 (4th Semester)

MAO441	Discrete Mathematics
MAO442	Probability and Stochastic Processes
PHO441	Quantitative Biology
BTO441	Food Biotechnology
CEO440	Introduction to Earthquake Engineering
CEO441	Elementary Civil Engineering
CEO442	Experimental Methods & Analysis
CHO441	Process Heat Transfer
CSO441	Data Structures and Algorithms
CSO442	Object Oriented Technology
ECO440	Digital Systems
ECO441	Communication Engineering
EEO440	Fundamentals of Power Systems
EEO441	Concept of Industrial Electronics
EEO442	Energy Conservation, Audit and ICT & IOT Application For Monitoring
EEO443	Network Theory
XEO441	Brain to Mind Creation

Basket– 2 (5th Semester)

HSO540	Entrepreneurship Development: Theory and Practice
HSO541	Statistical Techniques for Economics
HSO542	Culture and Communication
HSO543	Personality Development
HSO544	Soft Skills
MAO541	Mathematical Methods for Engineers
MAO542	Linear Algebra
MAO543	Modern Algebra
PHO541	Thin Film Technology
ESO 541	Groundwater Hydrology
BTO540	Mineral Biotechnology
CEO540	Numerical Methods in Engineering
CEO541	Engineering Computing and Simulation with Scilab
CEO542	Introduction to Random Vibrations
CHO542	Fuels & Combustion
CHO543	Industrial Water Treatment
CSO541	Fundamentals of Algorithms
CSO542	Database Management System
CSO543	Computer Organization
CSO544	Operating Systems
ECO540	Mechatronics
ECO541	Probability Theory for Engineering Application
ECO542	Artificial Intelligence and Soft Computing
EEO540	Measurement and Instrumentation
EEO541	Fundamentals of Control Systems
EEO542	Power System Analysis and Design
MEO541	Experimental methods in Engineering
MMO541	Basic Manufacturing Process

Basket– 3 (7th Semester)

HSO740	Indian Writings in English
HSO741	Development Economics and Sustainable Development
CYO741	Analytical and environmental chemistry
PHO741	Nuclear Reactor Technology
BTO740	Genetic Engineering
CEO740	Mechanics of Composite
CEO741	Optimization in Engineering Design
CEO742	Theory of Elasticity and Plasticity
CHO741	Non-linear Dynamics
CSO741	Software Engineering
CSO742	Multimedia Technologies
CSO743	Computer Networks
ECO740	Biomedical Instrumentation
ECO741	Embedded Systems
EEO740	Concept of Electrical Machines & Drives
EEO741	Biomedical Instrumentation
EEO742	Renewable Energy
MEO741	Nonconventional Energy Systems
MEO742	Robotics
XEO741	Human Resource Management
XEO742	Medical Instrumentation and Assistive Technology

Basket– 4 (8th Semester)

MSO841	Marketing Research and Analytics
PHO841	Quantum Physics
BTO840	Industrial Biotechnology
CEO840	Finite Element Analysis and Applications
CEO841	Disaster Management and Mitigation
CEO842	Experimental Methods in Engineering
CHO841	Bioengineering & Industrial applications
CSO841	CAD for VLSI
CSO842	Internet and Web Technologies
CSO843	Soft Computing Techniques
CSO844	Compiler Design
ECO840	Structronics
ECO841	Signal Processing
ECO842	Introduction to VLSI
EEO840	Concept of Electrical Machines and Drives
EEO841	Biomedical Instrumentation
EEO842	Renewable Energy
EEO843	Digital Image Processing
MEO841	Nonlinear Dynamical Systems
MMO841	Material Science

Basket– 5 (8th Semester)

HSO850	International Economics and Globalization
HSO851	Literature and Cinema
HSO852	Classics of Literature
MSO851	Investment Management and Stock Market
CYO851	Spectroscopic methods of chemical analysis
PHO851	Fiber-Optics Communication
PHO852	Optical Instrumentation
MAO851	Operations Research
MAO852	Advanced Numerical Analysis
MAO853	Optimization Techniques
BTO850	Medical Biotechnology
CEO850	Watershed Planning and Management
CEO851	Elementary Structural Design
CEO852	Reliability Engineering
CHO851	Energy, Environment & Sustainability
CSO851	Machine Learning
CSO852	Data Analytics
CSO853	Distributed Computing
CSO854	Game Theory and its Applications
CSO855	Information Security
CSO856	Optical Network
ECO850	Communication Network
ECO851	Mobile Computing
ECO852	MEMS Technology
EEO850	Soft Computing Techniques
EEO851	Embedded Systems and Applications
EEO852	Micro-Electro-Mechanical Systems
MEO851	Tribology
XEO851	Leadership and Corporate Strategy

2017 UNDERGRADUATE ADMISSION BATCH

DEPTH ELECTIVE SUBJECT BASKETS

THE STUDENTS PRIMARILY WILL OPT FROM THE DEPTH ELECTIVE SUBJECT(S) THAT ARE OFFERED IN A PARTICULAR SEMESTER BY HIS/ HER OWN DEPARTMENT. HOWEVER, A STUDENT CAN OPT FOR DEPTH ELECTIVE SUBJECT(S) THAT ARE OFFERED BY OTHER DEPARTMENT IN A PARTICULAR SEMESTER, WITH THE PERMISSION/ CONSENT FROM HIS/ HER HEAD OF THE DEPARTMENT AND THE CONCERNED TEACHER OF THAT SUBJECT.

SIXTH SEMESTER

	DEPARTMENT OF BIOTECHNOLOGY
BTE610	**Animal Biotechnology**
BTE611	**Industrial Microbiology**
BTE612	**Nutraceutical and Nutrigenomics**
BTE613	**Human Genomics**
BTE614	**Molecular Virology**
BTE615	**Biometallurgy**
BTE616	**Nanobiotechnology**
BTE617	**Marine Biotechnology**
BTE618	**Folding, Misfolding and Diseases**
	DEPARTMENT OF CHEMICAL ENGINEERING
CHE610	**Chemical Reactor Analysis**
CHE611	**Industrial Pollution Control and Treatment**
CHE612	**Non-conventional Energy Engineering**
CHE613	**Combustion Engineering**
CHE614	**Artificial Intelligence in Chemical Industries**
	DEPARTMENT OF CIVIL ENGINEERING
CEE610	**Advanced Design of Concrete Structures**
CEE611	**Advanced Structural Analysis**
CEE612	**Mechanics of Composite Structures**
CEE613	**Material Technology**
CEE614	**Applied Numerical Methods**
CEE615	**Bridge Engineering**
CEE620	**Analysis and Design of Pavement**
CEE621	**Finite Element Method**
CEE622	**Ground Improvement**
CEE623	**Remote sensing and GIS**
CEE624	**Traffic Engineering and Management**
CEE625	**System Approach to Civil Engineering**

	DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING	
CSE611	Embedded System Design
CSE612	System Software
CSE613	Internet and Web Technologies
CSE614	Advanced Computer Architecture
CSE615	Optimization Techniques
CSE616	Artificial Intelligence
CSE617	Advanced Algorithms
CSE618	Information Coding Theory
CSE619	Computer Graphics
CSE620	Game Theory and its Applications
CSE621	Digital Systems Testing
CSE622	Soft Computing
CSE623	Advanced Database Systems
	DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
ECE610	Artificial Intelligence & Soft Computing
ECE611	Computer Organization and Architecture
ECE612	Advanced Digital Communication
ECE613	Object Oriented Programming
ECE614	CAD for VLSI
ECE615	Active Filter Design
ECE616	VLSI Technology
ECE617	Probability and Random Signal Theory
ECE618	Data Comm. & Computer Networks
ECE619	Mobile Computing
ECE620	Nano Electronics
ECE621	Measurement & Instrumentation
ECE622	Digital IC Design
ECE623	Mechatronics Systems
ECE624	Power Electronics
ECE625	Optical Communication
	DEPARTMENT OF ELECTRICAL ENGINEERING
EEE610	Numerical Analysis
EEE611	Instrumentation
EEE612	Modern Control Systems
EEE613	Special Electrical Machines
EEE614	Signals and Systems
EEE615	Advanced Power Electronics
EEE616	Soft Computing Theory and Applications
	DEPARTMENT OF INFORMATION TECHNOLOGY
ITE611	Embedded System Design
ITE612	Internet and Web Technologies
ITE613	Optimization Techniques
ITE614	E-Commerce
ITE615	Artificial Intelligence
ITE616	Information Coding Theory
ITE617	Computer Graphics
ITE618	Game Theory and its Applications
ITE619	VLSI Testing and Verification
ITE620	Soft Computing
ITE621	Advanced Database Systems

	DEPARTMENT OF MECHANICAL ENGINEERING
MEE 610	Automobile Engineering
MEE 611	Gas Dynamics and Propulsion
MEE 612	Mechanics of Forming and Press Working
MEE 613	Advanced Solid Mechanics
MEE 614	Advanced Machining and CNC Machine Tools
MEE 615	Operation Research
MEE 616	Mechanical Equipment Design
MEE 620	Advanced Foundry Engineering
MEE 621	Mechanics of Composite and Functionally Graded Materials
MEE 622	Engineering Optimization
MEE 623	Multi-Phase Flow and Heat Transfer
MEE 624	Tribology
MEE 625	Computer Aided Design and Manufacturing
	DEPARTMENT OF METALLURGY AND MATERIALS ENGINEERING
MME610	Engineering Materials
MME611	Electronic and Thermal Properties of Materials
MME612	Alternative Routes of Iron Making
MME613	Production of Ferroalloys
MME614	Nano Science and Technology
MME615	Ceramic Technology
MME616	Solidification Phenomena
MME617	Metal Joining Processes

SEVENTH SEMESTER

	DEPARTMENT OF BIOTECHNOLOGY
BTE710	Molecular Plant Pathology
BTE711	Cancer Biology & Cell Signaling
BTE712	Food Biotechnology
BTE713	Biopharmaceutical Process Design
BTE714	Bioenergy
BTE715	Project Engineering for Biotechnology
BTE716	Structural Biology
BTE717	Environmental Biotechnology
BTE718	Proteomics and Protein Engineering
BTE719	Molecular Modelling & Drug Design
BTE720	Nanotherapeutics
BTE721	Biomaterials
BTE722	Vaccine Technology
BTE723	Stem Cell Biology
	DEPARTMENT OF CHEMICAL ENGINEERING
CHE710	Energy Sources & Utilization
CHE711	Bioprocess and Bioreactor Engineering
CHE712	Process Engineering
CHE713	Chemical Plant Design and Economics
CHE714	Process Safety in Chemical Industries
CHE715	Membrane Separation Processes
CHE716	Process Intensification
CHE717	Colloids and Interface Engineering
CHE718	Pinch Technology
CHE719	Energy Management and Process Optimization in Chemical Industry

		DEPARTMENT OF CIVIL ENGINEERING
CEE710		Structural Dynamics
CEE711		Advanced Design of Steel Structures
CEE712		Theory of Plates and Shells
CEE713		Theory of Elasticity and Plasticity
CEE714		Structural Health Monitoring
CEE720		Soil Dynamics
CEE721		Environmental Pollution and Control
CEE722		Construction Planning and Management
CEE723		Open Channel Hydraulics
CEE724		Ground Water
CEE725		Hydrology & Irrigation Engineering
CEE730		Principles of Reliability
CEE731		Offshore Structural Dynamics
CEE732		Pre-stressed Concrete
CEE733		Advanced Concrete Technology
CEE734		Advanced Structural Mechanics
		DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
CSE710		Machine Learning
CSE711		Graph Theory
CSE712		Electronic Design Automation
CSE713		Natural Language Processing
CSE714		Data Warehousing and Data Mining
CSE715		Digital Image Processing
CSE716		Data Analytics
CSE717		Biometrics
CSE718		Cryptography and Network Security
CSE719		Multimedia Information Systems
CSE720		Cellular Automata and its Application
CSE721		Computational Geometry
CSE722		Complex Network Theory
CSE723		Pattern Recognition
CSE724		Semantic Web Technology
CSE725		Human Computer Interaction
		DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
ECE710		Detection and Estimation Theory
ECE711		Information Theory & Coding
ECE712		Analog IC Design
ECE713		FPGA Based Design
ECE714		MEMS and Microsystems Technology
ECE715		Machine Learning
ECE716		Millimetre Wave Technology
ECE717		RF ID Technology and Applications
ECE718		VLSI System Design
ECE719		Telecommunication Networks
ECE720		Advanced Semiconductor Devices
ECE721		Random Processes
ECE722		Microwave Circuits & Techniques
ECE723		Semiconductor Device Modelling
ECE724		Biomedical Instrumentation
ECE725		Adhoc and Sensor Networks

	DEPARTMENT OF ELECTRICAL ENGINEERING	
EEE710	Renewable Energy Systems	
EEE711	Advanced Power Converters	
EEE712	Generalized Theory of Electrical Machines	
EEE713	Electrical Drives	
EEE714	Power System Planning, Operation and Control	
EEE715	Embedded Systems	
EEE716	FACTS Device	
EEE717	Generation & Utilization of Electrical Power	
EEE718	Advanced Control Systems	
EEE719	Microprocessor & Embedded Systems	
EEE720	Digital Signal Processing	
	DEPARTMENT OF INFORMATION TECHNOLOGY	
ITE710	Machine Learning	
ITE711	Graph Theory	
ITE712	Advanced Algorithms	
ITE713	Natural Language Processing	
ITE714	Data Warehousing and Data Mining	
ITE715	Digital Image Processing	
ITE716	Data Analytics	
ITE717	Cryptography and Network Security	
ITE718	Multimedia Information Systems	
ITE719	Pattern Recognition	
ITE720	Semantic Web	
	DEPARTMENT OF MECHANICAL ENGINEERING	
MEE710	Finite Element Method	
MEE711	Computational Fluid Dynamics and Heat Transfer	
MEE712	Design and Optimisation of Thermal Systems	
MEE713	Non-Conventional Machining	
MEE714	Advanced Welding Technology	
MEE715	Robotics	
MEE716	Mechanical Equipment Design	
MEE717	Control Systems	
MEE718	Fundamentals of Combustion	
MEE719	Modelling and Simulation of Dynamic Systems	
MEE720	Non-Linear Vibration	
MEE721	Convective Heat and Mass Transfer	
MEE722	Additive Manufacturing	
MEE723	Energy Conversion Systems	
MEE724	Hydraulic Machines	
	DEPARTMENT OF METALLURGY AND MATERIALS ENGINEERING	
MME710	Functional Materials	
MME711	Fatigue, Creep and Fracture	
MME712	Computational Materials Engineering	
MME713	Fuel, Furnace and Refractories	
MME714	Powder Metallurgy	
MME715	Secondary Steel Making	
MME716	Composite Materials	
MME717	Corrosion Engineering	
MME718	Energy and Environment in Metallurgical Industries	

EIGHTH SEMESTER

	DEPARTMENT OF BIOTECHNOLOGY
BTE810	**Plant Developmental Biology**
BTE811	**Bioprocess Plant & Equipment Design**
BTE812	**Medical & Pharmaceutical Biotechnology**
BTE813	**GM Crops**
BTE814	**Bioethics & IPR**
BTE815	**Environmental Microbiome**
	DEPARTMENT OF CHEMICAL ENGINEERING
CHE810	**Multiphase Flow**
CHE811	**Process Analysis and Optimisation**
CHE812	**Boiling Heat Transfer**
CHE813	**CFD Applications in Chemical Engineering**
CHE814	**Nanotechnology**
	DEPARTMENT OF CIVIL ENGINEERING
CEE810	**Sediment transport**
CEE811	**Slope Stability and Reinforced Earth**
CEE812	**Soil Structure Interaction**
CEE813	**Industrial Waste**
CEE814	**Water Resources System Planning & Management**
CEE815	**Machine Foundation**
	DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
CSE811	**Distributed Systems**
CSE812	**Computer Vision**
CSE813	**Optical Networks**
CSE814	**Internet Of Things**
CSE815	**Cloud Computing**
CSE816	**Mobile Computing**
CSE817	**Expert Systems**
	DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
ECE810	**Wireless Communication**
ECE811	**Mixed Signal IC Design**
ECE812	**Broadband Communication**
ECE813	**Digital Image Processing**
ECE814	**Error Control Coding**
ECE815	**Embedded System Design**
ECE816	**RF and MMIC**
ECE817	**Design with Op. Amps. & Analog Integrated Circuits**
ECE818	**Satellite Communication**
ECE819	**RF IC Design**
ECE820	**Low Power Circuits & Systems**
ECE821	**Advanced Antenna Synthesis**
ECE822	**DSP Architectures in VLSI**
ECE823	**Internet of Things (IoT) Technology**
ECE824	**VLSI Testing and Verification**
ECE825	**Statistical Signal Processing**
	DEPARTMENT OF ELECTRICAL ENGINEERING
EEE810	**Power System Transients & Power Quality**
EEE811	**Smart Grid**

	DEPARTMENT OF INFORMATION TECHNOLOGY
ITE811	**Distributed Systems**
ITE812	**Optical Networks**
ITE813	**Internet Of Things**
ITE814	**Cloud Computing**
ITE815	**Mobile Computing**
ITE816	**Bioinformatics**
ITE817	**Reinforcement Learning**
	DEPARTMENT OF MECHANICAL ENGINEERING
MEE 810	**Solar Energy**
MEE 811	**Mechatronics**
MEE 812	**Micro and Nano Manufacturing**
MEE 813	**Microfluidics**
MEE 814	**Machine Tool Engineering and Automation**
MEE 815	**Theory of Plates**
MEE 816	**Advanced Mechanical Vibration**
	DEPARTMENT OF METALLURGY AND MATERIALS ENGINEERING
MME810	**Nano Science and Technology**
MME811	**FEM Modelling and Simulation for Materials Design**
MME812	**Mathematical Modelling and Simulation**
MME813	**Raw Materials Preparation for Iron and Steel Making**

Semester - III							
Sl.	**Code**	**Subject**	**L**	**T**	**S**	**C**	**H**
1	MAC331	Mathematics – III	3	1	0	4.0	4
2	CYC301	State of Matter and Chemical Thermodynamics	3	1	0	4.0	4
3	CYC302	Atomic Structure and Chemical Bonding	3	1	0	4.0	4
4	CYC303	Stereochemistry and Basic Principle of Organic Chemistry	3	1	0	4.0	4
5	PHC334	Physics – II	3	0	0	3.0	3
6	PHS384	Physics- II Laboratory	0	0	3	1.5	3
7	CYS351	Qualitative Analysis of Organic Samples Laboratory	0	0	3	1.5	3
8	XXS381	Co-curricular Activities - III (optional)	0	0	0	0.0	0
		TOTAL	15	4	6	22.0	25

Semester - IV							
Sl.	**Code**	**Subject**	**L**	**T**	**S**	**C**	**H**
1	CYC401	Biochemistry: Structure and Function	3	0	0	3.0	3
2	CYC402	Phase-Equilibrium, Chemical Kinetics and Catalysis	3	1	0	4.0	4
3	CYC403	Chemistry of Elements and Radioactivity	3	1	0	4.0	4
4	CYC404	Organic Reaction Mechanism and Reactive Intermediates	3	1	0	4.0	4
5	YYE44*/ HSC431	Open Elective - 1/ Psychology	3	0	0	3.0	3
6	CYS451	Thermodynamic Properties of Solution and Mixture Laboratory	0	0	4	2.0	4
7	CYS452	Identification of Acidic and Basic Radicals Laboratory	0	0	4	2.0	4
8	CYS453	Biochemistry Laboratory	0	0	3	1.5	3
9	XXS481	Co-curricular Activities - IV (optional)	0	0	0	0.0	0
		TOTAL	15	3	11	23.5	29

Semester - V							
Sl.	**Code**	**Subject**	**L**	**T**	**S**	**C**	**H**
1	CYC501	Fundamentals of Electrochemistry and Surface Chemistry	3	1	0	4.0	4
2	CYC502	Chemistry in Solution and Solid State Chemistry	3	1	0	4.0	4
3	CYC503	Chemistry of Heterocyclic Compounds and Natural Products	3	1	0	4.0	4
4	CYC504	Industrial Chemistry	3	0	0	3.0	3
5	YYE54*	Open Elective – 2	3	0	0	3.0	3
6	CYS551	Chemical Kinetics, Surface Chemistry and Conductometry Laboratory	0	0	3	1.5	3
7	CYS552	Quantitative estimation of metal ions in mixture	0	0	4	2.0	4
8	CYS553	Quantitative Analysis of Organic Samples	0	0	3	1.5	3
9	XXS581	Co-curricular Activities- V (optional)	0	0	0	0.0	0
		TOTAL	15	3	10	23.0	28

		Semester - VI					
SI.	Code	Subject	L	T	S	C	H
1	CYC601	Basics of Photochemistry, Spectroscopy, Group Theory and Data Analysis	3	1	0	4.0	4
2	CYC602	Coordination Chemistry	3	1	0	4.0	4
3	CYC603	Reagents in Organic Synthesis	3	1	0	4.0	4
4	CYE610 --	Departmental Elective-1	3	0	0	3.0	3
5	XEC631	Economics and Management Accountancy	3	0	0	3.0	3
6	CYS651	Potentiometric and Colorimetric Analysis	0	0	3	1.5	3
7	CYS652	Analysis of Ores and Alloys	0	0	4	2.0	4
8	CYS653	Single Step Synthesis of Organic Compounds	0	0	4	2.0	4
9	CYS654	Comprehensive Viva Voce – I	0	0	0	1.0	0
10	XXS681	Co-curricular Activities - VI (Optional)	0	0	0	0.0	0
		TOTAL	15	3	10	24.5	28

		Semester - VII					
SI.	Code	Subject	L	T	S	C	H
1	MSC731	Principles of Management	3	0	0	3.0	3
2	CYC701	Quantum Chemistry and Spectroscopy	3	1	0	4.0	4
3	CYC702	Inorganic Reaction Mechanisms and Magnetochemistry	3	1	0	4.0	4
4	CYC703	Concept of Organic Synthesis and Asymmetric Synthesis	3	1	0	4.0	4
6	CYC704	Mathematical and Computational Chemistry	3	0	0	3.0	3
7	CYS751	Spectrophotochemical Analysis	0	0	3	1.5	3
8	CYS752	Spectrophotometric Estimation of Cations and Anions	0	0	3	1.5	3
9	CYS753	Separation and Identification of Organic Compounds from Binary Mixture	0	0	4	2.0	4
		TOTAL	15	3	10	23.0	28

		Semester - VIII					
SI.	Code	Subject	L	T	S	C	H
1	CYC801	Chemical, Statistical Thermodynamics and Electrochemistry	3	1	0	4.0	4
2	CYC802	Organometallic Compounds and Bioinorganic Chemistry	3	1	0	4.0	4
3	CYC803	Pericyclic Reactions and Organic Photochemistry	3	1	0	4.0	4
4	CYE810 --	Departmental Elective- 2	3	0	0	3.0	3
5	CYS851	Advanced Physical Chemistry Practical	0	0	4	2.0	4
6	CYS852	Synthesis and Characterisation of Complex Compounds	0	0	3	1.5	3
7	CYS853	Chromatographic Separation of Organic Compounds	0	0	3	1.5	3
		TOTAL	12	3	10	20.0	25

		Semester - IX					
SI.	Code	Subject	L	T	S	C	H
1	CYE9 --	Special subject -1	3	1	0	4.0	4
2	CYE9 --	Special subject -2	3	1	0	4.0	4
3	CYE9 --	Special subject -3	3	1	0	4.0	4
4	CYE9 --	Special subject -4	3	1	0	4.0	4
5	CYS9 --	Special subject Practical	0	0	3	1.5	3
6	CYS951	Project- I	0	0	3	1.0	4
7	CYS952	Vocational training/ Summer internship/ Term Paper	0	0	0	1.0	0
8	CYS953	Comprehensive Viva Voce – II	0	0	0	1.5	0
		TOTAL	12	4	7	21.0	23

Semester - X							
Sl.	Code	Subject	L	T	S	C	H
1	CYS051	Project – II/ Internship	0	0	30	10.0	30
2	CYS052	Seminar & Viva voce	0	0	0	2.0	0
		TOTAL	0	0	30	12.0	30

CREDIT UNIT OF THE PROGRAM:

Semester	I + II	III	IV	V	VI	VII	VIII	IX	X	TOTAL
Credit Unit	38.0	22.0	23.5	23.0	24.5	23.0	20.0	21.0	12.0	207.0

Baskets of Departmental Electives:

	Elective-1
CYE611	Analytical and Environmental Chemistry
CYE612	Chromatographic Separation and Instrumental Methods of Analysis
	Elective-2
CYE811	Advanced Natural Products and Medicinal Chemistry
CYE812	Spectroscopic Methods of Chemical Analysis

Special subjects:

	Physical Chemistry specialisation:
CYE911	Advanced Quantum Chemistry and Application of Group Theory
CYE912	Non-Equilibrium Thermodynamics and Biophysical Chemistry
CYE913	Material Chemistry and Advanced Spectroscopy
CYE914	Electrode Kinetics and Corrosion Science
CYS961	Advanced Physical Chemistry-II Laboratory
	Inorganic Chemistry specialisation:
CYE921	Advanced Green Chemistry and Analytical Chemistry
CYE922	Synthetic Methodology for Metal Complexes and Coordination Aggregates
CYE923	Small Molecule Activation and Nuclear Chemistry
CYE924	Group theory, Applied Electrochemistry and X-ray Structure Analysis
CYS971	Environmental Sample Analysis
	Organic Chemistry specialisation:
CYE931	Application of some Important Reactions in Synthetic Organic Chemistry
CYE932	Natural Products and Drug Design
CYE933	Bioorganic Chemistry
CYE934	Advanced Stereochemistry and Structure-reactivity Correlation
CYS981	Multi Step Synthesis and Characterization of Organic Compounds