सीनेट की आवश्यक बैठक (53वीं बैठक) का कार्यवृत्त

MINUTES OF THE EMERGENT MEETING (53RD MEETING) OF THE SENATE

02 दिसम्बर 2013

2ND DECEMBER 2013

भारतीय प्रौद्योगिकी संस्थान रूड़की

रूड़की – 247 667 (भारत)

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

ROORKEE – 247 667 (INDIA)

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE
ROORKEE-247 667 (INDIA)

INDEX

Item No.	Particulars	Page(s)
53.1	To consider the course structures and teaching schemes of different UG/IDD/IMT/IMS Programmes under new U.G. Curricula.	2
53.2	To consider the syllabi for various programmes under New Course Curricula.	4
App. 'A'	Credits approved for the Academic Departments (New UG/IDD/IMS/IMT Structure: 2013-14 onwards)	5-9
App. 'B'	Teaching schemes of different UG/IDD/IMT/IMS Programmes under new U.G. Curricula.	10-83
App. 'C'	PH-110: Introduction to Electronics	84-85

15 JAN 2014

MEETING SECTION
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Minutes of the 53rd Emergent Meeting of the Senate held on 2nd December 2013 in the Senate Hall of the Institute.

Following were present:

1.	Prof. Pradipta Banerji	Director & Chairman
2.	Prof. (Mrs.) Pushplata	(Architecture & Planning)
3.	Prof. R.P. Singh	(Biotechnology)
4.	Prof. Ramasare Prasad	(Biotechnology)
5.	Prof. I.M. Mishra	(Chemical Engineering)
6.	Prof. Bikash Mohanty	(Chemical Engineering)
7.	Prof. Shri Chand	(Chemical Engineering)
8.	Prof. Vijay Kumar Agarwal	(Chemical Engineering)
9.	Prof. Anil Kumar	(Chemistry)
10.	Prof. (Mrs.) Mala Nath	(Chemistry)
11.	Prof. U.P. Singh	(Chemistry)
12.	Prof. M.R. Maurya	(Chemistry)
13.	Prof. S.S. Jain	(Civil Engineering)
14.	Prof. Deepak Kashyap	(Civil Engineering)
15.	Prof. Pradeep Bhargava	(Civil Engineering)
16.	Prof. S.K. Ghosh	(Civil Engineering)
17.	Prof. Akhil Upadhyay	(Civil Engineering)
18.	Prof. Padam Kumar	(Computer Science)
19.	Prof. Ashwai Kumar	(Earthquake Engineering)
20.	Prof. A.K. Saraf	(Earth Sciences)
21.	Prof. R.G. Sastry	(Earth Sciences)
22.	Prof. Vinod Kumar	(Electrical Engineering)
23.	Prof. Pramod Agarwal	(Electrical Engineering)
24.	Prof. Sajjan Pal Singh	(Electrical Engineering)
25.	Prof. R.P. Maheshwari	(Electrical Engineering)
26.	Prof. R.S. Anand	(Electrical Engineering)
27.	Prof. M.V. Kartikeyan	(Electronics & Communication Engg.)
28.	Prof. Dharmendra Singh	(Electronics & Communication Engg.)
29.	Prof. D.K. Nauriyal	(Humanities & Social Sciences)
30.	Prof. (Mrs.) Rashmi Gaur	(Humanities & Social Sciences)

15 JAN 2014

31.	Prof. Y.S. Negi	(Paper Technology)
32.	Prof. S.P. Sharma	(Mathematics)
33.	Prof. T.R. Gulati	(Mathematics)
34.	Prof. R.C. Mittal	(Mathematics)
35.	Prof. V.K. Katiyar	(Mathematics)
36.	Prof. Kusum Deep	(Mathematics)
37.	Prof. Satish C. Sharma	(Mechanical & Industrial Engg.)
38.	Prof. P.K. Jain	(Mechanical & Industrial Engg.)
39.	Prof. Akhilesh Gupta	(Mechanical & Industrial Engg.)
40.	Prof. B.K. Gandhi	(Mechanical & Industrial Engg.)
41.	Prof. S.K. Nath	(Metallurgical & Materials Engg.)
42.	Prof. Anjan Sil	(Metallurgical & Materials Engg.)
43.	Prof. Rajesh Srivastava	(Physics)
44.	Prof. M.L.Kansal	(WRD&M)
45.	Prof. R.P. Saini	(AHEC)
46.	Dr. C.B. Majumdar,	Associate Dean, Sponsored Research & Consultancy
47.	Dr. P. Jeevanandam,	Associate Dean of Students' Welfare, Foreign Students
48.	Dr. Apurbba Kumar Sharma	Associate Dean, Academic Studies
49.	Dr. Yogendra Singh, Librarian	
50.	Lt. Col. (Retd) A.K. Srivastava,	Registrar & Secretary, Senate

The Chairman (Director) welcomed the members to the emergent (53rd) Meeting of the Senate. He stated that the meeting was convened to discuss the structures and teaching schemes of different UG/IDD/IMS/IMT Programmes under new U.G.Curicula.

The Senate noted the communication received from the following member for not attending the current meeting:

1. Dr. R.K.Peddiniti, Associate Dean, Academic Research

The Agenda was then taken up:

Item No. 53.1 **To consider the course structures and teaching schemes of different UG/IDD/IMT/IMS Programmes under new U.G. Curricula.**

The Senate hold in-depth discussion and approved the course structures, teaching schemes, and distribution of credits for different

15 JAN 2014

UG/IDD/IMS/IMT Programmes under new U.G. Curricula proposed by various Academic Departments (New Structure) and the same are given at **Appendices 'A' & 'B'.**

Arising out of the discussion, the Senate decided as under:

1. Departmental Elective courses be increased by Department of Architecture and Planning.
2. Currently running IDD programmes to be offered to the students after completion of Third Year under the new UG curricula be revised and approved afresh. Departments may deliberate on structures of IV and V years of the IDD Programme for approval in the next meeting of the Senate likely to be held in the month of February 2014. In addition, Departments intending to start new IDD programme(s) may also consider framing new programme and deliberate on the proposal. Proposed structures and the syllabi be placed before the Senate through IAPC.
3. To review the Postgraduate Programmes of the Institute and for this purpose, under-mentioned committee has been constituted:

   1. Prof. S.K.Ghosh, Chairman
   2. Prof. M.R.Maurya, Co-Chairman
   3. Associate Dean Academic Studies -Member Secretary
   4. Member } To be co-opted.
   5. Member }

15 JAN 2014

The parameters for review shall include the following:

(a) Number of students opting each programme.

(b) Placement status of each programme.

(c) Factors that would make a PG programme more attractive and demand centric.

(d) New programmes, have to be reviewed after a period of three years.

4. The under-mentioned Departments to identify and list the Department Electives, alongwith the course curriculum:

1. Department of Biotechnology
2. Department of Civil Engineering
3. Department of Chemical Engineering
4. Department of Computer Science and Engineering

5. Department of Electronics and Communication Engineering to give its own Electives.

Item No.53. 2 **To consider the syllabi for various programmes under New Course Curricula.**

The Senate discussed and approved the syllabi of Department of Physics, 'PH-110: Introduction to Electronics' as given at **Appendix 'C'.**

The Senate further decided that the Departments shall re-look at the syllabi proposed by them. The suggestions, additions and modifications, if any, be sent to the Academic Section at the earliest.

The meeting ended with a vote of thanks to the Chair.

15 JAN 2014

Appendix 'A'
Item No. Senate/53.1

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Credits Approved for the Academic Departments (New UG/IDD/IMS/IMT Structure: 2013-14 onwards)

Department/ Programme	Sanctioned Strength (2013-14)	DISTRIBUTION OF CREDITS												GRAND TOTAL
		BSC	DCC	DEC	ESC	GSC	HSSC	HSSMEC	OEC	DHC	MSC	TOTAL	CCA	
AR	40	1/4	44/167	3/9	8/27	1/3	2/4	2/6	-	-	-	220	3/6	226
BT	45	4/16	25/89	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	161	3/6	167
CE	135	4/16	24/91	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	163	3/6	169
CH	110	4/16	25/89	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	161	3/6	167
CS	75	4/16	26/88	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	160	3/6	166
EC	75	5/20	27/87	6/20	4/16	1/3	2/4	2/6	1/3	5/19	5/19	159	3/6	165
EE	140	4/16	24/90	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	162	3/6	168
ES-GT	30	4/16	30/117	6/24	4/16	1/3	2/4	2/6	1/3	-	-	189	3/6	195
ES-GPT	30	4/16	28/114	8/32	4/16	1/3	2/4	2/6	1/3	-	-	194	3/6	200
MA	30	4/16	34/123	7/21	4/16	1/3	2/4	2/6	1/3	-	5/18-20	192	3/6	198
MI-ME	80	4/16	23/88	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	160	3/6	166
MI-PI	60	4/16	23/86	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	158	3/6	164
MT	110	4/16	23/86	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	158	3/6	164
PEM	35	4/16	35/112	14/34	4/16	1/3	2/4	2/6	1/3	-	-	194	3/6	200
PH	30	9/34	30/109	6/19	4/16	1/3	2/4	2/6	1/3	-	5/18	194	3/6	200
PP	40	4/16	25/88	6/24	4/16	1/3	2/4	2/6	1/3	5/20	5/20	160	3/6	166
PS	40	4/16	23/85	6/22	4/16	1/3	2/4	2/6	1/3	5/20	5/20	155	3/6	164

15 JAN 2014

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

LIST OF BSC COURSES (New UG/IDD/IMS/IMT Structure: 2013-14 onwards)

Department/ Programme	Sanctioned Strength (2013-14)	Semester I (Autumn)	Semester II (Spring)	Semester III (Autumn)	Semester IV (Spring)
AR	40	MA-001 Mathematics I			
BT	45	MA-001 Mathematics I PH-007 Modern Physics	MA-002 Mathematical Methods CY-002 Organic and Inorganic Chemistry		
CE	135	MA-001 Mathematics-I PH-001 Mechanics	MA-006 Probability and Statistics CY-008 General Chemistry - III		
CH	110	MA-001 Mathematics-I CY-001 Physical Chemistry	MA-002 Mathematical Methods CY-002 Organic and Inorganic Chemistry		
CS	75	MA-001 Mathematics-I PH-005 Physics-I: Electrodynamics & Optics	MA-010 Optimization Techniques PH-006 Quantum Mechanics and Statistical Mechanics		
EC	75	MA-001 Mathematics-I PH-005 Electrodynamics & Optics	MA-002 Mathematical Methods PH-006 Quantum Mechanics and Statistical Mechanics		MA-006 Probability & Statistics
EE	140	MA-001 Mathematics-I PH-003 Electromagnetic Field Theory	MA-002 Mathematical Methods PH-004 Applied Physics		
ES-GT	30	MA-001 Mathematics-I PH-001 Mechanics	MA-004 Numerical Methods CY-008 General Chemistry-III		
ES-GPT	30	MA-001 Mathematics-I PH-001 Mechanics	MA-006 Probability and Statistics PH-008 Electromagnetic Theory		
MA	30	MA-001 Mathematics-I PH-001 Mechanics	MA-004 Numerical Methods PH-008 Electromagnetic Theory		
MI-ME	80	MA-001 Mathematics-I PH-001 Mechanics	MA-004 Numerical Methods PH-008 Electromagnetic Theory		
MI-PI	60	MA-001 Mathematics-I PH-001 Mechanics	MA-006 Probability and Statistics PH-008 Electromagnetic Theory		

15 JAN 2014

MT	110	MA-001 Mathematics-I PH-007 Modern Physics	MA-002 Mathematical Methods CY-006 General Chemistry-II		
PEM	35	MA-001 Mathematics-I AS-041 General Chemistry	AS-002 Mathematics-II AS-021 Applied Physics		
PH	30	MA-001 Mathematics-I PH-001 Mechanics	MA-004 Numerical Methods CY-004 General Chemistry-I	CY-201 Physical Chemistry-I CY-202 Basic Inorganic Chemistry MA-205 Ordinary and Partial Differential Equation	CY-203 Organic Chemistry-I MA-102 Linear algebra
PP	40	MA-001 Mathematics-I AS-021 Applied Physics	AS-002 Mathematics-II AS-042 Chemistry		
PS	40	MA-001 Mathematics-I AS-041 General Chemistry	AS-002 Mathematics-II AS-021 Applied Physics		

15 JAN 2014

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

LIST OF ESC COURSES (New UG/IDD/IMS/IMT Structure: 2013-14 onwards)

Department/ Programme	Sanctioned Strength (2013-14)	Semester I (Autumn)	Semester II (Spring)	Semester III (Autumn)	Semester IV (Spring)
AR	40		Geomatics Technique for Architects (CE-192) Computer Systems and Programming (AR-112)	X	Theory of Structures (CE-292)
BT	45	Computer Systems and Programming (BT-103)	Basic Manufacturing Processes (MI-102)	Engineering Thermodynamics (MI-106)	Fluid Mechanics (CE-142)
CE	135	Numerical Methods and Computer Programming (CE-103)	Solid Mechanics (CE-102)	Electrical Sciences (EE-112)	Basic Manufacturing Processes (ME-102)
CH	110	Computer Programming and Numerical Methods (CH-103)	Electrical Science (EE-112)	Mechanical Engineering Drawing (ME-108)	Energy Engineering (CH-112)
CS	75	Fundamentals of Object Oriented Programming (CS-103)	Fundamentals of Electronics (EC-102)	Engineering Thermodynamics (MI-108)	Electrical and Electronic Materials (MT-105)
EC	75	Fundamentals of Object Oriented Programming (CS-103)	Electrical Science (EE-112)	Mechanical Engineering Drawing (ME-108)	Electrical and Electronic Materials (MT-105)
EE	140	Programming in C++ (EE-103)	Engineering Thermodynamics (MI-106)	Control Systems (EE-211)	Electrical and Electronic Materials (MT-105)
ES-GT	30	Computer Programming (ES-103)	Engineering Thermodynamics (MI-106)	Materials Science (MT-106)	Engineering Hydrology (HY-102)
ES-GPT	30	Computer	Engineering Hydrology (HY-	Electrical Science	Fundamentals of Electronics

15 JAN 2014

		Programming (ES-103)	102)	(EE-112)	(EC-102)
MA	30	Introduction to Computer Programming (MA-103)	Fundamentals of Electronics (EC-102)	Solid Mechanics (CE-102)	Fluid Mechanics (CE-142)
MI-ME	80	Programming and Data Structure (MI-103)	Material Science (MT-106)	Solid Mechanics (CE102)	Electrical Science (EE-112)
MI-PI	60	Programming and Data Structure (MI-103)	Material Science (MT-106)	Solid Mechanics (CE-102)	Electrical Science (EE-112)
MT	110	Computer Programming (MT-103)	Mechanical Engineering Drawing (MI-108)	Electrical Science (EE-112)	Fundamentals of Electronics (EC-102)
PEM	35	Introduction to Computer Programming (PE-103)	Mechanical Engineering Drawing (MI-108)	Material Science (MT-106)	Electrical Science (EE-112)
PH	30	Computer Programming (PH-103)	Engineering Thermodynamics (MI-106) Electrical Science (EE-112) Mechanical Engineering Drawing (MI-108)	X	X
PP	40	Introduction to Computer Programming (PP-103)	Engineering Thermodynamics (MI-106)	Electrical Science (EE-112)	Fundamentals of Electronics (EC-102)
PS	40	Introduction to Computer Programming (PE-103)	Engineering Thermodynamics (MI-106)	Material Science (MT-106)	Electrical Science (EE-112)

13 JAN 2014

Program Code : **110 - B.Arch.**

Department : **Department of Architecture and Planning**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-001	Mathematics-I	BSC	4	3	1	-	3	-	25	-	25	50	-
2.	AR-101	Introduction to Architecture	DCC	2	1	-	2	-	-	100	-	-	-	-
3.	AR-103	Visual Art-I	DCC	2	1	-	3	-	3	-	60	20	-	20
4.	AR-105	Architectural Graphics-I	DCC	4	1	-	6	-	3	-	60	20	-	20
5.	AR-107	Basic Design and Creative Workshop-I	DCC	4	1	-	6	-	4	-	60	20	-	20
6.	HS-001A	Communication Skills (Basic)	HSSC	2	1	-	2	2	-	25	-	25	50	-
	HS-001B	Communication Skills (Advance)												
7.	CE-105	Introduction to Environmental Studies	GSC	3	3	-	-	3	-	15	-	35	50	-
8.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	-	2	-	25	-	25	50	-
		Total		**23**	**12**	**2**	**19**							
				(Spring)										
1.	AR-102	Architectural Design-I	DCC	4	1	-	6	-	7	-	60	20	-	20
2.	AR-104	Introduction to Building Materials and Construction	DCC	3	1	-	4	4	-	-	60	20	20	-
3.	AR-106	Architectural Graphics-II	DCC	4	1	-	6	-	3	-	60	20	-	20
4.	AR-108	Climatology in Architecture	DCC	3	2	1	-	3	-	25	-	25	50	-
5.	AR-110	Visual Art and Creative Workshop-II	DCC	4	1	1	4	1	2	15	40	15	15	15
6.	CE-192	Geomatics Techniques for Architects	ESC	3	2	-	2	3	-	-	25	25	50	-
7.	AR-112	Computer Systems and Programming	ESC	4	3	-	2	3	-	15	15	30	40	-
		Total		**25**	**11**	**2**	**24**							

15 JAN 2014

Program Code : **110 - B.Arch.**

Department : **Department of Architecture and Planning**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	AR-201	Architectural Design-II	DCC	5	1	-	8	-	7	-	60	20	-	20
2.	AR-203	Building Construction-II	DCC	4	1	1	4	4	-	-	60	20	20	-
3.	AR-205	History of Architecture-I	DCC	3	2	1	-	3	-	25	-	25	50	-
4.	AR-207	Interior Design	DCC	4	2	1	2	3	-	15	15	20	50	-
5.	AR-209	Structure and Architecture	DCC	3	2	1	-	3	-	25	-	25	50	-
6.	AR-211	Acoustics and Lighting	DCC	3	2	1	-	3	-	25	-	25	50	-
7.	AR-213	Measured Drawing Camp	DCC	2	-	-	2	-	-	-	100	-	-	-
		Total		**24**										
			(Spring)											
1.	AR-202	Architectural Design-III	DCC	5	1	-	8	-	7	-	60	20	-	20
2.	AR-204	Building Construction-III	DCC	4	1	1	4	4	-	-	60	20	20	-
3.	AR-206	History of Architecture-II	DCC	3	2	1	-	3	-	25	-	25	50	-
4.	CE-292	Theory of Structures	ESC	4	3	1	-	3	-	25	-	25	50	-
5.	AR-208	Vernacular Architecture	DCC	3	2	1	-	3	-	25	-	25	50	-
6.	AR-210	Principles of Architecture	DCC	3	2	1	-	3	-	25	-	25	50	-
7.	AR-212	Building Codes, Regulations and Standards	DCC	2	1	1	-	2	-	25	-	25	50	-
		Total		**24**										

15 JAN 2014

Program Code : **110 - B.Arch.**

Department : **Department of Architecture and Planning**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	AR-301	Architectural Design-IV	DCC	5	1	-	8	-	7	-	60	20	-	20
2.	AR-303	Building Construction-IV	DCC	4	1	1	4	4	-	-	60	20	20	-
3.	AR-305	Quantity, Pricing and Specifications	DCC	3	2	1	-	3	-	25	-	25	50	-
4.	AR-307	Contemporary Architecture	DCC	3	2	1	-	3	-	25	-	25	50	-
5.	AR-309	Working Drawing	DCC	2	-	-	4	-	-	-	100	-	-	-
6.	CE-391	Structural Design-I	ESC	3	2	1	-	3	-	25	-	25	50	-
7.	HS-351	Society, Culture and Built Environment	HSSMEC	3	2	1	-	3	-	25	-	25	50	-
		Total		**23**										
				(Spring)										
1.	AR-302	Architectural Design-V	DCC	5	1	-	8	-	7	-	60	20	-	20
2.	AR-304	Landscape Design and Site Development	DCC	3	2	0	2	3	-	25	-	25	50	-
3.	AR-306	Housing	DCC	3	2	-	2	3	-	15	15	20	50	-
4.	CE-392	Structural Design-II	ESC	4	3	1	-	3	-	25	-	25	50	-
5.	CE-394	Building Services	ESC	2	1	-	2	2	-	25	-	25	50	-
6.	AR-308	Building Technology-Mechanical and Electrical	ESC	4	3	1	-	3	-	25	-	25	50	-
7.	HS-352	Building Economics and Real Estate	HSSMEC	3	2	1	-	3	-	25	-	25	50	-
		Total		**24**										

15 JAN 2014

Program Code : **110 - B.Arch.**

Department : **Department of Architecture and Planning**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	AR-401	Architectural Design-VI	DCC	5	1	-	8	-	7	-	60	20	-	20
2.	AR-403	Urban Planning	DCC	4	3	-	2	3	-	15	15	20	50	-
3.	AR-405	Sustainable Architecture	DCC	4	3	1	-	3	-	25	-	25	50	-
4.	AR-407	Advanced Computer Applications in Architecture	DCC	2	1	-	3	-	4	-	25	25	-	50
5.	AR-409	Disaster Resistant Buildings	DCC	3	2	1	-	3	-	25	-	25	50	-
6.	AR-ELE1	Department Elective-I	DEC	3	Details as per list.									
7.	AR-411	Live Project/ Studio/ Seminar-I	DCC	2	-	-	4	-	-	-	100	-	-	-
		Total		**23**										
(Training)														
1.	AR-402	Professional Training	DCC	10										
		Total		**10**										

15 JAN 2014

Program Code: 110 - B.Arch.

Department : Department of Architecture and Planning

Year : V

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	AR-501	Architectural Design-VII	DCC	5	1	-	8	-	7	-	60	20	-	20
2.	AR-503	Urban Design	DCC	3	2	-	2	3	-	15	15	20	50	-
3.	CE-401	Construction, Planning and Management	ESC	3	2	1	-	3	-	25	-	25	50	-
4.	AR-507	Hill Architecture	DCC	3	2	1	-	3	-	25	-	25	50	-
5.	AR-500A	Thesis Project-I	DCC	3	-	2	-	-	-	100	-	-	-	-
6.	AR-ELE2	Departmental Elective-II	DEC	3	Details as per List.									
7.	AR 511	Live Project/Studio/Seminar-II	DCC	2			4				100			
		Total		22										
			(Spring)											
1.	AR-500B	Thesis Project-II	DCC	15	0	0	20	-	-	-	50	-	-	50
2.	AR-508	Professional Practice, Valuation and Arbitration	DCC	4	3	1	-	3	-	25	-	25	50	-
3.	AR-ELE3	Departmental Elective-III	DEC	3										
		Total		22										

15 JAN 2014

Program Code : 111 - B.Tech. (Biotechnology)

Department : Department of Biotechnology

Year : I

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No.	Subject Code	Course Title	Subject Area	Credit	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-107	Modern Physics	BSC	4	3	0	2	3	0	10	15	25	50	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS- 001A HS- 001B	Communication Skills (Basic) Communication Skills (Advance)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	2	1	0	2	0	25	25	50	50	-
6.	BT-101	Introduction to Biotechnology	DCC	2	2	0	0	2	0	25	-	25	50	-
7.	BT-103	Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**17**	**2**	**6**							
				(Spring)										
1.	MA- 002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	BT-102	Process Calculations	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	BT-104	Cell Biology	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	BT-106	Biochemistry	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	CY- 002	Organic and Inorganic Chemistry	BSC	4	3	0	2	3	2	15	15	30	40	-
6.	MI-102	Basic Manufacturing Processes	ESC	4	2	0	4	3	0	15	15	30	40	-
		Total		**24**	**17**	**4**	**6**							

Program Code : 111 - B.Tech. (Biotechnology)

Department : Department of Biotechnology

Year : II

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No.	Subject Code	Course Title	Subject Area	Credit	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MT-106	Engineering Thermodynamics	ESC	4	3	1	2/2	3	0	15	15	30	40	-
2.	BT-201	Genetics and Molecular Biology	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	BT-203	Microbiology	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	BT-205	Bioinformatics	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	BT-207	Immunotechnology	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	2	1	0	3	0	15	-	35	50	-
			Total	23	17	06	00							
				(Spring)										
1.	CE-142	Fluid Mechanics	ESC	4	3	1	2/2	3	0	15	15	30	40	-
2.	BT-202	Genetic Engineering	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	BT-204	Structural Biology	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	BT-206	Heat and Mass Transfer Operations	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	BT-208	Biotechnology Laboratory - I	DCC	4	0	0	8	0	0	-	100	-	-	-
6.	BT-292	Chemical Kinetics and Reactor Design	DCC	3	2	1	0	2	0	25	-	25	50	-
			Total	23	14	05	08							

15 JAN 2014

Program Code : 111 - B.Tech. (Biotechnology)

Department : Department of Biotechnology

Year : III

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No.	Subject Code	Course Title	Subject Area	Credit	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	BT-301	Bioprocess Engineering	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	BT-303	Plant Biotechnology	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	BT-305	Animal Biotechnology	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	BT-ELE1	Department Elective Course - I	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	OEC/BM-ELE	Management Studies / Open Elective Course *	HSSMEC/ OEC	3	3	0	0	3	0	15	-	35	50	-
6.	BT-391	Technical Communication	DCC	2	0	2	0	0	0	100	-	-	-	-
			Total	21	15	06	00							
				(Spring)										
1.	BT-300	Industry Oriental Problem /Case Study Lab Based Project/Practical Problem	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	BT-302	Bioseparation Engineering	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	BT-304	Biotechnology Laboratory - II	DCC	4	0	0	8	0	0	-	100	-	-	-
4.	BT-ELE2	Department Elective Course - II	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC1/DHC1	Minor Specialization Course-I Departmental Honours Course-I	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
6.	OEC/BM-ELE	Management Studies / Open Elective Course *	HSSMEC/ OEC	3	3	0	0	3	0	15	-	35	50	-
7.	BT-399	Educational Tour	DCC	0	0	0	0	0	0	-	-	-	-	-
			Total	23	15	04	08							

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

Program Code : 111 - B.Tech. (Biotechnology)

Department : Department of Biotechnology

Year : IV

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No.	Subject Code	Course Title	Subject Area	Credit	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	BT- 400A	B.Tech. Project	DCC	4	0	0	8	0	0	-	-	-	-	-
2.	BT- ELE3	Department Elective Course -III	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	BT- ELE4	Department Elective Course -IV	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC2/DHC2	Minor Specialization Course-II Departmental Honours Course-II	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC3/DHC3	Minor Specialization Course-III Departmental Honours Course-III	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
6.	BT- 499	Training Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
			Total	**14-22**	**12**	**06**	**08**							
				(Spring)										
1.	BT- 400B	B.Tech. Project (Contd. from Autumn Semester)	DCC	8	0	0	16	0	0	-	100	-	-	-
2.	BT- ELE5	Department Elective Course –V	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	BT- ELE6	Department Elective Course -VI	DEC	4	3	1	0	3	0	25	-	25	50	-
	MSC4/DHC4	Minor Specialization Course-IV Departmental Honours Course-IV	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC5/DHC5	Minor Specialization Course-V Departmental Honours Course-V	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
			Total	**16-24**	**12**	**04**	**16**							

5 JAN 2014

Program Code : 112 - B.Tech. (Chemical Engineering)

Department : Department of Chemical Engineering

Year: I

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	CY-001	Physical Chemistry	BSC	4	3	0	2	3	0	10	15	25	50	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
	HS-001B	Communication Skills (Advance)												
5.	HS-002	Ethics and Self-awareness	HSSC	2	1	1	0	2	0	15	-	35	50	-
6.	CH-101	Introduction to Chemical Engineering	DCC	2	2	0	0	0	0	-	-	100	-	-
7.	CH-103	Computer Programming and Numerical Methods	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**2**	**6**							
				(Spring)										
1.	CY-002	Organic and Inorganic Chemistry	BSC	4	3	1	2/2	3	0	15	15	30	40	-
2.	MA-002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	CH-102	Material and Energy Balance	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CH-104	Fluid Dynamics	DCC	4	3	1	2/2	3	2	15	15	15	40	15
5.	CH-106	Thermodynamics and Chemical Kinetics	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	EE-112	Electrical Science	ESC	4	3	1	2/2	3	0	15	15	30	40	-
		Total		**24**	**18**	**6**	**3**							

15 JAN 2014

Program Code : 112 - B.Tech. (Chemical Engineering)

Department : Department of Chemical Engineering

Year: II

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CH-201	Heat Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
2.	CH-203	Mechanical Operations	DCC	4	3	1	2/2	3	2	15	15	15	40	15
3.	CH-205	Chemical Engineering Thermodynamics	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CH-207	Transport Phenomena	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MI-108	Mechanical Engineering Drawing	ESC	4	2	0	4	0	4	-	25	25	-	50
6.	HS-ELE	HSS Elective Course	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**23**	**17**	**4**	**6**							
			(Spring)											
1.	CH-202	Mass Transfer -I	DCC	3	2	1	2/2	2	3	15	15	15	40	15
2.	CH-204	Reaction Engineering	DCC	5	3	1	4/2	3	4	15	15	15	40	15
3.	CH-206	Chemical Technology	DCC	3	3	0	0	3	0	15	-	35	50	-
4.	CH-210	Industrial Instrumentation	DCC	2	2	0	0	2	0	15	-	35	50	-
5.	CH-112	Energy Engineering	ESC	4	3	1	0	3	0	25	-	25	50	-
6.	CH-291	Equipment Design*	DCC	4	3	0	2	4	0	-	25	25	50	-
		Total		**21**	**16**	**3**	**5**							

Open book examinations of four hours duration

15 JAN 2014

Program Code : 112 - B.Tech. (Chemical Engineering)

Department : Department of Chemical Engineering

Year: III

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	CH-301	Mass Transfer-II	DCC	5	3	1	3/2	3	3	15	15	15	40	15
2.	CH-303	Process Dynamics and Control	DCC	4	3	1	2/2	3	3	15	15	15	40	15
3.	CH-305	Process Equipment Design*	DCC	4	3	0	2	4	0	-	25	25	50	-
4.	CH-ELE1	Departmental Elective Course-1	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	OEC	Open Elective Course	OEC	3	3	0	0	3	0	15	-	35	50	-
6.	CH-391	Technical Communication	DCC	2	0	2	0	0	0	-	100	-	-	-
		Total		**22**	**15**	**5**	**4.5**							
				(Spring)										
1.	CH-300	Industry Oriented Problem/Case Study/Lab Based Project/Practical Problem	DCC	3	0	0	3	0	0	-	50	-	50	-
2.	CH-302	Engineering Analysis and Process Modeling	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	CH-304	Process Economics and Plant Design	DCC	3	3	0	0	3	0	15	-	35	50	-
4.	CH-306	Process Utilities and Safety	DCC	3	3	0	0	3	0	15	-	35	50	-
5.	CH-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
6.	MSC1/ DHC1	Minor Specialization Course-I/ Departmental Honours Course-I	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
7.	BM-ELE	Any one Elective course from 'Management Studies'	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
8.	CH-399	Educational Tour	DCC	0	0	0	0	0	0	-	50	-	50	-
		Total		**20/24**	**15/18**	**2/3**	**3**							

Open book examinations of four hours duration

15 JAN 2014

Program Code : 112 - B.Tech. (Chemical Engineering)

Department : Department of Chemical Engineering

Year: IV

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CH-400A	B. Tech. Project	DCC	4	0	0	4	0	0				100	-
2.	CH-ELE3	Department Elective Course- III	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	CH-ELE4	Department Elective Course- IV	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC2/DHC2	Minor Specialization Course-II/ Departmental Honours Course-II	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC3/DHC3	Minor Specialization Course-III/ Departmental Honours Course-III	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
6.	CH-499	Training Seminar	DCC	2	0	2	0	0	0	50	-	-	50	-
		Total		**14/22**	**6/12**	**4/6**	**4**							
			(Spring)											
1.	CH-400B	B. Tech. Project (Contd. From Autumn Semester)	DCC	8	0	0	8	0	0	-	-	-	100	-
2.	CH-ELE5	Department Elective Course- V	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	CH-ELE6	Department Elective Course- VI	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC4/DHC4	Minor Specialization Course-IV/ Departmental Honours Course-IV	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course-V/ Departmental Honours Course-V	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Total		**16/24**	**6/12**	**2/4**	**8**							

13 JAN 2014

Program Code : 113 B. Tech. (Civil Engineering)

Department : Department of Civil Engineering

Year : I

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	0	10	15	25	50	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	2	1	0	2	0	25	-	25	50	-
4.	HS-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
	HS-001B	Communication Skills (Advance)												
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	CE-101	Introduction to Civil Engineering	DCC	2	2	0	0	0	0	-	-	50	50	-
7.	CE-103	Numerical Methods and Computer Programming	ESC	4	3	0	2	3	0	15	15	20	50	-
		Total		**21**	**15**	**3**	**6**							
(Spring)														
1.	CY-008	General Chemistry - III	BSC	4	3	0	2	3	0	15	15	30	40	-
2.	MA-006	Probability and Statistics	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	CE-102	Solid Mechanics	ESC	4	3	1	0	3	0	25	-	25	50	-
4.	CE-104	Water Supply Engineering	DCC	4	3	1	2/2	3	0	15	15	20	50	-
5.	CE-106	Geomatics Engineering – I	DCC	4	3	0	2	3	0	-	25	25	50	-
6.	CE-108	Fluid Mechanics	DCC	4	3	1	2/2	3	0	15	15	20	50	-
		Total		**24**	**18**	**4**	**6**							

Program Code : **113 B. Tech. (Civil Engineering)**

Department : **Department of Civil Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	EE-112	Electrical Sciences	ESC	4	3	1	2/2	3	0	15	15	30	40	-
2.	CE-203	Geomatics Engineering – II	DCC	5	3	0	2	3	0	-	30	20	50	-
3.	CE-205	Channel Hydraulics	DCC	4	3	1	2/2	3	0	15	15	20	50	-
4.	CE-207	Structural Analysis – I	DCC	4	3	1	2/2	3	2	15	15	15	40	15
5.	CE-291	Engineering Graphics	DCC	4	2	2	0	3	0	25	-	25	50	-
6.	HS-ELE	HSS Elective Course	HSSMEC	3	3	2	1	0	3	0	15	-	35	50
		Total		**24**	**17**	**7**	**6**							
(Spring)														
2.	CE-202	Waste Water Engineering	DCC	4	3	1	2/2	3	0	15	15	20	50	-
3.	CE-204	Engineering Hydrology	DCC	4	3	1	2/2	3	0	15	15	20	50	-
4.	CE-206	Structural Analysis-II	DCC	4	3	1	2/2	3	0	15	15	20	50	-
5.	CE-208	Design of Reinforced Concrete Elements	DCC	4	3	1	2/2	3	2	15	15	15	40	15
6.	CE-210	Highway and Traffic Engineering	DCC	4	3	1	2/2	3	0	15	15	20	50	-
1.	MI-102	Basic Manufacturing Processes	ESC	4	2	0	4	3	0	15	15	30	40	-
		Total		**24**	**17**	**5**	**9**							

Program Code : **113 B. Tech. (Civil Engineering)**
Department : **Department of Civil Engineering**
Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
				(Autumn)										
1.	CE-303	Soil Mechanics	DCC	4	3	1	2/2	3	0	15	15	20	50	-
2.	CE-305	Design of Steel Elements	DCC	4	3	0	2	3	0	25	-	25	50	-
3.	CE-307	Railway Engineering and Airport Planning	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CE-ELE1	Department Elective Course – I	DEC	4										
5.	OEC/ BM-ELE	Open Elective Course/ Management Studies Elective Course*	OEC/ HSSMEC	3										
6.	CE-391	Technical Communication	DCC	2	0	2	0	0	0	100				
		Total		**21**										
				(Spring)										
1.	CE-300	Industry Oriented Problem/ Case Study/Lab based Project/ Practical Problem	DCC	3										
2.	CE-306	Foundation Engineering	DCC	4	3	1	2/2	3	0	15	15	20	50	-
3.	CE-308	Design of Structural Systems	DCC	5	4	1	2/2	3	0	15	15	20	50	-
4.	CE-ELE2	Department Elective Course – II	DEC	4										
5.	MSC1/DHC1	Minor Specialization Course-I / Department Honours Course – I	MSC/ DHC	4										
6.	OEC/BM-ELE	Open Elective Course/ Management Studies Elective Course*	OEC/ HSSMEC	3										
7.	CE-399	Educational Tour	DCC	0										
		Total		**19/23**										

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

Program Code : **113 B. Tech. (Civil Engineering)**

Department : **Department of Civil Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	CE-400A	B. Tech. Project	DCC	4										
2.	CE-ELE3	Department Elective Course-III	DEC	4										
3.	CE-ELE4	Department Elective Course-IV	DEC	4										
4.	MSC2/DHC2	Minor Specialization Course-II / Department Honours Course – II	MSC/ DHC	4										
5.	MSC3/DHC3	Minor Specialization Course-III / Department Honours Course – III	MSC/ DHC	4										
6.	CE-499	Training Seminar	DCC	2										
		Total		**14/22**										
(Spring)														
1.	CE-400B	B. Tech. Project (Contd. From Autumn Semester)	DCC	8										
2.	CE-ELE5	Department Elective Course-V	DEC	4										
3.	CE-ELE6	Department Elective Course-VI	DEC	4										
4.	MSC4/DHC4	Minor Specialization Course-IV / Department Honours Course – IV	MSC/ DHC	4										
5.	MSC5/DHC5	Minor Specialization Course-V / Department Honours Course – V	MSC/ DHC	4										
		Total		**16/24**										

15 JAN 2014

Program Code : **114 - B. Tech. (Computer Science and Engineering)**

Department : **Department of Computer Science and Engineering**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-005	Electrodynamics and Optics	BSC	4	3	0	2	3	2	15	15	15	40	15
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-101A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
	HS-101B	Communication Skills (Advance)												
5.	HS-002	Ethics and Self Awareness	HSSC	2	2	0	0	2	0	15	-	35	50	-
6.	CS-101	Introduction to Computer Science and Engineering	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	CS-103	Fundamentals of Object Oriented Programming	ESC*	4	3	0	2/2	3	0	15	15	30	40	-
		Total		**21**	**17**	**1**	**5**							
			(Spring)											
1.	MA-010	Optimization Techniques	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-006	Quantum Mechanics and Statistical Mechanics	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	EC-104	Digital Logic Design	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CS-102	Data Structures	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	CS-106	Discrete Structures	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	EC-102	Fundamentals of Electronics	ESC	4	3	1	0	3	0	25	-	25	50	-
		Total		**24**	**18**	**4**	**0**							

*Open to ECE and CSE disciplines only

15 JAN 2014

Program Code : **114 - B. Tech. (Computer Science and Engineering)**

Department : **Department of Computer Science and Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MI-108	Engineering Thermodynamics	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	EC-203	Signals and Systems	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	CS-221	Computer Architecture and Microprocessors	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CS-261	Data Structures Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
5.	CS-291	Object Oriented Analysis and Design	DCC	4	3	0	2	3	0	15	15	30	40	-
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**18/21**	**15**	**3**	**5**							
			(Spring)											
1.	MT-105	Electrical and Electronic Materials	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	CS-212	Design and Analysis of Algorithms	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	CS-232	Operating Systems	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	CS-252	System Software	DCC	3	2	1	0	2	0	25	-	25	50	-
4.	CS-254	Software Engineering	DCC	4	3	1	0	3	0	25	-	25	50	
6.	EC-252	Digital Electronic Circuits Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
7.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**24/21**	**17**	**5**	**3**							

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

Program Code : **114 - B. Tech. (Computer Science and Engineering)**

Department : **Department of Computer Science and Engineering**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CS-341	Computer Networks	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	CS-351	Data Base Management Systems	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	CS-353	Theory of Computation	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CS-361	Computer Networks Laboratory	DCC	2	0	0	3	0	0	-	100	-	-	-
5.	CS-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	-
6.	OEC/BM-ELE	Open Elective Course/Management Studies Elective Course*	OEC/ HSSMEC	3	3	0	0	3	0	15	-	35	50	-
7.	CS-391	Technical Communication	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**23**	**15**	**6**	**3**							
			(Spring)											
1.	CS-300	Industry-oriented Problem / Lab-based Project / Software Engineering-based Project	DCC	4	0	0	6	0	0	-	100	-	-	-
2.	CS-312	Principles of Programming Languages	DCC	3	3	0	0	3	0	15	-	35	50	-
3.	CS-352	Compiler Design	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CS-362	Compiler Laboratory	DCC	2	0	0	3	0	0	-	100	-	-	-
5.	CS-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	15	-	35	50	-
6.	OEC/BM-ELE	Open Elective Course/Management Studies Elective Course*	OEC/ HSSMEC	3	3	0	0	3	0	15	-	35	50	-
7.	MSC1/DHC1	Minor Specialization Course-I / Departmental Honours Course-I	MSC / DHC	4	3	1	0	3	0	25	-	25	50	-
8.	CS-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		**19/23**	**12/ 15**	**2/3**	**9/9**							

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

Program Code : **114 - B. Tech. (Computer Science and Engineering)**

Department : **Department of Computer Science and Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CS-ELE3	Departmental Elective Course-III	DEC	4	3	1	0	3	0	15	-	35	50	-
2.	CS-ELE4	Departmental Elective Course-IV	DEC	4	3	1	0	3	0	15	-	35	50	-
3.	CS-499	Training Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
4.	CS-400A	B.Tech. Project	DCC	4	0	0	3	0	0	-	-	-	-	-
5.	MSC2/DHC2	Minor Specialization Course-II Departmental Honours Course-II (optional)	MSC / DHC	4	3	1	0	3	0	25	-	25	50	-
6.	MSC3/DHC3	Minor Specialization Course-III / Departmental Honours Course-III (optional)	MSC / DHC	4	3	1	0	3	0	25	-	25	50	-
		Total		**14/22**	**6/ 12**	**4/6**	**3**							
			(Spring)											
1.	CS-ELE5	Departmental Elective Course-V	DEC	4	3	1	0	3	0	15	-	35	50	-
2.	CS-ELE6	Departmental Elective Course-VI	DEC	4	3	1	0	3	0	15	-	35	50	-
3.	CS-400B	B.Tech. Project (Contd. from Autumn Semester)	DCC	8	0	0	12	0	0	100	-	-	-	-
4.	MSC4/DHC4	Minor Specialization Course-IV / Departmental Honours Course-IV (optional)	MSC / DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course-V / Departmental Honours Course-V (optional)	MSC / DHC	4	3	1	0	3	0	25	-	25	50	-
		Total		**16/20**	**6/ 12**	**2/4**	**12**							

15 JAN 2014

Program Code : **115 B.Tech. (Electrical Engineering)**

Department : **Department of Electrical Engineering**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-003	Electromagnetic Field Theory	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	2	1	0	2	0	25	-	25	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advanced)	HSSC	2	1	0	2	2	0	-	25	25	50	-
5.	HS-002	Ethics and Self-Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	EE-101	Introduction to Electrical Engineering	DCC	2	2	0	0	2	0	25	-	25	50	-
7.	EE-103	Programming in C++	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**3**	**4**							
			(Spring)											
1.	MA-002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-004	Applied Physics	BSC	4	3	1	2/2	3	2	15	15	30	40	-
3.	MI-106	Engineering Thermodynamics	ESC	4	3	1	0	3	0	25	-	25	50	-
4.	EE-102	Network Theory	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	EE-104	Electrical Measurement and Measuring Instruments	DCC	4	3	0	2	3	2	15	15	15	40	15
6.	EE-106	Analog Electronics	DCC	4	3	1	2/2	2	2	15	15	15	40	15
		Total		**24**	**18**	**5**	**4**							

15 JAN 2014

Program Code : 115 **B.Tech. (Electrical Engineering)**

Department : **Department of Electrical Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	EE-201	Electrical Machines-I	DCC	5	3	1	2	3	3	15	15	15	40	15
2.	EE-203	Digital Electronics and Circuits	DCC	4	3	1	2/2	3	2	15	15	15	40	15
3.	EE-205	Design of Electronic Circuits	DCC	4	3	1	2/2	3	0	15	15	15	40	15
5.	EE-211	Control Systems	ESC	4	3	1	0	3	0	25	-	25	50	-
6.	HS-ELE	HSS Elective Course	HSSMEC	3	2	1	0	2	0	-	25	25	50	-
4.	EE-291	Engineering Analysis and Design	DCC	3	2	0	2	2	0	15	15	30	40	-
		Total		**23**	**16**	**5**	**6**							
			(Spring)											
1.	MT-105	Electrical and Electronic Materials	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	EE-202	Electrical Machines-II	DCC	5	3	1	2	3	3	15	15	15	40	15
3.	EE-204	Microprocessors and Peripheral Devices	DCC	5	3	1	2	3	2	15	15	15	40	15
4.	EE-206	Power Transmission and Distribution	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	EE-208	Applied Instrumentation	DCC	4	3	1	2/2	3	0	15	15	30	40	-
		Total		**22**	**17**	**6**	**4**							

15 JAN 2014

Program Code : **115 B.Tech. (Electrical Engineering)**

Department : **Department of Electrical Engineering**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	EE-301	Power System Analysis and Control	DCC	4	3	1	2/2	3	0	15	15	30	40	-
2.	EE-303	Power Electronics	DCC	4	3	1	2/2	3	2	15	15	15	40	15
3.	EE-305	Advanced Control Systems	DCC	5	3	1	2	3	3	15	15	15	40	15
5.	EE-ELE1	Departmental Elective Course-I	DEC	4	-	-	-	-	-	-	-	-	-	-
6.	OEC	Open Elective Course	OEC	3	2	1	0	2	0	25	-	25	50	-
4.	EE-391	Technical Communication	DCC	2	0	0	4	0	0	-	-	-	100	-
		Total		**22**	**11**	**4**	**8**							
			(Spring)											
1.	EE-300	Industry Oriented Problem	DCC	3	-	-	-	-	-	-	-	-	-	-
2.	EE-302	Electric Drives	DCC	4	3	1	2/2	3	0	15	15	30	40	-
3.	EE-304	Protection and Switchgear	DCC	4	3	0	2	3	2	15	15	15	40	15
4.	EE-310	General Viva	DCC	2	-	-	-	-	-	-	-	-	100	-
5.	EE-ELE2	Departmental Elective Course-II	DEC	4	-	-	-	-	-	-	-	-	-	-
6.	BM-ELE	Management Studies Elective Course	HSSMEC	3	2	1	0	2	0	25	-	25	50	-
7.	MSC1/DHC1	Minor Specialization Course – I/ Departmental Honours Course – I	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
8.	EE-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		**20/24**										

15 JAN 2014

Program Code : **115 B.Tech. (Electrical Engineering)**

Department : **Department of Electrical Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	EE-400A	B.Tech. Project	DCC	4	-	-	-	-	-	-	-	-	-	-
2.	EE-ELE3	Departmental Elective Course-III	DEC	4	-	-	-	-	-	-	-	-	-	-
3.	EE-ELE4	Departmental Elective Course-IV	DEC	4	-	-	-	-	-	-	-	-	-	-
4.	MSC2/DHC2	Minor Specialization Course –II/ Departmental Honours Course – II	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
5.	MSC3/DHC3	Minor Specialization Course –III/ Departmental Honours Course – III	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
6.	EE-499	Training Seminar	DCC	2	-	-	-	-	-	-	-	-	-	-
		Total		**14/22**										
			(Spring)											
1.	EE-400B	B.Tech. Project (Contd. From Autumn Semester)	DCC	8	-	-	-	-	-	-	-	-	-	-
2.	EE-ELE5	Departmental Elective Course-V	DEC	4	-	-	-	-	-	-	-	-	-	-
3.	EE-ELE6	Departmental Elective Course-VI	DEC	4	-	-	-	-	-	-	-	-	-	-
4.	MSC4/DHC4	Minor Specialization Course-IV/ Departmental Honours Course – IV	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
5.	MSC5/DHC5	Minor Specialization Course-V/ Departmental Honours Course – V	MSC/DHC	4	-	-	-	-	-	-	-	-	-	-
		Total		**16/24**										

15 JAN 2014

Program Code : **116 - B. Tech. (Electronics and Communication Engineering)**

Department : **Department of Electronics and Communication**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-005	Electrodynamics and Optics	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
	HS-001B	Communication Skills (Advance)												
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	EC-101	Introduction to Electronics and Communication Engineering	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	CS-103	Fundamentals of Object Oriented Programming	ESC*	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**3**	**4**							
			(Spring)											
1.	MA-002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-006	Quantum Mechanics and Statistical Mechanics	BSC	4	3	0	2	3	0	15	15	30	40	-
3.	CS-102	Data Structures	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	EC-104	Digital Logic Design	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	EC-142	Semiconductor Devices	DCC	4	3	1	2/2	3	0	15	15	30	40	-
6.	EE-112	Electrical Science	ESC	4	3	1	2/2	3	0	15	15	30	40	-
		Total		**24**	**18**	**5**	**4**							

*Open to ECE and CSE disciplines only.

Program Code : **116 - B. Tech. (Electronics and Communication Engineering)**

Department : **Department of Electronics and [redacted]communication**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	ME-108	Mechanical Engineering Drawing	ESC	4	2	0	4	0	4	-	25	25	-	50
2.	EC-203	Signals and Systems	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	EC-205	Analog Circuits	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	CS-221	Computer Architecture and Microprocessors	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	EC-291	Electronic Network Theory (Engineering Analysis and Design course)	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	HS-ELE	HSS Elective Course	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**23**	**17**	**4**	**4**							
			(Spring)											
1.	MT-105	Electrical and Electronic Materials	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	MA-006	Probability and Statistics	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	EC-212	Principles of Digital Communication	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	EC-222	Automatic Control Systems	DCC	4	3	0	3	3	0	15	15	30	40	-
5.	EC-232	Engineering Electromagnetics	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	EC-252	Digital Electronic Circuits Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
		Total		**22**	**15**	**4**	**6**							

Program Code : **116 - B. Tech. (Electronics and Communication Engineering)**

Department : **Department of Electronics and [redacted]communication**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	EC-311	Communication Systems and Techniques	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	EC-331	Antenna Theory	DCC	3	3	0	0	3	0	15	-	35	50	-
3.	EC-333	Microwave Engineering	DCC	3	3	0	0	3	0	15	-	35	50	-
4.	EC-341	Microelectronic Devices, Technology and Circuits	DCC	2	1	0	2	0	2	15	35	-	-	50
5.	EC-351	IC Application Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
6.	EC-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	-
7.	BM-ELE	Management Studies Elective Course	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
8.	EC-391	Technical Communication	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**23**	**16**	**4**	**5**							
			(Spring)											
1.	EC-300	Industry-oriented Problem / Case study / Lab-based Project / Practical Problem	DCC	3	0	0	6	0	0	-	100	-	-	-
2.	EC-312	Digital Signal Processing	DCC	3	3	0	0	3	0	15	-	35	50	-
3.	EC-342	RF and Mixed Signals Circuits	DCC	3	3	0	0	3	0	15	-	35	50	-
4.	EC-352	Communication Systems Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
5.	EC-354	Microwave Laboratory	DCC	2	0	0	3	0	3	-	50	-	-	50
6.	EC-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
7.	OEC	Open Elective Course	OEC	3	3	0	0	3	0	15	-	35	50	-
8.	MSC1/DHC1	Minor Specialization Course-I/ Departmental Honours Course-I	MSC/ DHC	3	3	0	0	3	0	15	-	35	50	-
9.	EC-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		**20/23**	**12/ 15**	**1**	**12**							

15 JAN 2014

Program Code : **116 - B. Tech. (Electronics and Communication Engineering)**

Department : **Department of Electronics and Telecommunication**

Year: **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	EC-ELE3	Departmental Elective Course-III	DEC	3	3	0	0	3	0	15	-	35	50	-
2.	EC-ELE4	Departmental Elective Course-IV	DEC	3	3	0	0	3	0	15	-	35	50	-
3.	MSC2/DHC2	Minor Specialization Course-II/ Departmental Honours Course-II	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC3/DHC3	Minor Specialization Course-III/ Departmental Honours Course-III	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
5.	EC-499	Training Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
6.	EC-400A	B.Tech. Project	DCC	4	0	0	3	-	-	-	-	-	-	-
		Total		**12/ 20**	**6/ 12**	**2/ 4**	**3**							
				(Spring)										
1.	EC-ELE5	Departmental Elective Course-V	DEC	3	3	0	0	3	0	15	-	35	50	-
2.	EC-ELE6	Departmental Elective Course-VI	DEC	3	3	0	0	3	0	15	-	35	50	-
3.	MSC4/DHC4	Minor Specialization Course-IV/ Departmental Honours Course-IV	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC5/DHC5	Minor Specialization on Course-V/ Departmental Honours Course-V	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
5.	EC-400B	B.Tech. Project (contd. From Autumn semester)	DCC	8	0	0	12	0	0	-	100	-	-	-
		Total		**14/22**	**6/ 12**	**0/ 2**	**12**							

15 JAN 2014

Program Code : **117 - B.Tech. (Mechanical Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	0	15	15	30	40	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advance)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	MI-101A	Introduction to Mechanical Engineering	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	MI-103	Programming and Data Structure	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**02**	**06**							
			(Spring)											
1.	MA-004	Numerical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-008	Electromagnetic Theory	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-104	Manufacturing Technology-I	DCC	4	2	0	4	3	0	-	25	25	50	-
4.	MI-106	Engineering Thermodynamics	DCC	4	3	1	2/2	3	0	15	15	30	40	-
5.	MI-108	Engineering Drawing	DCC	4	2	0	4	3	0	-	25	25	50	-
6.	MT-106	Material Science	ESC	4	3	1	0	3	0	25	-	25	50	-
		Total		**24**										

15 JAN 2014

Program Code : **117 - B.Tech. (Mechanical Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CE-102	Solid Mechanics	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	MI-201	Kinematics of Machines	DCC	4	3	1	2/2	3	0	15	15	30	40	-
3.	MI-203	Manufacturing Technology-II	DCC	4	2	0	4	3	0	-	25	25	50	-
4.	MI-205	Fluid Mechanics	DCC	4	3	1	2/2	3	0	15	15	30	40	-
5.	MI-291	Engineering Analysis and Design	DCC	4										
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	2	1	0	3	0	15	-	35	50
		Total		**20-23**										
			(Spring)											
1.	EE-112	Electrical Science	ESC	4	3	1	2/2	3	0	15	15	30	40	0
2.	MI-204	Machine Drawing	DCC	4	2	0	4	4	0	-	25	25	50	-
3.	MI-206	Mechanics of Materials	DCC	4	3	1	2/2	3	0	15	15	30	40	-
4.	MI-208	Theory of Production Processes	DCC	4	3	1	2/2	3	0	15	15	30	40	-
5.	MI-210	Energy Conversion	DCC	4	3	1	2/2	3	0	15	15	30	40	-
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	2	1	0	3	0	15	-	35	50
		Total		**23-20**										

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

Program Code : **117 - B.Tech. (Mechanical Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MI-301	Dynamics of Machines	DCC	4	3	1	2/2	3	0	15	15	30	40	-
2.	MI-303	Principles of Industrial Engineering	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-305	Heat and Mass Transfer	DCC	4	3	1	2/2	3	0	15	15	30	40	-
4.	MI-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	BM-ELE/OEC	Management Studies /Open Elective Course*	OEC/ HSSMEC	3	3	2	1	0	2	0	25	-	25	50
6.	MI-391	Technical Communication	DCC	2	0	2	0	-	-	100	-	-	-	-
		Total		21										
			(Spring)											
1.	MI-300	Industry Oriented Problem/Case Study/ Lab based project/ Practical Problem	DCC	4	0	0	6	-	-	100	-	-	-	-
2.	MI-302	Machine Design	DCC	6	4	0	4	4	-	15	15	30	40	-
3.	MI-304	Fluid Machinery	DCC	4	3	1	2/2	3	0	15	15	30	40	-
4.	MI-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC1/DHC1	Minor Specialization Course- I	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course-I			3	1	0	3	0	25	-	25	50	-
6.	BM-ELE/OEC	Management Studies /Open Elective Course*	OEC/ HSSMEC	3	3	2	1	0	2	0	25	-	25	50
7.	MI-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		21/25										

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

Program Code : **117 - B.Tech. (Mechanical Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MI-400A	B.Tech. Project	DCC	4	0	0	3	-	-	-	-	-	-	-
2.	MI-ELE3	Departmental Elective Course-III	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-ELE4	Departmental Elective Course-IV	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC2/DHC2	Minor Specialization Course- II/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course – II			3	1	0	3	0	25	-	25	50	-
5.	MSC3/DHC3	Minor Specialization Course- III/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course – III			3	1	0	3	0	25	-	25	50	-
6.	MI-499	Training Seminar	DCC	2	0	2	0	-	-	100	-	-	-	-
		Total		**14/22**										
			(Spring)											
1.	MI-400B	B.Tech. Project (Contd. From Autumn Semester)	DCC	8	0	0	12	-	-	-	-	-	-	-
2.	MI-ELE5	Departmental Elective Course-V	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-ELE6	Departmental Elective Course-VI	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC4/DHC4	Minor Specialization Course- IV/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course – IV			3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course- V	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course – V			3	1	0	3	0	25	-	25	50	-
		Total		**16/24**										

15 JAN 2014

Program Code : **119 - B.Tech. (Production and Industrial Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	0	15	15	30	40	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advance)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	MI-101B	Introduction to Production and Industrial Engineering	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	MI-103	Programming and Data Structure	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**02**	**06**							
			(Spring)											
1.	MA-006	Probability and Statistics	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-008	Electromagnetic Theory	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-104	Manufacturing Technology-I	DCC	4	2	0	4	3	0	-	25	25	50	-
4.	MI-108	Engineering Drawing	DCC	4	2	0	4	3	0	-	25	25	50	-
5.	MI-110	Fluid Mechanics	DCC	4	3	1	2/2	3	0	15	15	30	40	-
6.	MT-106	Material Science	ESC	4										
		Total		**24**										

15 JAN 2014

Program Code : **119 - B.Tech. (Production and Industrial Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CE-102	Solid Mechanics	ESC	4										
2.	MI-203	Manufacturing Technology-II	DCC	4	2	0	4	3	0	-	25	25	50	-
4.	MI-209	Thermal Engineering	DCC	4	3	1	2/2	3	0	15	15	30	40	-
5.	MI-211	Theory of Machines	DCC	4	3	1	2/2	3	0	15	15	30	40	-
3.	MI-291	Engineering Analysis and Design	DCC	4										
6.	HS- ELE	HSS Elective Course*	HSSMEC*	3	3	2	1	0	3	0	15	-	35	50
		Total		**20/23**										
			(Spring)											
1.	EE-112	Electrical Science	ESC	4										
2.	MI-210	Production Planning and Control	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-212	Machine Design	DCC	4	2	0	4	3	0	15	15	30	40	-
4.	MI-214	Engineering Economy	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MI-216	Theory of Production Processes - I	DCC	4	3	1	2/2	3	0	15	15	30	40	-
6.	HS-ELE	HSS Elective Course*	HSSMEC*	3	3	2	1	0	3	0	15	-	35	50
		Total		**23/20**										

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

Program Code : **119 - B.Tech. (Production and Industrial Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MI-307	Technical Communication	DCC	2	0	2	0	-	-	100	-	-	-	-
2.	MI-309	Theory of Production Processes - II	DCC	4	3	1	2/2	3	0	15	15	30	40	-
3.	MI-311	Operations Research	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MI-313	Work System Design	DCC	4	3	0	2/2	3	0	15	15	30	40	-
5.	MI-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	-
6.	BM-ELE/OEC	Management Studies /Open Elective Course*	OEC/ HSSMEC	3	3	2	1	0	2	0	25	-	25	50
		Total		**21**										
			(Spring)											
1.	MI-300	Industry Oriented Problem/Case Study/ Lab based project/ Practical Problem	DCC	4	0	0	6	-	-	100	-	-	-	-
2.	MI-310	Quality Management	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-312	Operations Management	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MI-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC1/DHC1	Minor Specialization Course – I/ Departmental Honours Course – I	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
					3	1	0	3	0	25	-	25	50	-
6.	BM-ELE/OEC	Management Studies /Open Elective Course*	OEC/ HSSMEC	3	3	2	1	0	2	0	25	-	25	50
7.	MI-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		**19/23**										

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

Program Code : **119 - B.Tech. (Production and Industrial Engineering)**

Department : **Department of Mechanical and Industrial Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MI-400A	B.Tech. Project	DCC	4	0	0	3	-	-	-	-	-	-	-
2.	MI-ELE3	Departmental Elective Course-III	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-ELE4	Departmental Elective Course-IV	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC2/DHC2	Minor Specialization Course- II/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course – II			3	1	0	3	0	25	-	25	50	-
5.	MSC3/DHC3	Minor Specialization Course- III/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course – III			3	1	0	3	0	25	-	25	50	-
6.	MI-499	Training Seminar	DCC	2	0	2	0	-	-	100	-	-	-	-
		Total		14/22										
			(Spring)											
1.	MI-400B	B.Tech. Project (Contd. From Autumn Semester)	DCC	8	0	0	12	-	-	-	-	-	-	-
2.	MI-ELE5	Departmental Elective Course-V	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	MI-ELE6	Departmental Elective Course-VI	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC4/DHC4	Minor Specialization Course- IV/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course - IV			3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course- V/	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Departmental Honours Course - V			3	1	0	3	0	25	-	25	50	-
		Total		16/24										

15 JAN 2014

PROGRAM CODE : 311 - Integrated M.Sc. (Physics)

DEPARTMENT : Department of Physics

YEAR : I

Teaching Scheme				Contact Hours/Week				Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	0	15	15	30	40	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advanced)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	PH-101	Introduction to Physical Science	DCC	2	2	0	0	0	0	-	-	-	100	-
7.	PH-103	Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**2**	**6**							
			(Spring)											
1.	MA-004	Numerical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	CY-004	General Chemistry-I	BSC	4	3	0	2	3	-	15	15	30	40	-
3.	PH-010	Introduction to Electronics	DCC	4	3	1	0	3	-	25	-	25	50	-
4.	EE-112	Electrical Science	ESC	4	3	1	2/2	3	-	15	15	30	40	-
5.	MI-106	Engineering Thermodynamics	ESC	4	3	1	0	3	-	25	-	25	50	-
6.	MI-108	Mechanical Engineering Drawing	ESC	4	2	0	4	3	-	-	25	25	50	-
		Total		**24**	**17**	**4**	**7**	**18**						

PROGRAM CODE : 311 - Integrated M.Sc. (Physics)

DEPARTMENT : Department of Physics

YEAR : II

Teaching Scheme					Contact Hours/Week				Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CY-201	Physical Chemistry-I	BSC	3	2	1	0	2	0	25	-	25	50	-
2.	CY-202	Basic Inorganic Chemistry	BSC	3	2	1	0	2	0	25	-	25	50	-
3.	MA-205	Ordinary and Partial Differential Equation	BSC	4	3	1	0	3	0	25	-	25	50	-
4.	PH-201	Optics	DCC	5	3	1	2	3	0	15	15	30	40	-
5.	PH-203	Elements of Classical Mechanics	DCC*	4	3	1	0	3	-	25	-	25	50	-
6.	HS-ELE	HSS Elective Course*	HSSMEC**	3	2	1	0	2	0	25	-	25	50	-
		Total		19/22	15	6	2							
			(Spring)											
1.	CY-203	Organic Chemistry-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	MA-102	Linear algebra	BSC	4	3	1	0	3	-	25	-	25	50	-
3.	PH-202	Electricity and Magnetism	DCC	5	3	1	2	3	0	15	15	30	40	-
4.	PH-212	Thermal Physics	DCC	5	3	1	2	3	3	15	15	15	40	15
5.	HS-ELE	HSS Elective Course*	HSSMEC**	3	2	1	0	2	0	25	-	25	50	-
		Total		21/18	14	5	4							

*Physics Minor specialization course for other Departments

**Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

PROGRAM CODE : 311 - Integrated M.Sc. (Physics)

DEPARTMENT : Department of Physics

YEAR : III

Teaching Scheme				Contact Hours/Week				Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	PH-301	Plasma Physics	DCC	3	3	0	0	3	0	15	-	35	50	-
2.	PH-303	Quantum Physics	DCC*	4	3	1	0	3	-	25	-	25	50	-
3.	PH-305	Properties of Matter and Acoustics	DCC	4	3	1	0	3	-	25	-	25	50	-
4.	PH-307	Atomic Physics	DCC*	4	3	1	0	3	-	25	-	25	50	-
5.	PH-309	Laboratory Work I	DCC	3	0	0	6	-	4	-	50	-	-	50
6.	BM-ELE/OEC	Open Elective Course/ Management Studies Elective Course**	OEC/ HSSMEC	3	2	1	0	2	-	25	-	25	50	-
7.	MSC1	Minor Specialization Course- I	MSC	3										
		Total		**21/24**	**14**	**4**	**6**							
			(Spring)											
1.	PH-302	Laboratory Work II	DCC	3	0	0	6	-	4	-	50	-	-	50
2.	PH-304	Elements of Condensed Matter Physics	DCC*	4	3	1	0	3	-	25	-	25	50	-
3.	PH-306	Special Theory of Relativity	DCC	3	2	1	0	2	0	25	-	25	50	-
4.	PH-308	Nuclear Physics and its Applications	DCC*	4	3	1	0	3	-	25	-	25	50	-
5.	BM-ELE/OEC	Open Elective Course/ Management Studies Elective Course**	OEC/HSS MEC	3	2	1	0	2	-	25	-	25	50	-
6.	MSC2	Minor Specialization Course- II	MSC	3										
7.	MSC3	Minor Specialization Course- III	MSC	4										
		Total		**17/24**	**10**	**4**	**6**							

*Physics Minor specialization course for other Departments

**One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

PROGRAM CODE : 311 - Integrated M.Sc. (Physics)

DEPARTMENT : Department of Physics

YEAR : IV

Teaching Scheme					Contact Hours/Week				Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P		Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)											
1.	PH-501	Semiconductor Devices	DCC	3	3	0	0		3	0	15	0	35	50	0
2.	PH-503	Quantum Mechanics – I	DCC	4	3	1	0		3	0	15	0	35	50	0
3.	PH-505	Mathematical Physics	DCC	3	3	0	0		3	0	15	0	35	50	0
4.	PH-507	Classical Electrodynamics	DCC	4	3	1	0		3	0	25	0	25	50	0
5.	PH-509	Classical Mechanics	DCC	3	3	0	0		3	0	15	0	35	50	0
6.	PH-511	Computational Physics	DCC	3	2	0	2		2	2	10	15	15	30	30
	MSC4	Minor Specialization Course- IV	MSC	4											
		Total		**20/24**	**16**	**0**	**4**								
				(Spring)											
1.	PH-502	Laboratory Work III	DCC	3	0	0	6		0	4	0	50	0	0	50
2.	PH-504	Condensed Matter Physics	DCC	3	3	0	0		3	0	15	0	35	50	0
3.	PH-506	Statistical Mechanics	DCC	3	3	0	0		3	0	15	0	35	50	0
4.	PH-508	Quantum Mechanics - II	DCC	3	3	0	0		3	0	15	0	35	50	0
5.	PH-510	Nuclear and Particle Physics	DCC	2	2	0	0		2	0	15	0	35	50	0
6.	PH-512	Physics of Earth's Atmosphere	DCC	2	2	0	0		2	0	15	0	35	50	0
7.	PH-514	Molecular Spectroscopy and Lasers	DCC	2	2	0	0		2	0	15	0	35	50	0
8.	MSC5	Minor Specialization Course- V	MSC	4											
		Total		**18/22**	**15**	**0**	**6**								

*Physics Minor specialization course for other Departments

15 JAN 2014

PROGRAM CODE : 311 - Integrated M.Sc. (Physics)

DEPARTMENT : Department of Physics

YEAR : V

Teaching Scheme				Contact Hours/Week				Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
		(Autumn)												
1.	PH-ELE1	Departmental Elective – Group A	DEC	4	3	1	0	3	0	25	0	25	50	0
2.	PH-ELE2	Departmental Elective – Group B	DEC	3	0	0	6	0	3	0	50	0	0	50
3.	PH-ELE3	Departmental Elective – Group C	DEC	3	3	0	0	3	0	15	0	35	50	0
4.	PH-ELE4	Departmental Elective – Group C	DEC	3	3	0	0	3	0	15	0	35	50	0
5.	PH-ELE5	Departmental Elective – Group C	DEC	3	3	0	0	3	0	15	0	35	50	0
7.	PH-699	Seminar	DCC	2	0	0	0	0	0	0	0	0	0	0
		Total		18	15	1	6							
		(Spring)												
1.	PH- ELE6	Departmental Elective – Group D	DEC#	3	3	1	0	3	0	25	0	25	50	0
3.	PH-600	Dissertation	DCC	12	0	0	0	0	0	0	0	0	0	0
		Total	15	3	1	0								

#In case the Dissertation is to be done with an outside Institute of MOU then this course can be completed in advance one year earlier (i.e. in III year with the senior batch).

15 JAN 2014

Program Code : **118 - B.Tech. (Metallurgical and Materials Engineering)**

Department : **Department of Metallurgical and Materials Engineering**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-007	Modern Physics	BSC	4	3	0	2	3	0	15	15	30	40	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advance)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	MT-101	Introduction to Metallurgical and Materials Engineering	DCC	2	2	0	0	2	-	15	-	35	50	-
7.	MT-103	Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**02**	**6**							
			(Spring)											
1.	CY-006	General Chemistry-II	BSC	4	3	0	2	3	0	15	15	30	40	-
2.	MA-002	Mathematical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	MT-102	Metallurgical Thermodynamics and Kinetics	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MT-104	Structural Metallurgy	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MT-110	Metallography Lab	DCC	2	0	0	3	0	3	-	50	-	-	50
6.	MI-108	Mechanical Engineering Drawing	ESC	4	2	0	4	3	0	-	25	25	50	-
		Total		**22**	**14**	**3**	**9**							

Program Code : **118 - B.Tech. (Metallurgical and Materials Engineering)**

Department : **Department of Metallurgical and Materials Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	EE-112	Electrical Science	ESC	4	3	1	2/2	3	0	15	15	30	40	-
2.	MT-201	Transport Phenomena	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MT-203	Phase Transformation and Heat Treatment	DCC	4	3	1	2/2	3	0	15	15	30	40	-
4.	MT-205	Mechanical Behaviour of Materials	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MT-207	Electrical and Electronic Materials	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	HS-ELE	HSS Elective course*	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**20/23**	**18**	**5**	**2**							
			(Spring)											
1.	EC-102	Fundamentals of Electronics	ESC	4	3	1	2/2	3	0	15	15	30	40	-
2.	MT-204	Metal Casting and Joining	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	MT-206	Non-ferrous Metallurgy	DCC	4	3	1	0	0	0	25	-	25	50	-
4.	MT-208	Engineering Polymers and Composites	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MT-292	Engineering Analysis and Design	DCC	4	3	0	2	3	0	25	-	25	50	-
6.	HS-ELE	HSS Elective course*	HSSMEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**20/23**	**18**	**3**	**5**							

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

Program Code : **118 - B.Tech. (Metallurgical and Materials Engineering)**

Department : **Department of Metallurgical and Materials Engineering**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MT-301	Mechanical Working of Metals	DCC	4	3	0	2	3	0	15	15	30	40	-
2.	MT-303	Iron and Steel Making	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MT-305	Materials Testing Lab	DCC	2	0	0	3	0	3	-	50	-	-	50
4.	MT-307	Materials Characterization	DCC	4	3	0	2	3	0	15	15	30	40	-
5.	MT-ELE1	Departmental Elective Course – I	DEC	4	3	1	0	3	0	25	-	25	50	-
6.	BM-ELE/OEC	Management Studies / Open Elective Course	HSSMEC/ OEC	3	3	0	0	3	0	15	-	35	50	-
7.	MT-391	Technical Communication	DCC	2	3	0	0	3	0	15	-	35	50	-
		Total		**20/23**	**18**	**2**	**7**							
			(Spring)											
1.	MT-300	Industry Oriented Problem/ Case Study/ Lab based project/ Practical Problem	DCC	4										
2.	MT-302	Environmental Degradation of Materials	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	MT-304	Ceramics and Metal Powder Processing	DCC	4	3	0	2/2	3	0	15	15	30	40	-
4.	MT-ELE2	Departmental Elective Course – II	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC1/DHC1	Minor Specialization Course – I/ Departmental Honours Course - I	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
					3	1	0	3	0	25	-	25	50	-
6.	BM-ELE/OEC	Management Studies / Open Elective Course	HSSMEC/ OEC	3	3	0	0	3	0	15	-	35	50	-
7.	MT-399	Educational Tour	DCC	0	0	0	0	0	0	-	-	-	-	-
		Total		**19/23**	**9/15**	**1/2**	**3**							

15 JAN 2014

Program Code : **118 - B.Tech. (Metallurgical and Materials Engineering)**

Department : **Department of Metallurgical and Materials Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MT-400A	B.Tech. Project	DCC	4	0	0	4	-	-	-	-	-	-	-
2.	MT-ELE3	Departmental Elective Course – III	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	MT-ELE4	Departmental Elective Course – IV	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC2/ DHC2	Minor Specialization Course – II/ Departmental Honours Course - II	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
					3	1	0	3	0	25	-	25	50	-
5.	MSC3/ DHC3	Minor Specialization Course – III/ Departmental Honours Course - III	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
					3	1	0	3	0	25	-	25	50	-
6.	MT-499	Practical Training/ Internship	DCC	2	0	0	2	0	0	-	100	-	-	-
		Total		**14/22**	**6/ 12**	**2/4**	**6**							
			(Spring)											
1.	MT-400B	B.Tech. Project (Contd. from Autumn Sem.)	DCC	8	0	0	12							100
2.	MT-ELE5	Departmental Elective Course – V	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	MT-ELE6	Departmental Elective Course – VI	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC4/DHC4	Minor Specialization Course – IV/ Departmental Honours Course – IV	MSC/ DHC	4	3	0	2	3	0	15	15	30	40	-
					3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course – V/ Departmental Honours Course - V	MSC/ DHC	4	3	1	0	3	0	25	-	25	50	-
					3	1	0	3	0	25	-	25	50	-
		Total		**16/24**	**6/ 12**	**2/3/4**	**12/14**							

15 JAN 2016

Program Code : **411 - Integrated M.Tech. (Geophysical Technology)**

Department : **Department of Earth Sciences**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	2	15	15	15	40	15
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	25	-	25	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advance)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	ES-101	Introduction to Earth Sciences	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	ES-103	Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**2**	**6**							
(Spring)														
1.	MA-006	Probability and Statistics	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-008	Electromagnetic Theory	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-102	Physical Geology	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-104	Crystallography and Mineralogy	DCC	4	3	0	2	3	2	15	15	15	40	15
5.	HY-102	Engineering Hydrology	ESC	4	3	1	0	3	0	25	-	25	50	-
		Total		**20**	**15**	**4**	**2**							

15 JAN 2014

Program Code : **411 - Integrated M.Tech. (Geophysical Technology)**

Department : **Department of Earth Sciences**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	EE-112	Electrical Science	ESC	4	3	1	2/2	3	0	15	15	30	40	-
2.	ES-201	Basic Petrology	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-205	Structural Geology-I	DCC	4	3	0	2	3	0	15	15	30	40	-
4.	ES-221	Field Theory	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	ES-223	Geophysical Prospecting	DCC	3	2	1	0	2	0	25	-	25	50	-
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	0	0	2	0	25	-	25	50	-
		Total		**22**	**17**	**3**	**4**							
			(Spring)											
1.	EC-102	Fundamentals of Electronics	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	ES-202	Sedimentology	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-222	Geology of India	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-224	Geophysical Signal Processing	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	ES-226	Field Training-I (Geology)	DCC	4	-	-	-	-	-	-	-	-	100	-
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	0	0	3	0	25	-	25	50	-
		Total		**23**	**15**	**4**	**0**							

15 JAN 2014

Program Code : **411 - Integrated M.Tech. (Geophysical Technology)**

Department : **Department of Earth Sciences**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	ES-305	Economic Geology	DCC	4	3	0	2	3	0	15	15	30	40	-
2.	ES-321	Gravity and Magnetic Prospecting	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-323	Electrical Prospecting	DCC	4	3	0	2	3	0	15	15	30	40	-
4.	ES-325	Seismology	DCC	4	3	0	2	3	0	15	15	30	40	-
5.	OEC	Open Elective Course	OEC	3	3	0	0	3	-	25	-	25	50	-
6.	ES-391	Technical Communication (Advanced)	DCC	2	0	0	4	-	2	-	25	25	-	50
		Total		**21**	**15**	**0**	**12**							
			(Spring)											
1.	ES-300	Field Training-II (Integrated Gravity, Magnetic, Electrical & Seismic)	DCC	4	0	0	0	-	-	-	-	-	100	-
2.	ES-322	Electromagnetic Prospecting	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-324	Seismic Prospecting	DCC	4	3	0	2	3	0	15	15	30	40	-
4.	ES-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	
5.	ES-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
		Total		**20**	**12**	**2**	**4**							

15 JAN 2014

Program Code : **411 - Integrated M.Tech. (Geophysical Technology)**

Department : **Department of Earth Sciences**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	ES-421	Numerical Modelling in Geophysics	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	ES-423	Geophysical Well Logging	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-ELE3	Departmental Elective Course-III	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-ELE4	Departmental Elective Course-IV	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	ES-499	Seminar-I	DCC	2	0	0	0	0	0	0	0	0	100	
		Total		**18**	**12**	**3**	**2**							
			(Spring)											
1.	ES-406	Plate Tectonics	DCC	3	2	1	0	2	0	25	-	25	50	-
2.	ES-422	Geophysical Inversion	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-424	Petroleum Geosciences	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-ELE5	Departmental Elective Course-V	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	ES-ELE6	Departmental Elective Course-VI	DEC	4	3	1	0	3	0	25	-	25	50	
		Total		**19**	**14**	**5**	**0**							

15 JAN 2014

Program Code : **411 - Integrated M.Tech. (Geophysical Technology)**

Department : **Department of Earth Sciences**

Year : **V**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	ES-529	Comprehensive Viva Voce	DCC	2	0	0	0	-	-	-	-	-	100	-
2.	ES-ELE7	Department Elective Course-VII	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-ELE8	Department Elective Course-VIII	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-599	Seminar-II	DCC	2	0	0	0	-	-	-	-	-	100	-
		Total		**12**	**6**	**2**	**0**							
(Spring)														
1.	ES-500	Dissertation	DCC	18	0	0	0	-	-	-	-	-	100	-
		Total		**18**	**0**	**0**	**0**							

15 JAN 2014

Program Code : **410 - Integrated M.Tech. (Geological Technology)**

Department : **Department of Earth Sciences**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	2	15	15	15	40	15
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	25	-	25	50	-
4.	HS-001A HS-001B	Communication Skills (Basic) Communication Skills (Advance)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	ES-101	Introduction to Earth Sciences	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	ES-103	Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**2**	**6**							
				(Spring)										
1.	CY-008	General Chemistry-III	BSC	4	3	0	2	3	0	15	15	30	40	-
2.	MA-004	Numerical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-102	Physical Geology	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-104	Crystallography and Mineralogy	DCC	4	3	0	2	3	2	15	15	15	40	15
5.	MI-106	Engineering Thermodynamics	ESC	4	3	1	2/2	3	0	15	15	30	40	-
		Total		**20**	**15**	**3**	**4**							

15 JAN 2014

Program Code : **410 - Integrated M.Tech. (Geological Technology)**

Department : **Department of Earth Sciences**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	MT-106	Material Science	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	ES-201	Basic Petrology	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-203	Paleontology	DCC	4	3	0	2	3	0	15	15	30	40	-
4.	ES-205	Structural Geology-I	DCC	4	3	0	2	3	0	15	15	30	40	-
5.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	0	0	3	0	25	-	25	50	-
		Total		**19**	**15**	**1**	**6**							
			(Spring)											
1.	HY-102	Engineering Hydrology	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	ES-202	Sedimentology	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-204	Stratigraphy	DCC	4	3	0	2	3	0	15	15	30	40	-
4.	ES-206	Igneous Petrology	DCC	4	3	0	2	3	0	15	15	30	40	-
5.	ES-208	Field Training-I	DCC	4	-	-	-	-	-	-	-	-	100	-
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	3	0	0	3	0	25	-	25	50	-
		Total		**23**	**15**	**1**	**6**							

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

Program Code : **410 - Integrated M.Tech. (Geological Technology)**

Department : **Department of Earth Sciences**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	ES-301	Structural Geology-II	DCC	4	3	0	2	3	0	15	15	30	40	-
2.	ES-303	Metamorphic Petrology	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-305	Economic Geology	DCC	4	3	0	2	3	0	15	15	30	40	-
4.	ES-ELE1	Departmental Elective Course-I	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	OEC	Open Elective Course	OEC	3	3	0	0	3	-	25	-	25	50	-
6.	ES-391	Technical Communication (Advanced)	DCC	2	0	0	4	-	2	-	25	25	-	50
		Total		**21**	**15**	**1**	**10**							
				(Spring)										
1.	ES-302	Mineral Exploration	DCC	4	3	0	2	3	0	15	15	30	40	-
2.	ES-304	Ore Geology	DCC	4	3	0	2	3	0	15	15	30	40	-
3.	ES-306	Geomorphology	DCC	3	2	1	0	2	0	25	-	25	50	-
4.	ES-308	Field Training-II	DCC	4	0	0	0	-	-	-	-	-	100	-
5.	ES-ELE2	Departmental Elective Course-II	DEC	4	3	1	0	3	0	25	-	25	50	-
		Total		**19**	**11**	**2**	**4**							

15 JAN 2014

Program Code : **410 - Integrated M.Tech. (Geological Technology)**

Department : **Department of Earth Sciences**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	ES-401	Principles of Remote Sensing	DCC	3	2	1	0	2	0	25	-	25	50	-
2.	ES-403	Principles of Geographic Information Systems	DCC	3	2	1	0	2	0	25	-	25	50	-
3.	ES-405	Hydrogeology	DCC	3	2	1	0	2	0	25	-	25	50	-
4.	ES-407	Engineering Geology	DCC	3	2	1	0	2	0	25	-	25	50	-
5.	ES-409	Petroleum Geology	DCC	3	2	1	0	2	0	25	-	25	50	-
6.	ES-499	Seminar-I	DCC	2	0	0	0	-	-	-	-	-	100	-
		Total		**17**	**10**	**5**	**0**							
(Spring)														
1.	ES-402	Geophysical Prospecting	DCC	4	3	0	2	3	0	15	15	30	40	-
2.	ES-404	Well Logging	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-406	Plate Tectonics	DCC	3	2	1	0	2	0	25	-	25	50	-
4.	ES-ELE3	Departmental Elective Course-III	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	ES-ELE4	Departmental Elective Course-IV	DEC	4	3	1	0	3	0	25	-	25	50	-
		Total		**19**	**14**	**3**	**4**							

15 JAN 2014

Program Code : **410 - Integrated M.Tech. (Geological Technology)**

Department : **Department of Earth Sciences**

Year : **V**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
			(Autumn)											
1.	ES-509	Comprehensive Viva Voce	DCC	2	0	0	0	-	-	-	-	-	100	-
2.	ES-ELE5	Department Elective Course-V	DEC	4	3	1	0	3	0	25	-	25	50	-
3.	ES-ELE6	Department Elective Course-VI	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	ES-599	Seminar-II	DCC	2	0	0	0	-	-	-	-	-	100	-
		Total		**12**	**6**	**2**	**0**							
			(Spring)											
1.	ES-500	Dissertation	DCC	18	0	0	0	-	-	-	-	-	100	-
		Total		**18**	**0**	**0**	**0**							

15 JAN 2014

Program Code : **312 Integrated M.Sc. (Applied Mathematics)**

Department : **Department of Mathematics**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	MA-001	Mathematics-1	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-001	Mechanics	BSC	4	3	0	2	3	0	15	15	30	40	-
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
	HS-001B	Communication Skills (Advance)												
5.	HS-002	Ethics and General Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	MA-101	Introduction to Mathematical Sciences	DCC	2	2	0	0			15		35	50	-
7.	MA-103	Introduction to Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**2**	**6**							
			(Spring)											
1.	MA-004	Numerical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PH-008	Electromagnetic Theory	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	MA-102	Linear Algebra	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MA-104	Real Analysis I	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MA-106	Data Structures	DCC	4	3	0	2	3	0	15	15	30	40	-
6.	EC-102	Fundamental of Electronics	ESC	4	3	1	0	3	0	25	-	25	50	-
		Total		**24**	**18**	**5**	**2**							

15 JAN 2014

Program Code : 312 **Integrated M.Sc. (Applied Mathematics)**

Department : **Department of Mathematics**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
			(Autumn)											
1.	CE-102	Solid Mechanics	ESC	4	3	1	0							
2.	MA-201	Complex Analysis I	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MA-203	Discrete Mathematics	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MA-205	Ordinary and Partial Differential Equations	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MA-291	Design and Analysis of Algorithms	DCC	3	3	0	0	3	0	15	-	35	50	-
		Total		**19**	**15**	**4**	**0**							
			(Spring)											
1.	HS-ELE	HSS Elective Course	HSSMEC	4										
2.	CE-142	Fluid Mechanics	ESC	4	3	1	0	3	0	25	-	25	50	-
3.	MA-202	Transform Techniques	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MA-204	Database Management System	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	MA-206	Graph Theory	DCC	4	3	1	0	3	0	25	-	25	50	-
6.	MA-208	Number Theory	DCC	4	3	1	0	3	0	25	-	25	50	-
		Total		**24**										

15 JAN 2014

Program Code : 312 **Integrated M.Sc. (Applied Mathematics)**

Department : **Department of Mathematics**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-301	Abstract Algebra I	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	MA-303	Mathematical Statistics	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MA-305	Linear Programming	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MA-ELE1	Department Elective I	DEC	3	3	0	0	3	0	15	-	35	50	-
5.	BM-ELE	Management Elective Course	HSSMEC	3	3	0	0							
6.	MA-391	Technical Communication	DCC	2	2	0	0							
		Total		**20**	**17**	**3**	**0**							
				(Spring)										
1.	MA-300	Project	DCC	4	-	-	-	-	-	-	-	30	70	-
2.	MA-302	Math. Modeling & Simulation	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	MA-304	Theory of Computation	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MA-ELE2	Department Elective II	DEC	3	3	0	0	3	0	15	-	35	50	-
5.	OEC	Open Elective-I	OEC	3	3	0	0							
6.	MSC1	Minor Specialization Course	MSC	3/4	3	0/1	0	3	0	15/25	-	35/25	50	-
7.	MA-399	Educational Tour	DCC	0	-	-	-	-	-	-	-	-	-	-
		Total		**18/22**	**15**	**0/1**	**0**							

15 JAN 2014

Program Code : 312 **Integrated M.Sc. (Applied Mathematics)**

Department : **Department of Mathematics**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-501	Theory of Ordinary Differential Equations	DCC	3	3	0	0	3	0	15	-	35	50	-
2.	MA-503	Real Analysis II	DCC	3	3	0	0	3	0	15	-	35	50	-
3.	MA-505	Topology	DCC	3	3	0	0	3	0	15	-	35	50	-
4.	MA-507	Statistical Inference	DCC	3	3	0	0	3	0	15	-	35	50	-
5.	MA-ELE3	Department Elective III	DEC	3/4*	3	0/1	0	3	0	15/25	-	35/25	50	-
6.	OEC	Open Elective II	OEC	3/4*	3	0	0/2	3	0	15	0/15	35/30	50/40	
7.	MSC2	Minor Specialization Course	MSC	3/4	3	0/1	0	3	0	15/25	-	35/25	50	-
		Total		**18-24**	**21**	**0/2**	**0/2**							

*: For two years lateral entry students

				(Spring)										
1.	MA-502	Advanced Numerical Analysis	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	MA-504	Abstract Algebra II	DCC	3	3	0	0	3	0	15	-	35	50	-
3.	MA-506	Nonlinear Programming	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	MA-508	Theory of Partial Differential Equations	DCC	3	3	0	0	3	0	15	-	35	50	-
5.	MA-510	Complex Analysis II	DCC	3	3	0	0	3	0	15	-	35	50	-
6.	MA-ELE4	Department Elective IV	DEC	3/4*	3	0/1	0	3	0	15/25	-	35/25	50	-
7.	MSC3	Minor Specialization Course	MSC	3/4	3	0/1	0	3	0	15/25	-	35/25	50	-
		Total		**20-24***	**18/21**	**2/4**	**0**							

15 JAN 2014

Program Code : 312 **Integrated M.Sc. (Applied Mathematics)**

Department : **Department of Mathematics**

Year : **V**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MA-601	Fluid Dynamics	DCC	3	3	0	0	3	0	15	-	35	50	-
2.	MA-603	Tensors and Differential Geometry	DCC	3	3	0	0	3	0	15	-	35	50	-
3.	MA-605	Functional Analysis	DCC	3	3	0	0	3	0	15	-	35	50	-
4.	MA-699	Seminar	DCC	2	-	-	-	-	-	-	-	30	70	-
5.	MA-ELE5	Department Elective V	DEC	3	3	0	0	3	0	15	-	35	50	-
6.	MA-ELE6	Department Elective VI	DEC	3	3	0	0	3	0	15	-	35	50	-
		Total		**17**	**15**	**0**	**0**							
				(Spring)										
1.	MA-600	Dissertation	DCC	12	-	-	-	-	-	-	-	30	70	-
2.	MA-ELE7	Department Elective VII	DEC	3	3	0	0	3	0	15	-	35	50	-
3.	MSC4	Minor Specialization Course	MSC	3/4	3	0/1	0	3	0	15/25	-	35/25	50	-
4.	MSC5	Minor Specialization Course	MSC	3/4	3	0/1	0	3	0	15/25	-	35/25	50	-
		Total		**15-23**	**9**	**0/2**	**0**							

15 JAN 2014

PROGRAM CODE : 121 – B.Tech. (Polymer Science and Technology)

DEPARTMENT : Department of Polymer and Process Engineering

YEAR : I

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
					(Autumn)									
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	-	25	-	25	50	-
2.	AS-041	General Chemistry	BSC	4	3	1	2/2	3	2	15	15	15	40	15
3.	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4.	HS-001A HS-001B	Communication skills (Basic) Communication skills (Advanced)	HSSC	2	1	0	2	2	-	25	-	25	50	-
5.	HS-002	Ethics and Self-Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	PE-101A	Introduction to Polymer Engineering	DCC	2	2	0	0	0	0	15	-	35	50	-
7.	PE-103	Introduction to Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**03**	**5**							
					(Spring)									
1.	AS-002	Mathematics-II	BSC	4	3	1	0	3	-	25	-	25	50	-
2.	AS-021	Applied Physics	BSC	4	3	0	2	3	2	15	15	15	40	15
3.	PE-102	Structure and Properties of Polymers	DCC	4	3	1	3/2	2	3	15	15	15	40	15
4.	PP-102	Material and Energy Balance	DCC	4	3	1	0	3	0	25	-	25	50	-
5.	PP-104	Fluid Mechanics	DCC	4	3	1	2/2							
6.	MI-106	Engineering Thermodynamics	ESC	4	3	1	2/2	2	-	25	-	25	50	-
		Total		**24**	**18**	**05**								

15 JAN 2014

PROGRAM CODE : 121 – B.Tech. (Polymer Science and Technology)

DEPARTMENT : Department of Polymer and Process Engineering

YEAR : II

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	MT-106	Materials Science	ESC	4	3	1	0	3	-	25	-	25	50	-
2.	PE-201	Polymer Chemistry	DCC	4	2	1	3	2	3	15	15	15	40	15
3.	PE-205	Polymer Blends and Composites	DCC	4	3	1	0	3	-	25	-	25	50	-
4.	PE-291	Engineering Analysis and Design	DCC	3	3	1	0	3	-	25	-	25	50	-
5.	PP-203	Heat Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	2	1	0	2	0	25	-	25	50	-
		Total		**19/22**										
				(Spring)										
1.	EE-112	Electrical Science	ESC	4	3	1	0	3	0	25	0	25	50	0
2.	PE-206	Polymer Properties and Characterization	DCC	4	2	1	3	2	0	15	15	15	40	15
3.	PE-208	Polymer Rheology	DCC	4	2	1	3	2	0	15	15	15	40	15
4.	PE-254	Chemical Reaction Engineering	DCC	4	3	1	0	3	-	25	-	25	50	-
5.	PP-208	Mass Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
6.	HS-ELE	HSS Elective Course*	HSSMEC	3	2	1	0	2	0	25	0	25	50	0
		Total		**23/20**										

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

PROGRAM CODE : 121 – B.Tech. (Polymer Science and Technology)

DEPARTMENT : Department of Polymer and Process Engineering

YEAR : III

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	PE-301	Polymer Product Technology	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	PE-303	Polymer Reaction Engineering	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	PE-305	Polymer Processing	DCC	4	3	1	2/2	3	0	15	15	15	40	15
4.	PE-ELE1	Departmental Elective-I	DEC	4	3	1	0	2	0	25	-	25	50	-
5.	BM-ELE/ OEC	Courses from Management Studies / Open elective course*	HSSMEC /OEC	3	2	1	0	3	0	15	-	35	50	-
6.	PP-391	Technical Communication	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		21										
				(Spring)										
1.	PE-300	Lab Based Project	DCC	4	0	0	8	0	0	100	-	-	-	-
2.	PE-302	Rubber Material and Chemistry	DCC	4	3	1	2/2	3	2	15	15	15	40	15
3.	PE-304	Process System Analysis and Control	DCC	4	3	1	0	3	-	25	-	25	50	-
4.	PE-ELE2	Departmental Elective-II	DEC	4	3	1	0	2	0	25	-	25	50	-
5.	MSC1/DHC1	Minor Specialization Course-I/ Departmental Honours Course-I	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
6.	BM-ELE/ OEC	Courses from Management Studies /Open elective course*	HSSMEC /OEC	3	2	1	0	3	0	15	-	35	50	-
7.	PE-399	Educational Tour	DCC	0				0	0	100	-	-	-	-
		Total		19/23										

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

PROGRAM CODE : 121 – B.Tech. (Polymer Science and Technology)

DEPARTMENT : Department of Polymer and Process Engineering

YEAR : IV

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	PE-400A	B. Tech. Project	DCC	4	0	0	8	0	0	100	-	-	-	-
2.	PP-ELE3	Departmental Elective-III	DEC	4	3	1	0	0	0	0	25	25	50	0
3.	PE-ELE4	Departmental Elective-IV	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	MSC2/DHC2	Minor Specialization Course-II/Departmental Honours Course-II	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC3/DHC3	Minor Specialization Course-III/Departmental Honours Course-III	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
6.	PE-499	Training and Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**14/22**										
(Spring)														
1.	PE-400B	B. Tech. Project (Contd. From Autumn Semester)	DCC	8	0	0	16	0	0	100	-	-	-	-
2.	PE-ELE5	Departmental Elective-V	DEC	3	3	0	0	3	0	25	-	25	50	-
3.	PE-ELE6	Departmental Elective-VI	DEC	3	3	0	0	3	0	25		25	50	
4.	MSC4/DHC4	Minor Specialization Course-IV/Departmental Honours Course-IV	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course-V/Departmental Honours Course-V	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Total		**14/22**										

15 JAN 2014

PROGRAM CODE : **120 – B.Tech. (Pulp and Paper Engineering)**

DEPARTMENT : **Department of Paper Technology**

YEAR : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
					(Autumn)									
1.	MA-001	Mathematics-I	BSC	4	3	1	0	3	-	25	-	25	50	-
2.	AS-021	Applied Physics	BSC	4	3	1	2/2	3	2	15	15	15	40	15
3.	CE-105	Introduction to Environmental Science	GSC	3	3	0	0	3	-	15	-	35	50	-
4.	HS- 001A HS- 001B	Communication skills (Basic) Communication skills (Advanced)	HSSC	2	1	0	2	2	-	25	-	25	50	-
5.	HS-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	-	25	-	25	50	-
6.	PP-101	Introduction to Pulp and Paper Engineering	DCC	2	2	0	0	2	0	15	-	35	50	-
7.	PP-103	Introduction to Computer Programming	ESC	4	3	0	2	3	-	15	15	30	40	-
		Total		**21**	**16**	**03**	**05**							
					(Spring)									
1.	AS-002	Mathematics-II	BSC	4	3	1	0	3	-	25	-	25	50	-
2.	AS-042	Chemistry	BSC	4	3	1	2/2	3	2	15	15	15	40	15
3.	PP-102	Material and Energy Balance	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	PP-104	Fluid Mechanics	DCC	4	3	1	2/2	3	3	15	15	15	40	15
5.	PP-106	Raw Materials and High Yield Pulping	DCC	4	3	0	3/2	3	-	15	15	30	40	-
6.	MI-106	Engineering Thermodynamics	ESC	4	3	1	0	3	-	25	-	25	50	-
		Total		**24**	**18**	**5**	**7/2**							

15 JAN 2014

PROGRAM CODE : 120 – B.Tech. (Pulp and Paper Engineering)

DEPARTMENT : Department of Paper Technology

YEAR : II

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1	EE-112	Electrical Science	ESC	4	3	1	2/2	3	-	15	15	30	40	-
2	PP-201	Pulping -I	DCC	4	3	0	4/2	3	0	15	15	30	40	-
3	PP-203	Heat Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
4	PP-205	Fluid Particle Mechanics	DCC	4	3	1	2/2	3	3	15	15	15	40	15
5	PP-291	Engineering Analysis and Design	DCC	3	3	1	0	3	-	25	-	25	50	-
6	HS-ELE	HSS Elective Course*	HSSMEC	3	2	1	0	2	0	25	-	25	50	-
		Total		**19/22**	**15/17**	**4/5**	**5**							
(Spring)														
1	EC-102	Fundamentals of Electronics	ESC	4	3	1	2/2	3	-	15	15	30	40	-
2	PP-202	Pulping-II	DCC	4	3	0	4/2	3	4	15	15	30	40	-
3	PP-204	Paper Making-I	DCC	4	3	0	4/2	3	3	15	15	30	40	-
4	PP-206	Chemical Recovery -I	DCC	4	3	1	2/2	3	0	15	15	15	40	15
5	PP-208	Mass Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
6	HS-ELE	HSS Elective Course*	HSSMEC	3	2	1	0	2	0	25	-	25	50	-
		Total		**23/20**	**15/17**	**3/4**	**6**							

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

PROGRAM CODE : 120 – B.Tech. (Pulp and Paper Engineering)

DEPARTMENT : Department of Paper Technology

YEAR : III

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
					(Autumn)									
1.	PP-301	Chemical Recovery II	DCC	3	2	1	0	2	0	25	-	25	50	-
2.	PP-303	Paper Making -II	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	PP-305	Process Automation	DCC	4	3	1	2/2	3	0	15	15	15	40	15
4.	PP-ELE1	Departmental Elective I	DEC	4	3	1	0	2	0	25	-	25	50	-
5.	HS-ELE	HSS Elective Course *	OEC/ HSSMEC	3	2	1	0	2	0	25	-	25	50	-
6.	PP-391	Technical Communication	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**20**	**13**	**7**	**1**	**0**	**3**	**-**	**40**	**-**	**-**	**60**
					(Spring)									
1.	PP-300	Industry Oriented Problem	DCC	3	0	0	8	0	0	100	-	-	-	-
2.	PP-302	Strategy of Process Engineering	DCC	4	3	1	0	3	0	25	-	25	50	-
3.	PP-304	Paper Properties	DCC	3	2	0	3	2	3	15	15	15	40	15
4.	PP-306	Printing and Packaging Papers	DCC	3	3	0	0	3	0	15	-	35	50	-
5.	PP-ELE2	Departmental Elective II	DEC	4	3	1	0	0	0	0	25	25	50	0
6.	HS-ELE	HSS Elective Course *	OEC/ HSSMEC	3	2	1	0	2	0	25	-	25	50	-
7.	MSC1/ DHC1	Minor Specialization Course-I Departmental Honours Course-I	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
8.	PP-399	Educational Tour	DCC	0				0	0	100	-	-	-	-
		Total		**20/24**	**13/16**	**3/4**	**11**							

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

PROGRAM CODE : 120 – B.Tech. (Pulp and Paper Engineering)

DEPARTMENT : Department of Paper Technology

YEAR : IV

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
(Autumn)														
1.	PP-400A	B.Tech. Project	DCC	4	0	0	8	0	0	100	-	-	-	-
2.	PP-401	Environmental Management	DCC	3	3	0	2/2	3	0	15	15	30	40	-
3.	PP-ELE3	Departmental Elective III	DEC	4	3	1	0	3	0	25	-	25	50	-
4.	PP-ELE4	Departmental Elective IV	DEC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC2/DHC2	Minor Specialization Course-II/Departmental Honours Course-II	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
6.	MSC3/DHC3	Minor Specialization Course-III/Departmental Honours Course-III	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
7.	PP-499	Training Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**17/25**	**9/15**	**4/6**	**9**							
(Spring)														
1.	PP-400B	B.Tech. Project (Contd. From Autumn Semester)	DCC	8	0	0	16	0	0	100	-	-	-	-
2.	PP-ELE5	Departmental Elective V	DEC	4	3	1	0	3	0	25		25	50	
3.	PP-ELE6	Departmental Elective VI	DEC	4	3	1	0	3	0	25		25	50	-
4.	MSC4/DHC4	Minor Specialization Course-IV/Departmental Honours Course-IV	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
5.	MSC5/DHC5	Minor Specialization Course-V/Departmental Honours Course-V	MSC/DHC	4	3	1	0	3	0	25	-	25	50	-
		Total		**16/24**	**6/12**	**2/4**	**16**							

15 JAN 2014

Program Code : **214 –Process Engineering and M.B.A.**

Department : **Department of Polymer and Process Engineering**

Year : **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
					(Autumn)									
1	MA-001	Mathematics-I	BSC	4	3	1	0	3	0	25	-	25	50	-
2	AS-041	General Chemistry	BSC	4	3	1	2/2	3	0	10	15	25	50	-
3	CE-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	15	-	35	50	-
4	HS- 001A HS-001B	Communication Skills (Advanced) Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5	HS-002	Ethics and Self-Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6	PE-101B	Introduction to Process Engineering	DCC	2	2	0	0	2	0	15	-	35	50	-
7	PE-103	Introduction to Computer Programming	ESC	4	3	0	2	3	0	15	15	30	40	-
		Total		**21**	**16**	**03**	**05**							
					(Spring)									
1	AS-002	Mathematics-II	BSC	4	3	1	0	3	0	25	-	25	50	-
2	PP-102	Material and Energy Balance	DCC	4	3	1	0	3	0	25	-	25	50	-
3	PP-104	Fluid Mechanics	DCC	4	3	1	2/2	3	3	15	15	15	40	15
4	PE-152	Chemical Process Technology	DCC	4	3	0	3/2	3	0	10	15	25	50	-
5	AS-021	Applied Physics	BSC	4	3	0	2	3	2	15	15	15	40	15
6	MI-108	Mechanical Engineering Drawing	ESC	4	2	0	4	3	0	-	25	25	50	-
		Total		**24**	**17**	**03**								

Program Code : **214 –Process Engineering and M.B.A.**

Department : **Department of Polymer and Process Engineering**

Year : **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1	MT-106	Materials Science	ESC	4	3	1	0	3	0	25	-	25	50	-
3	PP-203	Heat Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
2	PE-251	Mechanical Operations	DCC	4	3	1	2/2	3	3	15	15	15	40	15
4	PE-253	Energy Technology	DCC	2	2	0	0	2	0	15	15	30	40	-
5	PE-291	Engineering Analysis and Design	DCC	3	2	1	0	3	0	25	-	25	50	-
6	HS-ELE	HSS Elective course*	HSSMEC	3	2	1	0	3	0	15	-	35	50	-
		Total		17/20*	15	6	3							
				(Spring)										
1	EE-112	Electrical Science	ESC	4	3	1	2/2	3	0	15	15	30	40	-
3	PE-208	Mass Transfer	DCC	4	3	1	2/2	3	3	15	15	15	40	15
2	PE-252	Chemical Engineering Thermodynamics	DCC	3	2	1	0	3	0	25	-	25	50	-
4	PE-254	Chemical Reaction Engineering	DCC	4	3	1	2/2	3	3	15	15	15	40	15
5	PE-256	Biochemical Engineering	DCC	4	3	1	2/2	3	3	15	15	15	40	15
6	PE-292	Technical Communication	DCC	2	0	2	0	0	0	100	-	-	-	-
7	HS-ELE	HSS Elective course*	HSSMEC	3	2	1	0	3	0	15	-	35	50	-
		Total		24/21*	16	8	4							

*Any one course in this category is to be opted either in the Autumn or in the Spring semester in the second year. The course should be selected from the list (basket) of Humanities and Social Sciences Elective Courses.

15 JAN 2014

Program Code : **214 –Process Engineering and M.B.A.**

Department : **Department of Polymer and Process Engineering**

Year : **III**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	**SUBJECT CODE**	**COURSE TITLE**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
(Autumn)														
1.	PE-351	Transport Phenomena	DCC	4	3	1	0	3	0	25	-	25	50	-
2.	PE-353	Process Instrumentation and Control	DCC	4	3	1	2/2	3	3	15	15	15	40	15
3.	PE-355	Modeling and Simulation	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	PE-ELE1	Departmental Elective -I	DEC	3	3	0	0	3	0	15	-	35	50	-
5.	BM-ELE/ OEC	Courses from Management Studies / Open Elective Course*	OEC/ HSSMEC	3	2	1	0	3	0	15	-	35	50	-
		Total		**18**	**14**	**4**	**1**							
(Spring)														
1.	PE-300	Industry Oriented Problem/ Case Study/Lab Based Project/Practical Problem	DCC	3	0	0	6	0	0	100	-	-	-	-
2.	PE-352	Pollution Control Engineering	DCC	3	2	1	2/2	3	3	15	15	15	40	15
3.	PE-354	Chemical Plant Design and Economics	DCC	4	3	1	0	3	0	25	-	25	50	-
4.	PE-356	Financial and Management Accounting	DCC	3	3	0	0	3	0	15	-	35	50	-
5.	PE-ELE2	Departmental Elective -II	DEC	3	3	0	0	3	0	15	-	35	50	-
6.	BM-ELE/ OEC	Courses from Management Studies / Open Elective Course*	OEC/ HSSMEC	3	2	1	0	3	0	15	-	35	50	-
7.	PE-399	Educational Tour	DCC	0				0	0	100	-	-	-	-
		Total		**19**	**13**	**3**	**7**							

*One course each from the OEC and the HSSMEC categories is to be opted either in the Autumn or in the Spring semester in the third year. The HSSMEC course should be selected from the list (basket) of Management Studies Elective Course.

15 JAN 2014

Program Code : **214 –Process Engineering and M.B.A.**

Department : **Department of Polymer and Process Engineering**

Year : **IV**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	SUBJECT CODE	COURSE TITLE	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
				(Autumn)										
1.	PE-400A	B.Tech. Project (Contd. From Autumn Semester)	DCC	4	0	8	1	0	0	100	-	-	-	-
2.	PE-401	Financial Management	DCC	3	2	1	0	3	0	25	-	25	50	-
3.	PE-403	Marketing Management	DCC	3	2	1	0	3	0	25	-	25	50	-
4.	PE-ELE3	Departmental Elective –III	DEC	3	3	0	0	3	0	25	-	25	50	-
5.	PE-ELE4	Departmental Elective –IV	DEC	3	3	0	0	3	0	25	-	25	50	-
6.	PE-499	Industrial Training and Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**18**	**10**	**8**	**1**							
				(Spring)										
1.	PE-400B	B.Tech. Project (Contd. From Autumn Semester)	DCC	8	0	0	16	0	0	100	-	-	-	-
2.	PE-402	Operations Management	DCC	3	2	1	0	3	0	15	-	35	50	-
3.	PE-404	Human Resources Management	DCC	2	2	0	0	2	0	25	-	25	50	-
4.	PE-ELE5	Departmental Elective –V	DEC	3	3	0	0	3	0	15		35	50	
5.	PE-ELE6	Departmental Elective –VI	DEC	3	3	0	0	3	0	15		35	50	-
		Total		**19**	**10**	**1**	**8**							

15 JAN 2014

Program Code : **214 –Process Engineering and M.B.A.**

Department : **Department of Polymer and Process Engineering**

Year : **V**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weights (%)				
S.No	**SUBJECT CODE**	**COURSE TITLE**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
					(Autumn)									
1.	PE-500A	MBA Dissertation Part-I	DCC	0	0	0	1	0	0	**	-	-	-	-
2.	PE-501	Research Methodology and Business Statistics	DCC	3	3	0	0	3	0	25	-	25	50	-
3.	PE-503	Business Environment	DCC	2	2	0	0	2	0	25	-	25	50	-
4.	PE-SELE1	Specialization Elective I	DEC	2	2	0	0	2	0	25	-	25	50	-
5.	PE-SELE2	Specialization Elective II	DEC	2	2	0	0	2	0	25	-	25	50	-
6.	PE-SELE3	Specialization Elective III	DEC	2	2	0	0	2	0	25	-	25	50	-
7.	PE-SELE4	Specialization Elective IV	DEC	2	2	0	0	2	0	25	-	25	50	-
8.	PE-599	Management Training and Seminar	DCC	2	0	2	0	0	0	100	-	-	-	-
		Total		**15**	**13**	**2**	**1**							
					(Spring)									
1.	PE-500B	MBA Dissertation Part-II	DCC	6	0	0	12	0	0	100	-	-	-	-
2.	PE-502	Strategic Management	DCC	2	2	0	0	2	0	25	-	25	50	-
3.	PE-504	Business law	DCC	3	3	0	0	2	0	15	-	35	50	-
4.	PE-SELE5	Specialization Elective V	DEC	2	2	0	0	2	0	25	-	25	50	-
5.	PE-SELE6	Specialization Elective VI	DEC	2	2	0	0	2	0	25	-	25	50	-
6.	PE-SELE7	Specialization Elective VII	DEC	2	2	0	0	2	0	25	-	25	50	-
7.	PE-SELE8	Specialization Elective VIII	DEC	2	2	0	0	2	0	25	-	25	50	-
		Total		**19**	**13**	**0**	**12**							

** Satisfactory/unsatisfactory grading

15 JAN 2014

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPTT./CENTRE : **Department of Physics**

1. Subject Code: **PH-110** Course Title: **Introduction to Electronics**

2. Contact Hours: **L: 3** **T: 1** **P: 0**

3. Examination Duration (Hrs.): **Theory : 3** **Practical : 0**

4. Relative Weightage: **CWS 25 PRS 0 MTE 25 ETE 50 PRE 0**

5. Credits: **4** 6. Semester: **Spring** 7. Subject Area: **DCC**

8. Pre-requisite: **None**

9. Objective: To impart knowledge of basic concepts of electronics.

10. Details of Course:

S. No.	Contents	Contact Hours
1	**Semiconductor Diode:** Energy band structure of Insulators, Semiconductors and Metals, Element and Compound semiconductors, Intrinsic semiconductors, Extrinsic semiconductors, electrons and holes, conductivity and mobility, effect of temperature and doping on mobility, carrier concentration and their temperature dependence, Fermi level in a semiconductor having impurities, p-n Junction fabrication (Simple Idea). Qualitative theory of the p-n junction, Barrier formation in p-n Junction Diode, current flow mechanism in Forward and Reverse Biased Diode, Volt-Ampere characteristics, Static and Dynamic Resistance of Diode, Zener Diode.	8
2	**Bipolar Junction transistors:** n-p-n and p-n-p transistors, Characteristics of CB, CE and CC configurations. Current gains α, β and γ and relations between them, Active, Cutoff, and Saturation regions.	5
3	**Amplifiers & Oscillators :** Analysis of a single-stage CE amplifier using DC Load Line, Coupled Amplifiers : RC-Coupled Amplifier and its Frequency Response of Voltage Gain, Operational Amplifiers: Inverting and noninverting Amplifiers. Feedback in Amplifiers: Effects of Positive and Negative Feedback on Input Impedance, Output Impedance and Gain, Stability, Distortion and Noise, Sinusoidal Oscillators : Barkhauson's Criterion for self-sustained oscillations, RC Phase Shift Oscillator, Determination of frequency, Non-Sinusoidal Oscillators – Multivibrators.	10
4	**Field Effect Transistors:** Junction Field Effect Transistors, Pinch-Off	5

15 JAN 2014

	Voltage, Volt-Ampere Characteristics of JFET, Insulated -Gate FET (MOSFET) , Enhancement MOSFET, Depletion MOSFET, circuit symbols.	
5	**Digital Circuits:** Difference Between Analog and Digital Circuits, Binary Numbers, Decimal to Binary and Binary to Decimal Conversion, AND, OR and NOT Gates (Realization using Diodes and Transistor). NAND AND NOR Gates. Exclusive OR and Exclusive NOR Gates, Basic concepts of flipflops.	8
6	**Integrated Circuits:** Basic Monolithic Integrated Circuits, Wafer, Chip, Scale of integration :SSI, MSI, LSI and VLSI (Basic Idea Only), Fabrication of Components on Monolithic ICs., Moore's law, Introduction to Nanoelectronics.	6
	Total	**42**

11. Suggested Books:

S.No.	Name of Authors / Books / Publishers	Year of Publication/ Reprint
1.	By Ben G. Streetman & Sanjay Banerjee, "Solid State Electronic Devices", Prentice Hall, 6th Ed.	2006
2.	Robert Boylestad, Louis, "Electronic Devices and Circuit Theory", Pearson Education, 8th Ed.	2004
3.	A.P.Malvino , "Electronic Principles", MacGraw Hill Publication, 7th Ed.	2006
4.	A P Malvino and D P Leach , "Digital Principles and Applications", MacGraw Hill Publication	1998
5.	Thomas L. Floyd and David L. Buchla "Electronics Fundamentals: Circuits, Devices and Applications", 8th Ed.	2010
6.	Allen Mottershead, "Electronic Circuits and Devices", PHI	1997
7.	Dube D C "Electronics: Circuits and Analysis" Narosa Publication, 2nd Edition	2010

15 JAN 2014