

INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, SHIBPUR
5 yr INTEGRATED B. TECH & M. TECH DUAL DEGREE DRAFTCOURSE STRUCTURE w.e.f. July, 2015

1st semester (COMMON TO ALL DEPARTMENTS)

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – I	MA 101	3	1	0	4	4
2.	Physics/Chemistry	PH 1201/CH 1201	3	1	0	4	4
3.	Int. to comp. & prog./ Prof. Comm. In English	CS 1201/HU 1201	2	1	0	3	3
4.	Basic Electrical Eng./Basic Electronics Eng.	EE 1201/ET 1201	3	1	0	4	4
5.	Environment & Ecology/Mechanics	CE 1201/AM 1201	2/3	0/1	0	2/4	2/4
	Theory Sub-total		13/14	4/5	NIL	17/19	17/19
6.	Physics-I Lab./Chemistry Lab.	PH 1251/CH 1251	0	0	3	2	
7.	Basic EE. Lab./Basic Electronics Eng. Lab.	EE 1251/ET 1251	0	0	3	2	
8.	Drawing Practice/Workshop Practice	AM 1251/WS 1251	0	0	3	2	
9.	Computing Practice Lab./None	CS 1251/NIL	0	0	3/0	2/0	
	Sessional Sub-total		NIL	NIL	12/9	8/6	12/09
	1 st Semester Total					25/23	29/28

2nd semester (COMMON TO ALL DEPARTMENTS)

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week
			L	T	P		
1.	Mathematics – II	MA 102	3	1	0	4	4
2.	Chemistry/Physics	CH 1201/PH 1201	3	1	0	4	4
3.	Prof.Comm. In English/Int. to comp. & Prog.	HU 1201/CS 1201	2	1	0	3	3
4.	Basic Electronics Eng./Basic Electircal Engg.	ET 1201/EE 1201	3	1	0	4	4
5.	Mechanics/Environment& Ecology	AM 1201/CE 1201	3/2	1/0	0	4/2	4/2
	Theory Sub-total		14/13	5/4	NIL	19/17	19/17
6.	Chemistry Lab./Physics Lab	CH 1251/PH 1251	0	0	3	2	
7.	Basic EE Lab./Basic Electronics Eng. Lab.	ET 1251/EE 1251	0	0	3	2	
8.	Workshop Practice / Drawing Practice	WS 1251/AM 1251	0	0	3	2	
9.	NONE/Computing Practice Lab.	NIL/CS 1251	0	0	0/3	0/2	
	Sessional Sub-total		NIL	NIL	9/12	6/8	9/12
	1 st Semester Total					22/24	28/29

Distribution of common core subjects

Group	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th
Aerospace, Civil, Mech, Met & Mining	CE 1201 CH 1201 CS 1201 ET 1201 AM 1251 ET 1251	AM 1201 PH 1201 HU 1201 EE 1201 EE 1251 WS 1251	HU3401 MA 301		HU5601		HU7801	
CS, EE, ET, IT	AM 1201 PH 1201 HU 1201 EE 1201 EE 1251 WS 1251	CE 1201 CH 1201 CS 1201 ET 1201 AM 1251 ET 1251	MA 301	HU3401		HU5601		HU7801

AEROSPACE AND APPLIED MECHANICS

3rd Semester:

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
2.	Intr. To Mgmt. & Industrial Sociology	HU 3401	4	0	0	4	4
3.	Rigid Body Dynamics	AM 302	3	1	0	4	4
4.	Fluid Dynamics	AE 301	3	1	0	4	4
5.	Strength of Materials	AM 304	3	1	0	4	4
	Theory Sub-total		16	4	NIL	20	20
6.	Strength of Materials Lab	AM 354	0	0	3	2	3
7.	Machine Drawing	AM 351	0	0	3	2	3
8.	Fluid Mechanics Laboratory	AM 353	0	0	3	2	3
9.	Mini Project I	AE 371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	3rd Semester Total					24	29

4th Semester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Viscous Flow	AE 401	3	1	0	4	4
2.	Basic Aerospace Structures	AE 402	3	1	0	4	4
3.	Aircraft Dynamics	AE 403	3	1	0	4	4
4.	Engineering Thermodynamics	AE 404	3	1	0	4	4
5.	Introduction to Aerospace Engineering	AE 406	3	1	0	4	4
	Theory Sub-total		15	5	NIL	20	20
6.	MMS Lab	AE 451	0	0	3	2	3
7.	CAD Lab	AE 452	0	0	3	2	3
9.	Mini Project II	AE 471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	6	06
	4th Semester Total					25	26

5thSemester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Economics	HU5601	2	1	0	3	3
2.	Low Speed Aerodynamics	AE501	3	1	0	4	4
3.	Aerospace Structures II	AE502	3	1	0	4	4
4.	Aerospace Vehicle Dynamics and Navigation	AE503	3	1	0	4	4
5.	Numerical Methods and Computational Tools – (Open Elective)	AE531/1	3	0	0	4	3
	Theory Sub-total		14	5	NIL	19	18
6.	Low Speed Aerodynamics Laboratory	AE551	0	0	3	2	3
7.	Aerospace Structures Lab	AE552	0	0	3	2	3
8.	Numerical Methods and Computational Tools Lab	AE555	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	5th Semester Total					25	27

3rd Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics - III	MA 301	3	1	0	4	4
2.	Intr. to Mgmt. & Industrial Sociology	HU 3401	4	0	0	4	4
3.	Hydraulics	AM 303/1	3	1	0	4	4
4.	Solid Mechanics	AM 304/1	3	1	0	4	4
5.	Surveying	CE 302	3	1	0	4	4
	Theory Sub-total		15	4	NIL	20	20
6.	Hydraulics Lab	AM 353/1	0	0	3	2	3
7.	Solid Mech Lab	AM 354/1	0	0	3	2	3
8.	Project on Building Planning	CE 351	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	12	6	9
	3 rd Semester Total					26	29

4th Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week
			L	T	P		
1.	Engineering Geology	GE 401	3	0	0	3	3
2.	Structural Analysis I	CE 401	3	1	0	4	4
3.	Civil Engineering Materials	CE 402	3	1	0	4	4
4.	Geotechnical Engineering I	CE 403	3	1	0	4	4
5.	Water Resource Engineering I	CE 404	3	1	0	4	4
	Theory Sub-total		15	4	NIL	19	19
6.	Surveying Lab	CE 451	0	0	3	2	3
7.	Estimation and Valuation Practice	CE 452	0	0	3	2	3
8.	Civil Engineering Materials Lab	CE 453	0	0	3	2	3
9.	General Civil Engg. problems	CE 471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	4 th Semester Total					27	28

5th Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Economics	HU 5601	2	1	0	3	3
2.	Structural Analysis II	CE 501	3	1	0	4	4
3	Design of Reinforced Concrete Structures	CE 502	3	1	0	4	4
4.	Environmental Engineering I	CE 503	3	1	0	4	4
5.	Open Elective I	CE 531/X					
	Theory Sub-total		15	4	NIL	19	19
6.	Reinforced Concrete Structure project	CE 551	0	0	3	2	3
7.	Geotechnical Engineering Lab	CE 552	0	0	3	2	3
8.	Water Resource Engg Lab	CE 553	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	5 th Semester Total					25	28

Open Elective I

X=1 : Introduction to GIS

X=2: Disaster Mitigation

X=3: Uncertainty Quantification in Engineering

X=4: Climate Change Impact Analysis

COMPUTER SCIENCE AND TECHNOLOGY

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics III	MA 301	4	0	0	4	4
2.	Digital Logic	CS 301	3	0	0	3	3
3.	Data Structures and Algorithms	CS 302	3	0	0	3	3
4.	Discrete Structure	CS 303	3	1	0	4	4
5.	Electrical Machines	EE 304	3	0	0	3	3
	Theory Sub-total		16	1	0	17	17
6.	Electrical Machines lab.	EE 354	0	0	3	2	3
7.	Digital Logic Laboratory	CS 351	0	0	3	2	3
8.	Algorithm-I Laboratory	CS 352	0	0	3	2	3
9.	Mini Project -I	CS 371	0	0	0	2	0
	Sessional Sub-total		0	0	9	8	9
	3rd Semester Total					25	26

4th Semester CST

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Intr. To Mgmt. & Industrial Sociology	HU 3401	4	0	0	4	4
5.	Design and Analysis of Algorithm	CS 401	3	0	0	3	3
3.	Computer Architecture and Organization-I	CS 402	3	0	0	3	3
4.	Programming Paradigms	CS 403	3	0	0	3	3
2.	Theory of computation	CS 404	3	0	0	3	3
	Theory Sub-total		15	0	0	16	16
6.	Algorithm II Laboratory	CS 451	0	0	3	2	3
7.	Computer Architecture and Org. Lab.	CS 452	0	0	3	2	3
8.	Programming Paradigms Laboratory	CS 453	0	0	3	2	3
9.	Mini Project II	CS 471	0	0	0	2	0
	Sessional Sub-total		0	0	9	8	9
	4th Semester Total					24	25

5th Semester CST

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Database Management Systems	CS501	3	0	0	3	3
2.	Computer Architecture and Organization II	CS502	3	0	0	3	3
3.	Operating Systems	CS503	3	0	0	3	3
4.	Elective-I: Computer Graphics (CS504/1) Graph Algorithms (CS504/2)	CS504/X	3	0	0	3	3
5.	Open Elective I:	CS531/X	3	0	0	3	3
	Theory Sub-total		15	0	0	15	15
6.	DBMS Lab	CS551	0	0	3	2	3
7.	Operating Systems Laboratory	CS553	0	0	3	2	3
8.	Elective-I Laboratory	CS554/X	0	0	3	2	3
	Sessional Sub-total		0	0	9	6	9
	5 th Semester Total					21	24

Open Elective

X= 1 Database Management Techniques (CS531/1)

X=2 Analysis and Design of Information Systems (CS531/2)

ELECTRICAL ENGINEERING

3rd Semester EE

Sl. No.	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
2.	Strength of Materials & Theory of Machines	AM 304/2	3	1	0	4	4
3.	Electrical Machines I	EE 301	3	1	0	4	4
4.	Electrical and Electronic Measurements	EE 302	4	0	0	4	4
5.	Field and Circuit Theory	EE 303	3	1	0	4	4
	Theory Sub-total		16	4	NIL	20	20
6.	Electrical Machines Lab – I	EE 351	0	0	3	2	3
7.	Electrical & Electronics Measurement Lab	EE 352	0	0	3	2	3
8.	Electrical Circuits Lab	EE 353	0	0	3	2	3
9.	Mini Project I	EE 371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	3rd Semester Total					28	29

4th Semester Electrical Engineering

Sl. No.	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Intro. To Mgmt & Industrial Sociology	HU 3401	4	0	0	4	4
2.	Electrical Machine II	EE 401	3	1	0	4	4
3.	Analog and Digital Electronics	EE 402	3	1	0	4	4
4.	Signals and Systems	EE 403	3	1	0	4	4
5.	Control Systems	EE 404	4	0	0	4	4
	Theory Sub-total		17	3	NIL	20	20
6.	Electrical Machines Lab –II	EE 451	0	0	3	2	3
7.	Analog and Digital Electronics Lab.	EE 452	0	0	3	2	3
8.	Numerical Simul. & Appl. Tools Lab	EE 453	0	0	3	2	3
9.	Mini Project II	EE 471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	3rd Semester Total					28	29

5th Semester Electrical Engineering

Sl. No.	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Electric Machine III	EE 501	3	0	0	3	3
2.	Power System I	EE 502	3	0	0	3	3
3.	Power Electronics	EE 503	3	0	0	3	3
4.	Open Elective I	EE 331/X	3	0	0	3	3
5.	Heat Power	ME 505	3	0	0	3	3
	Theory Sub-total		15	0	NIL	15	15
6.	Electrical Machines Lab – III	EE 551	0	0	3	2	3
7.	Power System design & Estimation, and M/C Design	EE 552	0	0	3	2	3
8.	Heat Power Lab	ME 553	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	3rd Semester Total					21	24

Open Elective I

X=1 Elements of control systems

ELECTRONICS AND TELECOMMUNICATION

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
2.	Network Theory	ET 301	3	1	0	4	4
3.	Analog Electronics	ET-302	4	0	0	4	4
4.	Electronic Devices	ET-303	4	0	0	4	4
5.	Signals and Systems	ET-304	3	1	0	4	4
	Theory Sub-total		15	4	NIL	20	19
6.	Network Theory Lab	ET 351	0	0	3	2	3
7.	Analog Electronics Lab	ET 352	0	0	3	2	3
8.	Electronic Devices Lab	ET 353	0	0	3	2	3
9.	Mini Project –I	ET 371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	09
	3rd Semester Total					28	29

4th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/Week
			L	T	P		
1.	Intro. To Mgmt & Industrial Sociology	HU 3401	4	0	0	4	4
2.	Principles of Analog & Digital Communications	ET 401	4	0	0	4	4
3.	Digital Electronics	ET 402	3	0	0	3	3
4.	Microelectronics	ET 403	3	0	0	3	3
5.	Electromagnetic Theory & Transmission Lines	ET 404	4	0	0	4	4
	Theory Sub-total		16	3	NIL	18	19
6.	Analog and Digital Communication Lab	ET 451	0	0	3	2	3
7.	Digital Electronics Lab	ET 452	0	0	3	2	3
8.	Microelectronics Lab	ET 453	0	0	3	2	3
9.	Modelling and Simulation Lab.	ET 454	0	0	0	2	2
10.	Mini Project -II	ET 471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	09
	4th Semester Total					26	28

5th Semester ELECTRONICS & TELECOMMUNICATION

Sl no	Course Name	Course Code	Class Load/Week			Credit	Total Class Load/Week	Full Marks
			L	T	P			
1.	Integrated Circuits and Systems	ET501	4	0	0	4	4	100
2.	Wave Propagation and Antenna Engineering	ET502	3	0	0	3	3	100
3.	Microprocessors and Microcontrollers	ET503	3	0	0	3	3	100
4.	Wireless and Mobile Communication	ET504	3	0	0	3	3	100
5.	Open Elective-I	ET531/X	3	0	0	3	3	100
	Theory Sub Total					16	16	
6	Integrated Circuits and Systems Lab	ET551	0	0	3	2	3	50
7	Transmission Lines and Antenna Lab	ET552	0	0	3	2	3	50
8	Microprocessors and Microcontrollers Lab	ET553	0	0	3	2	3	50
	Sessional Sub Total					6	9	
	5th Semester Total					22	25	

Open Elective I:

X=1 : Introduction to Electronic Communication Systems (ET531/1)

INFORMATION TECHNOLOGY

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
3.	Pogramming & Data Structure	IT 301	4	0	0	4	4
4.	Digital Logic & Circuit Design	IT 302	4	0	0	4	4
2.	Discrete Mathematics & Graph theory	IT 303	3	1	0	4	4
5.	Signals, System & Circuits	IT 304	3	1	0	4	4
	Theory Sub-total		17	3	NIL	20	20
6.	Programming & Data structure lab	IT 351	0	0	3	2	3
7.	Digital Logic & Circuit Design Lab	IT 352	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	4	6
	3rd Semester Total					24	26

4th Semester IT

Sl. No	Course Name	Course code	Class Load/Week			Crediti	Class load/Week
			L	T	P		
1.	Intro. to Mgmt. & Industrial Sociology	HU 3401	4	0	0	4	4
2.	Computer Graphics	IT 403	3	0	0	3	3
3.	Formal Language and Automata	IT 404	3	0	0	3	3
4.	Computer Organisation & Architecture	IT 401	3	0	0	3	3
5.	Communication Systems	IT 402	3	0	0	3	3
	Theory Sub-total		16	0	NIL	16	16
6.	Computer Graphics Lab.	IT 453	0	0	3	2	3
7.	Computer Org. & Architecture Lab.	IT 451	0	0	3	2	3
8.	Signal system and communication lab	IT 452	0	0	3	2	3
9.	Modelling and Simulation Lab.	IT 455	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	12	8	12
	4th Semester Total					24	28

5th Semester IT

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Microprocessors	IT 501	3	0	0	3	3
3.	Operating Systems	IT 502	3	1	0	4	4
4.	Database Management Systems	IT 503	3	1	0	4	4
2.	Elective - I	IT 521/X	3	0	0	3	3
5.	Open Elective I	IT 531/X	3	0	0	3	3
	Theory Sub-total		15	3	NIL	17	18
6.	Microprocessor lab	IT 551	0	0	3	2	3
7.	Operating Systems Lab	IT 552	0	0	3	2	3
8.	Database Management Systems lab	IT553	0	0	3	2	3
9.	Mini Project I	IT 571	0	0	2	2	2
	Sessional Sub-total		NIL	NIL	11	8	11
	5 th Semester Total					25	28

Elective I:

X= 1: Object oriented programming

X = 2: Telecommunication & Traffic Engg.

Open Elective:

X = 1: Multimedia Systems

MECHANICAL ENGINEERING

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
2.	Intr. To Mgmt. & Ind. Sociology	HU 3401	4	0	0	4	4
3.	Fundamentals of Thermodynamics	ME 301	3	0	0	3	3
4.	Rigid body Dynamics	AM 302	3	1	0	4	4
5.	Strength of Materials	AM 304	3	1	0	4	4
	Theory Sub-total		16	3	NIL	19	19
6.	Thermodynamics Lab	ME 351	0	0	3	2	3
7.	Machine Drawing	AM 351	0	0	3	2	3
8.	Strength of Materials Lab	AM 354	0	0	3	2	3
9.	Mini Project I	ME 371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	09
	3 rd Semester Total					27	28

4th Semester ME

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Fluid Mechanics	AM 403	3	1	0	4	4
2.	Basics of Machine Design	ME 401	3	0	0	3	3
3.	Applied Thermodynamics	ME 402	3	1	0	4	4
4.	Engineering Materials and Processes	ME 403	3	1	0	4	4
5.	Mechanical Measurement and Control Engineering	ME 404	4	0	0	4	4
	Theory Sub-total		14	4	NIL	19	19
6.	Fluid Mechanics Lab	AM 453	0	0	3	2	3
7.	Applied Thermodynamics lab	ME 451	0	0	3	2	3
8.	Mechanical Measurement lab	ME 454	0	0	3	2	3
9.	Mini Project II	ME 471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	4 th Semester Total					27	28

5th Semester Mechanical Engineering

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Economics	HU5601	3	0	0	3	3
2.	Kinematics of Mechanisms	ME 501	3	0	0	3	3
3.	Heat Transfer	ME 502	3	0	0	3	3
4.	Machine Tools & Metal Cutting	ME 503	3	0	0	3	3
5.	Open Elective I	ME 531/X	3	0	0	3	3
	Theory Sub-total		15	0	NIL	15	15
6.	Basics of Machine Design Sessional	ME 551	0	0	3	2	3
7.	Heat Transfer Lab	ME 552	0	0	3	2	3
8.	Machine Tools & Metal Cutting Lab	ME 553	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	5 th Semester Total					21	24

Open Elective I

X=1: Solar Energy and its applications

X=2: Composite Materials

X=3: Industrial Management

METALLURGY AND MATERIAL SCIENCE

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
2.	Intro. to Mgmt. & Industrial Sociology	HU 3401	4	0	0	4	4
3.	Physics of Materials	MT 301	3	1	0	4	4
4.	Metallurgical Thermodynamics & Kinetics	MT 302	3	1	0	4	4
5.	Introduction to Physical Metallurgy	MT 303	3	1	0	4	4
	Theory Sub-total		16	4	NIL	20	20
6.	Physics of Materials Lab	MT 351	0	0	3	2	3
7.	Met. Thermodynamics & Kinetics Lab	MT 352	0	0	3	2	3
8.	Introduction to Physical Metallurgy Lab	MT 353	0	0	3	2	3
9.	Mini Project I	MT 371	0	0	0	2	2
	Sessional Sub-total		NIL	NIL	9	8	11
	3 rd Semester Total					28	30

4th Semester Metallurgy and Materials Engineering

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Introduction to Materials Manufacturing	MT 404	2	1	0	3	3
2.	Instrumentation & Control	MT 405	2	1	0	3	3
3.	Phase Transformation	MT 401	3	1	0	4	4
4.	Principles of Extractive Metallurgy	MT 402	3	1	0	4	4
5.	Deformation behaviour of Materials	MT 403	3	1	0	4	4
	Theory Sub-total		13	5	NIL	18	18
6.	Phase Transformation Lab	MT 451	0	0	3	2	3
7.	Extractive Metallurgy Lab	MT 452	0	0	2	1	2
8.	Modelling and Simulation Lab	MT 453	0	0	3	2	3
9.	Mini Project II	MT 471	0	0	0	2	2
	Sessional Sub-total		NIL	NIL	8	7	10
	4 th Semester Total					25	28

5th Semester: Metallurgy and Materials Engineering

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Economics	HU5601	2	1	0	3	3
2.	Iron and Steel Making	MT501	3	1	0	4	4
3.	X-Ray and Electron Diffraction	MT502	3	1	0	4	4
4.	Metal Casting Technology	MT503	3	1	0	4	4
5.	Open Elective I	MT531/1	2	1	0	3	3
	Theory Sub-total		13	5	0	18	18
7.	Metal Casting Technology Lab	MT551	0	0	3	2	3
8.	X-Ray and Electron Diffraction Lab	MT552	0	0	2	1	2
9.	Heat Treatment Technology Lab	MT553	0	0	3	2	3
	Sessional Sub-total		0	0	8	5	8
	5 th Semester Total					23	26

Open Elective I

X= 1: Heat Treatment Technology

MINING ENGINEERING

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA 301	3	1	0	4	4
2.	Intro. To Mgmt & Industrial Sociology	HU 3401	4	0	0	4	4
3.	Electro-Technology in Mining	EE 305	3	1	0	4	4
4.	Drilling and Blasting	MN 301	3	0	0	3	3
5.	Mine Development	MN 302	3	0	0	3	3
	Theory Sub-total		16	2	NIL	18	18
6.	Electro-Technology in Mining Lab.	EE 355	0	0	3	2	3
7.	Industrial Visit to Underground Coal Mines	MN 351	0	0	0	1	0
8.	Seminar & Report Writing	MN 352	0	0	2	1	2
9.	Modelling & Simulation Lab.	MN 353	0	0	3	2	3
10.	Mini Project I	MN 371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	5	8	8
	3rd Semester Total					26	25

4th Semester MINING ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Geology	GE 401	3	1	0	4	4
2.	Basic Mechanical Engineering	ME 405	3	0	0	3	3
3.	Fluid Mechanics and Fluid Machines	AM 403/4	3	1	0	4	4
4.	Underground Coal Mining	MN 401	3	1	0	4	4
5.	Underground Mine Environment	MN 402	3	0	0	3	3
	Theory Sub-total		15	3	NIL	19	18
6.	Geology Lab.	GE 451	0	0	2	1	2
7.	Basic Mechanical Engineering Lab	ME 455	0	0	2	1	2
8.	Fluid Mechanics Lab.	AM 453/4	0	0	3	1	3
9.	Geology Field Study	GE 451	0	0	0	2	0
10.	Mini Project II	MT 471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	7	7	7
	4th Semester Total					26	25

5th Semester: MINING ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Economics	HU 5601	3	0	0	3	3
2.	Surface Mining	MN 501	3	1	0	4	4
3.	Mining Machinery	MN 502	3	1	0	4	4
4.	Surveying	MN 503	3	1	0	4	4
5.	Open Elective I	MN 531/X	3	0	0	3	3
	THEORY SUB-TOTAL		15	3	NIL	18	18
7.	Design of Mine Layout	MN 551	0	0	3	2	3
8.	Surveying Practical	MN 552	0	0	3	2	3
9.	Industrial Training/Internship Evaluation	MN 553	0	0	0	1	0
	Industrial Visit to Surface Mine	MN 554	0	0	0	1	0
	Minor Project I	MN 571	0	0	2	2	2
	SESSIONAL SUB-TOTAL		NIL	NIL	6	8	8
	5 TH SEMESTER TOTAL					26	26

Open Elective I

X=1 : Optimization Techniques