\

INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, SHIBPUR
5 yr INTEGRATED B. TECH & M. TECH DUAL DEGREE COURSE 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	MA101	3	1	0	4	4
2.	Physics/Chemistry	PH1201/CH1201	3	1	0	4	4
3.	Int. to comp. & prog./ Prof. Comm. In English	CS1201/HU1201	2	1	0	3	3
4.	Basic Electrical Eng./Basic Electronics Eng.	EE1201/ET1201	3	1	0	4	4
5.	Environment & Ecology/Mechanics	CE1201/AM1201	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.	PH1251/CH1251	0	0	3	2	
7.	Basic EE. Lab./Basic Electronics Eng. Lab.	EE1251/ET1251	0	0	3	2	
8.	Drawing Practice/Workshop Practice	AM1251/WS1251	0	0	3	2	
9.	Computing Practice Lab./None	CS1251/NIL	0	0	3/0	2/0	
	Sessional Sub-total		NIL	NIL	12/9	8/6	12/09
	1st Semester Total					25/23	29/28

2nd semester (COMMON TO ALL DEPARTMENTS EXCEPT ARCHITECTURE)

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	Mathematics – II	MA 201	3	1	0	4	4
2.	Chemistry/Physics	CH1201/PH1201	3	1	0	4	4
3.	Prof.Comm. In English/Int. to comp. & Prog.	HU1201/CS1201	2	1	0	3	3
4.	Basic Electronics Eng./Basic Electircal Engg.	ET 1201/EE1201	3	1	0	4	4
5.	Mechanics/Environment& Ecology	AM 1201/CE1201	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	CH1251/PH1251	0	0	3	2	
7.	Basic EE Lab./Basic Electronics Eng. Lab.	ET1251/EE1251	0	0	3	2	
8.	Workshop Practice / Drawing Practice	WS1251/AM1251	0	0	3	2	
9.	NONE/Computing Practice Lab.	NIL/CS1251	0	0	0/3	0/2	
	Sessional Sub-total		NIL	NIL	9/12	6/8	9/12
	1st Semester Total					22/24	28/29

Distribution of common core subjects

Group	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**
Aerospace, Civil, Mech, Met & Mining	CE1201 CH1201 CS1201 ET1201 AM1251 ET1251	AM1201 PH1201 HU1201 EE1201 EE1251 WS 1251	HU3401 MA 301		HU5601		HU7801	
CS, EE, ET, IT	AM1201 PH1201 HU1201 EE1201 EE1251 WS 1251	CE1201 CH1201 CS1201 ET1201 AM1251 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	MA301	3	1	0	4	4
2.	Intr. To Mgmt. & Industrial Sociology	HU3401	4	0	0	4	4
3.	Rigid Body Dynamics	AM302	3	1	0	4	4
4.	Fluid Dynamics	AE301	3	1	0	4	4
5.	Strength of Materials	AM304	3	1	0	4	4
	Theory Sub-total		16	4	NIL	20	20
6.	Strength of Materials Lab	AM354	0	0	3	2	3
7.	Machine Drawing	AM351	0	0	3	2	3
8.	Fluid Mechanics Laboratory	AM 353	0	0	3	2	3
9.	Mini Project I	AE371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	3rd Semester Total					24	29

4ThSemester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Viscous Flow	AE401	3	1	0	4	4
2.	Basic Aerospace Structures	AE402	3	1	0	4	4
3.	Aircraft Dynamics	AE403	3	1	0	4	4
4.	Engineering Thermodynamics	AE404	3	1	0	4	4
5.	Introduction to Aerospace Engineering	AE406	3	1	0	4	4
	Theory Sub-total		15	5	NIL	20	20
6.	MMS Lab	AE451	0	0	3	2	3
7.	CAD Lab	AE452	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

5th Semester 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.	Advanced Aerospace Structures	AE502	3	1	0	4	4
4.	Dynamic Systems and Control	AE503	3	1	0	4	4
5.	Numerical Methods and Computational Tools	AE535	3	1	0	4	4
	Theory Sub-total		14	5	NIL	19	19
6.	Low Speed Aerodynamics Lab.	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	28

6Th Semester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	High Speed Aerodynamics	AE601	3	1	0	4	4
2.	Vibration of Linear Systems	AE602	3	1	0	4	4
3.	Aircraft Stability and Control	AE603	3	1	0	4	4
4.	Orbital Mechanics	AE606	3	1	0	4	4
5.	Theory of Propulsion	AE604	3	1	0	4	4
	Theory Sub-total		15	5	NIL	20	20
6.	Aircraft Design and Optimisation Lab. I	AE 656	0	0	3	2	3
7.	High Speed Aerodynamics Lab.	AE 651	0	0	3	2	3
8.	Vibration Lab.	AE 652	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	6th Semester Total					26	29

7th Semester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Accountancy and F.M.	HU7801	2	1	0	3	3
2.	Jet and Rocket Propulsion	AE701	3	1	0	4	4
3.	ADCI	AE731	2	1	0	3	3
4.	ADCII	AE732	3	1	0	4	4
5.	ADS 1	AE741	3	1	0	4	4
	Theory Sub-total		14	5	NIL	18	18
6.	Aircraft Design and Optimisation Lab. II	AE756	0	0	3	2	3
7.	Aircraft Stability and Control Laboratory	AE753	0	0	3	2	3
8.	Propulsion Laboratory	AE754	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	7th Semester Total					24	27

8Th semester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	OE I	AE821/X	3	1	0	4	4
2.	ADCIII	AE813	3	1	0	4	4
3.	ADS II	AE842	3	1	0	4	4
4.	ADS I	AE843	3	1	0	4	4
	Theory Sub-total		12	4	NIL	16	16
6.	Project Part I	AE 850	0	0	8	4	4
7.	Aircraft Design and Optimisation Lab. III	AE 856	0	0	3	2	3
8.	Mechatronics and Avionics Laboratory/ Computational Solid Mechanics Laboratory	AE 857/1 AE 857/2	0	0	3	2	3
9.	Comprehensive viva-voce	AE 871	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	10	10	10
	8th Semester Total					26	26

	SPECIALISATION	
SUBJECT TYPE& CODING	AERODYNAMICS (X=1)	AEROSTRUCTURE (X=2)
OE I (AE S2N/X) S = SEMESTER; N = SEQ. NO.	Mechatronics and Avionics (AE 821/1)	Introduction to Plates & Shells (AE 821/2)

SUMMER TERM: Project for two to two and a half month / Industrial Training (Viva/Report) / Academic Assignments in India or abroad (4 credit)

9th semesterAEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	ADS IV	AE941	3	1	0	4	4
2.	ADS V	AE942	3	1	0	4	4
	Theory Sub-total		4	2	NIL	8	8
2.	Project Thesis	AE950	0	0	12	6	12
3.	Project Thesis Viva-voce	AE 970	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	16	8	12
	9th Semester Total					16	20

10th Semester AEROSPACE AND APPLIED MECHANICS

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
	(No Theory Subject)						
	Theory Sub-total		NIL	NIL	NIL	NIL	NIL
1.	Project thesis	AE1050	0	0	16	8	16
2.	Comprehensive viva-voce	AE105X	0	0	0	2	0
3.	Porject Thesis Viva-voce	AE105X	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	16	12	16
	10TH Semester Total					12	16

ADVANCED COMMON SUBJECTS FOR ALL SPECIALISATIONS		
ADC I (AE 731)	ADC II (AE 732)	ADC III (831)
Spacecraft Dynamics	Aircraft Structural Dynamics	Turbulent Flow
AE S4N/X	ADVANCED SUBJECTS FOR DIFFERENT SPECIALISATIONS	
S= 7/8/9: N=1/2/3..	AERODYNAMICS (X=1)	AEROSTRUCTURE (X=2)
ADS I	Advanced Aerodynamics (AE 741/1)	Composites & Structures (AE 741/2)
ADS II	Boundary Layer Theory (AE 841/1)	Finite Element Method (AE 841/2)
ADS III	Computational Fluid Dynamics (AE 842/1)	Aero Elasticity (AE 842/2)
ADS IV	Gas Turbine Theory (AE 941/1)	Nonlinear Vibration (AE 941/2)
ADS V	Hypersonic Aerodynamics (AE 942/2)	Theory of Elasticityand Plasticity (AE 942/1)

[obs: No. departmental elective, OE I ? who will take OE II; loading in the lower level is quite high. All the subjects offered have Tutorial – there must be some mechanism to take tutorial in real sense.]

3rd Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics-III	MA301	3	1	0	4	4
2.	Intr. to Mgmt. & Industrial Sociology	HU3401	4	0	0	4	4
3.	Solid Mechanics	AM304/1	3	1	0	4	4
4.	Hydraulics	AM303/1	3	1	0	4	4
5.	Surveying	CE302	3	1	0	4	4
	Theory Sub-total		15	3	NIL	20	20
6.	Solid Mech Lab	AM354/1	0	0	3	2	3
7.	Hydraulics Lab	AM353/1	0	0	3	2	3
8.	Project on Building Planning	CE351	0	0	3	2	3
9	Introduction to Civil Engg. Profession (Mini I)	CE352	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	12	8	12
	3rd Semester Total					28	32

<load is crossing the 30 hr limit>

4Th Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	Enginering Geology	GE401	3	0	0	3	3
2.	Structural Analysis	CE401	3	1	0	4	4
3.	Civil Engineering Materials	CE402	3	1	0	4	4
4.	Geotechnical Emgineering I	CE403	3	1	0	4	4
5.	Water Resource Engineering I	CE404	3	1	0	4	4
	Theory Sub-total		15	4	NIL	19	19
6.	Surveying Lab	CE451	0	0	3	2	3
7.	Estimation and Valuation Practice	CE452	0	0	3	2	3
8.	Civil Engineering Materials Lab	CE453	0	0	3	2	3
9.	General Civil Engg. problems I (MINI I)	CE471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	4th 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	HU5601	2	1	0	3	3
2.	Structural Analysis II	CE502	3	1	0	4	4
3	Reinforced Concrete Design	CE503	3	1	0	4	4
4.	Environmental Engineering I	CE504	3	1	0	4	4
5.	Transportation Engineering I	CE505	3	1	0	4	4
	Theory Sub-total		15	4	NIL	19	19
6.	Reinforced Concrete Structure project	CE551	0	0	3	2	3
7.	Geotechnical Engg Lab	CE552	0	0	3	2	3
8.	Water Resource Engg Lab	CE553	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	5th Semester Total					25	28

6Th Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Water Resource Engineering II	CE602	3	0	0	3	3
2.	Steel Design	CE601	3	1	0	4	4
3.	Transportation Engineering II	CE602	3	0	0	3	3
4.	Geotechnical Engineering II	CE603	3	1	0	4	4
5.	Environmental Engineering II	CE604	3	0	0	4	4
	Theory Sub-total		14	3	NIL	18	18
6.	Steel Structure Project		0	0	3	2	3
7.	Transportation Engineering Lab	CE651	0	0	3	2	3
	Environmental Engineering Lab	CE652	0	0	3	2	3
8.	Comprehensive Viva-voce	CE653	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	6	8	9
	6th Semester Total					26	27

7th Semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Accountancy & F.M	HU 7801	2	1	0	3	3
2.	Elective I (DE/OE)	CE702/ or OE/	3	0	0	3	3
3.	EL II (OE)	OE/	2	1	0	3	3
4.	ADS I	CE741/X	3	0	0	3	3
5.	ADS II	CE742/X	3	0	0	3	3
	Theory Sub-total		14	2	NIL	16	16
6.	Structure Lab	CE751	0	0	3	2	3
7.	PG Sessional I	CE752	0	0	3	2	3
8.	Mini Project	CE753	0	0	3	2	3
	Modelling and Simulation	CE701	0	0	3	4	4
	Sessional Sub-total		NIL	NIL	9	6	9
	7th Semester Total					22	25

Sl. No.	Name	Code	Type
1.	Advanced Mathematics and computing in Structural Engineering		
2.	Prestressed Concrete Design		
3.	Structures under Wind Excitation		
4.	Disaster Management		
5.	Flood Hazard Mitigation		
6.	Hydropower Engineering		
7.	Coastal Engineering		
8.	Geometric Design of Roads		
9.	Pavement Material & Construction		
10.	Chemistry for Environmental Engineering		
11.	Geotechnical investigations and Instrumentation		
12.	Ground Improvement Methods		

8Th semester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.							
2.	Construction & Management	CE801	3	0	0	3	3
3.	Elective III (DE/OE)	CE803/ or OE/	3	0	0	3	3
4.	ADS III	CE 841/X	3	0	0	3	3
5.	ADS IV	CE 842/X	3	0	0	3	3
	Theory Sub-total		14	1	0	15	15
6.	Project Thesis Part I	CE851			4	2	4
7.	PG Sessional II	CE852			3	2	3

8.	Industrial Problem	CE853			3	2	3
9.	Comprehensive viva-voce	CE854				2	
	Sessional Sub-total				10		10
	8th Semester Total					23	25

Elective Subjects

Sl. No.	Name	Code	Type
1.	Bridge Engineering		
2.	Earthquake Engineering		
3.	Probabilistic Structural Analysis		
4.	Irrigation and Drainage Engineering		
5.	Stochastic Hydrology		
6.	Fluvial Hydraulics		
7.	Advanced Numerical Methods in Water Resources Engineering		
8.	Advanced Airport Engineering		
9.	Energy & Environment in Transportation		
10.	Industrial and Hazardous Waste Management		
11.	Rock Mechanics and Tunneling		
12.	Principles of Slope Stability Analysis		

9th semesterCIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	ADS V	CE 941/X	3	0	0	3	3
2.	ADS VI (Adv. Elective I)	CE942/X	3	0	0	3	3
3.	ADS VII (Adv. Elective II)	CE943/X	3	0	0	3	3
4.	ADS VIII (Adv. ElectiveIII)	CE944/X	3	0	0	3	3
	Theory Sub-total		12			12	12
6.	Project Thesis Part II	CE951			10	6	10
7.	Project Thesis Viva-voce	CE952				2	
8.							
	Sessional Sub-total						
	9th Semester Total					20	22

10thSemester CIVIL ENGINEERING

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
	Theory Sub-total		NIL	NIL	NIL		
6.	Project thesis part III	CE1051			20	10	20

7.	Project Thesis Viva-voce	CE1052				2	
	Sessional Sub-total					12	
	10^{TH} Semester Total					12	20

ADVANCED SUBJECTS COMMON TO ALL SPECIALISATIONS					
NONE					
ADVANCED SUBJECTS FOR DIFFERENT SPECIALISATIONS					
NOMENCLATURE& CODE CE S4N/X/Y S=7/8/9 N=1/2/3/4/5	STRUCTURURAL ENGINEERING (X=1)	GEOTECHNICAL ENGINEERING (X=2)	WATER RESOUCRES ENGINEERING (X=3)	TRANSPORTATION ENGINEERING (X=4)	ENVIRONMENT ENGINEERING& MANAGEMENT (X=5)
ADS I (CE 741/X)	Advanced Mechanics of structures I	Theoretical Soil Mechanics	Hydraulic Structures	Pavement Structure Analysis and Design	Physicochemical Processes and Principles
ADS II (CE 742/X)	Structural Dynamics	Foundation Engineering – I	Flow through Open Channels	Traffic System Analysisand Design	Biological Processes in wastewater treatment
ADS III (CE 841/X)	Advanced Mechanics of structures II	Advanced Soil Mechanics – I	Groundwater Systems Analysis and Modeling	Analytical Techniques in Transportation Engine	Air and Noise Pollution Control Engineering
ADS IV (CE 842/X)	PG IV: Finite Element Method in Structural Analysis	Theory of vibration, discrete and continuous medium	Computer Applications in Water Resources Engineering	Urban and Regional Transportation Planning	Solid Waste Management
ADS V (CE 941/X)	Advanced Design of Structures	Foundation Engineering – II	Hydrologic Analysis and Design	Transportation Project Planning and Evaluation	Environment Management and Legislation
ADS VI (CE 942/X)	Elective 1	Elective-I	Hydraulics of River Flow	Elective-I	Elective-I
ADS VII (CE 943/X)	Elective 2	Elective-II	Watershed Management with Remote Sensing and GIS	Elective-II	Elective-II
ADS VIII(CE 944/X)	Elective 3	Elective-II	Water Resources Systems Planning and Management	Elective-II	Elective-II

LIST OF ADVANCED ELECTIVES

	Name of Specialisation			
	STRUCTURURAL ENGINEERING **(Elective I, II and III)**	GEOTECHNICAL ENGINEERING	TRANSPORTATION ENGINEERING **(Elective I, II and III)**	ENVIRONMENT ENGINEERING & MANAGEMENT **(Elective I, II and III)**
1	Design of tall structures	**(Elective I)** Advanced engineering analysis and numerical Methods	Advanced Pavement Engineering	Environmental Systems Management

2	Advanced Materials	**(Elective I)**Machine foundation and Geotechnical Earthquake engineering	Pavement Performance Management	Environmental Engineering Hydraulics
3	Offshore structures	**(Elective I)** Analysis and design of special foundations	Low Volume Roads	Environmental Economics
4	Optimization of structures	**(Elective II)** Geo-instrumentation techniques, digital data acquisition and signal processing	Transportation Asset Management	Rural Water Supply and Sanitation
5	Vibration control of structures	**(Elective II)** Offshore Geo-techniques	Advanced Traffic Engineering and Road Safety	Environment and Climate Change
6	Re-engineering of structures	**(Elective III)** Advanced Soil Mechanics – II	Public Transport SystemPlanning and Design	Managing Water Supply and Sanitation in Emergencies
7	Mechanics of composite materials and structures	**(Elective III)** Environmental Geotechnics	Transportation in Business Logistics Management	Ecological Principles and Processes
8	Shell structures	**(Elective III)** Probabilistic Methods in Geotechnical Engineering		Remote Sensing and GIS
9	Forensic engineering of structures			
10	Structural health monitoring			
11	Structures under extreme loading			
12	Random vibration			
13	Behaviour of Metal Structures			
14	Experimental Methods of Structural Analysis			
15	One of the Advanced Electives from other specialisation			

Y =1/2/3… MAY BE USED IF YOU OFFER ELECTIVES IN THE ADVANCED LEVEL

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	MA301	4	0	0	4	4
2.	Digital Logic	CS301	3	0	0	3	3
3.	Data Structures and Algorithms	CS302	3	0	0	3	3
4.	Discrete Structure	CS 303	3	1	0	4	4
5.	Electrical Machines	EE304	3	0	0	3	3
	Theory Sub-total		16	1	0	17	17

6.	Electrical Machines lab.	EE354	0	0	3	2	3
7.	Digital Logic Laboratory	CS351	0	0	3	2	3
8.	Algorithm-I Laboratory	CS352	0	0	3	2	3
9.	Mini Project -I	CS371	0	0	0	2	0
	Sessional Sub-total		0	0	9	8	9
	3rd Semester Total					25	26

4Th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Intr. To Mgmt. & Industrial Sociology	HU3401	4	0	0	4	4
5.	Design and Analysis of Algorithm	CS401	3	0	0	3	3
3.	Computer Architecture and Organization-I	CS402	3	0	0	3	3
4.	Programming Paradigms	CS403	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	CS451	0	0	3	2	3
7.	Computer Architecture and Org. Lab.	CS452	0	0	3	2	3
8.	Programming Paradigms Laboratory	CS453	0	0	3	2	3
9.	Mini Project II	CS471	0	0	0	2	0
	Sessional Sub-total		0	0	9	8	9
	4th Semester Total					**24**	**25**

5th Semester

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 Org. II	CS502	3	0	0	3	3
3.	Operating Systems	CS503	3	0	0	3	3
4.	Elective-I	CS524/X	3	0	0	3	3
5.	Open Elective I	XX53N/Y	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
	Simulation and Modeling	CS611	0	0	3	2	3
	Sessional Sub-total		0	0	9	8	12

	5th Semester Total					23	27

6Th Semester

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.	Microprocessor Based Systems	CS601	3	0	0	3	3
3.	Computer Network	CS602	3	0	0	3	3
4.	Elective II	CS623/x	3	0	0	3	3
5.							
	Theory Sub-total		12	1	2	14	15
6.	Microprocessor Laboratory	CS651	0	0	3	2	3
7.	Computer Network Lab	CS652	0	0	3	2	3
8.	Elective-II Laboratory	CS653/x	0	0	3	2	3
8.	Comprehensive Viva-voce	CS671	0	0	0	2	0
	Sessional Sub-total		0	0	9	8	9
	6th Semester Total					22	24

7th Semester (only one specialisation)

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Compiler Design	CS701	3	0	0	3	3
2.	Software Engineering	CS702	3	0	0	3	3
3.	Information and coding theory (ADBI)	CS703	3	0	0	3	3
4.	Elective III	CS724/X	2	0	0	2	2
5.	Open Elective II	XX73N/Y	3	0	0	3	3
	Theory Sub-total		14	0	0	14	14
6.	Compiler Design Laboratory	CS751	0	0	3	2	3
7.	Software Engineering Laboratory	CS752	0	0	3	2	3
8.	Project Part I	CS771	0	0	3	3	3
	Sessional Sub-total		0	0	9	7	9
	7th Semester Total					21	23

8Th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
1.	Accountancy & FM	HU7801	3	0	0	3	3
2.	Artificial Intelligence	CS801	3	0	0	3	3
3.	ADB II	CS802	3	0	0	3	3
4.	ADB III	CS803	3	0	0	3	3
5.	ADS I	CS81y	3	0	0	3	3
	Theory Sub-total		15	0	0	15	15
6.	Artificial Intelligence Laboratory	CS851	0	0	3	2	3
7.	ADS I Laboratory	CS86y	0	0	3	2	3
8.	Project Part I	CS871	0	0	3	3	3
9.	Comprehensive viva-voce	CS872	0	0	0	2	0
	Sessional Sub-total				9	9	9
	8th Semester Total					24	24

9th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	ADS II	CS91y	3	0	0	3	3
2.	ADS III	CS92y	3	0	0	3	3
3.	ADS IV	CS93y	3	0	0	3	3
4.	ADS V	CS94y	3	0	0	3	3
	Theory Sub-total		12	0	0	12	12
5.	Project Thesis Part II	CS971	0	0	12	6	12
6.	Project Thesis Viva-voce	CS972	0	0	0	2	
7.	Comprehensive Viva-voce	CS973				3	
	Sessional Sub-total		0	0	12	11	12
	9th Semester Total					23	24

10th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Project Thesis Part III	CSA71	0	0	20	10	20
2.	Porject Thesis Viva-voce	CSA72				3	
	Sessional Sub-total		0	0	20	13	20
	10TH Semester Total					13	20

ELECTRICAL ENGINEERING

3rd Semester EE

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA301	3	1	0	4	4
2.	Strength of Materials &Theory of Machines	AM304/2	3	1	0	4	4
3.	Electrical Machines I	EE301	3	1	0	4	4
4.	Electrical and Electronic Measurements	EE302	4	0	0	4	4
5.	Field and Circuit Theory	EE303	3	1	0	4	4
	Theory Sub-total		16	4	NIL	20	20
6.	Electrical Machines Lab – I	EE351	0	0	3	2	3
7.	Electrical & Electronics Measurement Lab	EE352	0	0	3	2	3
8.	Electrical Circuits Lab	EE353	0	0	3	2	3
9.	Mini Project I	EE371	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	3rd Semester Total					**28**	**29**

4th Semester EE

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	Intro. To Mgmt & Industrial Sociology	HU3401	4	0	0	4	4
2.	Electrical Machines –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. & Application Tools Lab	EE 453	0	0	3	2	3
9.	Mini Project –II	EE471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	4th 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.	Electrical M/Cs 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.	Transducers & Instrumentation	EE 504	3	0	0	3	3
5.	Heat Power	ME 5xx	3	0	0	3	3
	Theory Sub-total		15	0	NIL	15	15
6.	Machine Lab & Control Lab	EE 551	0	0	3	2	3
7.	Power Sys. Des. and Estimation&M/cDesign	EE 552	0	0	3	2	3
8.	Heat Power Lab	ME55x	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	5th Semester Total					**21**	**24**

6th Semester

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.	Electric Drives	EE – 601	3	0	0	3	3
3.	Power System II	EE – 602	3	0	0	3	3
4.	µP and µC	EE – 603	3	0	0	3	3
5.	**OE I**	**EE – 624/X**	3	0	0	3	3
	Theory Sub-total		14	1	NIL	15	15
6.	Power Systems & PE Lab	EE – 652	0	0	3	2	3
7.	Micropro & Transducers-Instrumentation Lab	EE– 653	0	0	3	2	3
8.	Comprehensive Viva-voce	EE– 651	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	6	6	6
	6th Semester Total					**21**	**21**

SL. NO	ELECTIVE SUBJECT	CODE	TYPE
1.	**Elements of Control Systems**	EE 624/1	Open (OE)

7th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	DSP & ES	EE 701	3	0	0	3	3
2.	Adv. Comp. Com. & Interfacing	EE 702	4	0	0	4	4
3.	EL II(OE): Open Elective 2		3	0	0	3	3
4.	ADC I	EE 731	3	0	0	3	3
5.	EL III		2	0	0	2	2
	Theory Sub-total		15	0	NIL	15	15
6.	DSP & Drives Lab	EE 751	0	0	3	2	3
7.	Advanced control systems Lab	EE 754	0	0	3	2	3
8.	EL III Lab:		0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	7th Semester Total					**21**	**24**

SL. NO	ELECTIVE SUBJECT	CODE	TYPE
1.	**Electricity Conservation and Environment**	**EE – 723/1**	Open
2.	**Industrial Practice in Electronic Installations**	**EE – 723/2**	Open
3.	**Advanced Programming**	**EE – 715/1**	Departmental
4.	**Soft Computing**	**EE – 715/2**	Departmental
5.	**Renewable Energy**	**EE – 715/3**	Departmental
	ELECTIVE LABORATORIES		

1.	**Adv. Programming Lab**	**EE – 755/1**	
2.	**Soft Comp Lab**	**EE – 755/2**	
3.	**Renewable Energy Lab.**	**EE – 755/3**	

8th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	Acct, & F.M	HU 7801	2	1	0	3	3
2.	Electrical Energy Utilization & Grid Interactive Control	EE – 801	4	0	0	4	4
3.	**ADS I**		3	0	0	3	3
4.	**ADS II**		3	0	0	3	3
5.	**ADS III**		3	0	0	3	3
	Theory Sub-total		15	1	0	16	16
6.	Term paper (Project Thesis I)	EE – 851			4	2	
7.	ADVLAB I				3	2	
8.	Term paper Viva-Voce	EE – 853				2	
9.	Comprehensive viva-voce	EE – 854				2	
10.	Industrial Visit/Training? †	EE – 855			3	2	
	Sessional Sub-total				10	10	10
	8th Semester Total					**26**	**26**

† This industrial training / visit must be fully and completely organized by the Training and Placement Department; Electrical Engineering Department will bear no responsibility of this entire process

9th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	**ADS IV**		3			3	3
2.	**ADS V**		3			3	3
3.	**ADS VI**		3			3	3
	Theory Sub-total		**9**			**9**	**9**
6.	Project Thesis – II	EE –951			14	7	7
7.	**PG Lab II:**				3	2	2
8.	Project Thesis Viva-voce	EE – 953				2	**0**
	Sessional Sub-total				17	11	**9**
	9th Semester Total					**20**	**18**

10th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.							
	Theory Sub-total						

2.	Project thesis III	EE – 1051			**29 (student)***	**15**	**4**
3.	Comprehensive viva-voce (specialisation)	EE – 1054				**3**	**0**
4.	Project Thesis Viva-voce	EE – 1053				**4**	**0**
	Sessional Sub-total						
	10th Semester Total					**22**	**4**

ADVANCED COMMON SUBJECTS FOR ALL SPECIALISATIONS				
ADC I : Advanced control systems (EE 731)				
ADVANCED SPECIALISED SUBJECTS		SPECIALISATIONS		
		Power Electornics and Machine Drives (X=1)	Power Elecronics Drives (X=2)	Control System and Instrumentation (X=3)
ADS I (EE 841/X)		Advanced Power Electronics	Power Sys. Stability, Security & HV Engg.	Discrete & Sampled Data Theory
ADS II (EE 842/X)		EM Fields in Electrical Machines	Renewable Energy & Energy Conservation	Optimal Control theory
ADSIII (EE 843/X)		Gen. Th. of Elec. Machines	Switchgear & Adv. Power Sys. Protection	Nonlinear control theory
ADS IV (EE 941/X)		Analysis of Synch. & Asynch. Machine	Adv. Power System Analysis	Optimal Filtering Process
ADS V (EE 942/X)		Advanced Solid State Drives	Energy System Planning & Mgmt	Process Control & Instrumentation
ADS VI (EE 943/X/Y)	Y=1	Dyn. of Regulated M/c	Power Sys. Operation & Control	ANN & Fuzzy Control
	Y=2	Special Topics in Power Electronics applications		Robust Control
	Y=3	Condition Monitoring of Elec. Equipment		Power Sys. Operation & Control
ADAVNCED LABORATORIES				
ADLAB I		Adv. PE & M/c I	HV Engg.	Control & Instrumentation I
ADLAB II		Adv. PE & M/c II	Adv. Power System	Control & Instrumentation II

ELECTRONICS AND TELECOMMUNICATION

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA301	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.	Netwrok Theory Lab	ET351	0	0	3	2	3
7.	Analog ElectronicsLab	ET352	0	0	3	2	3
8.	Electronic Devices Lab	ET353	0	0	3	2	3
9.	Mini Project –I	ET371	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	ET451	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	ET471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	09
	4th Semester Total					**26**	**28**

5th SEMESTER

Sl no	Course Name	Course Code	Class Load/ Week			Credit	Total Class Load/ Week
			L	T	P		
1.	Wireless and Mobile Communication	ET 501	3	0	0	3	3
2.	Integrated Circuits and Systems	ET502	4	0	0	4	4
3.	Microprocessorsand Microcontrollers	ET503	3	0	0	3	3
4.	Wave Propagation and Antenna	ET504	3	0	0	3	3
5.	Open Elective-I	ET 521/x	3	0	0	3	3
	Theory Sub Total					16	16
6	Integrated Circuits and Systems Lab	ET552	0	0	3	2	3
7	Microprocessorsand Microcontrollers Lab.	ET553	0	0	3	2	3
8	Transmission Line and Antenna Lab	ET554	0	0	3	2	3
	Sessional Sub Total					6	9
	5th Semester Total					**22**	**25**

6th SEMESTER

Sl no	Course Name	Course Code	Class Load/ Week			Credit	Total Class Load/ Week
			L	T	P		
1.	Economics	HU 5601	2	0	0	2	2
2.	Tele. Switching and Communication Network	ET601	4	0	0	4	4
3.	Introduction to VLSI	ET602	3	0	0	3	3
4.	Advanced Microprocessorsand Computer Architecture	ET603	3	0	0	3	3
5.	Electronic Instrumentation and Measurements	ET604	4	0	0	4	4
	Theory Sub Total					**16**	**16**
6.	Wireless Communication and Networking Lab	ET651	0	0	3	2	3
7.	Advanced MicroprocessorsLab	ET652	0	0	3	2	3

8.	Electronic Instrumentation and Measurements Lab	ET653	0	0	3	2	3
9.	Comprehensive Viva-voce-I	ET671	0	0	0	2	0
	Sessional Sub Total					8	9
	6th Semester Total					**24**	**25**

7th SEMESTER

Sl no	Course Name	Course Code	Class Load/ Week			Credit	Class Load/ Week	Full Marks
			L	T	P			
1.	Digital Signal Processing	ET701	3	0	0	3	3	100
2.	Microwave and Radar Engineering	ET702	3	0	0	3	3	100
3.	ADC I	MA 731	3	1	0	4	4	100
4.	Dep. Elective-I	ET704/x	3	0	0	3	3	100
5.	Open Elective-II	ET705/x	3	0	0	3	3	100
	Theory Sub Total					**16**	**16**	
6	Digital Signal Processing Lab	ET751	0	0	3	2	3	50
7	Microwave and Radar Engineering Lab	ET752	0	0	3	2	3	50
8	Dep. Elective-I Lab	ET753/x	0	0	3	2	3	50
	Sessional Sub Total					6	9	
	7th Semester Total					**22**	**25**	

8th SEMESTER

Sl no	Course Name	Course Code	Class Load/ Week			Credit	Class Load/ Week	Full Marks
			L	T	P			
1.	Acct. & F.M.	HU7801	2	0	0	2	2	50
2.	Digital Image Processing and Computer Vision	ET801	3	0	0	3	3	100
3.	ADC II	ET 831	3	0	0	3	3	100
4.	ADS I Information Theory and Coding	ET803	3	0	0	3	3	100
5.	ADS II Digital Voice and Picture Communication	ET804	3	0	0	3	3	100
	Theory Sub Total					**14**	**14**	
6	Project Thesis-I	ET851	0	0	6	3	6	100
7	Digital Image Processing and Computer Vision Lab	ET852	0	0	3	2	3	50
8	Electronic Design Automation Lab	ET853	0	0	3	2	3	50
9	Comprehensive Viva Voce-II	ET871	0	0	0	2	0	
10	Seminar on Project Thesis-I	ET872	0	0	0	2	0	50
	Sessional Sub Total					**11**	**12**	
	8th Semester Total					**25**	**26**	

Course Structure for the 9th Semester Dual Degree-Communication and Signal Processing Specialization

Sl no	Course Name	Course Code	Class Load/ Week			Credit	Total Class Load/ Week	Full Marks
			L	T	P			
1.	ADS III Advanced Digital Communication	ET901	3	0	0	3	3	100
2.	ADS IV Advanced Digital Signal Processing	ET902	3	0	0	3	3	100
3.	ADS V Advanced Elective-I	ET903/x	3	0	0	3	3	100
4.	ADS VI Advanced Elective-II	ET904/x	3	0	0	3	3	100
	Theory Sub Total					12	12	
5	Project Thesis-II	ET951	0	0	10	5	10	150
6	Advanced Communication Lab	ET952	0	0	3	2	3	50
7	Seminar on Project Thesis-II	ET971	0	0	0	2	0	50
	Sessional Sub Total					9	13	
	9th Semester Total					**21**	**25**	

Course Structure for the 10th Semester Dual Degree. All Specialization

Sl no	Course Name	Course Code	Class Load/ Week			Credit	Total Class Load/ Week	Full Marks
			L	T	P			
1	Project Thesis-III	ET1051	0	0	18	9	18	250
2	Comprehensive Viva Voce- III	ET1071	0	0	0	2	0	50
3	Seminar on Project Thesis-III	ET1072	0	0	0	3	0	100
	Sessional Sub Total					**14**	**18**	
	10th Semester Total					**14**	**18**	

ADVANCED COMMON SUBJECTS FOR ALL SPECIALISATIONS			
ADC I (ET 731):Advanced Mathematics		ADC II (ET 831): Electronic Design Automation	
ADVANCED SPECIALISED SUBJECTS NOMENCLATURE CODE (ET S4N/X/Y)		SPECIALISATIONS		
		MICROELECTRONICS & VLSI (X=1)	RF & MICROWAVE TECHNOLOGY (X=2)	COMMUNICATION & SIGNAL PRPCESSING (X=3)
ADS I (ET 841/X)		Digital VLSI Design	Computational Electromagnetics	Information Theory and Coding
ADS II (ET 842/X)		Advanced Semiconductor Devices	Microwave devices and circuits	Digital Voice and Picture Communication
ADSIII (ET 843/X)		Analog VLSI Design	Advanced Antenna Engineering	Advanced Digital Communication
ADS IV (ET 941/X)		Micro and Nano Fabrication Technology	Microwave Integrated Circuits	Advanced Digital Signal Processing
ADS V (ET 942/X)	Y=1	Specialized Elective-I	Specialized Elective-I	Specialized Elective-I
	Y=2			
	Y=3			
ADS VI (ET 943/X)	Y=1	Specialized Elective-II	Specialized Elective-II	Specialized Elective-II
	Y=2			
	Y=3			
ADAVNCED LABORATORIES				
ADLAB I				
ADLAB II				

INFORMATION TECHNOLOGY

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA301	3	1	0	4	4
3.	Programming & 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	IT304	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	6	4	6
	3rd Semester Total					**24**	**26**

4th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	Intro. to Mgmt. & Industrial Sociology	HU3401	3	1	0	4	4
2.	Computer Graphics	IT403	3	0	0	3	3
3.	Formal Language and Automata	IT404	3	1	0	4	4
4.	Computer Organisation & Architecture	IT401	3	1	0	4	4
5.	Communication Systems	IT402	3	1	0	4	4
	Theory Sub-total		15	4	NIL	19	19
6.	Computer Graphics Lab.	IT453	0	0	3	2	3
7.	Computer Org. & Architecture Lab.	IT451	0	0	3	2	3
8.	Signal system and communication lab	IT 452	0	0	3	2	3
9.	Modelling and Simulation Lab.	IT455	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	9	8	12
	4th Semester Total					27	**31**

5th Semester IT

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Microprocessor	IT501	3	0	0	3	3
3.	Operating System	IT 502	3	1	0	4	4
4.	Database Management System	IT 503	3	1	0	4	4
2.	Elective - I	IT 521/X	3	0	0	3	3
5.	Open Elective	IT531/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 System Lab	IT 552	0	0	3	2	3
8.	Database Management System 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
	5th Semester Total					**25**	**28**

Open Elective:
Multimedia Systems
Elective I:

1. Object oriented programming
2. Telecommunication & Traffic Engg.

6thSemester IT

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		

1.	Intro. to Mgmt. & Industrial Sociology	HU3401	3	1	0	3	3
2.	Design & Analysis of Algorithm	IT601	3	1	0	4	4
3.	Compiler Design	IT602	3	0	0	3	3
4.	Computer Networks	IT603	3	1	0	4	4
5.	Elective -II	IT 621/X	3	0	0	3	3
	Theory Sub-total		15	3	NIL	17	17
6.	Design & Analysis of Algorithm Lab.	IT651	0	0	3	2	3
7.	Compiler Design Lab.	IT652	0	0	3	2	3
8.	Computer Networks Lab.	IT653	0	0	3	2	3
9.	Grand viva	IT 691				2	
	Sessional Sub-total		NIL	NIL	9	8	9
	6th Semester Total					**25**	**26**

Elective II:
1. System Programming
2. Advance computer architecture
3. Mobile Communication
4. Distributed database

7th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Software Engineering	IT701	3	0	0	3	3
2.	Internet & Web Technology	IT 702	4	0	0	4	4
3.	Open Elective II	IT 731/X	3	0	0	3	3
4.	Elective III	IT 721/X	3	0	0	3	3
5.	ADB I	IT731/X	3	0	0	3	3

	Theory Sub-total		16	0	NIL	16	16
6.	S/W Engineering LAB	IT 751	0	0	3	2	3
7.	Internet & Web Technology Lab.	IT 752	0	0	3	2	3
8.	ADB I Lab	IT 763/X			3	2	3
	Sessional Sub-total		NIL	NIL	9	6	9
	7th Semester Total					**22**	**24**

Open Elective II:
1. Digital Signal Processing
2. Computational Geometry

Elective III:
1.Graph algorithms
2. Information and Coding Theory
3.Distributed and Parallel Systems
4. Data mining and data warehousing

8th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
1.	Accountancy & F.Mgmt.	HU7801	3	0	0	3	3
2.	Information & Systems Security	IT801	3	1	0	4	4
3.	ADB II	IT832/X	3	0	0	3	3
4.	ADB III	IT833/X	3	0	0	3	3
5.	ADS I	IT841	3	0	0	3	3
	Theory Sub-total		15	1	NIL	16	16
6.	Information & Systems Security LAB	IT851	0	0	3	2	3
7.	ADB II Lab	IT862/X	0	0	3	2	3
8.	Project Thesis Part I	IT871	0	0	4	2	4
8.	Project Thesis Part I viva voce	IT872	0	0	0	2	
9.	Comprehensive Viva voce	IT891				4	
	Sessional Sub-total		NIL	NIL	9	12	10
	8th Semester Total					**28**	26

9th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	ADS II	IT942/X	3	0	0	3	3
3.	ADS III	IT 943/X	3	0	0	3	3
4.	ADS IV	IT 944/X	3	0	0	3	3
2.	ADS V	IT 945/X	3	0	0	3	3

	Theory Sub-total		12	0	NIL	12	12
6.	Project Thesis Part II	IT 972	0	0	9	6	9
7.	Project Thesis Viva Voce II					3	
8.	ADS II Lab	IT 981/X	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	12	11	12
	9th Semester Total					**23**	**24**

10th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ Week
			L	T	P		
	Theory Sub-total						
1.	Project Thesis III	IT X73	0	0	20	12	20
2.	Project Thesis Viva-Voce III					4	
	Sessional Sub-total		NIL	NIL	20	16	20
	10th Semester Total					**16**	20

Specialization: Computer Science and Information Technology	
ADB I (IT 715/X)	Algebra and Computation
ADB II (IT 812/X)	Artificial Intelligence
ADB III (IT 813/X)	Image Processing and Pattern Recognition
Advanced Specialized Subjects	**Electives**
ADS I (IT 824/X)	Algorithm II, Distributed Algorithms, Big data analytics, Introduction to Embedded and Real Time Systems
ADS II (IT 921/X)	Complex Systems and Cellular Automata, Wireless SensorNetwork, Cognitive Radio Networks, Embedded Processors and Microcontrollers
ADS III (IT 922/X)	Computational Topology, Computer Vision, Medical Image Processing, Multi-core Architectures Systems
ADS IV (IT 923/X)	Human computer Interaction, Multimedia coding and compression, Embedded System Security
ADS V (IT 924/X)	Soft computing techniques, Cloud computing, Mobile Computing, Embedded Programming

Laboratories: ADB-I, ADB-II, and ADS-II laboratories

MECHANICAL ENGINEERING

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA301	3	1	0	4	4
2.	Intr. To Mgmt. & Ind. Sociology	HU3401	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	AM351	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
	3rd Semester Total					27	28

4Th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Fluid Mechanics	AM403	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	AM453	0	0	3	2	3
7.	Applied Thermodynamics lab	ME 451	0	0	3	2	3
8.	Mechanical Measurement lab	ME 452	0	0	3	2	3
9.	Mini Project II	ME471	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	4th Semester Total					27	28

5th Semester

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.	EL I (OE): Subject Names not given	ME – 504/1,2,..	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
	5th Semester Total					21	24

6Th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Dynamics of Machines Design of Power Transmission Elements	ME - 601	3	0	0	3	3
2.	Boiler and Steam Turbine	ME - 602	3	0	0	3	3
3.	Dynamics of Machines	ME - 603	3	0	0	3	3
4.	Manufacturing Technology	ME - 604	3	0	0	3	3
5.	Fluid Power Engineering	AM – 6 ...	3	0	0	3	3
	Theory Sub-total		15	0	NIL	15	15
6.	Design of Power Transmission Elements Sessional	ME - 651	0	0	3	2	3
7.	Modelling and Simulation Lab	ME - 652	0	0	3	2	3
8.	Fluid Power Engineering Lab	AM- 67...	0	0	3	2	3
8.	Comprehensive Viva-voce	ME - 671	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	9	8	9
	6th Semester Total					23	24

7th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Tribo-Design of Machine Elements	ME - 701	3	0	0	3	3
2.	IC Engines, Refrigeration & Air Conditioning	ME - 702	2+2	0	0	4	4
3.	EL II (OE): Subject names not given now	ME-703/1,2,..	3	0	0	3	3
4.	Modern Manufacturing Technology	ME- ADB 701	3	0	0	3	3
5.	EL III (DE) Automation and CIM Non-conventional energy systems Finite Element method	ME-704/1,2,..	2	0	0	2	2
	Theory Sub-total		15	0	0	15	15
6.	Tribo-Design of Machine Elements Sessional	ME - 751	0	0	3	2	3

7.	IC Engines, Refrigeration & Air Conditioning Lab	ME - 752	0	0	3	2	3
8.	Steam Power Lab	ME - 753	0	0	3	2	3
9.	Modern Manufacturing Technology Lab.	ME 754	0	0	3	2	3
	Sessional Sub-total		0	0	9	8	12
	7th Semester Total					23	27

8Th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Acct, & F.M	HU 7801	3	0	0	3	3
2.	Industrial Engg. & Operations Research	ME -801	2+2	0	0	4	4
3.	ADB II	ME –ADB 801	3	0	0	3	3
4.	Elective I	ME- 811/1,2,..	3	0	0	3	3
5.	ADS I	ME 841/X	3	0	0	3	3
	Theory Sub-total		16	0	0	16	16
6.	Term paper (Project Thesis I)	ME- 850	0	0	2	3	2
7.	Computational Methods Lab	ME- ADB 851	0	0	3	2	3
9.	Comprehensive viva-voce	ME- 871	0	0	0	2	0
	Sessional Sub-total		0	0	05	07	05
	8th Semester Total					23	21

9th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	ADS II	ME 941/X	3	0	0	3	3
2.	ADS III	ME 942/1	3	0	0	3	3
3.	ADS IV	ME 943/X	3	0	0	3	3
4.	ADS V	ME 944/X	3	0	0	3	3
	Theory Sub-total		12	0	0	12	12
6.	Project Thesis – II	ME - 950	0	0	10	5	10
8.	Project Thesis Viva-voce	ME - 951	0	0	0	2	0
	Sessional Sub-total		0	0	10	07	10
	9th Semester Total					19	22

10th Semester

Sl.	Course Name	Course code	Class Load/Week	Credit	Class

No							load/ week
			L	T	P		
6.	Project thesis III	ME - 1050	0	0	18	9	18
7.	Comprehensive viva-voce (specialisation)	ME - 1071	0	0	0	2	0
8.	Project Thesis Viva-voce	ME - 1051	0	0	0	2	0
	Sessional Sub-total		0	0	18	13	18
	10^{TH} Semester Total					13	18

ADVANCED COMMON SUBJECTS FOR ALL SPECIALISATIONS			
ADC I (ME 741):Modern Manufacturing Technology		ADC II (ME 841): Computational Methods	
ADVANCED SPECIALISED SUBJECTS NOMENCLATURE CODE (ME S4N/X/Y)	SPECIALISATIONS		
	MACHINE DESIGN (X=1)	THERMAL ENGINEERING (X=2)	PRODUCTION ENGINEERING (X=3)
ADS I (ME 841/X)	Theory of Mechanical Vibration	Advanced Engineering Thermodynamics	Advanced Machine Tools and Metal Cutting
ADS II (ME 842/X)	Advanced Solid Mechanics	IC Engines and Gas Turbines	Materials Processing Technology
ADSIII (ME 843/X)	Engineering Tribology	Advanced Heat Transfer	Design of production Systems
ADS IV (ME 941/X)	Fracture Mechanics	Numerical Heat Transfer	Energy beam processing of materials
ADS V (ME 942/X)	Dynamics and Control of Mechanical Systems	Refrigeration and Air Conditioning	Quality Control & Reliability Engg.
ADS VI (ME 943/X/Y) Y=1			
ADS VI (ME 943/X/Y) Y=2			
ADS VI (ME 943/X/Y) Y=3			
ADAVNCED LABORATORIES			
ADLAB I			
ADLAB II			

Elective subjects will be given later. Applied mechanics department subjects –codes are not given properly. AM dept will supply it.

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	MA301	3	1	0	4	4
2.	Intro. to Mgmt. & Industrial Sociology	HU3401	4	0	0	4	4
3.	Physics of Materials	MT301	3	1	0	4	4
4.	Metallurgical Thermodynamics & Kinetics	MT302	3	1	0	4	4
5.	Introduction to Physical Metallurgy	MT303	3	1	0	4	4
	Theory Sub-total		16	4	NIL	20	20
6.	Physics of Materials Lab	MT351	0	0	3	2	3
7.	Met. Thermodynamics & Kinetics Lab	MT352	0	0	3	2	3
8.	Introduction to Physical Metallurgy Lab	MT353	0	0	3	2	3
9.	Mini Project I	MT371	0	0	0	2	2
	Sessional Sub-total		NIL	NIL	9	8	11
	3rd Semester Total					28	30

4thSemester

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	MT401	3	1	0	4	4
4.	Principles of Extractive Metallurgy	MT402	3	1	0	4	4
5.	Deformation behaviour of Materials	MT403	3	1	0	4	4
	Theory Sub-total		13	5	NIL	18	18
6.	Phase Transformation Lab	MT451	0	0	3	2	3
7.	Extractive Metallurgy Lab	MT452	0	0	2	1	2
8.	Modelling and Simulation Lab	MT453	0	0	3	2	3
9.	Mini Project II	MT471	0	0	0	2	2
	Sessional Sub-total		NIL	NIL	8	7	10
	4th Semester Total					25	28

5th Semester

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.	Iron & 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.	Heat Treatment Technology	MT504	2	1	0	3	3
	Theory Sub-total		14	4	NIL	18	18
6.	Metal Casting Technology Lab	MT551	0	0	3	2	3
7.	X-ray and Electron Diffraction Lab	MT552	0	0	2	1	2
8.	Heat Treatment Technology Lab	MT553	0	0	3	2	3
	Sessional Sub-total		NIL	NIL	8	5	8
	5th Semester Total					23	26

6Th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Polymer and Refractory Technology	CH601	3	0	0	3	3
2.	Mechanical Properties Evaluation	MT601	3	1	0	4	4
3.	Metallurgy of Ferrous Alloys	MT602	3	1	0	4	4
4.	Non-ferrous Materials	MT603	3	1	0	4	4
5.	EL I (DE 1)	MT621/X	3	0	0	3	3
	Theory Sub-total		14/14	4/4	NIL	18	18
6.	Mechanical Properties Evaluation Lab	MT651	0	0	3	2	3
7.	Metallurgy of Ferrous Alloys Lab	MT652	0	0	3	2	3
8.	Communication skill	MT653	0	0	2	1	2
9.	Comprehensive Viva-voce I	MT671	0	0	0	1	0
	Sessional Sub-total		NIL	NIL	8	6	8
	6th Semester Total					24	26

(MT 621/1) Environmental issues in Metallurgical Industries
(MT 621/2) Hydrometallurgy and Electrometallurgy

After 6th semester, "industrial visit/3 to 4 weeks industrial training"

7th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Acct. & F. M.	HU 7801					
2.	Joining of Materials	MT701	2	1	0	3	3
3.	Degradation of Materials & their prevention	MT702	2	1	0	3	3
4.	Composites and Ceramic Materials	MT703	2	1	0	3	3
5.	ADC I	MT 734	2	1	0	3	3
	Theory Sub-total		10	5	NIL	15	15
6.	Joining of Materials Lab	MT751	0	0	3	2	3
7.	Degradation of Materials & their prevention Lab	MT752	0	0	3	2	3
8.	Composites and Ceramic Materials Lab	MT753	0	0	3	2	3
	Sessional Sub-total :		NIL	NIL	11	7	11
	7^{th} Semester Total					22	26

8^{Th} semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Materials Processing	MT801	3	1	0	4	4
2.	El II (OE)	MT721/X	2	1	0	3	3
3.	Computational Materials Engineering	AMT802	2	1	0	3	3
4.	ADS I	MT 841/X	3	0	0	3	3
5.	ADS II	MT 842/X	2	1	0	3	3
	Theory Sub-total		12	4	0	16	16
6.	Term paper (Project Thesis I)	MT851	0	0	4	2	4
7.	Materials Characterisation Lab	AMT852	0	0	3	2	3
8.	Materials Processing Lab	MT853	0	0	3	2	3
9.	Comprehensive Viva-Voce II	MT871	0	0	0	2	0
	Sessional Sub-total		NIL	NIL	10	8	10
	8^{th} Semester Total					24	26

(i) Selection of Engineering Materials (OE) - to be offered for other departments.
(ii) Finite Elements Methods (OE) – to be offered from AM and AE department.
SUMMER TERM: Project for two to two and a half month / Industrial Training (Viva/Report) / Academic Assignments in India or abroad (4 credit)

9^{th} semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		

1.	Design and Selection of Materials	MT901	3	0	0	3	3
2.	ADS III:	MT 941/X	3	0	0	3	3
3.	ADS IV:	MT 942/X	3	0	0	3	3
4.	ADS V:	MT 943/X	3	0	0	3	3
	Theory Sub-total		12	0	0	12	12
5.	Project Thesis – II	AMT951	0	0	10	5	10
6. (i) (ii) (iii)	 Nano-structured materials Lab Non-destructive Evaluation Lab Electron Microscopy Lab	 AMT952 AMT953 AMT954	0	0	2	1	2
7.	Project Thesis Viva-voce – I	AMT971	0	0	0	2	0
	Sessional Sub-total		0	0	12	8	12
	9th Semester Total		NIL	NIL	12	20	24

10th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
	Theory Sub-total		0	0	0	0	0
1.	Project Thesis – III	MT1051	0	0	18	9	18
2.	Comprehensive viva-voce (specialisation)	MT1071	0	0	0	2	0
3.	Project Thesis Viva-voce - II	MT1072	0	0	0	2	0
	Sessional Sub-total		0	0	18	13	18
	10th Semester Total					13	18

ADVANCED COMMON SUBJECTS FOR ALL SPECIALISATIONS	
ADC I (MT 731) : MATERIALS CHARACTERISATION	ADC II (MT 831) : COMPUTATIONAL MATERIALS ENGINEERING

ADVANCED SPECIALISED SUBJECTS NOMENCLATURE CODE (MT S4N/X/Y)	SPECIALISATIONS		
	PHYSICAL METALLURGY (X=1)	IRON AND STEEL TECHNOLOGY (X=2)	SURFACE ENGINEERING (X=3)
ADS I (MT 841/X)	Advanced Phase Transformation	Advances in Iron & Steel Technology I	Principles of Thin Films and Coatings
ADS II (EE 842/X)	Fracture Mechanics and Failure Analysis	Transportation Phenomena in Metallurgical Industries	Fracture Mechanics and Failure Analysis
ADSIII (EE 843/X)	High Temperature Materials	Advances in Iron & Steel Technology II	Coating Technology and Applications
ADS IV (EE Y=1	Electron Microscopy	Non-destructive Evaluation	Electron Microscopy

941/X/Y)	Y=2			Nano structured materials
ADS V (EE 943/X/Y)	Y=1	Industrial Practices in Materials Processing	Industrial Practices in materials processing	Surface Treatment and Modifications
	Y=2	Surface Treatment and Modifications		Bio Materials
	Y=3	Electronics and Magnetic materials		Electronics and Magnetic materials
ADAVNCED LABORATORIES				
ADLAB I				
ADLAB II				

MINING ENGINEERING

3rd Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/week
			L	T	P		
1.	Mathematics – III	MA301	3	1	0	4	4
2.	Intro. To Mgmt & Industrial Sociology	HU3401	4	0	0	4	4
3.	Electro-Technology in Mining	EE305	3	1	0	4	4
4.	Drilling and Blasting	MN301	3	0	0	3	3
5.	Mine Development	MN302	3	0	0	3	3
	Theory Sub-total		**16**	**2**	**NIL**	**18**	**18**
6.	Electro-Technology in Mining Lab.	EE355	0	0	3	2	3
7.	Industrial Visit to Underground Coal Mines	MN351	0	0	0	1	0
8.	Seminar & Report Writing	MN352	0	0	2	1	2
9.	Modelling & Simulation Lab.	MN353	0	0	3	2	3
10.	Mini Project I	MN371	0	0	0	2	0
	Sessional Sub-total		**NIL**	**NIL**	**5**	**8**	**8**
	3rd Semester Total					**26**	**25**

4Th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Geology	GE401	3	1	0	4	4
2.	Heat Power and Theory of Machines	ME	4	0	0	4	4
3.	Fluid Mechanics and Fluid Machines	AM403/4	3	1	0	4	4
4.	Underground Coal Mining	MN401	3	1	0	4	4

5.	Underground Mine Environment	MN402	3	0	0	3	3
	Theory Sub-total		15	2	NIL	19	19
6.	Geology Lab.	GE451	0	0	2	1	2
7.	Heat Power and Theory of Machines Lab	ME	0	0	2	1	2
8.	Fluid Mechanics Lab.	AM453/4	0	0	3	1	0
9.	Geology Field Study	GE	0	0	0	2	0
10.	Mini Project II	MT471	0	0	0	2	3
	Sessional Sub-total		NIL	NIL	8	7	8
	4th Semester Total					26	26

* Industrial Training/Internship after 4th semester

5th Semester

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.	EL I (OE)		3	0	0	3	3
	Theory Sub-total		15	3	NIL	18	18
6.	Design of Mine Layout	MN 551	0	0	3	2	3
7.	Surveying Practicals	MN 552	0	0	3	2	3
8.	Industrial Training/Internship Evaluation	MN 553	0	0	0	1	0
9.	Industrial Visit to Surface Mine	MN 554	0	0	0	1	0
10.	Minor Project I	MN 571	0	0	2	2	2
	Sessional Sub-total		NIL	NIL	6	8	8
	5th Semester Total					26	26

6Th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Environmental Engineering and Management in Mines	MN 601	3	0	0	3	3
2.	Mine Ventilation Engineering	MN 602	3	1	0	4	4
3.	Rock Mechanics	MN 603	3	1	0	4	4
4.	Underground Metal Mining	MN 604	3	0	0	3	3

5.	EL II (OE)		3	0	0	3	3
	Theory Sub-total		14	1	NIL	17	17
6.	Mine Ventilation Engineering Practical	MN 651	0	0	2	1	2
7.	Rock Mechanics Practical	MN 652	0	0	2	1	2
8.	Comprehensive Viva-voce	MN 653	0	0	0	2	0
9.	Industrial Visit to Underground Metal Mine	MN 654	0	0	0	1	0
10.	Environmental Engineering Practical	MN 655	0	0	2	1	2
11.	Minor Project II	MN 671	0	0	2	2	2
	Sessional Sub-total		NIL	NIL	6	8	8
	6th Semester Total					25	25

* Industrial Training/Internship after VIth Semester

7th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Coal and Mineral Beneficiation	MN 701	3	0	0	3	3
2.	Mine Planning and Design	MN 702	3	1	0	4	4
3.	Acct. & F.M /EL III (OE)	HU 7801/	3	0	0	3	3
4.	ADS I	MN 703/	3	0	0	3	3
5.	EL IV (OE)		3	0	0	3	3
	Theory Sub-total		15	1	NIL	16	16
6.	Coal and Mineral Beneficiation Lab	MN 751	0	0	2	1	2
7.	Mine Planning and Design Practicals	MN 752	0	0	3	2	3
8.	Evaluation of Industrial Training/Internship	MN 753	0	0	0	1	0
9.	ADS I Sessional	MN 754/	0	0	2	1	2
10.	Term Paper	MN 771	0	0	3	3	3
	Sessional Sub-total		NIL	NIL	7	8	10
	7th Semester Total					24	26

8Th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	Mine Mnagement Legislation and Safety	MN 801	3	1	0	4	4
2.	El III (OE)/ Acct, & F.M	HU 7801/	3	0	0	3	3
3.	ADS II	MN 802/	3	0	0	3	3
4.	ADS III	MN 803/	3	0	0	3	3
5.	ADS IV	MN 804/	3	0	0	3	3
	Theory Sub-total		15	1	0	16	16
6.	Project Thesis I	MN 871	0	0	4	4	4
7.	ADS II Sessional	MN 851/	0	0	2	1	2
8.	ADS III Sessional	MN 852/	0	0	2	1	2

9.	ADS IV Sessional	MN 853/	0	0	2	1	2
9.	Comprehensive viva-voce	MN 854	0	0	0	2	0
	Sessional Sub-total					09	10
	8th Semester Total					25	26

Industrial Training/internship after 8th Semester

9th semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.	ADS V	MN 901/	3	0	0	3	3
2.	ADS VI	MN 902/	3	0	0	3	3
3.	ADS VII	MN 903/	3	0	0	3	3
4.	ADS VIII	MN 904/	3	0	0	3	3
	Theory Sub-total		12	0	0	12	12
6.	Project Thesis – II	MN 971	0	0	0	5	0
7.	ADS V Sessional	MN 951/	0	0	2	1	2
8.	ADS VI Sessioanl	MN 952/	0	0	2	1	2
9.	ADS VII Sessioanl	MN 953/	0	0	2	1	2
10.	ADS VIII Sessioanl	MN 954/	0	0	2	1	2
11.	Project Thesis Viva-voce		0	0	0	2	0
12.	Evaluation of Industrial Training/Internship	MN 955	0	0	0	1	0
	Sessional Sub-total						
	9th Semester Total					24	20

10th Semester

Sl. No	Course Name	Course code	Class Load/Week			Credit	Class load/ week
			L	T	P		
1.							
2.							
3.							
4.							
5.							
	Theory Sub-total						NIL
6.	Project thesis III						
7.	Comprehensive viva-voce (specialisation)		0	0	0	2	0
8.	Project Thesis Viva-voce		0	0	0	2	0
	Sessional Sub-total					10	
	10TH Semester Total					19	

Total number of theory subjects:

Departmental Core (To be offered by the Department): 14
Departmental Core Others (To be offered by other departments): 04
Open Electives: 04
Advanced Specialization (To be offered by the Department as well as other departments): 08

The Department will offer the following electives, which students of any discipline including Mining Engineering can opt for.

OE1 MN 501/1Optimization Techniques
OE2 MN 601/1Geostatistics
OE3 MN 701/1Petroleum Drilling and Production Engineering
OE4 MN 801/1Industrial Safety Engineering and Ergonomics

Subject	Advanced Sepcialization for M.Tech			
	Mining Engineering	Geomechanics	Geoinformatics	Environmental Engineering and Management
7th Semester				
ADS I	Engineering Geology and Site Characterization	Engineering Geology and Site Characterization	Geographical Informations System	Environmental Chemistry and Microbiology
ADS I Sessional	Engineering Geology and Site Characterization Practicals	Engineering Geology and Site Characterization Practicals	Geogrpahical Information System Practical	Environmental Pollution Control Lab I
8th Semester				
ADS II	Soil Mechanics	Soil Mechanics	Cartography and Global Navigational Satellite System	Industrial Water Treatment
ADS III	Subsurface Rock Engineering and Tunneling	Subsurface Rock Engineering and Tunneling	Remote Sensing I	Air Pollution Control Engineering
ADS IV	Rock Slope Engineering	Rock Slope Engineering	Database Management System	Industrial Wastes Management
ADS II Sessional	Design Analysis in Rock Engineering	Design Analysis in Rock Engineering	Remote Sensing I Practical	Environmental Software and Computing Lab
ADS III Sessional	Statistical Analysis and Simulation in Geosciences	Statistical Analysis and Simulation in Geosciences	Database Management System Practical	Environmental Laboratory Viva Voce
ADS IV Sessional	Seminar	Seminar	Seminar	Seminar
9th Semester				
ADS V	Advanced	Geophysics for	Web GIS and	Environmental

	Statistics and Design of Experiments	Subsurface Characterization	Application Design	Modelling and Assessment
ADS VI	Material Handling and Transport	Advanced Engineering Analysis and Numerical Methods in Geomechanics	Remote Sensing II	Environmental Planning, Strategy, and Legislation
ADS VII	Environmental Engineering and Control in Mines	Fluid Flow through Porous Media	Spatial Modelling and Analysis	Sustainable Environmental Project Design
ADS VIII	Industrial Safety Engineering and Management	Reservoir Geomechanics	* Elective (One from the list)	+ Elective (any one from the list)
ADS V Sessional	Surface Mine Design	Reservoir Fluid Flow Simulation	Web GIS Practical	Industril/Intern Project
ADS VI Sessional	Underground Mine Design	Rock Core Analysis and Petrophysics	Remote Sensing II Practical	Environmental Pollution Control Lab II
ADS VII Sessional	Material Handling and Transport Design	Reservoir Geomechanics Analysis	Practical on Elective	Practical on Elective
ADS VIII Sessional	Seminar	Seminar	Seminar	Seminar
			• Electives 1) Geoinformatics Application in Natural Resource Management 2) Geoinformatics Application in Mineral Exploration and Orebody Modeling and 3) Geoinfromatcics Application in Facility and Utility Management 4) Geoinformatics Application in Disaster Management	+ Electives 1) Environmental Economics and Finance 2) Environmental Health, Risk, and Safety 3) Rehabilitation of Industrial Sites 4) Agriculture, Environment, and Climate Change 5) Design of Water Supply System and Sanitation

ADVANCED COMMON SUBJECTS FOR ALL SPECIALISATIONS	
ADC I (MN 731) : MATERIALS CHARACTERISATION	ADC II (MN 831) : COMPUTATIONAL MATERIALS ENGINEERING

ADVANCED SPECIALISED SUBJECTS	SPECIALISATIONS		
	(X=1)	(X=2)	(X=3)

NOMENCLATURE CODE (MT S4N/X/Y)				
ADS I (MT 841/X)				
ADS II (EE 842/X)				
ADSIII (EE 843/X)				
ADS IV (EE 941/X)				
ADS V (EE 942/X)				
ADS VI (EE 943/X/Y)	Y=1			
	Y=2			
	Y=3			
ADAVNCED LABORATORIES				
ADLAB I				
ADLAB II				