



1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum			
S.NO	YEAR	COURSE CODE	COURSE NAME
Human Values			
1	2017-18	HU-103	Human Values
2	2017-18	HU-104	Human Values: Activities Lab
3	2018-19, 19 - 20	1FY1 - 05/2FY1 - 05	Human Values
4	2018-19	1FY1-23	Human Values: Activities Lab
5	2019-20	1FY1-23	Human Values: Activities and Sports Lab
6	2015- 16,16- 17,17-18	6CS/IT11A,4EC10A,3EE11A	Humanities and Social Sciences
Professional Ethics			
1	2015- 16,16-17	101	Communicative English
2	2015- 16,16-17	201	Communication Techniques
3	2015- 16,16-17	211	Communication Technique Lab
4	2017-18	HU-101	Communication Skills
5	2017-18	HU-102	Communication Skills Lab.
6	2018-19, 19 - 20	1FY1-04/2FY1-04	Communication Skills
7	2018-19, 19 - 20	1FY1-22/2FY1 - 22	Language Lab
8	2018- 19,19-20	3CS/IT/EC/CE/EE/ME 1- 02,4CS/IT1-02	Technical Communication
9	2015- 16,16- 17,17-18	3CE11A,5EC11A,5EE11A,5ME10A	Professional Ethics and Disaster Management
10	2015- 16,16- 17,17-18	6EC11A	Personality Development and General Aptitude
11	2015- 16,16- 17,17-18	7EC9A	Practical Training & Industrial Visit
12	2015- 16,16- 17,17-18	4CS/IT10A,3EC11A,6EE11A	Entrepreneurship Development
13	2015- 16,16- 17,17-18	8ME2A	Laws of Engineers
14	2018- 19,19-20	3ME7-13	Industrial Training
15	2018- 19,19-20	5ME4-05	Principle of Management
16	2015-		PTS



17	16,16-		Project
18	17,17- 18,2018- 19,19-20		Seminar
Environment and sustainability			
1	2015- 16,16- 17,17-18	CE-101	Environmental Engineering and Disaster Management
2	2015- 16,16- 17,17-18	5CE6.3A	Solid Waste Management
3	2015- 16,16- 17,17-18	5CE2A	Environmental Engineering-I
4	2015- 16,16- 17,17-18	6CE2A	Environmental Engineering-II
5	2015- 16,16- 17,17-18	5CE7A	Environmental Engineering Lab-I
6	2015- 16,16- 17,17-18	6CE7A	Environmental Engineering Lab-II
7	2015- 16,16- 17,17-18	7CE1A	Water Resource Engineering-I
8	2015- 16,16- 17,17-18	7CE3A	Rural Water Supply and Sanitation
9	2015- 16,16- 17,17-18	7CE7A	Design of Water Resource Structures-I
10	2015- 16,16- 17,17-18	8CE1A	Water Resource Engineering-II
11	2015- 16,16- 17,17-18	8CE4.3A	Earthquake Resistant Construction & Design
12	2015- 16,16- 17,17-18	8CE5A	Design of Water Resource Structures-II
13	2019-20	5CE4 - 05	Water Resource Engineering
14	2019-20	5CE5-11	Air & Noise Pollution and Control
15	2019-20	5CE5-12	Disaster Management
16	2019-20	5CE5-13	Town Planning
17	2019-20	5CE5-14	Repair and Rehabilitation of Structures
18	2019-20	5CE5-15	Ground Improvement Techniques
19	2019-20	5CE5-16	Energy Science & Engineering
20	2019-20	5CE4-23	Water Resource Engineering Design



JAIPUR ENGINEERING COLLEGE
AND RESEARCH CENTRE

21	2019-20	6CE4-03	Environmental Engineering
22	2019-20	6CE4-21	Environmental Engineering Design and Lab
23	2019-20	6CE5-12	Solid and Hazardous Waste Management
24	2019-20	6CE4-24	Water and Earth Retaining Structures Design
25	2019-20	6EE4-04	Electrical Energy Conversion and Auditing
26	2019-20	6EE5-13	Electrical and Hybrid Vehicles
Gender			
1	2019-20	8ME2A	Laws For Engineers



RAJASTHAN TECHNICAL UNIVERSITY

**Scheme of Teaching & Examination for I year B. Tech. I Semester
Effective from the session: 2017-18**

S.N	Subject Code	Course Title	L	T	P	Marks		
						IA	External	Total
		Theory Papers						
1.	MA-101	Engineering Mathematics-I	3	1	0	20	80	100
2.	HU-101/ HU-103	Communication Skills / Human Values	3	0	0	20	80	100
3.	PY-101/ CY-101	Engineering Physics/ Engineering Chemistry	3	1	0	20	80	100
4.	CS-101	Computer Programming-I	3	0	0	20	80	100
5.	CE-101	Environmental Engineering and Disaster Management	3	0	0	20	80	100
		Total	15	2	0	100	400	500
		Practical						
6.	HU-102/ HU-104	Communication Skills Lab./ Human Values: Activities	0	0	2	45	30	75
7.	PY-102/ CY-102	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2	45	30	75
8.	CS-102	Computer Programming-I Lab.	0	0	2	60	40	100
9.	CE-102	Computer Aided Engineering Graphics	0	0	3	60	40	100
10.	ME-101	Mechanical Workshop Practice	0	0	2	60	40	100
11.		Discipline & Extra Curricular Activity	0	0	0	50	0	50
		Total	0	0	11	320	180	500
		Grand Total	15	2	11	420	580	1000

(Total **28** periods per week)

L = Lecture, **T** = Tutorial, **P** = Practical, **IA**=Internal Assessment



Scheme of Teaching & Examination for I year B.Tech. I Semester
Effective from the Session: 2012 – 2013
(Common to all branches of Engineering)

Sub Code	Subject	Number of Teaching Hours			Duration of Theory Paper (Hours)	Marks Allocation				
		L	T	P		Theory	Term Test	Sessional	Prac. Exam	Total
101	Communicative English	3	1	-	3	80	20			100
102	Engineering Mathematics-I	3	1	-	3	80	20			100
103	Engineering Physics-I	3	1	-	3	80	20			100
104	Engineering Chemistry	3	1	-	3	80	20			100
105	Basic Electrical & Electronics Engineering	3	-	-	3	80	20			100
Total		15	04	-	-	400	100			500
106	Engineering Physics Lab-I	-	-	2		-		45	30	75
107	Engineering Chemistry Lab			2				45	30	75
108	Electrical & Electronics Lab	-	-	2		-		60	40	100
109	Practical Geometry	-	-	3				60	40	100
110	Workshop Practice	-	-	2				60	40	100
111	Discipline & Extra curricular Activities	-	-	-				50	-	50
Grand Total		15	04	11	-	400	100	320	180	1000

(Total 30 periods per week)



Scheme of Teaching & Examination for I year B.Tech II Semester
Effective from the Session: 2012 – 2013
(Common to all branches of Engineering)

Sub Code	Subject	Number of Teaching Hours Per Week			Duration of theory Paper (Hours)	Marks Allocation				
		L	T	P		Theory	Term Test	Sessional	Prac. Exam	Total
201	Communication Techniques	2	-	-	3	80	20			100
202	Engineering Mathematics-II	3	1	-	3	80	20			100
203	Engineering Physics-II	2	1	-	3	80	20			100
204	Chemistry & Environmental Engineering	3	1	-	3	80	20			100
205	Engineering Mechanics	3	1	-	3	80	20			100
206	Fundamentals of Computer Programming	3	-	-	3	80	20			100
Total		16	04	-	-	480	120			600
207	Engineering Physics Lab-II	-	-	2		-		30	20	50
208	Chemistry & Environmental Engineering Lab	-	-	2		-		30	20	50
209	Computer programming lab	-	-	2				45	30	75
210	Machine Drawing	-	-	3		-		60	40	100
211	Communication Technique Lab	-	-	2		-		45	30	75
212	Discipline & Extra Curricular Activities	-	-	-	-	-		50	-	50
Grand Total		16	04	11	-	480	120	260	140	1000

(Total 31 periods per week)

L = Lecture, T = Tutorial, P = Practical



3. Interpersonal Communication and methods to improve it

Unit 4

Grammar

1. Subject-Verb Agreement (Concord)
2. Linking Words (Conjunctions)
3. Relative Clauses
4. Common Errors

Unit 5

Composition

1. Resume Writing
2. Business Letter Writing: Sales, Credit, Enquiry, Order, Claim, Complaint, Job Applications, etc.
3. E-mail messages
4. Telephone Etiquettes

Suggested Readings

1. Communication Skills for Engineers and Scientists, Sangeeta Sharma and Binod Mishra, PHI Learning Pvt. Ltd. (New Delhi)
2. English Grammar and Composition, Gurudas Mukherjee, Ane Books Pvt. Ltd. (New Delhi)
3. Current English Grammar and Usage with Composition, R.P. Sinha, Oxford University Press (New Delhi)
4. Effective Technical Communication, M Ashraf Rizvi, Tata McGraw Hill (New Delhi)
5. Business Communication, Meenakshi Raman & Prakash Singh, Oxford University Press (New Delhi)
6. Professional Communication, Aruna Koneru, Tata McGraw Hills, New Delhi.
7. A Practical Course for Developing Writing Skills in English, J.K. Gangal, PHI Learning Pvt. Ltd., New Delhi.
8. "Communicative English for Engineers and Professionals", by Nitin Bhatnagar & Mamta Bhatnagar, Pearson (New Delhi).
9. "The Ace of Soft Skills", by Gopalswamy Ramesh & Mahadevan Ramesh, Pearson (New Delhi)



101 COMMUNICATIVE ENGLISH

Unit 1

Grammar

1. Tenses
2. Passive Voice
3. Indirect Speech
4. Conditional Sentences
5. Modal Verbs

Unit 2

Composition

1. Dialogue Writing
2. Paragraph and Precis Writing
3. Report, its importance and Report Writing

Unit 3

Short Stories

1. The Luncheon: W.S. Maugham
2. How Much Land Does a Man Need?: Leo Tolstoy
3. The Last Leaf: O. Henry

Unit 4

Essays

1. On the Rule of the Road: A. G. Gardiner
2. The Gandhian Outlook: S. Radhakrishnan
3. Our Own Civilisation: C.E.M. Joad

Unit 5

Poems

1. The Unknown Citizen: W. H. Auden
2. The Character of A Happy Life: Sir Henry Wotton
3. No Men are Foreign: James Kirkup
4. If: Rudyard Kipling

Suggested Readings

1. Communication Skills for Engineers and Scientists, Sangeeta Sharma & Binod Mishra, PHI Learning Pvt. Ltd.
2. English for Engineers: Made Easy, Aeda Abidi & Ritu Chaudhary, Cengage Learning, (New Delhi)
3. A Practical Course for Developing Writing Skills in English, J.K. Gangal, PHI Learning Pvt. Ltd., New Delhi.
4. Intermediate Grammar, Usage and Composition, Tickoo, A. E. Subramaniam & P. R. Subramaniam, Orient Longman (New Delhi)
5. The Written Word, Vandana R. Singh, Oxford University Press (New Delhi)



211 COMMUNICATION TECHNIQUES LAB

1. Phonetic Symbols and Transcriptions
2. Word Formation
3. Affixes
4. Listening and speaking Skills.
5. Words often Mis-spelt and Mis- Pronounced
6. One Word for Many.
7. Synonyms and Antonyms.
8. Seminar Presentation.
9. Group Discussion.
10. Job Interview

Suggested Readings and Packages

1. Advanced Manual for Communication Laboratories and Technical Report Writing, D. Sudha Rani, Pearson, (New Delhi)
2. A Course in Phonetics and Spoken English, J. Sethi & P.V. Dhamija, PHI Learning Pvt. Ltd. (New Delhi)
3. English Language Laboratories: A Comprehensive Manual, Nira Konar, PHI Learning Pvt .Ltd. (New Delhi)
4. Communication Skills for Engineers and Scientists, Sangeeta Sharma and Binod Mishra, PHI Learning Pvt. Ltd.(New Delhi).
5. Oxford English Learning Package.(With CDs: Headway Series)
6. Tata McGraw Hills English Learning Package (With CDs)
7. "Oxford Advanced Learners' Dictionary" published by Oxford University Press (New Delhi)

212 DISCIPLINE & EXTRA CURRICULAR ACTIVITIES (DECA)

Component – A

Discipline:

25 Marks

The marks shall be deducted from this component for those who shall involve themselves in indiscipline/undesirable/Ragging activities or in case of penalty of marks imposed by Standing Disciplinary Committee (SDC) and approved by Head of the Institution concerned subject to a maximum of 25 marks.

Component – B

Extra Curricular Activities:

25 Marks

Marks shall be awarded for the participation of students in various Extra Curricular Activities organised by the respective institutions as per the following. subject to a maximum of 25 marks. In case student does not participate in any of the Extra Curricular Activities, he/ she shall be awarded zero(0) marks in DECA - Component B.

- (i) National Cadet Corps (NCC).
- (ii) National Service Scheme (NSS)

20 | Page

- (iii) Scouts & Guide
- (iv) Sports Activities
- (v) Literary Activities & model
- (vi) Cultural Activities
- (vii) Paper Presentation/ Participation in National Conferences/ Seminars/ Workshops etc.
- (viii) Blood Donation
- (ix) Participation in activities of College Annual day Celebration.
- (x) Organising/ Participation/ Volunteer in different activities organised by the departments/ institute
- (xi) Organising/ Participation in activities of Students Chapters of ISTE, IE (I), IEEE, IETE, Vivekanand Kendra etc.



SEMESTER VIII	8	8	Hrs. / Week			IA	Exam	Total
Subject Code	Title		L	T	P			
8ME1A	Computer Integrated Manufacturing Systems		3		Theory Subjects	20	80	100
8ME2A	Laws for Engineers		3			20	80	100
8ME3A	Power Generation		3	1		20	80	100
8ME4.1A	Product Development and Launching		3			20	80	100
8ME4.2A	Computational Fluid Dynamics							
8ME4.3A	Total Quality Management							
	Practicals and Sessionals							
8ME5A	CAM Lab		Lab courses		2	45	30	75
8ME6A	CAD Lab			3	60	40	100	
8ME7A	Industrial Engineering Lab - II			2	45	30	75	
8MEPR	Project-2			4	120	80	200	
8MESM	Seminar			2	60	40	100	
8MEDC	Discipline & Extra Curricular Activity							50
	Total		12	1	13			1000

SME2A: LAWS FOR ENGINEERS

B.Tech. (Mechanical) 8th semester
3L+0T

Max. Marks: 100
Exam Hours: 3

UNIT	CONTENTS	CONTACT HOURS
I	Constitutional Law: The Preamble; Fundamental Rights; Directive principles of State policy; Fundamental Duties; Emergency provisions – kinds, legal requirements and legal effects.	5
	General Principles of Contract under Indian Contract Act, 1872: General principles of contract – Sec. 1 to 75 of Indian Contract Act and including Government as contracting party, Kinds of government contracts and dispute settlement, Standard form contracts; nature, advantages, unilateral character, principles of protection against possibility of exploitation, judicial approach to such contracts, exemption clauses, clash between two standard form contracts.	4
II	Introduction to Human Rights: Theoretical foundation, Historical development of human rights; Human Rights in Indian tradition and Western tradition; Covenant on Civil & Political Rights 1966 including Optional Protocol – I (Individual Complaint Mechanism) & Optional Protocol – II (Abolition of Death Penalty); Covenant on Economic, Social and Cultural Rights 1966 including Optional Protocol – I (2002);	4
	Enforcement of Human Rights in India including Supreme Court, High Courts, Statutory Commissions – NHRC, NCW, NCM, NC-SC/ST etc.	4
	Labour Laws: Industrial Disputes Act, 1947; Collective bargaining; Industrial Employment (Standing Orders) Act, 1946; Workmen's Compensation Act, 1923.	3
III	Right to Information Act, 2005: Evolution and concept; Practice and procedures; Official Secret Act, 1923; Indian Evidence Act, 1872;	3



	Information Technology – legislation and procedures, Cyber crimes – issues and investigations.	
	Law relating to Intellectual property: Introduction–meaning of intellectual property, main forms of IP, Copyright, Trademarks, Patents and Designs, Secrets; International instruments on IP – Berne convention, Rome convention, TRIPS, Paris convention and international organizations relating IPRs, WTO etc;	4
IV	Law relating to Copyright in India, Meaning of copyright – literary, dramatics and musical works, sound records and cinematographic films, computer programs, Ownership of copyrights, Criteria of infringement, Piracy in Internet – Remedies and procedures in India;	1
	Law relating to Trademarks under Trademark Act, 1999 including Rationale of protection of trademarks as Commercial aspect and Consumer rights, Trademarks, registration, procedures, Distinction between trademark and property mark, Doctrine of deceptive similarity, Passing off an infringement and remedies;	2
	Law relating to Patents under Patents Act, 1970, Patentable inventions with special reference to biotechnology products, Patent protection for computer programs, Process of obtaining patent –application, examination, opposition and sealing of patents, Patent cooperation treaty and grounds for opposition, Rights and obligations of patentee, Duration of patents – law and policy considerations, Infringement and related remedies.	3
V	Corporate Law: Meaning of corporation; Law relating to companies, public and private (Companies Act, 1956) general provisions; Law and multinational companies – International norms for control, FEMA 1999, Corporate liability, civil and criminal.	4
	Election provisions under Indian Constitution (Art.324–329): Representation of Peoples Act and Prevention of Corruption Act, 1988; Superintendence, directions and control of elections to be vested in Election Commission; Election to the house of people and to the legislative assemblies of States to be on the basis of adult suffrage. Candidate electoral rights.	3
	TOTAL	40

REFERENCE BOOKS		
SN	Name of Authors /Books /Publisher	Year of Pub.
1	D.D. Basu, Shorter Constitution of India, Prentice Hall of India	1996
2	M.P. Jain, Indian Constitutional Law, Wadhwa & Co.	2005
3	S.K. Awasthi & R.P. Kataria, Law relating to Protection of Human Rights, Orient Publishing	2006
4	S.K. Kapur, Human Rights under International Law and Indian Law, Central Law Agency	2001
5	Avtarsingh, Law of Contract, Eastern Book Co	2002
6	Wadhwa , Intellectual Property Rights, Universal Law Publishing Co	2004
7	T. Ramappa, Intellectual Property Rights Law in India, Asia Law House	2010
8	O.P. Malhotra, Law of Industrial Disputes, N.M. Tripathi Publishers	