JAIDEV EDUCATION SOCIETY'S
J D COLLEGE OF ENGINEERING AND MANAGEMENT
KATOL ROAD, NAGPUR
Website: www.jdcoem.ac.in   E-mail: info@jdcoem.ac.in
(An Autonomous Institute, with NAAC "A" Grade)
Affiliated to DBATU, RTMNU & MSBTE Mumbai
Department of Civil Engineering
2020-21

VISION	MISSION
❖ **To shape professional Leaders of Global Standards in Civil Engineering.**	❖ **To provide quality Education and Excellent Learning Environment for the overall development of students.** ❖ **Making sustainable efforts for integrating academics with industry.**

TEACHING SCHEME

I Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	HSMC	HU1T001	Communication Skills	2	0	0	60	0	40	100	2
2	BSC	MA1T001	Engineering Mathematics- I	3	1	0	20	20	60	100	4
3	BSC	CE1T002	Engineering Chemistry	3	1	0	20	20	60	100	4
4	ESC	CE1T003	Engineering Graphics	1	0	0	20	20	60	100	1
5	HSMC	HU1L001	Communication Skills Lab.	0	0	4	60	0	40	100	2
6	BSC	CE1L002	Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC	CE1L003	Engineering Graphics Lab	0	0	4	60	0	40	100	2
8			Induction Programme	3 Weeks							
9	ESC	CE1T004	Basic Civil and Mechanical Engineering	2	0	0	10	15	25	50	Audit
			Total	**11**	**02**	**10**					**16**

II Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	HSMC	HU2T002	Introduction To Computer Programming	2	0	0	20	20	60	100	2
2	BSC	MA2T001	Engineering Mathematics- II	3	1	0	20	20	60	100	4
3	BSC	CE2T005	Engineering Physics	3	1	0	20	20	60	100	4
4	ESC	CE2T006	Energy and Environment Engineering	3	0	0	20	20	60	100	3
5	HSMC	HU2L002	Introduction to Computer Programming Lab	0	0	4	60	0	40	100	2
6	ESC	WS2L001	Workshop Practices	0	0	4	60	0	40	100	2
7	BSC	CE2L005	Engineering Physics Lab	0	0	2	60	0	40	100	1
8			Societal Internship/ Field Training	Report Submission							
9	ESC	CE2T007	Basic Electrical and Electronics Engineering	2	0	0	10	15	25	50	Audit
			Total	**13**	**02**	**10**					**19**

III Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	HSMC	CE3T001	Civil Engineering - Societal & Global Impact	2	0	0	20	20	60	100	2
2	BSC	CE3T002	Engineering Mathematics-III	2	1	0	20	20	60	100	3
3	ESC	CE3T003	Building Drawing and Drafting	2	1	0	20	20	60	100	3
4	ESC	CE3T004	Mechanics of Rigid Bodies	2	1	0	20	20	60	100	3
5	ESC	CE3T005	Energy Science and Engineering	3	0	0	20	20	60	100	3
6	PCC	CE3T006	Basic Geology and Geotechnical Engineering	3	0	0	20	20	60	100	3
7	MC	CE3T007	Universal Human Values	3	0	0	20	20	60	100	3
8	ESC	CE3L001	Building Drawing and Drafting Lab	0	0	4	60	0	40	100	2
9	ESC	CE3L002	Mechanics of Rigid Bodies Lab	0	0	2	60	0	40	100	1
10	PCC	CE3L003	Basic Geology and Geotechnical Engineering Lab	0	0	2	60	0	40	100	1
11	PROJECT	CE3F004	Field Visit I	0	0	0	0	0	50	50	1
			Total	**17**	**03**	**08**					**25**

IV Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	BSC	CE4T001	Life Science	2	0	0	20	20	60	100	2
2	PCC	CE4T002	Hydrology & Water Resource Engineering	2	1	0	20	20	60	100	3
3	PCC	CE4T003	Concrete Technology & Design of RCC Building Elements	2	1	0	20	20	60	100	3
4	PCC	CE4T004	Solid Mechanics	2	1	0	20	20	60	100	3
5	PCC	CE4T005	Surveying and Geomatics	2	0	0	20	20	60	100	2
6	PCC	CE4T006	Materials, Testing & Evaluation	2	0	0	20	20	60	100	2
7	PCC	CE4L001	Concrete Technology & Design of RCC Building Elements Lab	0	0	2	60	0	40	100	1
8	PCC	CE4L002	Solid Mechanics Lab	0	0	2	60	0	40	100	1
9	PCC	CE4L003	Surveying and Geomatics Lab	0	0	4	60	0	40	100	2
10	PROJECT	CE4F004	Field Visit II	0	0	0	0	0	50	50	1
11	MC	CE4T007	Innovation and Entrepreneurship Development	2	0	0	10	15	25	50	AU
			Total	**11**	**03**	**08**					**20**

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	HSMC	CE5T001	Professional Practice, Law & Ethics	2	0	0	20	20	60	100	2
2	PCC	CE5T002	Fluid Mechanics	2	1	0	20	20	60	100	3
3	PCC	CE5T003	Structural Analysis	2	1	0	20	20	60	100	3
4	PCC	CE5T004	Transportation Engineering	3	0	0	20	20	60	100	3
5	OEC	CEOEC1	Open Elective-I	4	0	0	20	20	60	100	4
6	PCC	CE5L001	Fluid Mechanics Lab	0	0	2	60	0	40	100	1
7	PCC	CE5L002	Structural Analysis Lab	0	0	2	60	0	40	100	1
8	PCC	CE5L003	Transportation Engineering Lab	0	0	2	60	0	40	100	1
9	PROJECT	CE5P004	Mini Project & Seminar	0	0	2	60	0	40	100	1
10	PROJECT	CE5F005	Field Visit III	0	0	0	60	0	40	100	1
11	MC	CE5T005	Consumer Affair	2	0	0	20	20	60	100	3
			Total	**15**	**02**	**08**					**23**

V Semester

				VI Semester								
Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	PCC	CE6T001	Design of Steel Structures	2	1	0	20	20	60	100	3
2	PCC	CE6T002	Environmental Engineering	3	0	0	20	20	60	100	3
3	PEC	CE6TE01	Professional Elective I	3	0	0	20	20	60	100	3
4	PEC	CE6TE02	Professional Elective-II	3	0	0	20	20	60	100	3
5	OEC	CEO002	Open Elective-II	4	0	0	20	20	60	100	4
6	PCC	CE6L001	Design of Steel Structures Lab	0	0	2	60	0	40	100	1
7	PCC	CE6L002	Environmental Engineering Lab	0	0	2	60	0	40	100	1
8	PROJECT	CE6P003	Mini Project & Seminar	0	0	2	30	0	20	50	1
9	PROJECT	CE6P004	CRT	0	0	2	50	0	0	50	1
10	PROJECT	CE6P005	Skill Development	0	0	2	15	0	35	50	1
11	MC	CE6T004	Research Methodology	2	0	0	10	15	25	50	AU
			Total	17	1	10					21

Sr. No.	Course Code	Type of Course	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	BTCVC701	Core	Design of Concrete Structure-II	2	1	--	20	20	60	100	3
2	BTCVC702	Core	Infrastructure Engineering	3	--	--	20	20	60	100	3
3	BTCVC703	Core	Water Resources Engineering	3	1	--	20	20	60	100	4
4	BTCVC704	Core	Professional Practices	2	1	--	20	20	60	100	3
5	BTCVE705A	Elective-IV	Construction Techniques	3	--	--	20	20	60	100	3
	BTCVE705B		Engineering Economics								
	BTCVE705C		Finite Element Method								
	BTCVE705D		Limit State Design of Steel Structures								
	BTCVE705E		Plastic Analysis and Design								
	BTCVE705F		Water Power Engineering								
6	BTCVOE706A	Open Elective V	Advanced Structural Mechanics	3	--	--	--	--	--	--	Audit (AU/ NP)
	BTCVOE706B		Air Pollution Control								
	BTCVOE706C		Bridge Engineering								
	BTCVOE706D		Introduction to Earthquake Engineering								
	BTCVOE706E		Town and Urban Planning								
	BTCVOE706F		Tunneling and Underground Excavations								
7	BTCVL707	Laboratory	Design & Drawing of RC & Steel Structures	--	--	2	30	--	20	50	1
8	BTCVL708	Laboratory	Professional Practices	--	--	2	30	--	20	50	1
9	BTCVL709	Training	Field Training /Internship/Industrial	--	--	--		--	50	50	1
10	BTCVS710	BTS	Seminar	--	--	2		--	50	50	1
11	BTCVS711	BTS	Project Stage-I**	--	--	6		50	50	100	3
			Total	16	3	12	160	150	490	800	23

VIII Semester

Sr. No.	Course Code	Type of Course	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	BTCVSS801A	(Self-Study Course) #	Characterization of Construction Materials	3**	--	--	20	20	60	100	3
	BTCVSS801B		Geosynthetics and Reinforced Soil Structures								
	BTCVSS801C		Higher Surveying								
	BTCVSS801D		Maintenance and Repair of Concrete Structures								
	BTCVSS801E		Structural Dynamics								
2	BTCVSS802A	(Self-Study Course) #	Energy Efficiency Acoustics and Daylighting in Building	3**	--	--	20	20	60	100	3
	BTCVSS802B		Environmental Remediation of Contaminated Sites								
	BTCVSS802C		Remote Sensing Essentials								
	BTCVSS802D		Mechanical Characterization of Bituminous Materials								
	BTCVSS802E		Soil Structure Interaction								
3	BTCEP803	Project Stage-II	In-house Project or Internship and Project in Industry*	--	--	30	50	--	100	150	15
			Total		**--**	**30**	**90**	**40**	**220**	**350**	**21**

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SYLLABUS

Course Code: CE6L003

Course Name: Campus Recruitment Training (CRT)

Unit	Content	Duration
PART I: QUANTITATIVE ABILITY		
I	Speed Maths Calculation, Number Systems, Ratio & Proportion, Percentage	03
II	Profit – Loss & Discount, Simple Interest & Compound Interest, Simple Equation and Age˝s	03
III	Averages Mixture & Allegation, Time and work, Time Speed & Distance, Permutation – Combination & Probability.	03
PART II: - REASONING ABILITY		
I	Coding Decoding, Blood Relation, Direction sense, Number Series, Analogy	03
II	Sitting Arrangement, Puzzles.	03
III	Syllogism, Statement course of action, Statement arguments, Statement Assumptions, Miscellaneous Type of Reasoning	03
PART III: - EMPLOYABILITY SKILLS		
I	**Presentation Skills:** What is a presentation? Essential characteristics of Good presentation. Preparation of presentation: Identify the purpose, Analyze the audience, Design andorganize the information, Medium of presentation and Visual aids. Delivering Presentation: rehearsal, body Language, Handling questions, Tips to fightstage fear.	02

II	**Job Interview Skills** Types of interviews, Focus of interview, dress code, importance of body language. Probable interview questions, Telephonic and video interview, Strategies for success at interview.	02
III	**Resume Building** Meaning, Difference among Bio-data, Curriculum vitae and Resume.CV writing tips, The content of Resume, Structure of Resume.	02

Course Code: CE4T007
Course Name: Innovation and Entrepreneurship Development

Unit	Content	Duration
I	**Innovation:** Concept of creativity, innovation, invention, discovery. Methods for development of creativity, convergent & divergent thinking etc. Introduction to Intellectual Property Rights (IPR), Patent and laws related to patents.	06 Hrs
II	**Entrepreneurship:** Concept of entrepreneurship, its relations in economic developments,Eventuation of concept of entrepreneur, characteristics of an Entrepreneur, Types of entrepreneurs, Qualities of entrepreneur, Factors affecting growth of entrepreneurship	06 Hrs
III	**Role of Entrepreneurial Bodies:** Theory of achievement, motivation, Medelland‟s. Experiment, Women entrepreneurship, Role of SSI, its advantages & limitations, policies governing small scale industries, Procedure to set up small scale industrial unit, Advantages and limitations of SSI.	06 Hrs
IV	**Role of Entrepreneurial Support:** Factors governing project selection, Market survey, Preparation of projectreport. Financial, technical & market analysis of project. Entrepreneurial support systems, Role of consultancy organization like, District IndustrialCentre, State Industrial Development Corporation, Financial institution, Latest SSI schemes of DIC (to be confirmed from DIC from time to time.	06 Hrs

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TEACHING PLAN: CAMPUS RECRUITMNT TRAINING

Course: B. Tech in Civil Engineering		**Year/Semester:** 6th Semester (3rd Year)	
Name of the Teacher: Prof. Smita Sharma		**Subject Code:**	
Subject: Soft Skills		**Section:** CE - A	
Periods per Week (each 60 min)		**Lecture**	**1**
		Tutorial	**-**
		Practical	**-**
Course Objective		**Course Outcomes**	
1. Students should be able to compare their own personality traits and behaviors they have practiced from their childhood in informal situations and the standardized aspects of behavior. 2. Student should be able to maximize her/his potentials and plan as well as realize her/his life goals.		1. Understand and practice interview techniques. 2 practice and. Improve interpersonal skills. 3. Understand different placement practice techniques.	

Sr. No	Lec. No	Contents to be Covered	Planned Teaching Dates	Text Books/ Reference Name	URL's (NPTEL/Online Material/PPT/Video)	Applications (R&D/ Industry)	Learning Outcomes	CO Mapping
1.	1.	Self-Introduction	Day 1	Ace of Soft skills, Mahadevan Ramesh, Pearson Publication	https://www.youtube.com/watch?v=Osa53-RYBk4	Campus selection process	Students learn how to give effective introduction in interview	CO1,CO3
2.	2.	Activity I – Self-Introduction	Day 2	--------	--------	Campus selection process	--------	CO1,CO3
3.	3.	Activity II – Self-Introduction	Day 3	--------	--------	Campus selection process	--------	CO1,CO3
4.	4.	Presentation Skills	Day 4	Ace of Soft skills, Mahadevan Ramesh, Pearson Publication	https://www.slideshare.net/biadoll123/effective-presentation-skills-29762969	Campus selection process	Student learn about presentation techniques	CO2,CO3
5.	5.	Body Language	Day 5	Ace of Soft skills, Mahadevan Ramesh, Pearson Publication	https://www.youtube.com/watch?v=cFLjudWTuGQ	Campus selection process	Student analyses the techniques of effective body language	CO2,CO3
6.	6.	Tone Of Voice	Day 6	Ace of Soft skills, Mahadevan Ramesh, Pearson Publication	https://www.slideshare.net/ConstructionMarketingOrg/tone-of-voice	Campus selection process	Student learn about importance of tone of	CO2,CO3

7.	7.	Activity III-Presentation	Day 7	--------	--------	Campus selection process	--------	CO2,CO3
8.	8.	Activity IV-Presentation	Day 8	--------	--------	Campus selection process	--------	CO2,CO3
9.	9.	Resume writing	Day 9	Effective Technical Communication	https://www.youtube.com/watch?v=y8YH0Qbu5h4	Campus selection process	Students learn how prepare their resumes	CO1,CO3
10.	10.	Activity V-Resume Writing (Practical)	Day 10	--------	--------	Campus selection process	--------	CO1,CO3
11.	11.	Activity VI-Resume Writing (Practical)	Day 11	--------	--------	Campus selection process	--------	CO1,CO3
12.	12.	Group Discussion Techniques	Day 12	Ace of Soft skills, Mahadevan Ramesh, Pearson Publication	https://ctb.ku.edu/en/table-of-contents/leadership/group-facilitation/group-discussions/main	Campus selection process	Students learn about techniques of GD	CO1,CO3
13.	13.	Activity VII – Group Discussion	Day 13	--------	--------	Campus selection process	--------	CO1,CO3
14.	14.	Activity VIII – Group Discussion	Day 14	--------	--------	Campus selection process	--------	CO1,CO3
15.	15.	Interview Skills Type, Dress Code, Presentation Skills	Day 15	Ace of Soft skills, Mahadevan Ramesh, Pearson Publication	--------	Campus selection process	Students learn about interview techniques	CO1,CO3

16.	16.	Activity IX – HR Questionnaire	Day 15	-------	--------	Campus selection process	--------	CO1,CO3
17.	17.	Activity X – HR Questionnaire	Day 17	-------	--------	Campus selection process	--------	CO1,CO3
18.	18.	Activity XI – Telephonic and Video interview	Day 18	--------	--------	Campus selection process	--------	CO1,CO3
19.	19.	Activity XII – Telephonic and Video interview	Day 19	-------	--------	Campus selection process	--------	CO1,CO3
20.	20.	Interview Preparation Tips and Tricks	Day 20	-------	--------	Campus selection process	--------	CO1,CO3

*T=Text Book; R= Reference Book;   C= Company name;   R= Research Paper

Total number of lectures as per syllabus: - 18   Total number of lectures as per planned: -20

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TEACHING PLAN

Course	: B. Tech in Civil Engineering	Year/Semester	: 6th Semester (3rd Year)	
Name of the Teacher	: Prof. Sumedh Gawande	**Subject Code**	:	
Subject	:Aptitude	**Section**	:CE – A	
Periods per Week **(each 60 min)**		Lecture	2	
		Practical	-	
		Tutorial	-	

Course Objective	Course Outcomes
1. To develop an an individual for CRT, competitive exams, entrance exams. 2. Questions have practical as well as theoretical approach and discussion in forum option is good for explanations so that one can understand them easily and conceptually. 3. By practicing Quantitative Aptitude Objective Questions and Answers Practice daily for good results and to learn and master various Quantitative Aptitude subjects.	1. Understand and practice quantitative aptitude. 2. Understand and practice Logical reasoning 3. Understand and practice verbal reasoning. 4. Understand different placement practice techniques.

Sr. No	Lec. No	Contents to be Covered	Planned Teaching Dates	Text Books (Page no) Reference Book (Page no)	URL's (NPTEL/Online Material/PPT/Video)	Applications (R&D/ Industry)	Learning Outcomes
1	1	Speed Math's Calculation	Day 1	T1 (Pg: 51-179)	------	Campus Drive selection process	Students should solve fast math problem
2	2	Speed Math's Calculation	Day 2	T1 (Pg: 51-179)	-----	-----	Students should solve fast math problem
3	3	Number System	Day 3	T1 (Pg:3-50)	----	-----	Students should understand different number system
4	4	Ration and Proportion	Day 4	T2 (Pg:426-475)	----	-----	Students should able to solve ratio problem
5	5	Percentage	Day 5	T2 (Pg:308-373)	----	-----	Students should analyze and solve percentage problem
6	6	Profit Loss and Discount	Day 6	T2 (Pg:374-425)	----	-----	Students should solve profit loss and discount problem
7	7	Simple Interest	Day 7	T2 (Pg:641-662)	----	-----	Students should simplify Simple interest problem
8	8	Compound Interest	Day 8	T2 (Pg:663-687)	----	-----	Students should simplify Compound interest problem
9	9	Simple equation and Age's	Day 7	T2 (Pg:264-277)	----	-----	Students should clear age problem concept
10	10	Average	Day 8	T2 (Pg:206-239)	----	-----	Student should understand concept of Average
11	11	Mixture and Allegations	Day 9	T1 (Pg:633-640)	--------	-----	Students should analyze Mixture Allegations
12	12	Time and Work	Day 10	T1 (Pg:526-561)	----	-----	Students should explain different Time and Work
13	13	Time speed And Distance	Day 11	T1 (Pg:562-599)	----	-----	Students should explain different Time Speed and Distance
14	14	Permutation and Combination	Day 12	T1 (Pg:841-849)	----	-----	Students should Permutation and Combination
15	15	Probability	Day 13	T1 (Pg:850-860)	----	-----	Students should explain Probability
16	16	Coding And Decoding	Day 14	T3 (Pg.4.1-4.46)	----	-----	Students should understand Coding And Decoding

17	17	Blood Relation	Day 15	T3 (Pg.5.1-5.19)	----	-----	Students should identify different Blood Relation
18	18	Direction Sense	Day 16	T3 (Pg.8.1-8.19)	----	-----	Students should remember steps and sequence of Direction Sense
19	19	Number Series	Day 17	T3 (Pg.1.3-1.26)	----	-----	Students should apply different combination of Number Series
20	20	Analogy	Day 18	T3 (Pg.2.1-2.74)	----	-----	Students should understand Analogy question..
21	21	Sitting Arrangements	Day 19	T3 (Pg.6.1-6.73)	----	-----	Students should solve and understand Sitting Arrangements
22	22	Puzzle	Day 20	T3 (Pg.6.1-6.73)	----	-----	Students should solve and understand Puzzle
23	23	Syllogism	Day 21	T2 (Pg:323-340)	----	-----	Students should understand Syllogism question
24	24	Statement Course of Action	Day 22	T2 (Pg:4.14.25)	----	-----	Students should analyze Statement Course of Action
25	25	Statement Argument	Day 23	T2 (Pg:2.1-2.27)	----	-----	Students should bale to understand Statement and Argument
26	26	Statement Assumption	Day 24	T2 (Pg:3.1-3.44)	----	-----	Students should able to understand Statement Assumption
27	27	Miscellaneous Type of Reasoning	Day 25	T2 (Pg:9.1-16.18)	----	-----	Students should be able to compute the Miscellaneous Type of Reasoning
28	28	Practice	Day 26		----	-----	Able to understandLeaky Bucket
29	29	Practice	Day 27		----	-----	Able to understandToken Bucket algorithm
30	30	Practice	Day 28		----	-----	Able to understandDomain Name Space (DNS), DDNS
31	31	Practice	Day 29		----	-----	Able to understandTELNET, EMAIL
32	32	Practice	Day 30		----	-----	Able to understandFile Transfer Protocol (FTP), WWW
33	33	Practice	Day 31		----	-----	Able to understandHTTP, SNMP
34	34	Practice	Day 32		----	-----	Able to understandBluetooth
35	35	Practice	Day 33		----	-----	Able to understandFirewalls

36	36	Practice	Day 34		----	-----	Able to understandBasic concepts of Cryptography

*T=Text Book;   R= Reference Book;   C= Company name;   R= Research Paper

Total number of lectures as per syllabus: - 36   Total number of lectures as per planned: -36

Text Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Quantitative Aptitude	Dr. R. S. Agrawal	S. CHAND	Edition 2017
T2	How to Prepare for Quantitative Aptitude	Arun Sharma	McGraw Hill Education	Eighth edition
T3	Quantitative Aptitude and Reasoning	R. V. Pravin	Prentice-Hall	Second Edition 2013
T4	Verbal and Non-Verbal Reasoning	Dr. R. S. Agrawal	S CHAND	Edition 2018

Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	A text book of Business Mathematics	G Ranganath , C Sampangiram and Y Rajaram	Himalaya	Edition 2015

Company/ Industry:

There are nearly 200 companies where students have to opportunities to apply their aptitude and reasoning skill of got placed. Includes Time and work, percentage, Speed and distance, simplification, Etc.

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❖ **To shape professional Leaders of Global Standards in Civil Engineering.**	❖ **To provide quality Education and Excellent Learning Environment for the overall development of students.** ❖ **Making sustainable efforts for integrating academics with industry.**

TEACHING PLAN

Course : B. Tech in Civil Engineering	**Year/Semester :** 3rd Semester (2nd Year)
Name of the Teacher: Atul Gautam	**Subject Code :** CE 307
Subject : Innovation & Entrepreneurship Development	**Section :** CE
Periods per Week (each 60 min)	**Lecture** — 1
	Tutorial — -
	Practical — -

Course Objective	Course Outcomes
The students develop and can systematically apply an entrepreneurial way of thinking that will allow them to identify and create business opportunities that may be commercialized successfully.	1.Have the ability to discern distinct entrepreneurial traits 2.Know the parameters to assess opportunities and constraints for new business ideas 3.Understand the systematic process to select and screen a business idea 4.design strategies for successful implementation of ideas 5.write a business plan

Sr. No	Lec. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books (Page no) Reference Book (Page no)	URL's (NPTEL/OnlineMaterial/ PPt/Video)	Applications (R&D/ Industry)	Learning Outcomes	CO Mapping
					Unit I – Innovation				
1	1	1	Concept of creativity, innovation &invention	Day 1	T1	.http://www.innovation-creativity.com/creative_thinking.html https://www.slideshare.net/ timoteorodrigues1/module-creativity-innovation-entrepreneurship		Able to understand Concept of creativity, innovation &invention	CO1, CO2
2	2	2	Idea generation validation	Day 2	T1	**https://nptel.ac.in/courses /110/107/110107094/**		Able to understand Idea generation validation	CO1, CO2
3	3	3	Methods for development of creativity	Day 3	T1	https://www.slideshare.net/ timoteorodrigues1/module-creativity-innovation-entrepreneurship		Able to understand Methods for development of creativity	CO1, CO2
4	4	4	Introduction to Intellectual Property Rights (IPR), Patent and laws related to patents.	Day 4	T1	https://nptel.ac.in/courses/1 10/105/110105139/		Able to understand Intellectual Property Rights (IPR), Patent and laws related to patents.	CO1, CO2
5	5	5	Idea generation by students group	Day 5	T1				CO1, CO2
6	6	6	Idea generation by students group	Day 6	T1				CO1, CO2
					Unit II – Entrepreneurship				
7	7	7	Concept of entrepreneurship, its relations in economic developments	Day 7	T1 (Pg : –)	https://www.slideshare.net/ timoteorodrigues1/module-creativity-innovation-entrepreneurship https://nptel.ac.in/courses/1 110/107/110107094/ https://shodhganga.inflibne t.ac.in/bitstream/10603/136 339/10/10_chapter%202.p df		Able to understand Concept of entrepreneurship, its relations in economic developments	CO1, CO2, CO3,

8	8	8	Eventuation of concept of entrepreneur	Day 8	T1 (Pg : −)	https://shodhganga.inflibnet.ac.in/bitstream/10603/136339/10/10_chapter%202.pdf		Able to understand Eventuation of concept of entrepreneur	CO1, CO2, CO3
9	9	9	characteristics of an Entrepreneur	Day 7	T1 (Pg : −)	https://www.yourarticlelibrary.com/entrepreneur/entrepreneurship-characteristicsimportance-types-and-functions-of-entrepreneurship/5228		Able to understand characteristics of an Entrepreneur	CO2, CO3
10	10	10	Types of entrepreneurs	Day 8	T1 (Pg : −)	https://www.yourarticlelibrary.com/entrepreneur/entrepreneurship-characteristicsimportance-types-and-functions-of-entrepreneurship/5228 https://www.tutorialspoint.com/entrepreneurship_skills/entrepreneurship_skills_types_of_entrepreneurs.htm		Able to understand Types of entrepreneurs	CO1, CO2, CO3,
11	11	11	Qualities of entrepreneur	Day 9	T1 (Pg : −)	https://www.yourarticlelibrary.com/entrepreneur/entrepreneurship-characteristicsimportance-types-and-functions-of-entrepreneurship/5228		Able to understand Qualities of entrepreneur	CO1, CO2, CO3
12	12	12	Factors affecting growth of entrepreneurship	Day 10	T1 (Pg : −)	https://www.researchgate.net/publication/332255136_Factors_Influencing_Entrepreneurship_Development https://www.googlesir.com/factors-affecting-entrepreneurship-growth-in-india/		Able to understand Factors affecting growth of entrepreneurship	CO1, CO2, CO3, CO4
Unit III – Role of Entrepreneurial Bodies									
13	13	13	Theory of achievement, motivation	Day 11	T1 (Pg : −)	https://www.researchgate.net/publication/258507973_Achievement_motivation		Able to understand Theory of achievement, motivation	CO1, CO2,
14	14	14	Medelland's. experiment	Day 12	T1 (Pg : −)	https://www.mindtools.com/pages/article/human-motivation-theory.htm		Able to understand Medelland's. experiment	CO4, CO5

15	15	15	Women entrepreneurship	Day 13	T1 (Pg : −)	https://www.researchgate.net/publication/323265156_Women_Entrepreneurship https://shodhganga.inflibnet.ac.in/bitstream/10603/6775/12/12_chapter%201.pdf		Able to understand Women entrepreneurship	CO1, CO2, CO3
16	16	16	Role of SSI, it's advantages & limitations,	Day 14	T1 (Pg : −)	https://www.researchgate.net/publication/220029819_ROLE_OF_SMALL_SCALE_INDUSTRIES_IN_ECONOMIC_DEVELOPMENT https://accountlearning.com/advantages-or-merits-of-small-scale-industries/ https://accountlearning.com/demerits-or-disadvantages-of-small-scale-industries/		Able to understand Role of SSI, it's advantages & limitations,	CO4, CO5
17	17	17	policies governing small scale industries	Day 15	T1 (Pg : −)	https://shodhganga.inflibnet.ac.in/bitstream/10603/167022/9/09_chapter%202.pdf		Able to understand policies governing small scale industries	CO3, CO4, CO5
18	18	18	Procedure to set up small scale industrial unit, Advantages and limitations of SSI.	Day 16	T1 (Pg : −)	https://blog.ipleaders.in/procedure-starting-small-scale-industries-india/ https://www.slideshare.net/zeeshanabdullateef/procedure-to-start-small-scale-industries		Able to understand Procedure to set up small scale industrial unit, Advantages and limitations of SSI.	CO3, CO4, CO5
			Unit IV – Role of Entrepreneurial Support						
19	19	19	Factors governing project selection, Market survey	Day 17	T1 (Pg : −)	https://www.slideshare.net/Yuvarajneelakandan1/factors-to-be-considered-for-project-selection https://www.tutorialspoint.com/management_concepts/project_selection_method.htm https://www.slideshare.net/Samiursajal/project-selection-64220660		Able to understand Factors governing project selection, Market survey	CO1, CO2, CO3

20	20	20	Preparation of project report	Day 18	T1 (Pg : –)	https://www.slideshare.net/ManojReddy1/project-report-39676742 https://accountlearning.com/project-report-meaning-contents-project-report/		Able to understand Preparation of project report	CO3, CO4, CO5
21	21	21	Financial, technical & market analysis of project.	Day 19	T1 (Pg : –)	http://www.ddegjust.ac.in/studymaterial/mba/fm-405.pdf		Able to understand Financial, technical & market analysis of project.	CO4
22	22	22	Entrepreneurial support systems	Day 20	T1 (Pg : –)	https://www.slideshare.net/ProfDrYGiri/entrepreneurial-support-system		Able to understand Entrepreneurial support systems	CO4, CO5
23	23	23	Role of consultancy organization like, District Industrial Centre, State Industrial Development Corporation, Financial institution, Latest SSI schemes of DIC (to be confirmed from DIC from time to time.	Day 21	T1 (Pg : –)	http://www.ijstm.com/images/short_pdf/1495175847_L1126ijstm.pdf https://sg.inflibnet.ac.in/bitstream/10603/30071/7/10_chapter%204.pdf https://msme.gov.in/sites/default/files/MarkAssis.pdf https://msme.gov.in/all-schemes		Able to understand Role of consultancy organization like, District Industrial Centre, State Industrial Development Corporation, Financial institution, Latest SSI schemes of DIC (to be confirmed from DIC from time to time.	CO3, CO4, CO5

*T=Text Book;   R= Reference Book;   C= Company name;   R= Research Paper

Total number of lectures as per syllabus: - 36   Total number of lectures as per planned: -36

Tutorial Plan			
Week	**Topic**	**ACTIVITY**	**Mapped With CO**
1	**Innovation**		CO1,CO2
2	**Entrepreneurship**		CO3
3	**Role of Entrepreneurial Bodies**		CO3,CO$
4	**Role of Entrepreneurial Support**		

Assignment Plan				
Assignment No.	**Topic**	**Given Date**	**Submission Date**	**Mapped With CO**
1	Innovation & Entrepreneurship			
2	Role of Entrepreneurial Bodies & Role of Entrepreneurial Support			
Sr. No.	**Content Beyond Syllabus Topic**	**Date Given**	**Mapped with CO's not covered in TP**	
1	http://ediindia.ac.in/e-policy/ [Entepreneurial Policy India]			
2	http://en.wikipedia.org/wiki/List_of_venture_capital_companies_in_India [Venture Capital]			
3	ndiavca.org/venture-capital-in-india.html [Venture Capital]			
4	www.indianangelnetwork.com/ [Angel Investing]			
5	www.startbizindia.in/angel_investors_india.php [ANGEL INVESTING]			
6	http://www.mensxp.com/work-life/entrepreneurship/21253-51-most-successful-entrepreneurs-of-india-p1.html [Successful Entrepreneurs]			
7	economictimes.indiatimes.com/of entrepreneurs/.../20912945.cms [Leadership]			
8	http://edition.cnn.com/2013/06/25/tech/innovation/frugal-innovation-india-inventors/ [Innovation]			
9	www.bplans.com/ [BUSINESS PLAN]			
10	www.entrepreneur.com/businessplan [BUSINESS PLAN]			

Text Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Entrepreneurship Development	S.S. Khanka	S. Chand Publisher	
T2	Creativity Innovation and Entrepreneurship	Zechariah James Blanchrd,	Needle Rat Buisness	
T3	Essentials of Entrepreneurship and Small Business management.	Thomas W. Zimmerer, and Norman M. Scarborough.	PHI	

Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	Entrepreneurship: Strategies and Resources, 3/E -: Marc Dollinger;	-: Marc Dollinger;	Prentice Hall	
R2	2.Bringing New Technology to Market	Kathleen R. Allen,	Prentice Hall	
R3	3.Entrepreneurship in Action,	Mary Coulter;	Prentice Hall	

Research Paper:

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	Issue/Volume/ Page no/Year
P1	**Factors_Affecting_the_Growth_of_Entrepreneurship_in_Small-Scale_Business**	Eijaj Ahmed Khan	Business Review: A Journaaal of Business Administration Discipline	10.35649/KUBR.2005.5.1.4	Volume 05, Number 02, January to June, 2005, pp. 33-38
P2	***ROLE OF DISTRICT INDUSTRIAL CENTERS IN ENTREPRENEURSHIP DEVELOPMENT***	L. Balaji 1	International journal of science, technology and Mangement	10.1109/FUZZY.1995.410043.	Vol. no. 6, Issue no. 5, May 2017

Branch: Computer Science & Engineering   **Branch Code: CS**

1st Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext. Pra.	Total	
1	HSMC	HU1T002	Introduction to Computer programming	2	0	0	20	20	60	100	2
2	BSC	MA1T001	Engineering Mathematics-I	3	1	0	20	20	60	100	4
3	BSC	CS1T005	Engineering Physics	3	1	0	20	20	60	100	4
4	ESC	CS1T006	Energy and Environment	3	0	0	20	20	60	100	3
5	HSMC	HU1L002	Introduction to Computer programming Lab	0	0	4	60	0	40	100	2
6	ESC	WS1L001	Workshop Practices	0	0	4	60	0	40	100	2
7	BSC	CS1L005	Engineering Physics Lab	0	0	2	60	0	40	100	1
8			Induction Programme	3 Weeks							
9	ESC	CS1T007	Basic Electrical and Electronics Engineering	2	0	0	10	15	25	50	Audit
				13	2	10	270	95	385	750	18

2nd Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext. Pra.	Total	
1	HSMC	HU2T001	Communication Skills	2	0	0	60	0	40	100	2
2	BSC	MA2T001	Engineering Mathematics-II	3	1	0	20	20	60	100	4
3	BSC	CS2T002	Engineering Chemistry	3	1	0	20	20	60	100	4
4	ESC	CS2T003	Engineering Graphics	1	0	0	20	20	60	100	1
5	HSMC	HU2L001	Communication Skills Lab.	0	0	4	60	0	40	100	2
6	BSC	CS2L002	Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC	CS2L003	Engineering Graphics Lab	0	0	4	60	0	40	100	2
8			Societal Internship/ Field	Report submission						50	1
9	ESC	CS2T004	Basic Civil and Mechanical Engineering	2	0	0	10	15	25	50	Audit
				11	2	10	310	75	365	750	17

3rd Semester Computer Science & Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	HSMC	CS3T001	Organizational Behaviour	2	0	0	20	20	60	100	2
2	BSC	CS3T002	Mathematics-III	2	1	0	20	20	60	100	3
3	ESC	CS3T003	Programming for Problem Solving	3	0	0	20	20	60	100	3
4	HSMC	CS3T004	Universal Human Values(UHV)	2	1	0	20	20	60	100	3
5	PCC	CS3T005	Digital Electronics and Microprocessor	3	0	0	20	20	60	100	3
6	PCC	CS3T006	Data structure & Algorithms	2	1	0	20	20	60	100	3
7	PCC	CS3T007	Operating System	3	0	0	20	20	60	100	3
8	PCC	CS3L008	Digital Electronics and Microprocessor (Lab)	0	0	2	60	0	40	100	1
9	PCC	CS3L009	Data structure and Algorithms(Lab)	0	0	2	60	0	40	100	1
10	PCC	CS3L010	Web Designing (Lab)	0	0	2	60	0	40	100	1
				17	3	6	320	140	540	1000	23

4th Semester Computer Science & Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	PCC	CS4T001	Computer Architecture Organization	3	0	0	20	20	60	100	3
2	PCC	CS4T002	Java Programming	3	0	0	20	20	60	100	3
3	PCC	CS4T003	FLAT	2	1	0	20	20	60	100	3
4	PCC	CS4T004	Computer Network	3	0	0	20	20	60	100	3
5	PCC	CS4T005	Database Management Systems	3	0	0	20	20	60	100	3
6	PCC	CS4T006	Discrete Mathematics & Graph Structures	3	0	0	20	20	60	100	3
7	PCC	CS4L007	JAVA(Lab)	0	0	2	60	0	40	100	1
8	PCC	CS4L008	Computer Networks(Lab)	0	0	2	60	0	40	100	1
9	PCC	CS4L009	DBMS(Lab)	0	0	2	60	0	40	100	1
10	MC	CS4T010	Consumer Affairs	2	0	0	15	10	25	50	Audit
11	PROJECT	CS4P011	Field Training/ Industrial Visit	0	0	0	30	0	20	50	1
				19	1	6	345	130	525	1000	22

5th Semester Computer Science & Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	ESC	CS5T001	Internet Of Things	3	0	0	20	20	60	100	3
2	PCC	CS5T002	TCP/IP	3	0	0	20	20	60	100	3
3	PCC	CS5T003	Design and Analysis of Algorithm	2	1	0	20	20	60	100	3
4	PCC	CS5O001	Open Elective-1	3	1	0	20	20	60	100	4
5	PEC	CS5TE01	Elective -I	3	0	0	20	20	60	100	3
6	ESC	CS5L004	Internet Of Things (Lab)	0	0	2	60	0	40	100	1
7	PCC	CS5L005	TCP/IP(Lab)	0	0	2	60	0	40	100	1
8	PCC	CS5L006	Python Programming(Lab)	0	0	2	60	0	40	100	1
9	PROJECT	CS5P007	Mini Project	0	0	2	30	0	20	50	1
10	PROJECT	CS5P008	Field Training/ Industrial Visit	0	0	0	30	0	20	50	1
10	MC	CS5T009	Innovation and Enterpreneurship Development	2	0	0	15	10	25	50	Audit
				16	2	8	355	110	485	950	21

Open Elective-1 : OSOS (Open Source Operating System)

6th Semester Computer Science & Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC	CS6T001	Artificial Intelligence & Robotics	3	0	0	20	20	60	100	3
2	PCC	CS6T002	Neural Networks and Machine Learning	3	0	0	20	20	60	100	3
3	PEC	CS6TE02	Elective -II	3	0	0	20	20	60	100	3
4	PEC	CS6TE03	Elective-III	3	0	0	20	20	60	100	3
5	OEC	CS6O002	Open Elective-2	3	1	0	20	20	60	100	4
6	PCC	CS6L003	Neural Networks and Machine Learning(Lab)	0	0	2	60	0	40	100	1
7	PCC	CS6L004	Full Stack Development(Lab)	0	0	2	60	0	40	100	1
8	PCC	CS6L005	Advance Java Programming(LAB)	0	0	2	60	0	40	100	1
9	PROJECT	CS6P006	Mini Project	0	0	2	25	0	25	50	1
10	PROJECT	CS6P007	CRT(Campus Recruitment Traini	0	0	2	50	0	0	50	1
11	PROJECT	CS6P008	Skill Development	0	0	2	15	0	35	50	1
12	MC	CS6T009	Intellectual Property Rights	2	0	0	15	10	25	50	Audit
				17	1	12	385	110	505	1000	22

Open Elective-2 : SE (Software Engineering)

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7th Semester Computer Science & Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	ESC	CS7T001	Data Science	2	1	0	20	20	60	100	3
2	PEC	CS7TE04	Elective-IV	3	0	0	20	20	60	100	3
3	PEC	CS7TE05	Elective -V	3	0	0	20	20	60	100	3
4	OEC	CS7T002	Cyber Security & Cryptography	2	1	0	20	20	60	100	3
5	OEC	CS7O003	Open Elective -3	3	1	0	20	20	60	100	4
6	ESC	CS7L002	Cyber Security & Cryptography(Lab)	0	0	2	60	0	40	100	1
7	PCC	CS7L003	Data Science using R(Lab)	0	0	2	60	0	40	100	1
8	PROJECT	CS7P004	Project Phase I	0	0	6	75	0	75	150	5
9	MC	CS7T005	Research Methodology	2	0	0	15	10	25	50	Audit
				15	3	10	310	110	480	900	23

Open Elective-3 : PHP Development

8th Semester Computer Science & Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	PEC	CS8TE06	Elective –VI	3	0	0	20	20	60	100	3
2	OEC	CS8O004	Open Elective -4	3	1	0	20	20	60	100	4
(Sr. No. 1, 2) OR (3)											
3	PROJECT	CS8P001	Internship	0	0	0	100	0	100	200	7
4	PROJECT	CS8P002	Project phase-II	0	0	4	50	0	50	100	3
5	PEC	CS8P003	NPTEL	0	0	0	25	0	25	50	2
				6	1	4	215	0	175	350	12

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Course Title : Communication Skills
Course Code :HU1T001/ HU2T001
Pre-requisite : Basic knowledge of English
Stream   :Theory subject

Semester   : I&II
Course Type : Compulsory
L – T – P   : 2 – 0– 0
Credits   : 2

Course Objectives:

The main objective of the subject is to enhance the employability skills of engineering studentsas well as communication skills at work place.

The sub-objectives are:

1) To develop students' reading skills and pronunciation.
2) To develop technical communication skills through drafting, letter writing, and précis writing.
3) To develop literary skills through essay writing.
4) To develop public speaking skills of the students.

Course Outcomes:

At the end of the course students will be able to

1) to better reading comprehension, pronunciation, and functional English grammar.
2) to write letters and resumes
3) to organize their thoughts for effective presentation and writing.
4) to learn skills to present themselves well in an interview, and handle a Group Discussion

To expose the students to the ethics of English language by teaching grammar

Unit 1: Communication and Communication Processes   (06 hrs)

Introduction to Communication, Types and functions of Communication, Barriers to Communication and overcoming them, Role of Communication Skills in Society
Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Intensive and Extensive, Strategies for Reading Comprehension.
Listening : Importance of Listening, Types of Listening, Barriers to Listening.

Unit 2: Study of Sounds in English and Vocabulary Building   (06 hrs)

Introduction to phonetics, Study of Speech Organs, Study of Phonemic Script, Articulation of Different Sounds in English.

Vocabulary Building: The concept of Word Formation, Root words from foreign languages and their use in English, Use of prefixes and suffixes from foreign languages in English to form derivatives, Synonyms, antonyms, and standard abbreviations

Unit 3: English Grammar   (06 hrs)

Grammar: Forms of Tenses, Articles, Prepositions, Use of Auxiliaries and Modal Auxiliaries, Sentence Structures, Use of phrases and clauses in sentences, Importance of proper punctuation, Common Errors. Misplaced modifiers

Unit 4: Professional Verbal Communication   (06 hrs)

Components of an effective talk, Idea of space and time in public speaking, Tone of voice, Body language, Timing and duration of speech, Audio-Visual Aids in speech. Presentation Skills, Group Discussion and Job Interviews

Unit 5: Developing Business Writing Skills, Styles and Practice   (06 hrs)

Writing Emails, Report Writing: Format, Structure and Types, Letter Writing: Types, Parts, Layouts, Writing Job Application Letter and Resume.

Nature and Style of sensible Writing and Practice: Describing, Defining, Classifying, Providing examples or evidence, writing introduction and conclusion, Writing Practices: Comprehension, Précis Writing, Essay Writing

Text book:

Mohd. Ashraf Rizvi, Communication Skills for Engineers, Tata McGraw Hill

Reference Books:

1) Sanjay Kumar, Pushp Lata, Communication Skills, Oxford University Press, 2016
2) Meenakshi Raman, Sangeeta Sharma, Communication Skills, Oxford University Press, 2017
3) Teri Kwal Gamble, Michael Gamble, Communication Works, Tata McGraw Hill Education, 2010
4) Anderson, Kenneth. Joan Maclean and Tossny Lynch. Study Speaking: A Course in Spoken English for Academic Purposes. Cambridge: CUP, 2004.
5) Aswalthapa, K. Organisational Behaviour, Himalayan Publication, Mumbai (1991).
6) Atreya N and Guha, Effective Credit Management, MMC School of Management, Mumbai (1994).
7) Balan,K.R. and Rayudu C.S., Effective Communication, Beacon New Delhi (1996).
8) Bellare, Nirmala. Reading Strategies. Vols. 1 and 2. New Delhi. Oxford University Press, 1998.
9) Bhasker, W. W. S & Prabhu, N. S.: English through Reading, Vols. 1 and 2. Macmillan,

Course Title : Communication Skills-Lab   **Semester**   : I& II

Course Code : HU1L001/ HU2L001   **Course Type** :

Compulsory

Pre-requisite : Basics of English grammar   **L – T – P**   : 0 – 0– 4

Stream   :Theory subject   **Credits**   : 2

COURSE OBJECTIVES:

1. Apply appropriate communication skills. Students are able to enhance their employability skills as well as communication skills at work place.

2. Demonstrate knowledge of communication theory and application. Students have better reading comprehension, pronunciation, and functional English grammar.

3.Practice critical thinking to develop innovative and well-founded perspectives related to the students' emphases.

4.Build and maintain healthy and effective relationships. Students are able to write letters and resumes.

5.Use technology to communicate effectively in various settings and contexts. Students are able to organize their thoughts for effective presentation and writing.

6.Demonstrate appropriate and professional ethical behavior. Students are able to learn skills to present themselves well in an interview, and handle a Group Discussion

COURSE OUTCOMES

Students will be able to

CO1.Remember Communication Skills by giving adequate exposure in reading, writing, listening and speaking.

CO2. Understand the communication process by identifying, explaining, and applying current communication theories as they relate to a variety of contexts.

CO3. Apply proficiency, both in spoken and written English.

CO4. Analysing the communication behaviours of others and themselves in a variety of scenario (e.g. interpersonal, intercultural, group, public and professional communication, and mass media).

CO5. Evaluate and organize their thoughts for effective presentation and writing.

CO6. Improve research, organizational, and critical thinking skills by finding and evaluating reference material and organizing and presenting effective messages adapted to specific situations.

List of Practical Sessions (Any 10 PR sessions can be conducted):

1) Pronunciation, Intonation, Stress and Rhythm(02 hrs)
2) Introduction to Phonemic symbols (02 hrs)
3) Articulation of sounds in English with proper manner (02 hrs)
4) Practice and exercises on articulation of sounds (02 hrs)
5) Read Pronunciations/transcriptions from the dictionary (02 hrs)
6) Practice and exercises on pronunciations of words (02 hrs)
7) Introduce yourself (02 hrs)
8) Importance of Business Communication with the help of a case study.(02hrs)
9) Listening Skills/ Comprehension(02 hrs)
10) Common Everyday Situations: Conversations and Dialogues(02 hrs)
11) Communication at Workplace(02 hrs)
12) Rapid reading sessions (02 hrs)
13) Draft Email(02 hrs)
14) Resume Writing(02hrs)
15) Drafting Business Letter(02 hrs)
16) Preparing technical paper using IEEE format(02 hrs)
17) Extempore (02 hrs)
18) Elocution (02 hrs)
19) Group discussion (02 hrs)
20) Participating in a debate (02 hrs)
21) Presentation techniques (02 hrs)
22) Interview techniques – Job Interviews, Telephonic Interviews(02hrs)
23) Mock interviews and practice sessions(02 hrs)

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Program: B. Tech. in Computer Science & Engineering

Semester	Course Code	Name of the course	L	T	P	Credits
III	CS3T001	Organizational Behaviour	2	0	0	2

Prerequisites for the course	
1.	Universal Human Value
2.	Communication Skill

Prior Reading Material/useful links	
1.	https://www.iedunote.com/organizational-behavior
2.	https://thebusinessprofessor.com/en_US/management-leadership-organizational-behavior/organizational-behavior-definition
3.	https://www.javatpoint.com/organizational-behaviour

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Students will be able to remember various methods and terms used in different organizational behaviour models.
2	CO2	Students will be able to understand Individual as well as Group Behaviour like attitude, perception, motivation, personality, misbehaviour and emotions.
3	CO3	Students will be able to apply the Principles of Organization Behaviour through leadership, Power & Politics.
4	CO4	Students will be able to analyze the dynamics of organizational behaviour and managing change.
5	CO5	Students will be able to evaluate the importance of Advanced Communication tools and Techniques for the decision making Process.

Syllabus:

Course Contents		Hours
Unit I	**Introduction to organization Behaviour** Meaning, Fundamental concepts, Definition, Approaches to OB, Characteristics and limitations of OB, Models of OB, Impact of technology on organizational behaviour. **Organization Culture:** Meaning and dimensions, Types of organizational cultures.	5
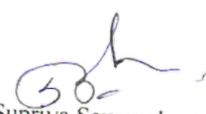
	Organizational Design, Change And Innovation	
Unit II	Designing an organizational structure, Division of labour, Delegation of authority, Span of control, Dimensions of structure, Organizational design models, Multinational Structure and Design, Virtual Organizations. **Communication**: The importance of communication, The communication process, Communicating within organizations, Interpersonal communication, Multicultural communication, Barriers to effective communication, **Technical Report Writing :** Characteristics of Technical Communication, Types of Technical Documents, Technical Writing Process.	5
Unit III	**Personality** Meaning of personality, Nature and Determinants of Personality, Personality Traits - Big Five, Locus of Control, Self-esteem, Type A/ Type B Personality, Risk Taking, Machiavellianism, Self-Monitoring, Personality and OB. **Attitude:** Attributes of personality- Transactional Analysis – Nature and dimensions of attitude – Developing the right attitude, ABC model of Attitude, Managerial Implications of Attitude	5
Unit IV	**Groups and Organizations** Groups and Teams, Group Dynamics - Groups versus teams, Nature and types of groups and teams, five stages of group/team development, **Leadership:** Leadership as a concept and its essence, Leaders versus managers, Blake and Mouton's managerial grid, Hersey and Blanchard's situational leadership, Transactional versus Transformational leadership,	5
Unit V	Power and purpose of motivation, Theories of motivation - Locke's goal setting theory, Vroom's expectancy theory, Porter and Lawler's model, Motivational Techniques **Power and Politics**: The concept of power, Sources of power, Interdepartmental power, Illusion of power, Political strategies and tactics, Ethics, power and politics, **Empowerment and Participation**: The nature of empowerment and participation, How participation works, Programs for participation, Important considerations in participation.	5

Text Books	
1.	Franklin Kuo, "Network Analysis & Synthesis", Wiley International.
2.	Govind Daryanani, "Analysis and Synthesis of Filters".
3.	Stephen P. Robbins, Timothy A. Judge, "Organisational Behaviour" Pearson Australia, 2019
4.	S. S. Khanka, "Organisational Behaviour" S. Chand Limited

Reference Books	
1.	Kendall Su, "Analog Filters", Kluwer Academic Publisher, 2nd Edition, 2002.
2.	John O' Malley, "Basic Circuit Analysis", Schaum's series.

3.	Van Valkenberg, "Network Analysis", Pearson Education
4.	Organisation Behaviour by Dr. F. C. Sharma, SBPD Publications

Useful Links	
1.	https://www.google.co.in/books/edition/ORGANIZATIONAL_BEHAVIOUR_SECOND_EDITION/HJipDwAAQBAJ?hl=en&gbpv=1&dq=organizational+behaviour+book&printsec=frontcover
2.	https://www.google.co.in/books/edition/Organizational_Behaviour/6Rj9DwAAQBAJ?hl=en&gbpv=1&dq=organizational+behaviour+book&printsec=frontcover
3.	https://www.youtube.com/watch?v=SheMhZeajyk
4.	https://www.youtube.com/watch?v=aA_ygVI0gB8

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Semester	Course Code	Name of the course	L	T	P	Credits
4th	CS4T009	Consumer Affairs	2	0	0	2

	Prerequisites for the course	
1	A basic concept of Ethics in IT	
2	A basic concept of human Universal value	

	Prior Reading Material/useful links	
1	www.consumeraffairs.nic.in	
2	www.consumeraffairs.nic.in	
3	www.iso.org	

Course Outcomes:
Students will be able to:

Sr. No	Course outcome number	CO statement
1	CO1	The student should be able to comprehend the business firms' interface with consumers
2	CO2	The student should be able to comprehend the consumer related regulatory and business environment.
3	CO3	To provides an understanding of the procedure of redress of consumer complaints,
4	CO4	It Provide different agencies in establishing product and service standards.
5	CO5	To comprehend the social framework of consumer rights and legal framework of protecting consumer rights.

Syllabus:

Course Contents	
Unit I	Consumer and Markets: Concept of Consumer, Nature of markets: Liberalization and Globalization of markets with special reference to Indian Consumer Markets, E-Commerce with reference to Indian Market, GST, and Digital consumer issues. Experiencing and Voicing Dissatisfaction: Consumer buying process, Consumer Satisfaction/Dissatisfaction-Grievances-complaint, Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process: ISO 10000 suite. **[6Hrs]**

Unit II	**Objectives and Basic Concepts**: Consumer rights and UN Guidelines on consumer protection, Consumer goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice, and restrictive trade practice. **[8Hrs]**
Unit III	**Grievance Redressal Mechanism under the Indian Consumer Protection Law** Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties. **[8Hrs]**

Unit IV	**Role of Industry Regulators in Consumer Protection**
	    i. Banking: RBI and Banking Ombudsman
	   ii. Insurance: IRDA and Insurance Ombudsman
	  iii. Telecommunication: TRAI
	  iv. Food Products: FSSAI
	   v. Electricity Supply: Electricity Regulatory Commission
	  vi. Real Estate Regulatory Authority **[7Hrs]**

	Text Books
1	Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. (2007) *ConsumerAffairs,* Universities Press.
2	Choudhary, Ram Naresh Prasad (2005). *Consumer Protection Law Provisions andProcedure,* Deep and Deep Publications Pvt Ltd.
3	Empowering Consumers e-book, ebook, www.bis.org

	Reference Books
1	Misra Suresh, (Aug 2017) "Is the Indian Consumer Protected? One India One People
2	Raman Mittal, Sonkar Sumit and Parineet Kaur (2016) Regulating Unfair Trade Practices: An Analysis of the Past and Present Indian Legislative Models, Journal ofConsumer Policy.
3	Chakravarthy, S. (2014). MRTP Act metamorphoses into Competition Act. CUTSInstitute for Regulation and Competition position paper. Available online at www.cuts-international.org/doc01.doc.

	Useful links
1	www.bis.org
2	www.consumeraffairs.nic.in

Semester	Course Code	Name of the course	L	T	P	Credits
5th	CS5T009	Innovation and Entrepreneurship Development	2	0	0	2

Prerequisites for the course	
1	Business Communication

Prior Reading Material/useful links	
1	https://www.nextiva.com/blog/what-is-business-communication.html

Course Outcomes:
Students will be able to:

Sr. No	Course outcome number	CO statement
1	CO1	To gain an expansive and deep appreciation of entrepreneurship and its pivotal role in the economy.
2	CO2	To approach entrepreneurship with clarity and focus, and an enhanced understanding of the key success factors as well as possible risks and potential mitigation strategies.
3	CO3	To navigate the opportunities and challenges of entrepreneurship more effectively with the additional insights available.
4	CO4	To evaluate the key factors needed to develop a successful business
5	CO5	To recognize the value of problem-solving, effective business management

Syllabus:

Course Contents	
Unit I	Entrepreneurial Journey, Entrepreneurial Discovery, Ideation, and Prototyping **[4hrs]**
Unit II	Testing, Validation, and Commercialisation, Disruption as a Success Driver, Technological Innovation and Entrepreneurship – 1, Technological Innovation and Entrepreneurship – 2 **[6 hrs]**
Unit III	Raising Financial Resources, Education and Entrepreneurship, Beyond Founders and Founder-Families **[4 hrs]**
Unit IV	India as a Start-up Nation, National Entrepreneurial Culture **[4 hrs]**
Unit V	Entrepreneurial Thermodynamics, Entrepreneurship and Employment. Start-up Case Studies. **[6 hrs]**
Text Books	
1	Innovation and Entrepreneurship: Practice and Principles by Peter F Drucker
2	The Innovator's Solution: Creating and Sustaining Successful Growth by Clayton M Christensen
Reference Books	
1	Zero to One: Notes on Startups, or How the Build the Future by Peter Thiel
2	The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses by Eric Ries

Useful links	
1	https://www.lakeforest.edu/academics/majors-and-minors/entrepreneurship-and-innovation/student-learning-
2	https://www.indeed.com/career-advice/career-development/innovative-

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1st Semester (AI)

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	HSMC	HU1T002	Introduction to Computer programming	2	0	0	20	20	60	100	2
2	BSC	MA1T001	Engineering Mathematics- I	3	1	0	20	20	60	100	4
3	BSC	AI1T005	Engineering Physics	3	1	0	20	20	60	100	4
4	ESC	AI1T006	Energy and Environment Engineering	3	0	0	20	20	60	100	3
5	HSMC	HU1L002	Introduction to Computer programming Lab	0	0	4	60	0	40	100	2
6	ESC	AI1L001	Workshop Practices	0	0	4	60	0	40	100	2
7	BSC	AI1L005	Engineering Physics Lab	0	0	2	60	0	40	100	1
8			Induction Programme	3 Weeks							
9	ESC	AI1T008	Introduction to AI and its Application	2	0	0	10	15	25	50	Audit
				13	2	10					18

2nd Semester (AI)

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	HSMC	HU2T001	Communication Skills	2	0	0	60	0	40	100	2
2	BSC	MA2T001	Engineering Mathematics-II	3	1	0	20	20	60	100	4
3	BSC	AI2T002	Engineering Chemistry	3	1	0	20	20	60	100	4
4	ESC	AI2T003	Engineering Graphics	1	0	0	20	20	60	100	1
5	HSMC	HU2L001	Communication Skills Lab.	0	0	4	60	0	40	100	2
6	BSC	AI2L002	Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC	AI2L003	Engineering Graphics Lab	0	0	4	60	0	40	100	2
8			Societal Internship/ Field Training	Report submission						50	1
9	ESC	AI2T009	Introduction to Drones	2	0	0	10	15	25	50	Audit
				11	2	10					17

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3rd Semester Artificial Intelligence

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	HSMC	AI3T001	Organization Behaviour	2	0	0	20	20	60	100	2
2	HSMC	AI3T002	Universal Human Rights	2	1	0	20	20	60	100	3
3	BSC	AI3T003	Mathematics-III	2	1	0	20	20	60	100	3
4	ESC	AI3T004	Statistical Data Analysis	3	0	0	20	20	60	100	3
5	PCC	AI3T005	Computer Architecture and Organisation	3	0	0	20	20	60	100	3
6	PCC	AI3T006	Internet of Things	2	1	0	20	20	60	100	3
7	PCC	AI3T007	Data Structure & Algorithm	2	1	0	20	20	60	100	3
8	ESC	AI3L008	Introduction to IoT (Lab)	0	0	2	60	0	40	100	1
9	ESC	AI3L009	DSA (Lab)	0	0	2	60	0	40	100	1
10	ESC	AI3L010	Data Analytics (Lab)	0	0	2	60	0	40	100	1
				16	4	6	320	140	540	1000	23

4th Semester Artificial Intelligence

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC	AI4T001	Theory of Computation	2	1	0	20	20	60	100	3
2	PCC	AI4T002	Design & Analysis of Algorithm	2	1	0	20	20	60	100	3
3	PCC	AI4T003	Operating System & Virtualization	3	0	0	20	20	60	100	3
4	PCC	AI4T004	Neural Networks & Fuzzy System	3	0	0	20	20	60	100	3
5	PCC	AI4T005	Discrete Mathematics & Graph Structures	3	0	0	20	20	60	100	3
6	PCC	AI4T006	Database Management Systems	3	0	0	20	20	60	100	3
7	PCC	AI4L007	Introduction to Robotics-(Lab)	0	0	2	60	0	40	100	1
8	PCC	AI4L008	Neural Networks & Fuzzy System (Lab)	0	0	2	60	0	40	100	1
9	PCC	AI4L009	DBMS-(Lab)	0	0	2	60	0	40	100	1
10	MC	AI4T010	Consumer Affairs	2	0	0	10	15	25	50	Audit
11	PROJECT	AI4P011	Field Training/ Industrial Visit	0	0	0	30	0	20	50	1
				18	2	6	340	135	525	1000	22

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5th Semester Artificial Intelligence

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC	AI5T001	AI & Cognitive Robotics	3	0	0	20	20	60	100	3
2	PCC	AI5T002	Digital Image Techniques and Analysis	2	1	0	20	20	60	100	3
3	PCC	AI5T003	Machine Learning & Deep Learning	2	1	0	20	20	60	100	3
4	PCC	AI5O001	Open Elective -I	3	0	0	20	20	60	100	3
5	PEC	AI5TE01	Elective -I	3	0	0	20	20	60	100	3
6	PCC	AI5L004	Machine Learning & Deep Learning (Lab)	0	0	2	60	0	40	100	1
7	PCC	AI5L005	Digital Image Techniques and Analysis (Lab)	0	0	2	60	0	40	100	1
8	PCC	AI5L006	AI & Cognitive Robotics (Lab)	0	0	2	60	0	40	100	1
9	PROJECT	AI5P007	Mini Project	0	0	2	0	0	50	50	1
10	PROJECT	AI5P008	Field Training/ Industrial Visit	0	0	0	30	0	20	50	1
11	IED	AI5T008	Innovation and Enterprenership Development	2	0	0	10	15	25	50	Audit
				15	2	8	290	115	495	900	21

Open Elective 1: Ethics in IT

6th Semester Artificial Intelligence

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC	AI6T001	Advanced Computer Vision	2	1	0	20	20	60	100	3
2	ESC	AI6T002	Data Science	2	1	0	20	20	60	100	3
3	PEC	AI6TE02	Elective -II	3	0	0	20	20	60	100	3
4	PEC	AI6TE03	Elective-III	3	0	0	20	20	60	100	3
5	OEC	AI6O002	Open Elective-II	3	1	0	20	20	60	100	4
6	PCC	AI6L003	Data Science Using R -Lab	0	0	2	60	0	40	100	1
7	PCC	AI6L004	Advanced Computer Vision (Lab)	0	0	2	60	0	40	100	1
8	PCC	AI6L005	Big Data Tools & Techniques(LAB)	0	0	2	60	0	40	100	1
9	PROJECT	AI6P006	Mini Project	0	0	2	25	0	25	50	1
10	PROJECT	AI6P007	CRT(Campus Recruitment Traini	0	0	2	60	0	40	100	1
11	PROJECT	AI6P008	Skill Development	0	0	2	15	0	35	50	1
12	IPR	AI6T007	Intellectual Property Rights	2	0	0	10	15	25	50	Audit
				15	3	12	390	115	545	1050	22

Open Elective 2: Object Oriented Methodology

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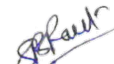
7th Semester Artificial Intelligence

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC	AI7T001	AI in Intelligence Systems	3	0	0	20	20	60	100	3
2	PEC	AI7TE04	Elective-IV	3	0	0	20	20	60	100	3
3	PEC	AI7TE05	Elective -V	3	0	0	20	20	60	100	3
4	PCC	AI7T002	Sequential NLP	3	0	0	20	20	60	100	3
5	OEC	AI7O003	Open Elective-III	3	1	0	20	20	60	100	4
6	PCC	AI7L003	AI in Intelligence System-Lab	0	0	2	60	0	40	100	1
7	PCC	AI7L004	Data Security & Privacy (Lab)	0	0	2	60	0	40	100	1
8	PROJECT	AI7P005	Project phase-I	0	0	6	75	0	75	150	5
9	RM	AI7T006	Research Methedology	2	0	0	10	15	25	50	Audit
				17	**1**	**10**	**305**	**115**	**480**	**900**	**23**

8th Semester Artificial Intelligence

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PEC	AI8TE06	Elective –VI	3	0	0	20	20	60	100	3
2	OEC	AI8O004	Open Elective -IV	3	1	0	20	20	60	100	4
(Sr. No. 1, 2) OR (3)											
3	PROJECT	AI8P001	Internship	0	0	0	100	0	100	200	7
4	PROJECT	AI8P002	Project phase-II	0	0	4	50	0	50	100	3
5	PEC	AI8P003	NPTEL	0	0	0	25	0	25	50	2
				6	**1**	**4**	**215**	**0**	**175**	**350**	**12**

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Course Title	: Communication Skills	Semester	: I&II
Course Code	: HU1T001/ HU2T001	Course Type	: Compulsory
Pre-requisite	: Basic knowledge of English	L – T – P	: 2 – 0– 0
Stream	: Theory subject	Credits	: 2

Course Objectives:

The main objective of the subject is to enhance the employability skills of engineering studentsas well as communication skills at work place.

The sub-objectives are:

1) To develop students' reading skills and pronunciation.
2) To develop technical communication skills through drafting, letter writing, and précis writing.
3) To develop literary skills through essay writing.
4) To develop public speaking skills of the students.

Course Outcomes:

At the end of the course students will be able to

1) to better reading comprehension, pronunciation, and functional English grammar.
2) to write letters and resumes
3) to organize their thoughts for effective presentation and writing.
4) to learn skills to present themselves well in an interview, and handle a Group Discussion

To expose the students to the ethics of English language by teaching grammar

Unit 1: Communication and Communication Processes (06 hrs)

Introduction to Communication, Types and functions of Communication, Barriers to Communication and overcoming them, Role of Communication Skills in Society
Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Intensive and Extensive, Strategies for Reading Comprehension.
Listening : Importance of Listening, Types of Listening, Barriers to Listening.

Unit 2: Study of Sounds in English and Vocabulary Building (06 hrs)

Introduction to phonetics, Study of Speech Organs, Study of Phonemic Script, Articulation of Different Sounds in English.

Vocabulary Building: The concept of Word Formation, Root words from foreign languages and their use in English, Use of prefixes and suffixes from foreign languages in English to form derivatives, Synonyms, antonyms, and standard abbreviations

Unit 3: English Grammar (06 hrs)

Grammar: Forms of Tenses, Articles, Prepositions, Use of Auxiliaries and Modal Auxiliaries, Sentence Structures, Use of phrases and clauses in sentences, Importance of proper punctuation, Common Errors. Misplaced modifiers

Unit 4: Professional Verbal Communication (06 hrs)

Components of an effective talk, Idea of space and time in public speaking, Tone of voice, Body language, Timing and duration of speech, Audio-Visual Aids in speech. Presentation Skills, Group Discussion and Job Interviews

Unit 5: Developing Business Writing Skills, Styles and Practice (06 hrs)

Writing Emails, Report Writing: Format, Structure and Types, Letter Writing: Types, Parts, Layouts, Writing Job Application Letter and Resume.
Nature and Style of sensible Writing and Practice: Describing, Defining, Classifying, Providing examples or evidence, writing introduction and conclusion, Writing Practices: Comprehension, Précis Writing, Essay Writing

Text book:

Mohd. Ashraf Rizvi, Communication Skills for Engineers, Tata McGraw Hill

Reference Books:

1) Sanjay Kumar, Pushp Lata, Communication Skills, Oxford University Press, 2016
2) Meenakshi Raman, Sangeeta Sharma, Communication Skills, Oxford University Press, 2017
3) Teri Kwal Gamble, Michael Gamble, Communication Works, Tata McGraw Hill Education, 2010
4) Anderson, Kenneth. Joan Maclean and Tossny Lynch. Study Speaking: A Course in Spoken English for Academic Purposes. Cambridge: CUP, 2004.
5) Aswalthapa, K. Organisational Behaviour, Himalayan Publication, Mumbai (1991).
6) Atreya N and Guha, Effective Credit Management, MMC School of Management, Mumbai (1994).
7) Balan,K.R. and Rayudu C.S., Effective Communication, Beacon New Delhi (1996).
8) Bellare, Nirmala. Reading Strategies. Vols. 1 and 2. New Delhi. Oxford University Press, 1998.
9) Bhasker, W. W. S & Prabhu, N. S.: English through Reading, Vols. 1 and 2. Macmillan,

Course Title : Communication Skills-Lab   **Semester** : I& II

Course Code : HU1L001/ HU2L001   **Course Type** :
Compulsory

Pre-requisite : Basics of English grammar   **L – T – P** : 0 – 0– 4

Stream :Theory subject   **Credits** : 2

COURSE OBJECTIVES:

1. Apply appropriate communication skills. Students are able to enhance their employability skills as well as communication skills at work place.

2. Demonstrate knowledge of communication theory and application. Students have better reading comprehension, pronunciation, and functional English grammar.

3.Practice critical thinking to develop innovative and well-founded perspectives related to the students' emphases.

4.Build and maintain healthy and effective relationships. Students are able to write letters and resumes.

5.Use technology to communicate effectively in various settings and contexts. Students are able to organize their thoughts for effective presentation and writing.

6.Demonstrate appropriate and professional ethical behavior. Students are able to learn skills to present themselves well in an interview, and handle a Group Discussion

COURSE OUTCOMES

Students will be able to

CO1.Remember Communication Skills by giving adequate exposure in reading, writing, listening and speaking.

CO2. Understand the communication process by identifying, explaining, and applying current communication theories as they relate to a variety of contexts.

CO3. Apply proficiency, both in spoken and written English.

CO4. Analysing the communication behaviours of others and themselves in a variety of scenario (e.g. interpersonal, intercultural, group, public and professional communication, and mass media).

CO5. Evaluate and organize their thoughts for effective presentation and writing.

CO6. Improve research, organizational, and critical thinking skills by finding and evaluating reference material and organizing and presenting effective messages adapted to specific situations.

List of Practical Sessions (Any 10 PR sessions can be conducted):

1) Pronunciation, Intonation, Stress and Rhythm(02 hrs)
2) Introduction to Phonemic symbols (02 hrs)
3) Articulation of sounds in English with proper manner (02 hrs)
4) Practice and exercises on articulation of sounds (02 hrs)
5) Read Pronunciations/transcriptions from the dictionary (02 hrs)
6) Practice and exercises on pronunciations of words (02 hrs)
7) Introduce yourself (02 hrs)
8) Importance of Business Communication with the help of a case study.(02hrs)
9) Listening Skills/ Comprehension(02 hrs)
10) Common Everyday Situations: Conversations and Dialogues(02 hrs)
11) Communication at Workplace(02 hrs)
12) Rapid reading sessions (02 hrs)
13) Draft Email(02 hrs)
14) Resume Writing(02hrs)
15) Drafting Business Letter(02 hrs)
16) Preparing technical paper using IEEE format(02 hrs)
17) Extempore (02 hrs)
18) Elocution (02 hrs)
19) Group discussion (02 hrs)
20) Participating in a debate (02 hrs)
21) Presentation techniques (02 hrs)
22) Interview techniques – Job Interviews, Telephonic Interviews(02hrs)
23) Mock interviews and practice sessions(02 hrs)

Program: B.Tech. in Artificial Intelligence

Semester	Course Code	Name of the course	L	T	P	Credits
III	AI3T001	Organizational Behaviour	2	0	0	2

Prerequisites for the course	
1.	Communication skills (verbal and written)
2.	Honesty/integrity.
3.	Interpersonal skills (relates well to others)

Prior Reading Material/useful links	
1.	http://catalog.umd.umich.edu/graduate/coursesaz/ob/ob.pdf

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Students will be able to remember various methods and terms used in different organizational behaviour models.
2	CO2	Students will be able to understand Individual as well as Group Behaviour like attitude, perception, motivation, personality, misbehaviour and emotions.
3	CO3	Students will be able to apply the Principles of Organization Behaviour through leadership, Power & Politics.
4	CO4	Students will be able to analyse the dynamics of organizational behaviour and managing change.
5	CO5	Students will be able to evaluate the importance of Advanced Communication tools and Techniques for the decision-making Process.

Syllabus:

Course Contents		Hours
Unit I	**Introduction to organization Behaviour** Meaning, Fundamental concepts, Definition, Approaches to OB, Characteristics and limitations of OB, Challenges and Opportunities of OB, Models of OB, Impact of technology on organizational behaviour. **Organization Culture** Meaning and dimensions, Role of founders' values and vision in creating and sustaining culture, Types of organizational cultures, Impact of culture on image and performance of the organization. **[7Hrs]**	
Unit II	**Organizational Design, Change and Innovation** Designing an organizational structure, Division of labour, Delegation of authority, Departmental biases, Span of control, Dimensions of structure, Organizational design models, Multinational Structure and Design, Virtual Organizations. **Communication**: The importance of communication, the communication process, communicating within organizations, Information richness, how technology affects communication, Interpersonal communication, Multicultural communication, Barriers	

	to effective communication, Improving Communication in organizations, Promoting ethical communications **Technical Report Writing:** Characteristics of Technical Communication, Types of Technical Documents, Establishing Goals in Technical Writing, Technical Writing Process: Prewriting, writing, rewriting, Examples of Industries user manuals. **[6 Hrs]**
Unit III	**Personality** Meaning of personality, Nature and Determinants of Personality, Personality Traits - Big Five, Locus of Control, Self-esteem, Type A/ Type B Personality, Risk Taking, Machiavellianism, Self-Monitoring, Personality and OB. **Attitude:** Attributes of personality- Transactional Analysis – Ego states – Johari window - Nature and dimensions of attitude – Developing the right attitude, ABC model of Attitude, Managerial Implications of Attitude **[6Hrs]**
Unit IV	**Groups and Organizations** Groups and Teams, Group Dynamics - Groups versus teams, Nature and types of groups and teams, five stages of group/team development, Determinants of group behaviour, Typical teams in organizations. **Leadership:** Leadership as a concept and its essence, Leaders versus managers, Blake and Mouton's managerial grid, Hersey and Blanchard's situational leadership, Transactional versus Transformational leadership, Women as leaders, Leadership in entrepreneurial and family business, organizations. **[7 Hrs]**
Unit V	**Motivation** Power and purpose of motivation, Theories of motivation - Locke's goal setting theory, Vroom's expectancy theory, Porter and Lawler's model, Adam's equity theory, McClelland's theory of needs, Motivational Techniques – Job design/enlargement /enrichment / rotation, Managing rewards - Job status based rewards, Competency based rewards, performance based rewards, Empowerment and Self-Managed Teams. **Power and Politics**: The concept of power, Sources of power, Interdepartmental power, Illusion of power, Political strategies and tactics, Ethics, power and politics, using power to manage effectively. **Empowerment and Participation**: The nature of empowerment and participation, How participation works, Programs for participation, Important considerations in participation. **[6 Hrs]**

Text Books	
1.	V.G.Kondalkar , "Organization Behaviors" , New Age International Publisher,2007.
2.	Uma Sekaran, "Organization Behaviors" , McGraw Hill Company, New Delhi ,2011.
3.	Nair, Banerjee, Agarwal , "Organization Behaviors" , PrgathiPrakashan, New Delhi,2006.

Reference Books

1.	.LM Prasad , "Organization Behavior", S. Chand and Co. Ltd, New Delhi,2008.
2.	S.S. Khanka , " Organization Behavior", S. Chand and Co. Ltd, New Delhi , 2008
3.	Fred Luthans , " Organization Behavior",McGraw Hill Book Co,2005

Useful Links	
1.	http://catalog.umd.umich.edu/graduate/coursesaz/ob/ob.pdf
2.	https://www.investopedia.com/terms/o/organizational-behavior.asp
3.	https://onlinecourses.swayam2.ac.in/cec20_mg03/preview

Semester	Course Code	Name of the course	L	T	P	Credits
4th	AI4T010	Consumer Affairs	2	0	0	2

Prerequisites for the course	
1	A basic concept of Ethics in IT
2	A basic concept of human Universal value

Prior Reading Material/useful links	
1	www.consumeraffairs.nic.in
2	www.consumeraffairs.nic.in
3	www.iso.org

Course Outcomes:

Students will be able to:

Sr. No	Course outcome number	CO statement
1	CO1	The student should be able to comprehend the business firms' interface with consumers
2	CO2	The student should be able to comprehend the consumer related regulatory and business environment.
3	CO3	To provides an understanding of the procedure of redress of consumer complaints,
4	CO4	It Provide different agencies in establishing product and service standards.
5	CO5	To comprehend the social framework of consumer rights and legal framework of protecting consumer rights.

Syllabus:

Course Contents	
Unit I	Consumer and Markets: Concept of Consumer, Nature of markets: Liberalization and Globalization of markets with special reference to Indian Consumer Markets, E-Commerce with reference to Indian Market, GST, and Digital consumer issues. Experiencing and Voicing Dissatisfaction: Consumer buying process, Consumer Satisfaction/Dissatisfaction-Grievances-complaint, Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process: ISO 10000 suite. **[6Hrs]**

Unit II	**Objectives and Basic Concepts**: Consumer rights and UN Guidelines on consumer protection, Consumer goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice, and restrictive trade practice. **[8Hrs]**
Unit III	**Grievance Redressal Mechanism under the Indian Consumer Protection Law** Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties. **[8Hrs]**

Unit IV	**Role of Industry Regulators in Consumer Protection**
	  i. Banking: RBI and Banking Ombudsman
	  ii. Insurance: IRDA and Insurance Ombudsman
	  iii. Telecommunication: TRAI
	  iv. Food Products: FSSAI
	  v. Electricity Supply: Electricity Regulatory Commission
	  vi. Real Estate Regulatory Authority **[7Hrs]**

	Text Books
1	Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. (2007) *ConsumerAffairs,* Universities Press.
2	Choudhary, Ram Naresh Prasad (2005). *Consumer Protection Law Provisions andProcedure,* Deep and Deep Publications Pvt Ltd.
3	Empowering Consumers e-book, ebook, www.bis.org

	Reference Books
1	Misra Suresh, (Aug 2017) "Is the Indian Consumer Protected? One India One People
2	Raman Mittal, Sonkar Sumit and Parineet Kaur (2016) Regulating Unfair Trade Practices: An Analysis of the Past and Present Indian Legislative Models, Journal ofConsumer Policy.
3	Chakravarthy, S. (2014). MRTP Act metamorphoses into Competition Act. CUTSInstitute for Regulation and Competition position paper. Available online at www.cuts-international.org/doc01.doc.

	Useful links
1	www.bis.org
2	www.consumeraffairs.nic.in

Semester	Course Code	Name of the course	L	T	P	Credits
5th	AI5T008	Innovation and Entrepreneurship Development	2	0	0	2

Prerequisites for the course	
1	Business Communication

Prior Reading Material/useful links	
1	https://www.nextiva.com/blog/what-is-business-communication.html

Course Outcomes:
Students will be able to:

Sr. No	Course outcome number	CO statement
1	CO1	To gain an expansive and deep appreciation of entrepreneurship and its pivotal role in the economy.
2	CO2	To approach entrepreneurship with clarity and focus, and an enhanced understanding of the key success factors as well as possible risks and potential mitigation strategies.
3	CO3	To navigate the opportunities and challenges of entrepreneurship more effectively with the additional insights available.
4	CO4	To evaluate the key factors needed to develop a successful business
5	CO5	To recognize the value of problem-solving, effective business management

Syllabus:

Course Contents	
Unit I	Entrepreneurial Journey, Entrepreneurial Discovery, Ideation, and Prototyping **[4hrs]**
Unit II	Testing, Validation, and Commercialisation, Disruption as a Success Driver, Technological Innovation and Entrepreneurship – 1, Technological Innovation and Entrepreneurship – 2 **[6 hrs]**
Unit III	Raising Financial Resources, Education and Entrepreneurship, Beyond Founders and Founder-Families **[4 hrs]**
Unit IV	India as a Start-up Nation, National Entrepreneurial Culture **[4 hrs]**
Unit V	Entrepreneurial Thermodynamics, Entrepreneurship and Employment. Start-up Case Studies. **[6 hrs]**
Text Books	
1	Innovation and Entrepreneurship: Practice and Principles by Peter F Drucker
2	The Innovator's Solution: Creating and Sustaining Successful Growth by Clayton M Christensen
Reference Books	
1	Zero to One: Notes on Startups, or How the Build the Future by Peter Thiel
2	The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses by Eric Ries

Useful links	
1	https://www.lakeforest.edu/academics/majors-and-minors/entrepreneurship-and-innovation/student-learning-
2	https://www.indeed.com/career-advice/career-development/innovative-

Prof. Swati Raut
Chairman, AI
BOS, Artificial intelligence
JDCOEM, Nagpur

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JAIDEV EDUCATION SOCIETY'S
J D COLLEGE OF ENGINEERING AND MANAGEMENT
KATOL ROAD, NAGPUR
An Autonomous Institute, with NAAC "A" Grade
Department Of Electrical Engineering
"Igniting minds to illuminate the world"
2020-21 (Odd Sem)

VISION	MISSION
"To develop competent and committed Electrical Engineers to serve the society"	1. To impart quality education in the field of Electrical Engineering. 2. To be excellent learning centre through research and industry interaction.

Teaching Scheme

Branch code: EE

I Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext. Pra.	Total	
1	HSMC	HU2T001	Communication Skills	2	0	0	60	0	40	100	2
2	BSC	MA2T001	Engineering Mathematics- I	3	1	0	20	20	60	100	4
3	BSC	EE2T002	Engineering Chemistry	3	1	0	20	20	60	100	4
4	ESC	EE2T003	Engineering Graphics	1	0	0	20	20	60	100	1
5	HSMC	HU2L001	Communication Skills Lab.	0	0	4	60	0	40	100	2
6	BSC	EE2L002	Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC	EE2L003	Engineering Graphics Lab	0	0	4	60	0	40	100	2
8			Induction Programme	3 Weeks							
9	ESC	EE2T004	Basic Civil and Mechanical Engineering	2	0	0	10	15	25	50	Audit
				11	2	10					16

II Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext. Pra.	Total	
1	HSMC	HU1T002	Introduction to Computer programming	2	0	0	20	20	60	100	2
2	BSC	MA1T001	Engineering Mathematics- II	3	1	0	20	20	60	100	4
3	BSC	EE1T005	Engineering Physics	3	1	0	20	20	60	100	4
4	ESC	EE1T006	Energy and Environment Engineering	3	0	0	20	20	60	100	3
5	HSMC	HU1L002	Introduction to Computer programming Lab	0	0	4	60	0	40	100	2
6	ESC	WS1L001	Workshop Practices	0	0	4	60	0	40	100	2
7	BSC	EE1L005	Engineering Physics Lab	0	0	2	60	0	40	100	1
8			Societal Internship/ Field Training	Report submission						50	1
9	ESC	EE1T007	Basic Electrical and Electronics Engineering	2	0	0	10	15	25	50	Audit
				13	2	10					19
				25							

III Semester

Sr. No.	Subject Category	Subject Code	Course Title	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	TOTAL	
1	HSMC	EE3T001	Engineering Economics	2	0	0	20	20	60	100	2
2	BSC	EE3T002	Engineering Mathematics –III	3	1	0	20	20	60	100	4
3	ESC	EE3T003	Fundamentals of Electrical Engineering	2	1	0	20	20	60	100	3
4	PCC-EE	EE3T004	Network Analysis	3	0	0	20	20	60	100	3
5	PCC-EE	EE3T005	Electrical Machine I	3	1	0	20	20	60	100	4
6	PCC-EE	EE3T006	Measurement and Instrumentation	2	1	0	20	20	60	100	3
7	PCC-EE	EE3L004	Network Analysis Lab	0	0	2	60	0	40	100	1
8	PCC-EE	EE3L005	Electrical Machine I Lab	0	0	2	60	0	40	100	1
9	PCC-EE	EE3L006	Measurement and Instrumentation Lab	0	0	2	60	0	40	100	1
10	PROJ-EE	EE3P001	Field training/ Industrial visit	0	0	0	0	0	50	50	1
11	HSMC	EE3T007	Universal Human Values -II	3	0	0	10	15	25	50	3
				18	4	6	310	135	555	1000	
									Total Credits		26

IV Semester

Sr. No.	Subject Category	Subject Code	Course Title	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	TOTAL	
1	BSC	EE4T001	Numerical method and probability	2	1	0	20	20	60	100	3
2	ESC	EE4T002	Power Station Practice	4	0	0	20	20	60	100	4
3	PCC-EE	EE4T003	Electronic Devices and circuits	3	0	0	20	20	60	100	3
4	PCC-EE	EE4T004	Power System I	2	1	0	20	20	60	100	3
5	PCC-EE	EE4T005	Electrical Machine II	3	0	0	20	20	60	100	3
6	BSC	EE4L001	Numerical method and probability Lab	0	0	2	60	0	40	100	1
7	PCC-EE	EE4L004	Power System I Lab	0	0	2	60	0	40	100	1
8	PCC-EE	EE4L005	Electrical Machine II Lab	0	0	2	60	0	40	100	1
9	PROJ-EE	EE4P002	Field trainning/ Internship/ industrial visit	0	0	0	0	0	50	50	1
10	MC	EE4T007	Innovation and entrepreneurship Development	2	0	0	10	15	25	50	Audit
				16	2	6	290	115	495	900	
									Total Credits		20

V Semester

Sr. No.	Subject Category	Subject Code	Course Title	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	TOTAL	
1	PCC-EE	EE5T001	Power Electronics	3	0	0	20	20	60	100	3
2	PCC-EE	EE5T002	Control System I	3	1	0	20	20	60	100	4
3	PCC-EE	EE5T003	Power System II	3	0	0	20	20	60	100	3
4	PEC-EE	EE5E001	**Elective I**	3	0	0	20	20	60	100	3
5	PEC-EE	EE5E002	**Elective II**	3	0	0	20	20	60	100	3
6	OEC-EE	EE5O001	**Open Elective I**	4	0	0	20	20	60	100	4
7	PCC-EE	EE5L001	Power Electronics Lab	0	0	2	60	0	40	100	1
8	PCC-EE	EE5L002	Control System I Lab	0	0	2	60	0	40	100	1
9	PCC-EE	EE5L003	Power System II Lab	0	0	2	60	0	40	100	1
10	PROJ-EE	EE5P003	Mini Project/Seminar (Phase I)	0	0	2	30	0	20	50	1
11	MC	EE5T004	Consumer Affairs	2	0	0	10	15	25	50	Audit
				21	**1**	**8**	**340**	**135**	**525**	**1000**	
								Total Credits			**24**

VI Semester

Sr. No.	Subject Category	Subject Code	Course Title	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	TOTAL	
1	PCC-EE	EE6T001	Microprocessor and microcontroller	3	0	0	20	20	60	100	3
2	PCC-EE	EE6T002	Advance Control System	3	0	0	20	20	60	100	3
3	PEC-EE	EE6E003	**Elective III**	3	0	0	20	20	60	100	3
4	PEC-EE	EE6E004	**Elective IV**	3	0	0	20	20	60	100	3
5	OEC-EE	EE6O002	**Open Elective II**	4	0	0	20	20	60	100	4
6	PCC-EE	EE6L001	Microprocessor and microcontroller Lab	0	0	2	60	0	40	100	1
7	PCC-EE	EE6L003	Computer Aided Design Lab	0	0	2	60	0	40	100	1
8	PROJ-EE	EE6P004	Mini Project/Seminar(phase II)	0	0	2	30	0	20	50	1
9	PROJ-EE	EE6P005	Campus Recruitment Training(CRT)	0	0	2	50	0	0	50	1
10	PROJ-EE	EE6P006	Skill Development Courses	0	0	2	15	0	35	50	1
11	MC	EE6T003	Research Methodology	2	0	0	10	15	25	50	Audit
				15	**0**	**10**	**305**	**95**	**400**	**800**	
								Total Credits			**21**

Prof. A. V.Joshi
Member Secretary
Board of Studies, EE Dept

Dr.S.R.Vaishnav
Chairman
Board of Studies, EE Dept

Dr. Babasaheb Ambedkar Technological University, Lonere.

B.Tech (Electrical Engineering / Electrical Engineering (Electronics and Power)/ Electrical & Electronics Engg / Electrical & Power Engineering)

Curriculum for Semester VII [Final Year]

Sr. No.	Course Code	Type of Course	Course Title	Hours per week			Evaluation Scheme			Total Marks	Credits
				L	T	P	MSE	CA	ESE		
1	BTEEC701	PCC1	Power System Operation & Control	3	0	0	20	20	60	100	3
2	BTEEC702	PCC2	High Voltage Engineering	3	0	0	20	20	60	100	3
3	BTEEC703	PCC3	Electrical Drives	3	0	0	20	20	60	100	3
4	BTEEE704	PEC1	Elective-IX	3	0	0	20	20	60	100	3
5	BTEEE705	PEC2	Elective-X	3	0	0	20	20	60	100	3
6	BTEEL706	Lab	Power System Operation & Control Lab	0	0	2	--	30	20	50	1
7	BTEEL707	Lab	High Voltage Engineering Lab	0	0	2	--	30	20	50	1
8	BTEEL708	Lab	Electrical Drives Lab	0	0	2	--	30	20	50	1
9	BTEES709	Seminar	Seminar	0	0	2	--	30	20	50	1
10	BTEEP710	Project	Project Part-I	0	0	6	--	30	20	50	3
11	BTEEF711	--	Field Training /Internship/Industrial Training III	--	--	--	--	--	50	50	1
			Total	15	0	14	100	250	450	800	23

Elective-IX	Elective-X
A) Special Purpose Electrical Machines	A) Digital Signal Processing
B) Electrical Traction and Utilization	B) Energy Audit and Conservation
C) Engineering System Design and Optimization	C) Electrical Power Quality
D) Financial Management	D) HVDC Transmission and FACTS

Dr. Babasaheb Ambedkar Technological University, Lonere.

B.Tech (Electrical Engineering / Electrical Engineering (Electronics and Power)/ Electrical & Electronics Engg / Electrical & Power Engineering)

Curriculum for Semester VIII [Final Year]

Sr. No.	Course Code	Course Title	Hours per week			Evaluation Scheme			Total Marks	Credits
			L	T	P	MSE	CA	ESE		
		1.Power Management Integrated Circuits 2.DC Power Transmission Systems 3.High Power Multilevel Converters 4.Fuzzy Sets, Logic and Systems & Applications 5.The Joy of Computing using Python 6.Introduction to Industry 4.0 and Industrial Internet of Things 7.Entrepreneurship Essentials **# Student to opt any two subjects from above list**	3	0	0	20*	20*	60*	100	3
			3	0	0	20*	20*	60*	100	3
6	BTEEP803	Project - II	0	0	30	--	100	150	250	15
		Total	**6**	**0**	**30**	**40**	**240**	**270**	**450**	**21**

Six months of Internship in the industry

Students doing project at institute will have to appear for CA/MSE/ESE

* Student doing project at Industry will give NPTEL examination / Examination conducted byuniversity i.e. CA/MSE/ESE

 # These subjects are to be studied on self –study mode using SWAYAM/NPTEL/Any other source

 # Teacher who work as a facilitator for the course should be allotted 3 hrs/week load.

 # Project Load: 2hrs/week/project.

Mapping of Courses with MOOCs Platform SWYAM / NPTEL

S.N.	Course Name	Duration	Name of Professor	Institute offering Course
1	Power Management Integrated Circuits	12 Weeks	Prof. Qadeer Ahmad Khan	IITM
2	DC Power Transmission Systems	12 Weeks	Prof. Krishna S	IITM
3	High Power Multilevel Converters	12 Weeks	Prof. Anandarup Das	IITD
4	Fuzzy Sets, Logic and Systems & Applications	12 Weeks	Prof. Nishchal Kumar Verma	IITK
5	The Joy of Computing using Python	12 Weeks	Prof. Sudarshan Iyengar Prof. Yayati Gupta	IIT Ropar
6	Introduction to Industry 4.0 and Industrial Internet of Things	12 Weeks	Prof. Sudip Misra	IIT KGP
7	Entrepreneurship Essentials	12 Weeks	Prof. Manoj Kumar Mondal	IIT KGP

JAIDEV EDUCATION SOCIETY'S
J D COLLEGE OF ENGINEERING AND MANAGEMENT
KATOL ROAD, NAGPUR
Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere
Website: www.jdcoem.ac.in   E-mail: info@jdcoem.ac.in
An Autonomous Institute, with NAAC "A" Grade
Basic Science and Humanities Department
2021-22 (Odd Sem)

VISION	MISSION
To lay a robust foundation for an institute to reach its zenith.	The department is making its paramount efforts, 1. Achieving academic excellence through rigorous teaching, learning and evaluation practices. 2. To develop an ability to apply knowledge of basic science and mathematics to excel in the field of engineering. 3. To provide salutary environment for the betterment of faculty and students.

Course: B. Tech. All branches	**Year/Semester :** First Year/Sem I	
Name of the Teacher : Dr.Asha A. Dave	**Subject Code :** HU1T001	
Subject : Communication Skill	**Section** ME/CE/EE	
	Theory	**2**
	Practical	**4**

Course Outcomes	Course Objective
Define communication, reading, listening and phonetics 2.Classify different types and functions of communication, reading, listening 3.Demonstrate ability to write/speak error free while making optimum use of business 4.Distinguish among various levels of communication barriers while developing an understanding 5.Evaluate effective ways of conducting speech, presentation, group discussion and job	1.To develop Students Reading Skills and Pronunciation 2.To develop technical communication skillsthrough drafting, letter writingand precise writing. 3. To develop literary skills through essay writing 4. To develop public speaking skills of the students.

6.Organize their thoughts for effective presentation and writing	5.To expose students to the ethics of English language by teaching grammar
	6.To enhance the employability skills of Engineering students as well as communication skills at work place.

TEACHING PLAN

NAME OF THE TEACHER: - Dr.Asha A. Dave
SUBJECT: -**COMMUNICATION SKILLS**   SUBJECT CODE   :-   **HU1T001**
YEAR/SEM: -**FIRST YEAR/ SEM I**   DEPARTMENT: -ME/CE/EE

S r. N o	Lect. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books (Page no)	Reference Book (Page no)	URL's (NPTEL/OnlineMaterial/PPt/Video)	Applications (R&D/Indust ry)	Learning Outcomes
UNIT-I Communication and Communication Processes
1	1	1.01	Introduction to Communication, Types and functions of Communication		T1 (Pg:4-12)	R1 (Pg:4-12)	Video: https://www.youtube.com/watch?v=-DHeRk4cwtY Material: https://thebusinesscommunication.com/what-is-communication-functions-of-communication/	P1	Students should be able to define and describe the types and function of communication.
2	2	1.02	Barriers to Communication and overcoming them, Role of Communication Skills in Society		T1 (Pg:15-16)	R1 (Pg:25-36)	Video: https://www.youtube.com/watch?v=slq1nAhZuqE Material: https://www.toppr.com/guides/business-correspondence-and-reporting/communication/barriers-in-communication/	P2	Students should be able understand the barrier for effective communication and how they can overcome them.

3	3	1.03	Introduction to Reading, Barriers to Reading		T1 (Pg:248-249)	R1 (Pg:223)	Video: https://www.youtube.com/watch?v=slq1nAhZuqE Material: https://www.ques10.com/p/12688/discuss-some-of-the-barriers-to-effective-readin-1/	P3	Students should be able to understand the barriers of reading and how they can become a good reader.
4	4	1.04	Types of Reading: Skimming, Scanning, Intensive and Extensive reading, Strategies for Reading Comprehension		T1 (Pg:265-268)	R1 (Pg:224)	Video: https://www.youtube.com/watch?v=RtcXr0_201A Material: https://www.howtolearn.com/2012/08/different-reading-techniques-and-when-to-use-them/	P4	Students should be able to use different reading techniques to solve reading comprehension questions in lesser time.
5	5	1.05	Importance of Listening, Types of Listening		T1 (Pg:74-76)	R1 (Pg:63-65)	Video: https://www.youtube.com/watch?v=22gzvSindTU	P5	Students should understand the importance and types of listening.
6	6	1.06	Barriers to Listening		T1 (Pg:78-80)	R1 (Pg:65-67)	Video: https://www.youtube.com/watch?v=o6JGi2voyDM	P6	Students should know the barriers for effective listening and how they can overcome them to become good listeners.
UNIT-II Study of Sounds in English and Vocabulary Building									
7	7	2.01	Introduction to phonetics, Study of Speech Organs		T1 (Pg:120)	R1 (Pg:73-74)	Video: https://www.youtube.com/watch?v=4KDkHvvksAE	P7	Students should know the basics of phonetics and how the speech organs work while speaking.
8	8	2.02	Study of Phonemic Script		T1 (Pg:121-	R2 (Pg:75-76)	Video: https://www.youtube.com/watch?	P8	Students should be able to read and write the transcription of sounds of the words and

					123)		v=JfwVXfl0EnI			phrases.
9	9	2.03	Articulation of Different Sounds in English			T1 (Pg:129)	R2 (Pg:81-96)	Video: https://www.youtube.com/watch?v=72M770xTvaU https://www.youtube.com/watch?v=d1HZPx8DuDw	P9	Students should be able to understand the ways to produce speech.
10	10	2.04	The concept of Word Formation, Root words from foreign languages and their use in English			T1 (Pg:580-582)	R1 (Pg:437-449)	Material: https://wordpandit.com/root-words-in-english/	P10	Students should be able to expand their vocabulary by understanding the concept of word formation and how root words are taken from other languages to form English words.
11	11	2.05	Use of prefixes and suffixes from foreign languages in English to form derivatives			T1 (Pg:583-586)	R1(Pg: 437-449)	Video: https://www.youtube.com/watch?v=1ffjfpMl9-4	P11	Students should get acquainted with the prefixes and suffixes and how to use them to form words.
12	12	2.06	Synonyms, antonyms, and standard abbreviations			T1 (Pg:586-588)	R1 (Pg: 437-449)	Material: https://www.toppr.com/guides/english/vocabulary/synonyms-and-antonyms/ https://www.englisch-hilfen.de/en/words/abbreviations.htm	P12	Students should get the knowledge of synonyms and antonyms and some standard abbreviations used in English language.

UNIT-III English Grammar

13	13	3.01	Forms of Tenses			T1 (Pg:552-554)	R2 (Pg:42-50)	Video: https://www.youtube.com/watch?v=th8SNmRW69w	P13	Students should be able to apply the correct rules of tenses to form grammatically correct sentences.

1 4	14	3.02	Articles, Preposition		T1 (Pg:547-551)	R2 (Pg:14-41)	Video: https://www.youtube.com/watch?v=Cc5i5jnqM4g https://www.youtube.com/watch?v=duMo2VoFAQY	P14	Students should be able to use the proper articles and prepositions at proper place.
1 5	15	3.03	Use of Auxiliaries and Modal Auxiliaries		T1 (Pg:551-552)	R3 (Pg:90-95)	Video: https://www.youtube.com/watch?v=wVYcMIOMsQc	P15	Students should be able to use appropriate auxiliaries.
1 6	16	3.04	Sentence Structures, Use of phrases and clauses in sentences		T1 (Pg:)	R3 (Pg:157-159)	Video:https://www.youtube.com/watch?v=4dr5lN1jqRE	P16	Students should be able to construct grammatically correct sentences.
1 7	17	3.05	Importance of proper punctuation		T1 (Pg:)	R2 (Pg:122-132)	Video: https://www.youtube.com/watch?v=bY5ChVDRLus	P17	Students should be able to use the correct punctuation marks.
1 8	18	3.06	Common Errors. Misplaced modifiers		T1 (Pg:505-521)	R2 (Pg:107-111)	Video: https://www.youtube.com/watch?v=1Dax90QyXgI	P18	Students should get acquainted with the common errors in English and how to avoid them.
UNIT-IV Professional Verbal Communication									
1 9	19	4.01	Components of an effective talk, Idea of space and time in public speaking		T1 (Pg:133)	R4 (Pg:91-107)	Video: https://www.youtube.com/watch?v=-FOCpMAww28	P19	Students should be able to understand the components to become effective public speakers.
2 0	20	4.02	Tone of voice, Body language		T1 (Pg:114)	R1 (Pg:178)	Video: https://www.youtube.com/watch?v=bSx6Zg9Ibgw https://www.youtube.com/watch?	P20	Students should be able to use tone of voice and body language for effective communication.

							v=cFLjudWTuGQ		
21	21	4.03	Timing and duration of speech, Audio-Visual Aids in speech		T1 (Pg:)	R1 (Pg:)	Video: https://www.youtube.com/watch?v=MGobKltZtII	P21	Students should be able to use different audio-visual aids.
22	22	4.04	Presentation Skills		T1 (Pg: 121-141)	R1 (Pg:113-137)	Video: https://www.youtube.com/watch?v=dEDcc0aCjaA	P22	Students should be able to use presentation skills to give betters presentations.
23	23	4.05	Group Discussion		T1 (Pg:187-208)	R1 (Pg:185-190)	Video: https://www.youtube.com/watch?v=BguYUJ7cWrs	P23	Students should understand importance and rules to participate in group discussion.
24	24	4.06	Job Interviews		T1 (Pg:157-183)	R1 (Pg:143-156)	Video: https://www.youtube.com/watch?v=1mHjMNZZvFo	P24	Students should be able to know the commonly asked questions in interviews and how to face interviews.
UNIT-V Developing Business Writing Skills, Styles and Practice									
25	25	5.01	Writing Emails		T1 (Pg: 491-500)	R1 (Pg:401-411)	Video: https://www.youtube.com/watch?v=3Tu1jN65slw	P25	Students should be able to write professional emails.
26	26	5.02	Report Writing: Format, Structure and Types		T1 (Pg:503-516)	R1 (Pg:284-315)	Material: https://www.openpolytechnic.ac.nz/current-students/study-tips-and-techniques/assignments/how-to-write-a-report/	P26	Students should know the format of report writing and how to write reports.

27	27	5.03	Letter Writing: Types, Parts, Layouts, Writing Job Application Letter		T1 (Pg:391-409)	R1 (Pg:368-386)	Material: https://www.wikihow.com/Write-a-Letter	P27	Students are able to write the business letters.
28	28	5.04	Resume		T1(Pg:438-458)	R1 (Pg:160-169)	Material: https://www.wikihow.com/Make-a-Resume	P28	Students are able to write good resumes.
29	29	5.05	Describing, Defining, Classifying, Providing examples or evidence	31/10/2019	T1 (Pg:)	R1 (Pg:274) R2 (Pg: 290-299)	Video: https://slideplayer.com/slide/5986568/	P29	Students learn different styles of writing.
30	30	5.06	Writing Practices: Comprehension, Précis Writing, Essay Writing		T1 (Pg:377-385)	R2 (Pg:300-385)	Video: https://www.youtube.com/watch?v=o9aVjBHEEbU https://www.youtube.com/watch?v=xKvm46W9Tm0 Material: https://grammar.yourdictionary.com/writing/how-to-write-an-essay.html	P30	Students should learn different types of writing.

*T=Text Book; R= Reference Book; C= Company name; P= Research Paper

Total number of lectures as per syllabus: - 30Total number of lectures as per planned: - 30

Final Outcome of the Subject (Maximum 6 Outcomes):

Students should be able to:

CO1. Define communication, reading, listening and phonetics.

CO2. Classify different types and functions of communication, reading, listening, speech organs, and sounds in English, types of reports, letters.

CO3. Demonstrate ability to write/speak error free while making optimum use of business vocabulary, grammar, tone of voice, body language.
CO4. Distinguish among various levels of communication barriers while developing an understanding of analytical writing.
CO5. Evaluate effective ways of conducting speech, presentation, group discussion and job interviews.
CO6. Organize their thoughts for effective presentation and writing.

TextBooks:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Effective Technical Communication	M Ashraf Rizvi	Tata McGraw-Hill Education	Second Edition/2005

Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	Technical Communication Principles and Practice	Meenakshi Raman, Sangeeta Sharma	Oxford University Press	Third Edition/ 2015
R2	Professional Communication Skills	Er. A.K. Jain, Dr. Pravin S.R.Bhatia, Dr. A.M. Sheikh	S. Chand	Fifth Edition/ 2011
R3	High School English Grammar and Composition	Wren & Martin	S Chand	2008
R4	How to Develop Self-Confidence & Influence People by Public Speaking	Dale Carnegie	Simon & Schuster, Inc.	1956

Company/Industry:

Code	Company/Industry Name	Website	Detailed Information

Research Paper:

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	Issue/Volume/Page no/Year
P1	Communication Skills for the 21st Century Engineer	Marc J. Riemer	UNESCO International Centre for Engineering Education (UICEE) Faculty of Engineering, Monash University, Clayton, Melbourne, VIC 3800, Australia	http://www.wiete.com.au/journals/GJEE/Publish/vol11no1/Riemer.pdf	Global J. of Engng. Educ., Vol.11, No.1 Published in Australia
P2	Barriers to Effective Communication	Dr. Radhika Kapur		https://www.researchgate.net/publication/323794732_Barriers_to_Effective_Communication	March 2018

P3	Reading difficulties as barriers to learning experienced by learners entering the intermediate phase	Dorcas Joan Naiken	University of South Africa	https://core.ac.uk/download/pdf/85157470.pdf	November 2016
P4	How Can Students Improve Their Reading Comprehension Skill?	Abbas Pourhosein Gilakjani	Journal of Studies in Education	https://www.researchgate.net/publication/303742915_How_Can_Students_Improve_Their_Reading_Comprehension_Skill DOI: 10.5296/jse.v6i2.9201	June 2016 ISSN 2162-6952 2016, Vol. 6, No. 2
P5	The Types and the Functions of the Listening Activities in Turkish and English Course Books1	Derya Eken	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/275544385_The_Types_and_the_Functions_of_the_Listening_Activities_in_Turkish_and_English_Course_Books1 DOI: 10.1016/j.sbspro.2014.09.355	October 2014
P6	Keys to Effective Listening and Presenting: An Action Plan	Tharindu Dananjaya Weerasinghe, T J R Thisera	Kelaniya Journal of Human Resource Management	https://www.researchgate.net/publication/313828241_Keys_to_Effective_Listening_and_Presenting_An_Action_Plan DOI: 10.4038/kjhrm.v9i1-2.11	Volume 09-Number 01-January 2014 & Number 02-July 2014
P7	Speech Production	Dani Byrd, Elliot Saltzman	The Handbook of Brain Theory and Neural Networks, Second edition, (M.A. Arbib, Ed.), Cambridge, MA: The MIT Press, 2002	https://www.researchgate.net/publication/2489347_Speech_Production	March 2002
P8	Phonemic Awareness: Clarifying What We Know	Marilyn Chapman		https://www.researchgate.net/publication/252718468_Phonemic_Awareness_Clarifying_What_We_Know	January 2003

	Title	Author	Source	Link	Date
P9	DIFFICULTIES IN ARTICULATION OF SOME CONSONANT SOUNDS	GEORGE KUPARADZE		https://www.researchgate.net/publication/308478067_DIFFICULTIES_IN_ARTICULATION_OF_SOME_CONSONANT_SOUNDS_On_the_material_of_English_and_Georgian	September 2016
P10	The Significance of the Words Borrowed Into English Language	V. Chandra Sekhar Rao		https://www.researchgate.net/publication/324273536_The_Significance_of_the_Words_Borrowed_Into_English_Language	April 2018
P11	Prefixes of Degree in English: A Cognitive-Corpus Analysis	Zeki Hamawand	Open Journal of Modern Linguistics 01(02)	https://www.researchgate.net/publication/267990519_Prefixes_of_Degree_in_English_A_Cognitive-Corpus_Analysis DOI: 10.4236/ojml.2011.12003	January 2011
P12	On the use of antonyms and synonyms from a domain perspective p	Debela Tesfaye, Carita Paradis	Conference: Word Knowledge and Word Usage: Representations and processes in the Mental Lexicon., At Pisa	https://www.researchgate.net/publication/275210472_On_the_use_of_antonyms_and_synonyms_from_a_domain_perspective	March 2015
P13	Tense in English	Laura Adrienne Michaelis	The Handbook of English Linguistics, pp.220 - 243	https://www.researchgate.net/publication/228045646_Tense_in_English DOI: 10.1002/9780470753002.ch10	January 2008
P14	Information Structure and English Article Pedagogy	Peter Master	System 30(3):331-348	https://www.researchgate.net/publication/2	September 2002

P15	HEDGING THROUGH THE USE OF MODAL AUXILIARIES IN ENGLISH ACADEMIC DISCOURSE	Tofan Hardjanto	HUMANIORA	https://www.research gate.net/publication/3 10663354_HEDGING_ THROUGH_THE_USE_ OF_MODAL_AUXILIAR IES_IN_ENGLISH_ACA DEMIC_DISCOURSE	VOLUME 28 No. 1 February 2016
P16	Difficulties of Building English Sentences in Writing	Badraddin ALawad Balal, Sabir Ahmed Hago	Conference: The European Eonference on Language Learning ECLL 2015, At Dubai, UAE	https://www.research gate.net/publication/2 83256681_Difficulties _of_Building_English_ Sentences_in_Writing	February 2015
P17	An Analysis of English Punctuation: The Special Case of Comma	Murat Bayraktar, Bilge Say, Varol Akman	International Journal of Corpus Linguistics	https://www.research gate.net/publication/2 8762309_An_Analysis _of_English_Punctuati on_The_Special_Case _of_Comma	July 1998
P18p	COMMON GRAMMATICAL ERRORS IN THE USE OF ENGLISH AS A FOREIGN LANGUAGE: A CASE IN STUDENTS' UNDERGRADUATE THESES	Bambang Sugeng	LITERA	https://www.research gate.net/publication/3 30680801_COMMON _GRAMMATICAL_ERR ORS_IN_THE_USE_OF _ENGLISH_AS_A_FOR EIGN_LANGUAGE_A_C ASE_IN_STUDENTS'_U NDERGRADUATE_THE SES	Volume 15, Nomor 1, April 2016

P19	Enhancing the development of speaking skills for non-native speakers of English	Kamonpan Boonkit	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/248607406_Enhancing_the_development_of_speaking_skills_for_non-native_speakers_of_English DOI: 10.1016/j.sbspro.2010.03.191	2(2):1305-1309 · December 2010
P20	Language and Body Language	Vijendra Pratap Singh		https://www.researchgate.net/publication/324246401_Language_and_Body_Language	April 2018
P21	The Impact of Audio-Visual Aids (AVA) and Computerize Materials (CM) on University ESP Students' Progress in English Language	Ali Al-Khayyat	International Journal of Education and Research	https://www.researchgate.net/publication/325285878_The_Impact_of_Audio-Visual_Aids_AVA_and_Computerize_Materials_CM_on_University_ESP_Students'_Progress_in_English_Language	Vol. 4 No. 1 January 2016
P22	Developing Presentation Skills in the English Language Courses for the Engineering Students of the 21st Century Knowledge Society: A Methodological Approach	Catana Elisabeta Simona	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/282457434_Developing_Presentation_Skills_in_the_English_Language_Courses_for_the_Engineering_Students_of_the_21st_Century_Knowledge_Society_A_Methodological_Approach DOI: 10.1016/j.sbspro.2015.08	August 2015

					.261
P23	The Use of Small Group Discussion and Snowballing Techniques: An Effort to enhance EFL Students' Self –Efficacy and Speaking Skill	Ade Silvana, Martin Kustati, Darmayanti Darmayanti	AL-TA'LIM JOURNAL, 25 (1), 2018, (77-86)	https://www.researchgate.net/publication/326792181_The_Use_of_Small_Group_Discussion_and_Snowballing_Techniques_An_Effort_to_enhance_EFL_Students'_Self_-Efficacy_and_Speaking_Skill DOI: 10.15548/jt.v25i1.409	28 th February 2018
P24	Better English for Better Employment Opportunities	Dr. Meenu Pandey, Prabhat Kumar Pandey	International Journal of Multidisciplinary Approach and Studies	https://www.researchgate.net/publication/264788119_Better_English_for_Better_Employment_Opportunities	Volume 01, No.4, July - Aug 2014
P25	Students writing emails to faculty: An examination of E-politeness among native and non-native speakers of English	Sigrun Biesenbach-Lucas	Language, Learning and Technology	https://www.researchgate.net/publication/259703275_Students_writing_emails_to_faculty_An_examination_of_E-politeness_among_native_and_non-native_speakers_of_English	11(2):59-81 · June 2007
P26	Report Writing Skills of Engineering Students	Su-Hie Ting, Syaharom Abdullah	The Second International Conference on the Roles of the Humanities and Social Sciences in Engineering	https://www.researchgate.net/publication/228295799_Report_Writing_Skills_of_Engineering_Students	12-14 November 2010
P27	Letters and Letter Writing in Early Modern	Gabriella Del Lungo	Journal of Early Modern Studies	https://www.researc	April 2014

	Culture: An Introduction	Camiciotti		hgate.net/publication/307742338_Letters_and_Letter_Writing_in_Early_Modern_Culture_An_Introduction DOI: 10.13128/JEMS-2279-7149-14163	
P28	THE QUALITIES OF A GOOD CV AND RESUME	Adrian Wallwork		https://www.researchgate.net/publication/315404987_THE_QUALITIES_OF_A_GOOD_CV_AND_RESUME DOI: 10.1007/978-1-4939-0647-5_1	June 2014
P29					
P30	Reading Skills and Reading Comprehension in English for Specific Purposes	Milevica Bojovic	Conference: The International Language Conference on the Importance of Learning Professional Foreign Languages for Communication between Cultures, At Celje, Slovenia	https://www.researchgate.net/publication/261213403_Reading_Skills_and_Reading_Comprehension_in_English_for_Specific_Purposes	23 and 24 September 2010

Course Title : Communication Skills

Course Objectives:

The main objective of the subject is to enhance the employability skills of engineering students as well as communication skills at workplace.

The sub-objectives are:

1) To develop students' reading skills and pronunciation.
2) To develop technical communication skills through drafting, letter writing, and précis writing.
3) To develop literary skills through essay writing.
4) To develop public speaking skills of the students.
5) To expose the students to the ethics of English language by teaching grammar

Unit 1: Communication and Communication Processes   (06 hrs)

Introduction to Communication, Types and functions of Communication, Barriers to Communication and overcoming them, Role of Communication Skills in Society

Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Intensive and Extensive, Strategies for Reading Comprehension.

Listening : Importance of Listening, Types of Listening, Barriers to Listening.

Unit 2: English Grammar   (06 hrs)

Grammar: Forms of Tenses, Articles, Prepositions, Use of Auxiliaries and Modal Auxiliaries, Sentence Structures, Use of phrases and clauses in sentences, Importance of proper punctuation, Common Errors. Misplaced modifiers.

Unit 3: Professional Verbal Communication   (06 hrs)

Components of an effective talk, Idea of space and time in public speaking, Tone of voice, Body language, Timing and duration of speech, Audio-Visual Aids in speech. Presentation Skills, Group Discussion and Job Interviews

Unit 4: Developing Business Writing Skills, Styles and Practice   (06 hrs)

Writing Emails, Report Writing: Format, Structure and Types, Letter Writing: Types, Parts, Layouts, Writing Job Application Letter and Resume.

Nature and Style of sensible Writing and Practice: Describing, Defining, Classifying, Providing examples or evidence, writing introduction and conclusion, Writing Practices: Comprehension, Précis Writing, Essay Writing

Unit 5: Study of Sounds in English and Vocabulary Building   (06 hrs)

Introduction to phonetics, Study of Speech Organs, Study of Phonemic Script, Articulation of Different Sounds in English.

Vocabulary Building: The concept of Word Formation, Root words from foreign languages and their use in English, Use of prefixes and suffixes from foreign languages in English to form derivatives, Synonyms, antonyms, and words syllables.

Text book:

Mohd. Ashraf Rizvi, Communication Skills for Engineers, Tata McGraw Hill

Reference Books:

1) Sanjay Kumar, Pushp Lata, Communication Skills, Oxford University Press, 2016

2) Meenakshi Raman, Sangeeta Sharma, Communication Skills, Oxford University Press, 2017

3) Teri Kwal Gamble, Michael Gamble, Communication Works, Tata McGraw Hill Education, 2010

4) Anderson, Kenneth. Joan Maclean and Tossny Lynch. Study Speaking: A Course in Spoken English for Academic Purposes. Cambridge: CUP, 2004.

5) Aswalthapa, K. Organisational Behaviour, Himalayan Publication, Mumbai (1991).

6) Atreya N and Guha, Effective Credit Management, MMC School of Management, Mumbai (1994).

7) Balan,K.R. and Rayudu C.S., Effective Communication, Beacon New Delhi (1996).

8) Bellare, Nirmala. Reading Strategies. Vols. 1 and 2. New Delhi. Oxford University Press, 1998.

9) Bhasker, W. W. S & Prabhu, N. S.: English through Reading, Vols. 1 and 2. Macmillan, 1975.

10) Black, Sam. Practical Public Relations, E.L.B.S. London (1972).

11) Blass, Laurie, Kathy Block and Hannah Friesan. Creating Meaning. Oxford: OUP, 2007.

12) Bovee Courtland,L and Thrill, John V. Business Communication, Today McGraw Hill, New York, Taxman Publication (1989).

Course Title : Communication Skills-Lab

List of Practical Sessions (Any 6 practical sessions can be conducted):

1) Pronunciation, Intonation, Stress and Rhythm(02 hrs)
2) Introduction to Phonemic symbols (02 hrs)
3) Articulation of sounds in English with proper manner (02 hrs)
4) Practice and exercises on articulation of sounds (02 hrs)
5) Read Pronunciations/transcriptions from the dictionary (02 hrs)
6) Practice and exercises on pronunciations of words (02 hrs)
7) Introduce yourself (02 hrs)
8) Importance of Business Communication with the help of a case study.(02hrs)
9) Listening Skills/ Comprehension(02 hrs)
10) Common Everyday Situations: Conversations and Dialogues(02 hrs)
11) Communication at Workplace(02 hrs)
12) Rapid reading sessions (02 hrs)
13) Draft Email(02 hrs)
14) Resume Writing(02hrs)
15) Drafting Business Letter(02 hrs)
16) Preparing technical paper using IEEE format(02 hrs)
17) Extempore (02 hrs)
18) Elocution (02 hrs)
19) Group discussion (02 hrs)
20) Participating in a debate (02 hrs)
21) Presentation techniques (02 hrs)
22) Interview techniques – Job Interviews, Telephonic Interviews (02hrs)
23) Mock interviews and practice sessions (02 hrs)

EE3T007	Innovation and Entrepreneurship Development	Audit

Syllabus:

Course Outcomes:

At the end of the Course, Student will be able to:

1. Discover the creative / innovative side within her/him.

2. Hone entrepreneurial and leadership skills within his/her personality.

3. Develop new ways of thinking and Learn the entire innovation cycle from Ideation to GoToMarket.

4. Study frameworks, strategies, techniques and business models for conceived ideas.

5. Develop skills for evaluating, articulating, refining, and pitching a new product or service.

Course Contents:

Introduction to Innovation, Personal thinking preferences, 'Innovation' mind set, Everyday creativity and eliminating mental blocks, Introduction to Innovation, Creative thinking techniques, Innovation types, Idea management and approaches, Teaming techniques for creativity, Idea Conception, Idea Scoping, Self-Evaluation, Idea Brainstorming sessions, Idea Verification, Market Evaluation, Concept Evaluation, Idea Verification, Prototype Evaluation, Protection/Patent review, Innovation Case Study, Idea Presentations, Idea Incubation, Product and Market Plan, Product and Market Development, Innovation Case Studies, Idea Incubation and Product Launch, Marketing and selling, Post Launch Review

Reference Books:

1. Jeff Dyer, Hal Gregersen, Clayton M. Christensen, " The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators, Harvard Business Review Press, 2011.

2. Paddy Miller, Thomas Wedell-Wedellsborg, "Innovation as Usual: How to Help Your People Bring Great Ideas to Life, Harvard Business Review Press, Kindle Edition.

Prof. A. V.Joshi	**Dr.S.R.Vaishnav**
Member Secretary	**Chairman**
Board of Studies, EE Dept	**Board of Studies, EE Dept**

EE5T004	Consumer Affairs	2 Credit

Objective: This paper seeks to familiarize the students with their rights and responsibilities as a consumer, the social framework of consumer rights and legal framework of protecting consumer rights. It also provides an understanding of the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards. The student should be able to comprehend the business firms' interface with consumers and the consumer related regulatory and business environment.

Unit 1: Conceptual Framework   06 Lectures

Consumer and Markets: Concept of Consumer, Nature of markets: Liberalization and Globalization of markets with special reference to Indian Consumer Markets, E-Commerce with reference to Indian Market, GST, and Digital consumer issues.

Experiencing and Voicing Dissatisfaction: Consumer buying process, Consumer Satisfaction/dissatisfaction-Grievances-complaint, Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process: ISO 10000 suite

Unit 2: The Consumer Protection Law in India   06 Lectures

Objectives and Basic Concepts: Consumer rights and UN Guidelines on consumer protection, Consumer goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice, and restrictive trade practice.

Unit 3: Grievance Redressal Mechanism under the Indian Consumer Protection Law

06 Lectures

Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties.

Unit 4: Role of Industry Regulators in Consumer Protection   06 Lectures

   i.   Banking: RBI and Banking Ombudsman

   ii.   Insurance: IRDA and Insurance Ombudsman

   iii.   Telecommunication: TRAI

   iv.   Food Products: FSSAI

   v.   Electricity Supply: Electricity Regulatory Commission

   vi.   Real Estate Regulatory Authority

Text Books

1. Khanna,SriRam,SavitaHanspal,SheetalKapoor,andH.K.Awasthi.(2007)*ConsumerAffairs,*UniversitiesPress.
2. Choudhary,RamNareshPrasad(2005).*ConsumerProtectionLawProvisionsandProcedure,*Deepand Deep PublicationsPvtLtd.
3. G.GanesanandM.Sumathy.(2012).*GlobalisationandConsumerism:IssuesandChallenges*,RegalPublications
4. SureshMisraandSapnaChadah(2012).ConsumerProtectioninIndia:IssuesandConcerns,IIPA,NewDelhi
5. RajyalaxmiRao(2012),*ConsumerisKing,*UniversalLawPublishingCompany
6. Girimaji,Pushpa(2002).*ConsumerRightforEveryone* Penguin Books.
7. E-books:-www.consumereducation.in
8. EmpoweringConsumerse-book,www.consumeraffairs.nic.in
9. ebook,www.bis.org
10. *TheConsumerProtectionAct,1986anditslaterversions.*

Reference Books

1. 1. Misra Suresh, (Aug 2017) "Is the Indian Consumer Protected? One India OnePeople.
2. Raman Mittal, SonkarSumitand Parineet Kaur (2016) Regulating Unfair TradePractices: An Analysis of the Past and Present Indian Legislative Models, Journal ofConsumerPolicy.
3. Chakravarthy, S. (2014). MRTP Act metamorphoses into Competition Act. CUTSInstitute for Regulation and Competition position paper. Available online atwww.cuts-international.org/doc01.doc.
4. KapoorSheetal(2013)"Bankingand theConsumer"Akademos(ISSN2231-0584)
5. Bhatt K. N., Misra Suresh and ChadahSapna (2010). Consumer, Consumerism andConsumerProtection, Abhijeet Publications.
6. Kapoor Sheetal (2010) "Advertising-An Essential Part of Consumer's Life-Its Legaland Ethical Aspects", Consumer Protection and Trade Practices Journal, October2010.
7. Verma, D.P.S. (2002). Regulating Misleading Advertisements, Legal Provisions andInstitutionalFramework.Vikalpa.Vol. 26. No.2.pp. 51-57.

Website

www.ncdrc.nic.in

www.consumeraffairs.nic.in

www.iso.org

www.bis.org.in

www.consumereducation.in

www.consumer-voice.in

www.cercindia.org

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Syllabus for Skill Development Courses

1. Power Quality Improvement Technique

Course layout

Week 1 : Concept of Power Quality: Frequency variations, voltage variations- sag and swell, waveform distortion –dc offset,harmonics, inter-harmonics, notching and noise.

Week 2 : Representation of harmonics, waveform, harmonic power,measures of harmonic distortion; Current and voltage limits of harmonic distortions: IEEE, IEC, EN, NORSO

Week 3 : Causes of Harmonics: 2-pulse, 6-pulse and 12-pulse converter configurations, input current waveforms and their harmonic spectrum; Input supply harmonics of AC regulator, integral cycle control, cycloconverter, transformer, rotating machines, ARC furnace, TV and battery charger.

Week 4 : Elimination/ Suppression of Harmonics: High power factor converter, multi-pulse converters using transformer connections
(delta, polygon)
Passive Filters: Types of passive filters, single tuned and high pass filters, filter design criteria, double tuned filters, damped filters
and their design

Week 5 : PWM Inverter: Voltage sourced active filter, current sourced active filter, constant frequency control, constant tolerance band control,variable tolerance band control.

Week 6 : Active Power Filters: Compensation principle, classification of active filters by objective, system configuration, power circuit andcontrol strategy

Week 7 : Hybrid Shunt Active power filter: Principle of operation, analysis and modelling

Week 8 : Unified power quality conditioner, voltage source and current source configurations, principle of operation for sag, swell and flicker control

Books and references

1. Derek A. P., "Power Electronic Converter Harmonics", IEEE Press
2. Arrillaga J., Smith B. C., Watson N. R. and Wood A. R., "Power System Harmonic Analysis", 2nd 2008 Ed., Wiley India.
3. Dugan R. C., McGranaghan M. F. and Beaty H. W., Electrical Power System Quality", McGraw-Hill International Book Company

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2.Design of Power Electronic Converters

Course layout

Week 1: Analysis of power electronic converters
Week 2: Power semiconductor devices
Week 3: Gate drivers
Week 4: Snubber design
Week 5: Thermal Design
Week 6: Magnetics Design
Week 7: Electromagnetic interference in power electronic converters
Week 8: Familiarity and design on power electronic hardware

Books and references

1. Ned Mohan, Tore M. Undeland, William P. Robbins, Power Electronics: Converters, Applications, and Design, 3rd Ed. Wiley, 2007.
2. Muhammad H. Rashid, Power Electronics: Circuits, Devices and Applications, 4th Ed. Pearson Education, 2017.

3.Recent Advances in Transmission Insulators

Course layout

Week 1 : Introduction, Important components of transmission system,Insulation coordination ,Design and selection of insulators for transmission/distribution ,
Week 2 : Non ceramic insulators performance-service experience ,Pollution/contamination flashover phenomena, modelling etc ,Failures, importance of reliability and testing
Week 3 : High Voltage testing and techniques employed ,HV testing techniques for Ceramic/glass Insulators ,HV testing on Composite Insulators
Week 4 : Surface degradation studies on composite insulators ,Recent studies on composite insulators / Summary

Books and references

1.Rakosh Das Begamudre, " Extra High Voltage AC Transmission Engineering", New Age International(P) Ltd, New Delhi, 2000.
2.E Kuffel, W S Zaengl and J Kuffel, "High Voltage Engg. Fundamentals", textbook published by Newness publishers, second edition, 2000.
3.Recent IEEE Journal / Conference and CIGRE publications. • "Outdoor Insulators", Ravi group, Edward Cherney & Jeffery Burnham Text book, 1999
4.Insulators for High Voltage – J S T Looms, text book, Peregrines, 1988 • K Papailiou and F Schmuck, "Silicone Composite Insulators: Materials, design, Applications for Power systems, Springer Berlin Heidelberg, 2012.

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Department of Electronics and Telecommunication Engineering

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VISION	MISSION
"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.
	2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

Scheme for B. Tech in Electronics and Telecommunication Engineering (w.e.f. 2021-22)

B. Tech First Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	Total	
1	HSMC	HU1T002	Introduction to Computer programming	2	0	0	20	20	60	100	2
2	BSC	MA1T001	Engineering Mathematics- I	3	1	0	20	20	60	100	4
3	BSC	ET1T005	Engineering Physics	3	1	0	20	20	60	100	4
4	ESC	ET1T006	Energy and Environment Engineering	3	0	0	20	20	60	100	3
5	HSMC	HU1L002	Introduction to Computer programming Lab	0	0	4	60	0	40	100	2
6	ESC	WS1L001	Workshop Practices	0	0	4	60	0	40	100	2
7	BSC	ET1L005	Engineering Physics Lab	0	0	2	60	0	40	100	1
8			Induction Programme	3 Weeks							
9	ESC	ET1T007	Basic Electrical and Electronics Engineering	2	0	0	10	15	25	50	Audit
				13	2	10					18

B. Tech Second Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	Total	
1	HSMC	HU2T001	Communication Skills	2	0	0	60	0	40	100	2
2	BSC	MA2T001	Engineering Mathematics- II	3	1	0	20	20	60	100	4
3	BSC	ET2T002	Engineering Chemistry	3	1	0	20	20	60	100	4
4	ESC	ET2T003	Engineering Graphics	1	0	0	20	20	60	100	1
5	HSMC	HU2L001	Communication Skills Lab.	0	0	4	60	0	40	100	2
6	BSC	EL2L002	Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC	ET2L003	Engineering Graphics Lab	0	0	4	60	0	40	100	2
8	Project		Societal Internship/ Field Training	Report submission						50	1
9	ESC	ET2T004	Basic Civil and Mechanical Engineering	2	0	0	10	15	25	50	Audit
				11	2	10					17

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B. Tech Third Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	Total	
1	BSC	ET3T001	Multivariate Calculus	2	1	0	20	20	60	100	3
2	ESC	ET3T002	Electronic Devices and Circuits-I	3	1	0	20	20	60	100	4
3	PCC	ET3T003	Analog Communication System	2	1	0	20	20	60	100	3
4	PCC	ET3T004	Digital Circuits and Microprocessor	2	1	0	20	20	60	100	3
5	PCC	ET3T005	Integrated Circuits and Applications	3	1	0	20	20	60	100	4
6	PCC	ET3T006	Network Synthesis and Analog Filters	2	1	0	20	20	60	100	3
7	ESC	ET3L002	Electronic Devices and Circuits-I Lab	0	0	2	60	0	40	100	1
8	PCC	ET3L003	Analog Communication System Lab	0	0	2	60	0	40	100	1
9	PCC	ET3L004	Digital Circuits and Microprocessor Lab	0	0	2	60	0	40	100	1
10	HSMC	ET3T007	Universal Human Values	3	0	0	20	20	60	100	3
			Total	17	6	6	320	140	540	1000	26

B. Tech Fourth Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	Total	
1	BSC	ET4T001	Partial Differential Equation and Numerical Methods	2	1	0	20	20	60	100	3
2	ESC	ET4T002	Basics of Python Programming	3	0	0	20	20	60	100	3
3	ESC	ET4T003	Electrical Machines and Instruments	2	1	0	20	20	60	100	3
4	ESC	ET4T004	Electronic Devices and Circuits-II	2	1	0	20	20	60	100	3
5	PCC	ET4T005	Signals and Systems	3	0	0	20	20	60	100	3
6	PCC	ET4T006	Electromagnetic Fields	3	1	0	20	20	60	100	4
7	ESC	ET4L003	Electrical Machines and Instruments Lab	0	0	2	60	0	40	100	1
8	ESC	ET4L004	Electronic Devices and Circuits-II Lab	0	0	2	60	0	40	100	1
9	PCC	ET4L005	Signals and Systems Lab	0	0	2	60	0	40	100	1
10	Project	ET4P001	Field Training-1	0	0	0	30	0	20	50	1
11	MC	ET4T007	Innovation and Entrepreneurship Development	2	0	0	10	15	25	50	Audit
			Total	17	4	6	340	135	525	1000	23

B. Tech Fifth Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	Total	
1	PCC	ET5T001	Digital Signal Processing	2	1	0	20	20	60	100	3
2	PCC	ET5T002	Microcontroller and Application	3	0	0	20	20	60	100	3
3	PCC	ET5T003	Control System Engineering	3	0	0	20	20	60	100	3
4	PEC	ET5E004	Professional Elective Course-I	3	0	0	20	20	60	100	3
5	OEC	ET5O001	OPEN Elective Course-I	4	0	0	20	20	60	100	4
6	ESC	ET5L005	Software Workshop Lab	0	0	2	60	0	40	100	1
7	PCC	ET5L001	Digital Signal Processing Lab	0	0	2	60	0	40	100	1
8	PCC	ET5L002	Microcontroller and Application Lab	0	0	2	60	0	40	100	1
9	Project	ET5P001	Field Training-2	0	0	0	30	0	20	50	1
10	Project	ET5P002	Mini Project	0	0	2	30	0	20	50	1
11	MC	ET5T006	Consumer Affairs	2	0	0	10	15	25	50	Audit
			Total	17	1	8	350	115	485	950	21

B. Tech Sixth Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credits
				L	T	P	CA	MSE	ESE	Total	
1	HSMC	ET6T001	Education, Technology and Society	2	0	0	20	20	60	100	2
2	PCC	ET6T002	Antennas and Wave Propagation	3	0	0	20	20	60	100	3
3	PCC	ET6T003	Computer Networks and Cloud Computing	3	0	0	20	20	60	100	3
4	PEC	ET6E004	Professional Elective Course-II	3	0	0	20	20	60	100	3
5	OEC	ET6O002	OPEN Elective Course-II	4	0	0	20	20	60	100	4
6	PCC	ET6L003	Computer Networks and Cloud Computing Lab	0	0	2	60	0	40	100	1
7	PCC	ET6L005	Electronic Design Engineering Lab	0	0	2	60	0	40	100	1
8	Project	ET6P001	Campus Recruitment Training (CRT)	0	0	2	50	0	0	50	1
9	Project	ET6P002	Skill Development	0	0	2	15	0	35	50	1
	Project	ET6P003	Mini Project	0	0	2	30	0	20	50	1
10	MC	ET6T007	Research Methodology	2	0	0	10	15	25	50	Audit
			Total	17	0	10	325	115	460	900	20

B. Tech Seventh Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC	ET7T001	Digital Communication	3	0	0	20	20	60	100	3
2	PEC	ET7E002	Professional Elective Course-III	3	0	0	20	20	60	100	3
3	PEC	ET7E003	Professional Elective Course-IV	3	0	0	20	20	60	100	3
4	PEC	ET7E004	Professional Elective Course-V	3	0	0	20	20	60	100	3
5	OEC	ET7O003	OPEN Elective Course-III	4	0	0	20	20	60	100	4
6	ESC	ET7L005	Basic Electronic Simulation Lab	0	0	2	60	0	40	100	1
7	PCC	ET7L001	Digital Communication Lab	0	0	2	60	0	40	100	1
8	Project	ET7P002	Major Project Part-1	0	0	6	25	0	25	50	5
9	MC	ET7T006	Intellectual Property Rights	2	0	0	10	15	25	50	Audit
			Total	18	0	10	255	115	430	800	23

B. Tech Eighth Semester

Sr. No.	Category of Course	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PEC	ET8E001	Professional Elective Course-VI	3	0	0	20	20	60	100	3
2	OEC	ET8O004	OPEN Elective Course-IV	4	0	0	20	20	60	100	4
3	Project	ET8P001	Major Project Part-2	0	0	12	75	0	75	150	3
			Total	7	0	12	115	40	195	350	10

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To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics & Telecommunication	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.	
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Professional Elective Courses (PEC)			
Category	Course Code	Subject	Sem
Professional Elective Course-I	ET5E004A	Introduction to Robotics & Computer Programming	V
	ET5E004B	Telecommunication Switching System	V
	ET5E004C	AI Search Methods for Problem Solving	V
	ET5E004D	Digital System Design & Hardware Modelling Using Verilog	V
	ET5E004E	Embedded C Programming	V
	ET5E004F	Advanced Wireless Communication & Coding Technique	V
	ET5E004G	Introduction to Java Programming and Salesforce	V
	ET5E004H	Sensor Technology	V
	ET5E004I	Introduction to Deep Learning	V
Professional Elective Course-II	ET6E004A	Embedded Processor & its Interfacing with RTOS	VI
	ET6E004B	AI: Knowledge Representation & Reasoning	VI
	ET6E004C	VLSI Physical Design	VI
	ET6E004D	Satellite Communication	VI
	ET6E004E	Wireless IP Networks	VI
	ET6E004F	Computer Vision	VI
	ET6E004G	Database Management System	VI
	ET6E004H	Switching Theory	VI
	ET6E004I	Strength, Kinematics & Design of Machine Elements	VI
	ET6E004J	Embedded Systems Design	VI
	ET6E004K	Neural Networks and Fuzzy Logic	VI
Professional Elective Course-III	ET7E002A	Biomedical Instrumentation	VII
	ET7E002B	Introduction to IoT	VII
	ET7E002C	Optical Communication Networks	VII
	ET7E002D	Advanced Cellular Communication	VII
	ET7E002E	IoT& Wireless Sensor Networks	VII
	ET7E002F	Cryptography & Network Security	VII
	ET7E002G	Multimedia Communication	VII
	ET7E002H	Television Engg	VII

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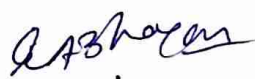
Professional Elective Course-IV	ET7E003A	Drives & Control System for Robots & Robotic Vision	VII
	ET7E003B	Data Structures and Algorithms & System Software	VII
	ET7E003C	Mobile Communication	VII
	ET7E003D	Reinforcement Learning	VII
	ET7E003E	Verilog HDL	VII
	ET7E003F	Compruter Architecture	VII
	ET7E003G	UHF and Microwave Engineering	VII

Professional Elective Course-V	ET7E004A	Machine Learning	VII
	ET7E004B	Deep Learning for Visual Computing	VII
	ET7E004C	Industrial Automation & Control	VII
	ET7E004D	EMF Optics & Photonic Integrated Circuit	VII
	ET7E004E	Digital Image Processing	VII
	ET7E004F	Advanced Mobile Communication	VII
	ET7E004G	Advanced Digital Signal Processing	VII

Professional Elective Course-VI	ET8E001A	Fundamentals of Artificial Intelligence for Robots.	VIII
	ET8E001B	Device Drivers	VIII
	ET8E001C	5G Wireless Networks	VIII
	ET8E001D	Basics of Artificial Intelligence.	VIII
	ET8E001E	Optimization Techniques for Digital VLSI Design	VIII
	ET8E001F	Modern Digital Communication Systems	VIII
	ET8E001G	Spread Spectrum Techniques	VIII
	ET8E001H	Industrial Management & Quality Control	VIII

OPEN Elective Courses (OEC)		
Course Code	Subject	Deptt.
1	Finance for Engineers	MBA
2	Engineering Economics	
3	Legislative Procedure	
4	Labour Law	
5	Human Resource Development and Organizational Behavior	
6	Professional Effectiveness and Business Communication skills	
7	Fitness Management Yoga	Wellnes s Centre
8	Quantative Aptitude & Logical Resoning	
9	Personal Psychology	
10	Classical Singining	
11	Dancing	
12	Drama	
13	Physics of Engineering Materials	FY
14	Nanotechnology	
15	Biology for Engineers	
16	Life and Career Skills with Interactive Learning	
17	English language Proficiency	
18	Probality of Random Variable	
19	Advanced Controller & Applications (VII Sem)	ETC
20	Pattern Recognition	
21	Internet of Things (5th sem)	
22	PLC, SCADA	
23	MEMS (VII Sem)	
24	Broadband Communication (6th sem)	
25	Introduction to Microprocessor, Microcontroller & Robotics (6th sem)	
26	Basic Electronic Components (5th sem)	

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27	Automotive Embedded System	
28	Block Chain	MECH
29	Vehicle Maintenance & Garage Practice	
30	Advanced JAVA Programing	
31	.Net	
32	LINUX	
33	Web Developmet & Design	
34	Machine Learning	
35	Cyber Security	CSE, IT, AI
36	Android App Development	
37	Ethical Hacking	
38	Data Science	
39	Big Data Analysis	
40	Application of Artificial Intelligence in Finance	
41	QILQ (Quantitative Intelligence and learning Quickness)	
42	Remote sencing and GIS	
43	Highway Pavements	
44	Traffic Engineering	Civil
45	Air pollution and Noise Pollution	
46	Waste Water Management	
47	Electrical Safety and Management	
48	Electrical Autocad	
49	Smart Grid Technology	EE
50	Industrial Instrumentation	

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B. Tech (Electronics & Telecommunication Engineering)
Proposed Curriculum for Semester VII [Final Year]

Sr. No.	Course Code	Type of Course	Course Title	Hours Per Week			Evaluation Scheme			Total Marks	Credits
				L	T	P	MSE	CA	ESE		
1	BTETC701	Professional Core Course 1	Digital Communication	3	0	0	20	20	60	100	3
2	BTETPE702	Program Elective 3	Group A	3	0	0	20	20	60	100	3
3	BTETPE703	Program Elective 4	Group B	3	0	0	20	20	60	100	3
4	BTETPE704	Program Elective 5	Group C	3	0	0	20	20	60	100	3
5	BTHM705	Humanities & Social Science including Management Courses	Financial Management	2	0	0	20	20	60	100	2
6	BTETL706	Program Elective 3 Lab		0	0	2	--	30	20	50	1
7	BTETL707	Program Elective 4 Lab		0	0	2	--	30	20	50	1
8	BTETL708	Program Elective 5 Lab		0	0	2	--	30	20	50	1
9	BTETP709	Project Part I		0	0	8	--	50	50	100	4
10	BTETF611	Field Training/ Internship/Industrial Training Evaluation		--	--	--	--	--	50	50	1
			Total	**14**	**0**	**14**	**100**	**240**	**460**	**800**	**22**

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Program Elective - 3 (Group A)	Program Elective -4 (Group B)	Program Elective- 5 (Group C)
(A) Microwave Theory & Techniques	(A) Embedded System Design	(A) Consumer Electronics
(B) RF Circuit Design	(B) Artificial Intelligence Deep learning	(B) Analog Integrated Circuit Design
(C) Satellite Communication	(C) VLSI Design & Technology	(C) Soft Computing
(D) Fiber Optic Communication	(D) Data Compression & Encryption	(D) Advance Industrial Automation-1
(E) Wireless Sensor Networks	(E) Big Data Analytics	(E) Mechatronics
(F) Mobile Computing	(F) Cyber Security	(F) Electronics in Smart City

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B. Tech (Electronics & Telecommunication Engineering)
Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	MSE	CA	ESE	Total	
- Introduction to Internet of Things - Computer Vision and Image Processing - Biomedical Signal Processing - Industrial Automation and Control - Cryptography and Network Security - Digital IC Design # Student to opt any two subjects from above list			3	-	--	20*	20*	60*	100	3
			3	-	--	20*	20*	60*	100	3
BTMEP803	Project Part-II or Internship*		--	--	30	--	--	100	150	15
		Total	--	--				220	350	21

Six months of Internship in the industry

 Students doing project at institute will have to appear for CA/MSE/ESE

* Student doing project at Industry will give NPTEL examination / Examination conducted by university i.e. CA/MSE/ESE

 # These subjects are to be studied on self –study mode using SWAYAM/NPTEL/Any other source

 # Teacher who work as a facilitator for the course should be allotted 3 hrs/week load.

 # Project Load: 2hrs/week/project.

Mapping of Courses with MOOCs Platform SWYAM / NPTEL

No	Course Name	Duration (Weeks)	Institute Offering Course	Name of Professor
1	Introduction to internet of things	12	IIT Kharagpur	Prof. Sudip Misra
2	Computer Vision and Image Processing	12	IIT Gandhinagar	Prof. M. K. Bhuyan
3	Biomedical Signal Processing	12	IIT Kharagpur	Prof. Sudipta Mukhopadhyay
4	Industrial Automation and Control	12	IIT Kharagpur	Prof. Siddhartha Mukhopadhyay
5	Cryptography & Network Security	12	IIT Kharagpur	Prof. Sourav Mukhopadhyay
6	Digital IC Design	12	IIT Madras	Prof. Janakiraman

Course Title : Communication Skills

Course Objectives:

The main objective of the subject is to enhance the employability skills of engineering students as well as communication skills at workplace.

The sub-objectives are:

1) To develop students' reading skills and pronunciation.
2) To develop technical communication skills through drafting, letter writing, and précis writing.
3) To develop literary skills through essay writing.
4) To develop public speaking skills of the students.
5) To expose the students to the ethics of English language by teaching grammar

Unit 1: Communication and Communication Processes   (06 hrs)

Introduction to Communication, Types and functions of Communication, Barriers to Communication and overcoming them, Role of Communication Skills in Society

Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Intensive and Extensive, Strategies for Reading Comprehension.

Listening : Importance of Listening, Types of Listening, Barriers to Listening.

Unit 2: English Grammar   (06 hrs)

Grammar: Forms of Tenses, Articles, Prepositions, Use of Auxiliaries and Modal Auxiliaries, Sentence Structures, Use of phrases and clauses in sentences, Importance of proper punctuation, Common Errors. Misplaced modifiers.

Unit 3: Professional Verbal Communication   (06 hrs)

Components of an effective talk, Idea of space and time in public speaking, Tone of voice, Body language, Timing and duration of speech, Audio-Visual Aids in speech. Presentation Skills, Group Discussion and Job Interviews

Unit 4: Developing Business Writing Skills, Styles and Practice   (06 hrs)

Writing Emails, Report Writing: Format, Structure and Types, Letter Writing: Types, Parts, Layouts, Writing Job Application Letter and Resume.

Nature and Style of sensible Writing and Practice: Describing, Defining, Classifying, Providing examples or evidence, writing introduction and conclusion, Writing Practices: Comprehension, Précis Writing, Essay Writing

Unit 5: Study of Sounds in English and Vocabulary Building   (06 hrs)

Introduction to phonetics, Study of Speech Organs, Study of Phonemic Script, Articulation of Different Sounds in English.

Vocabulary Building: The concept of Word Formation, Root words from foreign languages and their use in English, Use of prefixes and suffixes from foreign languages in English to form derivatives, Synonyms, antonyms, and words syllables.

Text book:

Mohd. Ashraf Rizvi, Communication Skills for Engineers, Tata McGraw Hill

Reference Books:

1) Sanjay Kumar, Pushp Lata, Communication Skills, Oxford University Press, 2016

2) Meenakshi Raman, Sangeeta Sharma, Communication Skills, Oxford University Press, 2017

3) Teri Kwal Gamble, Michael Gamble, Communication Works, Tata McGraw Hill Education, 2010

4) Anderson, Kenneth. Joan Maclean and Tossny Lynch. Study Speaking: A Course in Spoken English for Academic Purposes. Cambridge: CUP, 2004.

5) Aswalthapa, K. Organisational Behaviour, Himalayan Publication, Mumbai (1991).

6) Atreya N and Guha, Effective Credit Management, MMC School of Management, Mumbai (1994).

7) Balan,K.R. and Rayudu C.S., Effective Communication, Beacon New Delhi (1996).

8) Bellare, Nirmala. Reading Strategies. Vols. 1 and 2. New Delhi. Oxford University Press, 1998.

9) Bhasker, W. W. S & Prabhu, N. S.: English through Reading, Vols. 1 and 2. Macmillan, 1975.

10) Black, Sam. Practical Public Relations, E.L.B.S. London (1972).

11) Blass, Laurie, Kathy Block and Hannah Friesan. Creating Meaning. Oxford: OUP, 2007.

12) Bovee Courtland,L and Thrill, John V. Business Communication, Today McGraw Hill, New York, Taxman Publication (1989).

Course Title : Communication Skills-Lab

List of Practical Sessions (Any 6 practical sessions can be conducted):

1) Pronunciation, Intonation, Stress and Rhythm(02 hrs)
2) Introduction to Phonemic symbols (02 hrs)
3) Articulation of sounds in English with proper manner (02 hrs)
4) Practice and exercises on articulation of sounds (02 hrs)
5) Read Pronunciations/transcriptions from the dictionary (02 hrs)
6) Practice and exercises on pronunciations of words (02 hrs)
7) Introduce yourself (02 hrs)
8) Importance of Business Communication with the help of a case study.(02hrs)
9) Listening Skills/ Comprehension(02 hrs)
10) Common Everyday Situations: Conversations and Dialogues(02 hrs)
11) Communication at Workplace(02 hrs)
12) Rapid reading sessions (02 hrs)
13) Draft Email(02 hrs)
14) Resume Writing(02hrs)
15) Drafting Business Letter(02 hrs)
16) Preparing technical paper using IEEE format(02 hrs)
17) Extempore (02 hrs)
18) Elocution (02 hrs)
19) Group discussion (02 hrs)
20) Participating in a debate (02 hrs)
21) Presentation techniques (02 hrs)
22) Interview techniques – Job Interviews, Telephonic Interviews (02hrs)
23) Mock interviews and practice sessions (02 hrs)

ET4T007	Innovation and Entrepreneurship Development	Audit

Course Objectives

1. To understand the importance of Innovation and Idea Generation

2. To understand the concept of entrepreneurship.

Course Outcomes

At the end of the course students will be able to

1. Identify and validate of ideas.

2. Remember Patent registration of Innovation.

3. Understand roles and responsibilities of Entrepreneurship.

Module 1: Innovation [06 Hrs]

Concept of creativity, innovation, invention, discovery. Methods for development of creativity, convergent & divergent thinking etc. Introduction to Intellectual Property Rights (IPR), Patent and laws related to patents.

Module 2: Entrepreneurship [06 Hrs]

Concept of entrepreneurship, its relations in economic developments, Eventuation of concept of entrepreneur, characteristics of an Entrepreneur, Types of entrepreneurs, Qualities of entrepreneur, Factors affecting growth of entrepreneurship

Module 3: Role of Entrepreneurial Bodies [06 Hrs]

Theory of achievement, motivation, Medelland's. Experiment, Women entrepreneurship, Role of SSI, its advantages & limitations, policies governing small scale industries, Procedure to set up small scale industrial unit, Advantages and limitations of SSI.

Module 4: Role of Entrepreneurial Support [06 Hrs]

Factors governing project selection, Market survey, Preparation of project report. Financial, technical & market analysis of project. Entrepreneurial support systems, Role of consultancy organization like, District Industrial Centre, State Industrial Development Corporation, Financial institution, Latest SSI schemes of DIC (to be confirmed from DIC from time to time.

Text Book

1) Entrepreneurship Development, S. S. Khanka, S. Chand Publishers.

Reference Book

1) Creativity Innovation & Entrepreneurship, Zechariah James Blanchard, Needle Rat Business Publishers.

ET5T007	Consumer Affairs	Audit

Objective: This paper seeks to familiarize the students with their rights and responsibilities as a consumer, the social framework of consumer rights and legal framework of protecting consumer rights. It also provides an understanding of the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards. The student should be able to comprehend the business firms' interface with consumers and the consumer related regulatory and business environment.

Unit 1: Conceptual Framework   06 Lectures

Consumer and Markets: Concept of Consumer, Nature of markets: Liberalization and Globalization of markets with special reference to Indian Consumer Markets, E-Commerce with reference to Indian Market, GST, and Digital consumer issues.

Experiencing and Voicing Dissatisfaction: Consumer buying process, Consumer Satisfaction/dissatisfaction-Grievances-complaint, Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process: ISO 10000 suite

Unit 2: The Consumer Protection Law in India   06 Lectures

Objectives and Basic Concepts: Consumer rights and UN Guidelines on consumer protection, Consumer goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice, and restrictive trade practice.

Unit 3: Grievance Redressal Mechanism under the Indian Consumer Protection Law   06 Lect.

Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties.

Unit 4: Role of Industry Regulators in Consumer Protection   06 Lectures

  i.   Banking: RBI and Banking Ombudsman

  ii.   Insurance: IRDA and Insurance Ombudsman

  iii.   Telecommunication: TRAI

  iv.   Food Products: FSSAI

  v.   Electricity Supply: Electricity Regulatory Commission

  vi.   Real Estate Regulatory Authority

Text Books

  1. Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. (2007) *Consumer Affairs,*

Universities Press.

2. Choudhary, Ram Naresh Prasad (2005). *Consumer Protection Law Provisions and Procedure,* Deep and Deep Publications Pvt Ltd.

3. G. Ganesan and M. Sumathy. (2012). *Globalisation and Consumerism: Issues and Challenges*, Regal Publications

4. Suresh Misra and Sapna Chadah (2012). Consumer Protection in India: Issues and Concerns, IIPA, New Delhi

5. Rajyalaxmi Rao (2012), *Consumer is King,* Universal Law Publishing Company

6. Girimaji, Pushpa (2002). *Consumer Right for Everyone* Penguin Books.

7. E-books :- www.consumereducation.in

8. Empowering Consumers e-book, www.consumeraffairs.nic.in

9. ebook, www.bis.org

10. *The Consumer Protection Act, 1986 and its later versions.*

Reference Books

1. Misra Suresh, (Aug 2017) "Is the Indian Consumer Protected? One India OnePeople.

2. Raman Mittal, Sonkar Sumit and Parineet Kaur (2016) Regulating Unfair Trade Practices: An Analysis of the Past and Present Indian Legislative Models, Journal ofConsumer Policy.

3. Chakravarthy, S. (2014). MRTP Act metamorphoses into Competition Act. CUTSInstitute for Regulation and Competition position paper. Available online at www.cuts-international.org/doc01.doc.

4. Kapoor Sheetal (2013) "Banking and the Consumer" Akademos (ISSN 2231-0584)

5. Bhatt K. N., Misra Suresh and Chadah Sapna (2010). Consumer, Consumerism andConsumer Protection, Abhijeet Publications.

6. Kapoor Sheetal (2010) "Advertising-An Essential Part of Consumer's Life-Its Legaland Ethical Aspects", Consumer Protection and Trade Practices Journal, October 2010.

7. Verma, D.P.S. (2002). Regulating Misleading Advertisements, Legal Provisions and Institutional Framework. Vikalpa. Vol. 26. No. 2. pp. 51-57.

Website:

www.ncdrc.nic.in
www.consumeraffairs.nic.in
www.iso.org
www.bis.org.in
www.consumereducation.in
www.consumer-voice.in
www.cercindia.org

Dr. Babasaheb Ambedkar Technological University, Lonere.

BTHM705	Financial Management	2 Credits

Course Objectives:

- To help the students to develop cognizance of the importance of Financial Management in corporate valuation

- To enable students to describe how people analyze the corporate leverage under different conditions and understand why people valuate different corporates in different manner.

- To provide the students to analyze specific characteristics of Supply Chain Industry and their future action for cash flow

- To enable students to synthesize related information and evaluate options for most logical and optimal solution such that they would be able to predict and control Debt Equity incurrence and improve results.

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. The students would be able to understand and define basic terminology used in finance and accounts

2. The students would be able to prepare& appraise Financial Statements and evaluate a company in the light of different measurement systems.

3. The students would be able to analyze the risk and return of alternative sources of financing.

4. Estimate cash flows from a project, including operating, net working capital, and capital spending.

5. To estimate the required return on projects of differing risk ,to estimate the cash flows from an investment project, calculate the appropriate discount rate, determine the value added from the project, and make a recommendation to accept or reject the project

6. To describe and illustrate the important elements in project finance Using financial calculator and Excel in a variety of problems.

UNIT - 1

Introduction to Financial Accounting, Book keeping & Recording: Meaning, Scope and importance of Financial Accounting. Financial Accounting - concepts and conventions, classification of accounts, Rules and principles governing Double Entry Book-keeping system, Meaning, Preparation of Journal, Ledger , Cash book & Trial balance.

UNIT - 2

Financial Statement Preparation, analysis & Interpretation: Preparation of financial statement and Profit & Loss Account, Balance Sheet. , Ratio Analysis - classification of various ratios.

UNIT - 3

Introduction To Financial Management: Concept of business finance, Goals & objectives of financial management, Sources of financing, Long Term financing- shares, debentures, term loans, lease & hire purchase, retained earnings, public deposits, bonds (Types, features & utility). Short Term Financing- bank finance, commercial paper, trade credit

UNIT - 4

Working Capital Management: Concept of working Capital, significance, types. Adequacy of working capital, Factors affecting working capital needs, financing approaches for working capital, Methods of forecasting working capital requirements, Methods of Forecasting.

UNIT - 5

Time Value of Money & Capital Budgeting: Concept of time value of money, Compounding & discounting; Future value of single amount & annuity, present value of single amount & annuity; Practical application of time value technique. Capital budgeting - Nature and significance, techniques of capital budgeting –Pay Back Method, Accounting rate of return, Internal Rate of Return, DCF, Net Present Value and profitability index.

UNIT - 6

Project Financing: Details of the company, its promoters and project finances required, profitability etc., Loan documentation-Appraisal of terms loans by financial institutions. Basic components of project finance.

TEXT & REFERENCE BOOKS

1. Financial Management by Khan & Jain, Text, Problem & Cases, Tata McGraw Hill Publication 5th Edition.

2. Tulsian Financial Management by Dr. P.C.Tulsian, S Chand Publication 5th Edition.

3. Taxman's Financial Management by Ravi M. Kishore, Taxmann 2017 Edition.

4. A Textbook of Financial , Cost & Management Accounting by Dr.P.Pariasamy, Himalaya Publishing House

5. Fundamentals of financial Management by Bhabhtosh Banerjee, PHI publication, 2nd Edition.

JAIDEV EDUCATION SOCIETY'S
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KATOL ROAD, NAGPUR
Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere
Website: www.jdcoem.ac.in   E-mail: info@jdcoem.ac.in
An Autonomous Institute, with NAAC "A" Grade
Basic Science and Humanities Department
2021-22 (Odd Sem)

VISION	MISSION
To lay a robust foundation for an institute to reach its zenith.	The department is making its paramount efforts, 1. Achieving academic excellence through rigorous teaching, learning and evaluation practices. 2. To develop an ability to apply knowledge of basic science and mathematics to excel in the field of engineering. 3. To provide salutary environment for the betterment of faculty and students.

Course: B. Tech. All branches	**Year/Semester :** First Year/Sem I	
Name of the Teacher : Dr.Asha A. Dave	**Subject Code :** HU1T001	
Subject : Communication Skill	**Section** ME/CE/EE	
	Theory	**2**
	Practical	**4**

Course Outcomes	Course Objective
Define communication, reading, listening and phonetics 2.Classify different types and functions of communication, reading, listening 3.Demonstrate ability to write/speak error free while making optimum use of business 4.Distinguish among various levels of communication barriers while developing an understanding 5.Evaluate effective ways of conducting speech, presentation, group discussion and job	1.To develop Students Reading Skills and Pronunciation 2.To develop technical communication skillsthrough drafting, letter writingand precise writing. 3. To develop literary skills through essay writing 4. To develop public speaking skills of the students.

6.Organize their thoughts for effective presentation and writing	5.To expose students to the ethics of English language by teaching grammar 6.To enhance the employability skills of Engineering students as well as communication skills at work place.

TEACHING PLAN

NAME OF THE TEACHER: - Dr.Asha A. Dave
SUBJECT: -**COMMUNICATION SKILLS**   SUBJECT CODE   :-   **HU1T001**
YEAR/SEM: -**FIRST YEAR/ SEM I**   DEPARTMENT: -ME/CE/EE

S r. N o	Lect. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books (Page no)	Reference Book (Page no)	URL's (NPTEL/OnlineMaterial/PPt/Video)	Applications (R&D/Indust ry)	Learning Outcomes
							UNIT-I Communication and Communication Processes		
1	1	1.01	Introduction to Communication, Types and functions of Communication		T1 (Pg:4-12)	R1 (Pg:4-12)	Video: https://www.youtube.com/watch?v=-DHeRk4cwtY Material: https://thebusinesscommunication.com/what-is-communication-functions-of-communication/	P1	Students should be able to define and describe the types and function of communication.
2	2	1.02	Barriers to Communication and overcoming them, Role of Communication Skills in Society		T1 (Pg:15-16)	R1 (Pg:25-36)	Video: https://www.youtube.com/watch?v=slq1nAhZuqE Material: https://www.toppr.com/guides/business-correspondence-and-reporting/communication/barriers-in-communication/	P2	Students should be able understand the barrier for effective communication and how they can overcome them.

3	3	1.03	Introduction to Reading, Barriers to Reading		T1 (Pg:248-249)	R1 (Pg:223)	Video: https://www.youtube.com/watch?v=slq1nAhZuqE Material: https://www.ques10.com/p/12688/discuss-some-of-the-barriers-to-effective-readin-1/	P3	Students should be able to understand the barriers of reading and how they can become a good reader.
4	4	1.04	Types of Reading: Skimming, Scanning, Intensive and Extensive reading, Strategies for Reading Comprehension		T1 (Pg:265-268)	R1 (Pg:224)	Video: https://www.youtube.com/watch?v=RtcXr0_201A Material: https://www.howtolearn.com/2012/08/different-reading-techniques-and-when-to-use-them/	P4	Students should be able to use different reading techniques to solve reading comprehension questions in lesser time.
5	5	1.05	Importance of Listening, Types of Listening		T1 (Pg:74-76)	R1 (Pg:63-65)	Video: https://www.youtube.com/watch?v=22gzvSindTU	P5	Students should understand the importance and types of listening.
6	6	1.06	Barriers to Listening		T1 (Pg:78-80)	R1 (Pg:65-67)	Video: https://www.youtube.com/watch?v=o6JGi2voyDM	P6	Students should know the barriers for effective listening and how they can overcome them to become good listeners.
UNIT-II Study of Sounds in English and Vocabulary Building									
7	7	2.01	Introduction to phonetics, Study of Speech Organs		T1 (Pg:120)	R1 (Pg:73-74)	Video: https://www.youtube.com/watch?v=4KDkHvvksAE	P7	Students should know the basics of phonetics and how the speech organs work while speaking.
8	8	2.02	Study of Phonemic Script		T1 (Pg:121-	R2 (Pg:75-76)	Video: https://www.youtube.com/watch?	P8	Students should be able to read and write the transcription of sounds of the words and

					123)		v=JfwVXfl0EnI		phrases.
9	9	2.03	Articulation of Different Sounds in English		T1 (Pg:129)	R2 (Pg:81-96)	Video: https://www.youtube.com/watch?v=72M770xTvaU https://www.youtube.com/watch?v=d1HZPx8DuDw	P9	Students should be able to understand the ways to produce speech.
1 0	10	2.04	The concept of Word Formation, Root words from foreign languages and their use in English		T1 (Pg:580-582)	R1 (Pg:437-449)	Material: https://wordpandit.com/root-words-in-english/	P10	Students should be able to expand their vocabulary by understanding the concept of word formation and how root words are taken from other languages to form English words.
1 1	11	2.05	Use of prefixes and suffixes from foreign languages in English to form derivatives		T1 (Pg:583-586)	R1(Pg: 437-449)	Video: https://www.youtube.com/watch?v=1ffjfpMl9-4	P11	Students should get acquainted with the prefixes and suffixes and how to use them to form words.
1 2	12	2.06	Synonyms, antonyms, and standard abbreviations		T1 (Pg:586-588)	R1 (Pg: 437-449)	Material: https://www.toppr.com/guides/english/vocabulary/synonyms-and-antonyms/ https://www.englisch-hilfen.de/en/words/abbreviations.htm	P12	Students should get the knowledge of synonyms and antonyms and some standard abbreviations used in English language.
			UNIT-III English Grammar						
1 3	13	3.01	Forms of Tenses		T1 (Pg:552-554)	R2 (Pg:42-50)	Video: https://www.youtube.com/watch?v=th8SNmRW69w	P13	Students should be able to apply the correct rules of tenses to form grammatically correct sentences.

14	14	3.02	Articles, Preposition		T1 (Pg:547-551)	R2 (Pg:14-41)	Video: https://www.youtube.com/watch?v=Cc5i5jnqM4g https://www.youtube.com/watch?v=duMo2VoFAQY	P14	Students should be able to use the proper articles and prepositions at proper place.
15	15	3.03	Use of Auxiliaries and Modal Auxiliaries		T1 (Pg:551-552)	R3 (Pg:90-95)	Video: https://www.youtube.com/watch?v=wVYcMIOMsQc	P15	Students should be able to use appropriate auxiliaries.
16	16	3.04	Sentence Structures, Use of phrases and clauses in sentences		T1 (Pg:)	R3 (Pg:157-159)	Video:https://www.youtube.com/watch?v=4dr5lN1jqRE	P16	Students should be able to construct grammatically correct sentences.
17	17	3.05	Importance of proper punctuation		T1 (Pg:)	R2 (Pg:122-132)	Video: https://www.youtube.com/watch?v=bY5ChVDRLus	P17	Students should be able to use the correct punctuation marks.
18	18	3.06	Common Errors. Misplaced modifiers		T1 (Pg:505-521)	R2 (Pg:107-111)	Video: https://www.youtube.com/watch?v=1Dax90QyXgI	P18	Students should get acquainted with the common errors in English and how to avoid them.
UNIT-IV Professional Verbal Communication									
19	19	4.01	Components of an effective talk, Idea of space and time in public speaking		T1 (Pg:133)	R4 (Pg:91-107)	Video: https://www.youtube.com/watch?v=-FOCpMAww28	P19	Students should be able to understand the components to become effective public speakers.
20	20	4.02	Tone of voice, Body language		T1 (Pg:114)	R1 (Pg:178)	Video: https://www.youtube.com/watch?v=bSx6Zg9Ibgw https://www.youtube.com/watch?	P20	Students should be able to use tone of voice and body language for effective communication.

							v=cFLjudWTuGQ		
2 1	21	4.03	Timing and duration of speech, Audio-Visual Aids in speech		T1 (Pg:)	R1 (Pg:)	Video: https://www.youtube.com/watch?v=MGobKltZtII	P21	Students should be able to use different audio-visual aids.
2 2	22	4.04	Presentation Skills		T1 (Pg: 121-141)	R1 (Pg:113-137)	Video: https://www.youtube.com/watch?v=dEDcc0aCjaA	P22	Students should be able to use presentation skills to give betters presentations.
2 3	23	4.05	Group Discussion		T1 (Pg:187-208)	R1 (Pg:185-190)	Video: https://www.youtube.com/watch?v=BguYUJ7cWrs	P23	Students should understand importance and rules to participate in group discussion.
2 4	24	4.06	Job Interviews		T1 (Pg:157-183)	R1 (Pg:143-156)	Video: https://www.youtube.com/watch?v=1mHjMNZZvFo	P24	Students should be able to know the commonly asked questions in interviews and how to face interviews.
UNIT-V Developing Business Writing Skills, Styles and Practice									
2 5	25	5.01	Writing Emails		T1 (Pg: 491-500)	R1 (Pg:401-411)	Video: https://www.youtube.com/watch?v=3Tu1jN65slw	P25	Students should be able to write professional emails.
2 6	26	5.02	Report Writing: Format, Structure and Types		T1 (Pg:503-516)	R1 (Pg:284-315)	Material: https://www.openpolytechnic.ac.nz/current-students/study-tips-and-techniques/assignments/how-to-write-a-report/	P26	Students should know the format of report writing and how to write reports.

2 7	27	5.03	Letter Writing: Types, Parts, Layouts, Writing Job Application Letter		T1 (Pg:391-409)	R1 (Pg:368-386)	Material: https://www.wikihow.com/Write-a-Letter	P27	Students are able to write the business letters.
2 8	28	5.04	Resume		T1(Pg:438-458)	R1 (Pg:160-169)	Material: https://www.wikihow.com/Make-a-Resume	P28	Students are able to write good resumes.
2 9	29	5.05	Describing, Defining, Classifying, Providing examples or evidence	31/10/2019	T1 (Pg:)	R1 (Pg:274) R2 (Pg: 290-299)	Video: https://slideplayer.com/slide/5986568/	P29	Students learn different styles of writing.
3 0	30	5.06	Writing Practices: Comprehension, Précis Writing, Essay Writing		T1 (Pg:377-385)	R2 (Pg:300-385)	Video: https://www.youtube.com/watch?v=o9aVjBHEEbU https://www.youtube.com/watch?v=xKvm46W9Tm0 Material: https://grammar.yourdictionary.com/writing/how-to-write-an-essay.html	P30	Students should learn different types of writing.

*T=Text Book; R= Reference Book; C= Company name; P= Research Paper

Total number of lectures as per syllabus: - 30Total number of lectures as per planned: - 30

Final Outcome of the Subject (Maximum 6 Outcomes):

Students should be able to:

CO1. Define communication, reading, listening and phonetics.

CO2. Classify different types and functions of communication, reading, listening, speech organs, and sounds in English, types of reports, letters.

CO3. Demonstrate ability to write/speak error free while making optimum use of business vocabulary, grammar, tone of voice, body language.
CO4. Distinguish among various levels of communication barriers while developing an understanding of analytical writing.
CO5. Evaluate effective ways of conducting speech, presentation, group discussion and job interviews.
CO6. Organize their thoughts for effective presentation and writing.

TextBooks:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Effective Technical Communication	M Ashraf Rizvi	Tata McGraw-Hill Education	Second Edition/2005

Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	Technical Communication Principles and Practice	Meenakshi Raman, Sangeeta Sharma	Oxford University Press	Third Edition/ 2015
R2	Professional Communication Skills	Er. A.K. Jain, Dr. Pravin S.R.Bhatia, Dr. A.M. Sheikh	S. Chand	Fifth Edition/ 2011
R3	High School English Grammar and Composition	Wren & Martin	S Chand	2008
R4	How to Develop Self-Confidence & Influence People by Public Speaking	Dale Carnegie	Simon & Schuster, Inc.	1956

Company/Industry:

Code	Company/Industry Name	Website	Detailed Information

Research Paper:

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	Issue/Volume/Page no/Year
P1	Communication Skills for the 21st Century Engineer	Marc J. Riemer	UNESCO International Centre for Engineering Education (UICEE) Faculty of Engineering, Monash University, Clayton, Melbourne, VIC 3800, Australia	http://www.wiete.com.au/journals/GJEE/Publish/vol11no1/Riemer.pdf	Global J. of Engng. Educ., Vol.11, No.1 Published in Australia
P2	Barriers to Effective Communication	Dr. Radhika Kapur		https://www.researchgate.net/publication/323794732_Barriers_to_Effective_Communication	March 2018

P3	Reading difficulties as barriers to learning experienced by learners entering the intermediate phase	Dorcas Joan Naiken	University of South Africa	https://core.ac.uk/download/pdf/85157470.pdf November 2016
P4	How Can Students Improve Their Reading Comprehension Skill?	Abbas Pourhosein Gilakjani	Journal of Studies in Education	https://www.researchgate.net/publication/303742915_How_Can_Students_Improve_Their_Reading_Comprehension_Skill DOI: 10.5296/jse.v6i2.9201 June 2016 ISSN 2162-6952 2016, Vol. 6, No. 2
P5	The Types and the Functions of the Listening Activities in Turkish and English Course Books1	Derya Eken	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/275544385_The_Types_and_the_Functions_of_the_Listening_Activities_in_Turkish_and_English_Course_Books1 DOI: 10.1016/j.sbspro.2014.09.355 October 2014
P6	Keys to Effective Listening and Presenting: An Action Plan	Tharindu Dananjaya Weerasinghe, T J R Thisera	Kelaniya Journal of Human Resource Management	https://www.researchgate.net/publication/313828241_Keys_to_Effective_Listening_and_Presenting_An_Action_Plan DOI: 10.4038/kjhrm.v9i1-2.11 Volume 09-Number 01-January 2014 & Number 02-July 2014
P7	Speech Production	Dani Byrd, Elliot Saltzman	The Handbook of Brain Theory and Neural Networks, Second edition, (M.A. Arbib, Ed.), Cambridge, MA: The MIT Press, 2002	https://www.researchgate.net/publication/2489347_Speech_Production March 2002
P8	Phonemic Awareness: Clarifying What We Know	Marilyn Chapman		https://www.researchgate.net/publication/252718468_Phonemic_Awareness_Clarifying_What_We_Know January 2003

P9	DIFFICULTIES IN ARTICULATION OF SOME CONSONANT SOUNDS	GEORGE KUPARADZE		https://www.researchgate.net/publication/308478067_DIFFICULTIES_IN_ARTICULATION_OF_SOME_CONSONANT_SOUNDS_On_the_material_of_English_and_Georgian	September 2016
P10	The Significance of the Words Borrowed Into English Language	V. Chandra Sekhar Rao		https://www.researchgate.net/publication/324273536_The_Significance_of_the_Words_Borrowed_Into_English_Language	April 2018
P11	Prefixes of Degree in English: A Cognitive-Corpus Analysis	Zeki Hamawand	Open Journal of Modern Linguistics 01(02)	https://www.researchgate.net/publication/267990519_Prefixes_of_Degree_in_English_A_Cognitive-Corpus_Analysis DOI: 10.4236/ojml.2011.12003	January 2011
P12	On the use of antonyms and synonyms from a domain perspective p	Debela Tesfaye, Carita Paradis	Conference: Word Knowledge and Word Usage: Representations and processes in the Mental Lexicon., At Pisa	https://www.researchgate.net/publication/275210472_On_the_use_of_antonyms_and_synonyms_from_a_domain_perspective	March 2015
P13	Tense in English	Laura Adrienne Michaelis	The Handbook of English Linguistics, pp.220 - 243	https://www.researchgate.net/publication/228045646_Tense_in_English DOI: 10.1002/9780470753002.ch10	January 2008
P14	Information Structure and English Article Pedagogy	Peter Master	System 30(3):331-348	https://www.researchgate.net/publication/2	September 2002

				23357198_Informatio n_Structure_and_Engl ish_Article_Pedagogy DOI: 10.1016/S0346-251X(02)00018-0	
P15	HEDGING THROUGH THE USE OF MODAL AUXILIARIES IN ENGLISH ACADEMIC DISCOURSE	Tofan Hardjanto	HUMANIORA	https://www.research gate.net/publication/3 10663354_HEDGING_ THROUGH_THE_USE_ OF_MODAL_AUXILIAR IES_IN_ENGLISH_ACA DEMIC_DISCOURSE DOI: 10.22146/jh.v28i1.11412	VOLUME 28 No. 1 February 2016
P16	Difficulties of Building English Sentences in Writing	Badraddin ALawad Balal, Sabir Ahmed Hago	Conference: The European Eonference on Language Learning ECLL 2015, At Dubai, UAE	https://www.research gate.net/publication/2 83256681_Difficulties _of_Building_English_ Sentences_in_Writing	February 2015
P17	An Analysis of English Punctuation: The Special Case of Comma	Murat Bayraktar, Bilge Say, Varol Akman	International Journal of Corpus Linguistics	https://www.research gate.net/publication/2 8762309_An_Analysis _of_English_Punctuati on_The_Special_Case _of_Comma DOI: 10.1075/ijcl.3.1.03bay	July 1998
P18p	COMMON GRAMMATICAL ERRORS IN THE USE OF ENGLISH AS A FOREIGN LANGUAGE: A CASE IN STUDENTS' UNDERGRADUATE THESES	Bambang Sugeng	LITERA	https://www.research gate.net/publication/3 30680801_COMMON _GRAMMATICAL_ERR ORS_IN_THE_USE_OF _ENGLISH_AS_A_FOR EIGN_LANGUAGE_A_C ASE_IN_STUDENTS'_U NDERGRADUATE_THE SES DOI: 10.21831/ltr.v15i1.1041 5	Volume 15, Nomor 1, April 2016

P19	Enhancing the development of speaking skills for non-native speakers of English	Kamonpan Boonkit	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/248607406_Enhancing_the_development_of_speaking_skills_for_non-native_speakers_of_English DOI: 10.1016/j.sbspro.2010.03.191	2(2):1305-1309 · December 2010
P20	Language and Body Language	Vijendra Pratap Singh		https://www.researchgate.net/publication/324246401_Language_and_Body_Language	April 2018
P21	The Impact of Audio-Visual Aids (AVA) and Computerize Materials (CM) on University ESP Students' Progress in English Language	Ali Al-Khayyat	International Journal of Education and Research	https://www.researchgate.net/publication/325285878_The_Impact_of_Audio-Visual_Aids_AVA_and_Computerize_Materials_CM_on_University_ESP_Students'_Progress_in_English_Language	Vol. 4 No. 1 January 2016
P22	Developing Presentation Skills in the English Language Courses for the Engineering Students of the 21st Century Knowledge Society: A Methodological Approach	Catana Elisabeta Simona	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/282457434_Developing_Presentation_Skills_in_the_English_Language_Courses_for_the_Engineering_Students_of_the_21st_Century_Knowledge_Society_A_Methodological_Approach DOI: 10.1016/j.sbspro.2015.08	August 2015

				.261	
P23	The Use of Small Group Discussion and Snowballing Techniques: An Effort to enhance EFL Students' Self –Efficacy and Speaking Skill	Ade Silvana, Martin Kustati, Darmayanti Darmayanti	AL-TA'LIM JOURNAL, 25 (1), 2018, (77-86)	https://www.researchgate.net/publication/326792181_The_Use_of_Small_Group_Discussion_and_Snowballing_Techniques_An_Effort_to_enhance_EFL_Students'_Self_-Efficacy_and_Speaking_Skill DOI: 10.15548/jt.v25i1.409	28 th February 2018
P24	Better English for Better Employment Opportunities	Dr. Meenu Pandey, Prabhat Kumar Pandey	International Journal of Multidisciplinary Approach and Studies	https://www.researchgate.net/publication/264788119_Better_English_for_Better_Employment_Opportunities	Volume 01, No.4, July - Aug 2014
P25	Students writing emails to faculty: An examination of E-politeness among native and non-native speakers of English	Sigrun Biesenbach-Lucas	Language, Learning and Technology	https://www.researchgate.net/publication/259703275_Students_writing_emails_to_faculty_An_examination_of_E-politeness_among_native_and_non-native_speakers_of_English	11(2):59-81 · June 2007
P26	Report Writing Skills of Engineering Students	Su-Hie Ting, Syaharom Abdullah	The Second International Conference on the Roles of the Humanities and Social Sciences in Engineering	https://www.researchgate.net/publication/228295799_Report_Writing_Skills_of_Engineering_Students	12-14 November 2010
P27	Letters and Letter Writing in Early Modern	Gabriella Del Lungo	Journal of Early Modern Studies	https://www.researc	April 2014

	Culture: An Introduction	Camiciotti		hgate.net/publication/307742338_Letters_and_Letter_Writing_in_Early_Modern_Culture_An_Introduction DOI: 10.13128/JEMS-2279-7149-14163	
P28	THE QUALITIES OF A GOOD CV AND RESUME	Adrian Wallwork		https://www.researchgate.net/publication/315404987_THE_QUALITIES_OF_A_GOOD_CV_AND_RESUME DOI: 10.1007/978-1-4939-0647-5_1	June 2014
P29					
P30	Reading Skills and Reading Comprehension in English for Specific Purposes	Milevica Bojovic	Conference: The International Language Conference on the Importance of Learning Professional Foreign Languages for Communication between Cultures, At Celje, Slovenia	https://www.researchgate.net/publication/261213403_Reading_Skills_and_Reading_Comprehension_in_English_for_Specific_Purposes	23 and 24 September 2010

Dr.Asha A. Dave   Dr. U. V. Rathod   Dr. Amit N. Gupta

Subject Teacher   Academic Incharge, BSHD   HOD, BSHD

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An Autonomous Institute, with NAAC "A" Grade
Department of Electronics and Telecommunication Engineering
"Rectifying Ideas, Amplifying Knowledge"
2020-21 (Odd Sem)

VISION	MISSION
"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

Teaching Plan

Course : B. Tech in Electronics & Telecommunication		**Year/Semester :** 3rd year	
Name of the Teacher : Prof. Asha dave		**Subject Code :**	
Subject :Consumer Affairs		**Section :**CS/It	
Periods per Week (each 60 min)		**Lecture**	**2**
		Tutorial	**-**
		Practical	

Course Objective	Course Outcomes
1. To familiarize the students with of their rights as a consumer, the social framework of consumer rights and legal framework of protecting consumer rights. 2. To provide an understanding of the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards.	1. 1 Remember the basic terminology related to Consumer Affairs 2. Understand the different approaches applied in differentaspects of consumption, customerprotection and consumer awareness andtheir evolution. 3. Apply the knowledge in different aspects ofconsumption, customer protection andconsumer awareness. 4. Comprehend the business firms' interface with consumers and the consumer related regulatory and business environment. 5. Analyze: the norms applicable to different consumption patterns. 6. Evaluating the functioning of Consumer Protection mechanism in India. .

Sr. No	Lec. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books (Page no) Reference Book (Page no)	URL's (NPTEL/OnlineMaterial /PPt/Video)	Applications (R&D/ Industry)	Learning Outcomes	CO mapping

Unit I –Introduction

Sr. No	Lec. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books	URL's	Applications	Learning Outcomes	CO mapping
1	1	1	An Introduction to History and Development of Consumer Movement	23/2		https://youtu.be/G5EO8DbqH94	All activities relating to buying and selling of Products	Knowledge of Consumer Movement	1
2	2	2	An introduction to International Organizations and Agreements;;	26//2		www.youtube.com%2Fwatch%3Fv%3D38CXcE_Q1Ug&usg=AOvVaw3jEJt4Twu2LNyIDe1lU1OI		Knowledge of international organizations	2
3	3	3	Product Liabilities Including Tortious Liabilities	2/3		https://youtu.be/jSrC-EWYIJQ		Knowing the Producers liability	2
4	4	4	Role of Non-Government	5/3		https://youtu.be/webOQVOuNSg		How Ngo protect the Rights of Customers	3
5	5	5	Importance					Significance of Consumer Movement	2
6	6	6	Revision					revision	
7	7	7	Who can file a complaint? Grounds of filing a complaint	5/3		https://youtu.be/webOQVOuNSg		Process of Filing a complain	3
8	8	8	Limitation period; Procedure for filing and hearing of a complaint;	9/3		https://www.slideshare.net/InstaRemedy/consumer-rights-in-india-73526804		Who can file a complain	2
9	9	9	Disposal of cases, Relief/Remedy to be provided;	12/3		https://www.slideshare.net/maheswarijaikumar/consumer-protection-act-india		How remedies can be sought	3
10	10	10	Temporary Injunction, Enforcement of	16/3		https://www.slideshare.net/maheswarijaikumar/consumer-protection-act-india		Awareness about injunctions	2
11	11	11	Appeal, frivolous and vexatious	19/3		https://www.slideshare.net/satyapalkurmi/cons			

			complaints			umer-protection-act-new			
12	12	12	Offences and penalties	22/3		https://www.slideshare.net/satyapalkurmi/consumer-protection-act-new		Offences and penalties imposd	3
13	13	13	Features and Aim of Consumer Protection Act	26/3		https://www.slideshare.net/satyapalkurmi/consumer-protection-act-new		Awareness of COPRA	3
14	14	14	Consumer Protection Act;	30/3		https://www.slideshare.net/satyapalkurmi/consumer-protection-act-new		Copra 2	2
15	15	15	Consumer Protection Act;					Copra 3	2

Unit IV – International NGO

16	16	16	Comparison between Pre and Post Legislation Period;Land Mark Judgements	2//4		https://www.slideshare.net/satyapalkurmi/consumer-protection-act-new		Changes in Copra	2
17	17	17	Customer Awareness Importance	6/4		https://www.slideshare.net/ManishKumavat/consumer-awarenes-ppt		Importance of Awareness	3
18	18	18	Companies' Behaviour and Customer Awareness	9/4		Companies' Behaviour and Customer Awareness		How companies exploit people	4
19	19	19	Relevance, Understanding the Market and Consumers'	16/4		https://www.slideshare.net/AnjaliKaur3/theory-of-consumer-behaviour-class-12-economics		Different experiences in the market	4
20	20	20	Companies' Behaviour, Companies' Practices Requiring	20/4		https://www.slideshare.net/DrifttHQ/what-is-a-gotocustomer-strategy		Companies behaviour	4
21	21	21	Customer Awareness Relevance and Strategies	23/4		https://www.slideshare.net/DrifttHQ/what-is-a-gotocustomer-strategy		Strategies to increase awareness	5
22	22	22	Planning	27/4				Planning for future	5

23	23	23	Globalisation						
24	24	24	Leading Cases decided under Consumer Protection Act	30/4		https://www.researchgate.net/publication/342329505_Consumer_Protection-ppt			6
25	25	25	: Medical Negligence; Banking; Insurance; Housing	4/5		https://www.researchgate.net/publication/342329505_Consumer_Protection-ppt			6
26	26	26	Real Estate; Electricity, Water, and Telecom Services	7/5		https://www.researchgate.net/publication/342329505_Consumer_Protection-ppt			6
27	27	27	Education; Defective Product;Presenting a comprehensive solution to aselected case study.	11/5		https://www.researchgate.net/publication/342329505_Consumer_Protection-ppt			6
28	28	28	Education; Defective Product;Presenting a comprehensive solution to aselected case study.	14/5		https://www.researchgate.net/publication/342329505_Consumer_Protection-ppt			6

Text Books / Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Consumer Rights Clarion book.2.Shri Ram Khanna , Saivta Hanunspal Sheetal Kapoor.	M.J Anthony	S chand University Press .3.R.S.N.Pillai	

			and	
T2	"Violation of Democratic Rights in India", Bombay Popular Prakashan	A. R. Desai	Bombay Popular Publisher	
T3	, Consumerism A Growing Concept,.	Mohine Setr and P.Seetharaman	Phoenix Publishers, New Delhi	

Company/Industry:

Research Paper:

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	Issue/Volume/Page no/Year
P1	1. Remedies for consumer protection: prevention, restitution, or punishment, ,. 2. The consumer ombudsman, Com.L.J. 3. Challenge to the lawyers: Philippines, 4. Who speaks for the consumer, Susan S. Silbey, 1984 Am. B. Found, Res 5. Determination of complex issues under the Consumer Protection Act: 9. 6. Consumer Protection Act, 1986: Supreme Court recent elucidations and interpretations, V. Gopalan, CLC/XII/(2002).	DorDonald B. King, 79 othy Lilia D (1987). V.K. Agarwal, (2004Cohen	J. Ling, 12 Int'l Legal Prac. 93 ournal of Marketing, Vol. 39	(355, (1974). Oct 19. J. 429, (1984). 75) p. 24	6 5
P2					

Verma, D. P. S. (2002). Developments in Consumer Protection in India. Journal of Consumer Policy. Vol. 25. No. pp 107 –123.

2.Verma, D.P.S. (2002). Regulating Misleading Advertisements, Legal Provisions and Institutional Framework. Vikalpa. Vol. 26. No. 2. pp. 51-57.

3.Ralph L. Day and Laird E. Landon, Jr. (1997). Towards a Theory of Consumer Complaining Behaviour. Ag Woodside, et al. (Eds.). Consumer and Industrial Buying Behaviour. New York; North Holland pp. 425-37.4.George, S. Day and A. Aaker (1970). A Guide to consumerism. Journal of Marketing. Vol. 34. pp 12-19.

5.Sharma, Deepa (2003).New measures for Consumer Protection in India. The Indian Journal of Commerce. Vol.56. No.4. pp. 96-106 6.Sharma, Deepa (2011).Consumer Grievance Redress by Insurance Ombudsman. BIMAQUEST.Vol.11. pp.29-47.

Prof.Asha Dave	**Prof. Acacemic Incharge**	**Dr. N. N. Gyanchandani**
Subject Teacher	**Academic Incharge**	**HOD (ETC)**

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Teaching Plan

Programme : B. Tech in Electronics & Telecommunication		**Year/Semester** : 7th Semester (3rd Year)	
Name of the Teacher : Prof. Asha Dave		**Subject Code** : BTEXC505	
Course : financial Management		**Section** :ETC - A	
Periods per Week (each 60 min)		**Lecture**	2
		Tutorial	-
		Practical	-

Course Objective	Course Outcomes
1. To understand the functoning of Finance 2. To understand The management of businesss. 3. To study about the concepts of working capital. 4. The learner can understand how a business or a production unit can be set up. 5. The students can design and develop a business plan their owns. **6. Understand the basic features of Economy.**	1. **Remember** The basic definitions of Economics. 2. **Understand** How Capital has to be arranged and organized.. 3. **Apply** knowledge of finance to understand the financial management of a business. 4. **Analyze** the causes of Price Rise and Indian Economic condition.. 5. **Evaluate The causes for Indian development.**. 6. **Design** a simple business of their own.

Sr. No	Lec. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books (Page no) Reference Book (Page no)	URL's (NPTEL/OnlineMaterial /PPt/Video)	Applications (R&D/ Industry)	Learning Outcomes	CO mapping
Unit I – Introduction To Financial Management									

1	1	1	Concept of business finance,	Day 1	T2 (Pg : 9 – 9)	https://www.youtube.com/watch?v=vLPmjO4K3Vk	C1-C10	Various terminology related to business	
2	2	2	Goals & objectives of financial management,	Day 2	T1 (Pg : –)	https://youtu.be/a3_-kBT5vM0 https://www.youtube.com/watch?v=p0A82MJGD7c	C1-C10	Hoe finances can be managed	
3	3	3	Sources of financing,	Day 3	T1 (Pg : –)	https://www.youtube.com/watch?v=c8hIwQ5xFY8	C1-C10	From where you can get money to start your business	
4	4	4	Long Term financing- shares, debentures, term loans, lease & hire purchase, retained earnings, public deposits, bonds (Types, features & utility).	Day 4	T1 (Pg : –)	https://www.youtube.com/watch?v=7QFnKWuIsT8 https://www.youtube.com/watch?v=-eKXPMIlPaU https://www.youtube.com/watch?v=b6HoXMwDPhQ https://www.youtube.com/watch?v=xiwQh5E7JWQ https://www.youtube.com/watch?v=sPFotedshTU	C1-C10	Different type of Loans available	
5	5	5	Short Term Financing- bank finance, commercial paper,	Day 5	T1 (Pg : –)	https://www.youtube.com/watch?v=GlabOH78TMM https://www.youtube.com/watch?v=eq2kbv9QuN8	C1-C10	Short term loan availibility	

Unit II – Working Capital Management

6	7	7	Concept of working Capital	Day 7	T1 (Pg : –)	https://www.youtube.com/watch?v=XvHAlui-Bno	C1-C10	Definition and concept of Working capital	
7	8	8	significance	Day 8	T1 (Pg : –)	https://www.youtube.com/watch?v=uMhLsjY5MBQ	C1-C10	Significance of Working capital	

8	9	9	types	Day 7	T1 (Pg : –)	https://www.youtube.com/watch?v=_4lcuLJfbzQ	C1-C10	Types of working capital
9	10	10	Adequacy of working capital	Day 8	T1 (Pg : –)	https://www.youtube.com/watch?v=pMAGgpEyRFM	C1-C10	Decide how much working capital you need
10	11	11	Factors affecting working capital needs	Day 9	T1 (Pg : –)	https://www.youtube.com/watch?v=5NGiDiO1C-s	C1-C10	What are the factor st hat will tell you the capital requirement

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Unit III – Project Financing

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11	13	13	Details of the company	Day 11	T1 (Pg : –)	https://www.youtube.com/watch?v=T1-dd60WU8U	C1-C10	What is a company
12	14	14	promoters and project	Day 12	T1 (Pg : –)	https://www.youtube.com/watch?v=1Re64K-Z7PI	C1-C10	Who will promote
13	15	15	profitability	Day 13	T1 (Pg : –)	https://www.youtube.com/watch?v=ROqkmlVuXKU	C1-C10	What are the chances of Profit
14	17	17	Basic components of project finance	Day 15	T1 (Pg : –)	https://www.youtube.com/watch?v=LiCAHuhQHDg	C1-C10	Basics of Project financing

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Unit IV – Time Value of Money & Capital Budgeting

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15	19	19	Concept of time value of money	Day 17	T1 (Pg : –)	https://www.youtube.com/watch?v=Yf-VmsLc40k	C1-C10	How the value of money changes with time
16	20	20	Compounding & discounting	Day 18	T1 (Pg : –)	https://www.youtube.com/watch?v=O1Q4RfRaAIM	C1-C10	Calculation of returns
17	21	21	Future value of single amount & annuity	Day 19	T1 (Pg : –)	https://www.youtube.com/watch?v=PxTmRpIwKtU	C1-C10	Uture value of money
18	22	22	present value of single amount & annuity	Day 20	T1 (Pg : –)	https://www.youtube.com/watch?v=vJRD2q9kFeQ	C1-C10	Present value

<div align="center">

Unit V – Financial Statement Preparation

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19	25	25	Preparation of financial statement	Day 23	T1 (Pg : –)	https://www.youtube.com/watch?v=CxeLR9gAdtg	C1-C10	Preparing financial documents	
20	26	26	Profit and Loss Account	Day 24	T1 (Pg : –)	https://www.youtube.com/watch?v=hJD4o8DSuco	C1-C10	Calculations of Profit and loss	
21	27	27	Balance Sheet. , Ratio Analysis - classification of various ratios.	Day 25	T1 (Pg : –)	https://www.youtube.com/watch?v=WoHkLJz_5K0	C1-C10	Preparation and understanding of balance sheet	
Unit VI – Introduction to Financial Accounting									
22	31	31	Meaning, Scope and importance of Financial Accounting	Day 29	T1 (Pg : –)	https://www.youtube.com/watch?v=p0A82MJGD7c	C1-C10		
23	32	32	Financial Accounting - concepts and conventions	Day 30	T1 (Pg : –)	https://www.youtube.com/watch?v=WQO1vaMWbdA	C1-C10		
24	33	33	classification of accounts	Day 31	T1 (Pg : –)	https://www.youtube.com/watch?v=MoRuuh4k6A0	C1-C10		
25	34	34	and principles governing Double Entry Book-keeping system	Day 32	T1 (Pg : –)	https://www.youtube.com/watch?v=ijPDIy6gXxc	C1-C10		
26	35	35	Meaning, Preparation of Journal	Day 33	T1 (Pg : –)	https://www.youtube.com/watch?v=5Lzu-Va2NXs	C1-C10		
27			Concept of Capital budgeting			https://www.youtube.com/watch?v=5Lzu-Va2NXs			
28			Financial Statements			https://www.youtube.com/watch?v=5Lzu-Va2NXs			

*T=Text Book;   R= Reference Book;   C= Company name;   R= Research Paper

Total number of lectures as per syllabus: - 36   Total number of lectures as per planned: - 36

Assignment Plan

Assignment No.	Topic	Given Date	Submission Date	Mapped With CO
1	Introduction to Financial Management	21/8	29/8	1
2	Working capital	17/9	19/9	2
Content Beyond Syllabus Topic – Planned				
Sr. No.	Content Beyond Syllabus Topic	Date Given	Mapped with CO's not covered in TP	
1	Shares and debentures	28/8	5	
2	Designing a business	21/9	6	

Text Books / Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Elementary Economic theory	K.K. dewett	s.Chand	
T2	Financial Management	Dr Satish Inamdar	Everest publishing	
T3	Modern Economic Theory	K.K. Dewett	S chand 5th edition	
	Financial Management by, Text, Problem & Cases	Khan & Jain	S chand 3rd edition	
	Financial Management by,	Dr. P.C.Tulsian	S Chand Publication 5th Edition	

Company/Industry:

Research Paper:

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	Issue/Volume/Page no/Year
P1					
P2					

Prof.Dr Asha Dave	Prof. Avinash K. Ikhar	Prof. N. N. Gyanchandani
Subject Teacher	**Academic Incharge**	**HOD (EN/ETC)**

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Session 2021 -22
Students Who studied Value Added Courses

Name of subject:Communication Skill

Semester:II

Sr. No.	Roll No.	Unique College ID	Name of Student
1	ET01	BT210001ET	ANKITA UTTAM WANJARI
2	ET02	BT210002ET	DAMINI AJAY ATHAWALE
3	ET03	BT210003ET	DHANASHRI RAJESH GHOTEKAR
4	ET04	BT210004ET	GAURI SANJAY GAWANDE
5	ET05	BT210005ET	HARSHADA DIPAK GOJE
6	ET06	BT210006ET	LAXMI RAVINDRA MAINENI
7	ET07	BT210007ET	MANASI PRASHANT LANDGE
8	ET08	BT210008ET	MANISHA BHOJRAJ SHAHANE
9	ET09	BT210009ET	MANJU CHINTAMAN TAGDE
10	ET10	BT210010ET	NIKITA KISHOR MESHRAM
11	ET11	BT210011ET	PRAJAKTA NARENDRA TAMBE
12	ET12	BT210012ET	PRAJKTA SUBHASHRAO GAWANDE
13	ET13	BT210013ET	PRAVAJYA PARASHRAM GONDANE
14	ET14	BT210014ET	SAKSHI NARAYAN PARATE
15	ET15	BT210015ET	SAMIKSHA BABAN RANGARI
16	ET16	BT210016ET	SANIYA SANJAY PATIL
17	ET17	BT210017ET	SEJAL ABHAY ASHTIKAR
18	ET18	BT210018ET	SEJAL DEVIDAS MESHRAM
19	ET19	BT210019ET	SEJAL DIVAKAR RADKE
20	ET20	BT210020ET	SONAL SANJAY MESHRAM
21	ET21	BT210021ET	VIDISHA VINOD TAMBE
22	ET22	BT210022ET	VISHAKHA MOHAN BAWANKAR
23	ET23	BT210023ET	YOGESHWARI SHIVKUMAR SINHA
24	ET24	BT210024ET	YUKTA SHYAM HARSULKAR
25	ET25	BT210025ET	AKHILESH MANOJ BORKAR
26	ET26	BT210026ET	ANSHU RATAN RAMTEKE
27	ET27	BT210027ET	ANSHUL UMREDKAR
28	ET28	BT210028ET	ATHARVA PRADEEP PANDE
29	ET29	BT210029ET	AYUSH AJAY RAMTEKE
30	ET30	BT210030ET	CHAITANYA SUNIL BAWANE
31	ET31	BT210031ET	CHINMAY PANKAJ BHATE
32	ET32	BT210032ET	DHIRAJ PARVE MAYANK
33	ET33	BT210033ET	GAURAV GANESH BORKAR
34	ET34	BT210034ET	JAY RAJKUMAR TETE
35	ET35	BT210035ET	JAYANT VIVEKANAND PATIL
36	ET36	BT210036ET	KALASH RAJESH DHANGARE
37	ET37	BT210037ET	KUNAL DIGAMBAR TAGDE
38	ET38	BT210038ET	MANISH OMPRAKASH GOUPALE
39	ET39	BT210039ET	MASUM JITENDRA CHAHANDE
40	ET40	BT210040ET	MAYUR NARENDRA NANDKAR
41	ET41	BT210041ET	OM SUDHIR KOHALE
42	ET42	BT210042ET	PIYUSH RAJU DESHBHRATAR

43	ET43	BT210043ET	PRAJWAL SANJAY GAWHANE
44	ET44	BT210044ET	PRANAY MOHAN KUTHE
45	ET45	BT210045ET	RAJ MOHANRAO DESHMUKH
46	ET46	BT210046ET	RAM DHANRAJ LICHADE
47	ET47	BT210047ET	SAHIL ISHWAR SAWARBANDHE
48	ET48	BT210048ET	SAHIL RAVINDRA CHANDORE
49	ET49	BT210049ET	SANYOG SARANATH SHEWALE
50	ET50	BT210050ET	SAURABH GUNVANT PAL
51	ET51	BT210051ET	SHANTANU PRADIP SONTAKKE
52	ET52	BT210052ET	SHARIQUE HUSAIN NASIR HUSAIN
53	ET53	BT210053ET	SHREYASH NAMIHAR DONGARE
54	ET54	BT210054ET	SUJAL ANANDRAO KHEDKAR
55	ET55	BT210055ET	TEJAS SANDIP VITANKAR
56	ET56	BT210056ET	TUSHAR RAJESH MENDWAR
57	ET57	BT210057ET	VEDANT PRASHANT POHANKAR
58	ET58	BT210058ET	VEDPRAKASH PRAMOD CHATURVEDI
59	ET59	BT210059ET	VINIT NARVIR GAJBHIYE
60	ET60	BT210060ET	YASH DILIP JADHAO
61	ET61	BT210061ET	YASH PANDURANG BATTIGHARE
62	ET62	BT210062ET	YASH PRALHAD GOUR

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"Rectifying Ideas, Amplifying Knowledge"
Session 2021 -22
Students Who studied Value Added Courses
Name of Subject:Innovation and Entrepreneurship Development(ET4T007)

Semester:IV

Sr. No.	Roll No	Student_Id	B.Tech.ID	Student name
1	1	JBTECH20296	BT200054ET	SWAPNIL YOGESH SARODE
2	2	JBTECH20298	BT200041ET	PALKHI MANOJ WANKHEDE
3	3	JBTECH20307	BT200036ET	HARSHAL RAJKUMAR MANKAR
4	4	JBTECH20309	BT200007ET	BHOOMI NILESH GAJIMWAR
5	5	JBTECH20311	BT200016ET	NIDHI SHIVKUMAR MATE
6	6	JBTECH20312	BT200047ET	ROHIT PANDIT DARUNDE
7	7	JBTECH20340	BT200037ET	HEMANT UDERAM BARANGE
8	8	JBTECH20352	BT200003ET	AKANKSHA KAWDU BARMATE
9	9	JBTECH20371	BT200052ET	SHREYASH RAVISHAN AMBADE
10	10	JBTECH20383	BT200058ET	TUSHAR SHARAD KUMRE
11	11	JBTECH20385	BT200027ET	TRUPTI DEEPCHAND CHOUDHARI
12	12	JBTECH20392	BT200035ET	RUMAISHA FIRDOUS SK WAHEED
13	13	JBTECH20629	BT200032ET	DIVYANSHU DEEPAK BHAKTA
14	14	JBTECH20313	BT200043ET	PRAJWAL SOPAN JADHAV
15	15	JBTECH20314	BT200045ET	PRIYANSHU SHRIKRUSHNA RANGARI
16	16	JBTECH20316	BT200049ET	SAHIL SUNIL DEKATE
17	17	JBTECH20323	BT200014ET	NANDINI RAHUL GANVIR

18	18	JBTECH20346	BT200006ET	AVANTIKA SANJAY TEMBHURNE
19	19	JBTECH20347	BT200020ET	ROSHAN MANOJ SAHU
20	20	JBTECH20349	BT200015ET	NAZNEEN KAUSER RAZZAQUE SHEIKH
21	21	JBTECH20350	BT200056ET	TEJAS YOGENDRA REWATKAR
22	22	JBTECH20324	BT200011ET	KHUSHI SHIVSHANKAR YADAV
23	23	JBTECH20326	BT200017ET	NIRMI JITENDRA MESHRAM
24	24	JBTECH20328	BT200002ET	ASHWARYA DANYANESHWARJI WANKHEDE
25	25	JBTECH20244	BT200060ET	YASHSVI DEEPAK BORKAR
26	26	JBTECH20247	BT200053ET	SUYOG LALJEE SHUKLA
27	27	JBTECH20356	BT200001ET	ADITI ANIL GHODESWAR
28	28	JBTECH20358	BT200039ET	HIMANSHU UTTAM KORE
29	29	JBTECH18309		ASHISH GAJANAN KAMDI
30	30	JBTECH20359	BT200042ET	PAWAN GHANSHYAM SAHU
31	31	JBTECH20248	BT200022ET	SAKSHI BUDHRAM AMBULE
32	32	JBTECH20266	BT200018ET	RISHABH RAJKUMAR BEDI
33	33	JBTECH20609	BT200025ET	SIMRAN SHRAVAN TIWARI
34	34	JBTECH20337	BT200029ET	ADIL MUNNA WAGHADE
35	35	JBTECH20303	BT200019ET	RITIKA RAVINDRA FUSATE
36	36	JBTECH20304	BT200046ET	RIYA RANJEET DEOLIYA
37	37	JBTECH20310	BT200051ET	SANDESH KRUPAKAR GAJBHIYE
38	38	JBTECH20393	BT200013ET	MEGHA ANUP GHOSH
39	39	JBTECH20295	BT200009ET	DRISHTI NITIN KHANDELWAR
40	40	JBTECH20246	BT200057ET	TUSHAR MUKESH NAGVANSHI
41	41	JBTECH20623	BT200024ET	SHREEJAL KAMLESH SAHARE
42	42	JBTECH20336	BT200030ET	ASHISH MOHAN PARADKAR
43	43	JBTECH20271	BT200012ET	MANSI RAJESH GOTEPHODE
44	44	JBTECH20317	BT200005ET	AQSA ANJAD KHAN
45	45	JBTECH20318	BT200059ET	YASH SANJAY MESHRAM
46	46	JBTECH20380	BT200028ET	YASHASWINI VINOD SADAWARTI
47	47	JBTECH20262	BT200031ET	CHANDRAJ YUWARAJ BEHARE
48	48	JBTECH20363	BT200055ET	TEJAS UTTAMRAO DHAWAD
49	49	JBTECH20365	BT200026ET	TEJASWINI SURESH BAWANE
50	50	JBTECH20366	BT200038ET	HIMANSHU ASHOK LOHAKARE
51	51	JBTECH20370	BT200048ET	SAGAR RAMESH KUMRE
52	52	JBTECH20387	BT200023ET	SEJAL SHAILESH TIRPUDE
53	53	JBTECH20360	BT200040ET	HRUSHIKESH HEMANTKUMAR DALAL
54	54	JBTECH20362	BT200010ET	KHUMESH ASHOK RAHANGDALE
55	55	JBTECH20353	BT200004ET	ANAS SHAMIN KHAN
56	56	JBTECH20355	BT200021ET	ROSHANI PREMLAL BHAGAT
57	57	JBTECH21334	BT210601ET	DEVESHRI NANDKISHOR WANJARI
58	58	JBTECH21336	BT210602ET	ABHIJEET MUKESH AMBADE
59	59	JBTECH21338	BT210603ET	PRAVESH DEONATH KHAWAS
60	60	JBTECH21339	BT210604ET	DEEPAK SURESH DAHIWALE
61	61	JBTECH21340	BT210605ET	SHUBHAM PRAKASH KUMBHARE
62	62	JBTECH21341	BT210606ET	TRUPTI DILIP CHAINDE
63	63	JBTECH21347	BT210607ET	VAISHNAVI CHANDRASHEKHAR MESHRAM
64	64	JBTECH21348	BT210608ET	SAKSHI KRUSHNARAO KALE
65	65	JBTECH21349	BT210609ET	AJIT DIPAK BAGDE
66	66	JBTECH21350	BT210610ET	HRITIK RAJESH NAGPURE
67	67	JBTECH21351	BT210611ET	RUCHI GAJENDRA BANSOD
68	68	JBTECH21352	BT210612ET	DHANASHREE ASHOK NEWARE

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Students Who studied Value Added Courses

NAME OF SUBJECT:FIELD TRAINING-2(ET5P001)

Semester:V

Sr. No.	Roll No	Student_Id	B.Tech.ID	Student name
1	ETC23	JBTECH18053	BT190293ET	ABHISHEK ABHAY SHANIWARE
2	ETC01	JBTECH19046	BT190046ET	AKANSHA RAJU POTBHARE
3	ETC12	JBTECH19066	BT190066ET	AKASH MANOHAR SAHASTRABUDDHE
4	ETC13	JBTECH19062	BT190062ET	ASHISH GAJANANRAO YESANKAR
5	ETC24	JBTECH18113	BT190294ET	BHUSHAN SHAILENDRA BHANDARAKAR
6	ETC17	JBTECH19299	BT190218ET	DAMINI VIJAY MANAPURE
7	ETC14	JBTECH19125	BT190125ET	GANESH ANANDRAO MUNGAL
8	ETC03	JBTECH19137	BT190136ET	GANGASAGAR GANGADHARRAO YAMMEWAR
9	ETC15	JBTECH19065	BT190065ET	GAURAV KISHOR ZADE
10	ETC25	JBTECH18080	BT190297ET	GAYATRI PADMAKAR BHOSKAR
11	ETC04	JBTECH19395	BT190251ET	MAYURI CHANDRAMANI BARMATE
12	ETC05	JBTECH19118	BT190118ET	NIKITA SUBHASH GANVIR
13	ETC06	JBTECH19138	BT190137ET	POOJA NARAYAN DUBUKWAD
14	ETC21	JBTECH19142	BT190141ET	PRACHI SANJAY SATPUTE
15	ETC16	JBTECH19148	BT190147ET	PRANAY PRADEEP NETANRAO
16	ETC22	JBTECH19409	BT190256ET	PRIYANKA DUDHNATH KOTPALLIWAR
17	ETC18	JBTECH19385	BT190242ET	RIUCHIKA MANOHAR CHATAP
18	ETC08	JBTECH19047	BT190047ET	ROHINI RAMAJI KUMBHALKAR
19	ETC20	JBTECH18407	BT190278ET	RUTIKA MOTIRAM KUNJAM
20	ETC09	JBTECH19221	BT190174ET	SAKSHI DILIP BANSOD
21	JOB	JBTECH18135		VISHAL RAJU SAMUNDRE
22	ETC19	JBTECH19140	BT190246ET	SAMEER NOKLAL PATLE
23	ETC19	JBTECH19149	BT190148ET	SARANG DHANRAJ BAWANKULE
24	ETC27	JBTECH18346	BT190295ET	SHRADDHA GANGADHAR URKUDE
25	ETC26	JBE17288	BT190191ET	SIDDHANT SHANKAR YELANE
26	ETC10	JBTECH19302	BT190219ET	VAIDEHI RAJEDNRA MESHRAM
27	ETC11	JBTECH19097	BT190097ET	VAISHNAVI SIDDHARTH MESHRAM
28	ETC28	JBTECH18041	BT190292ET	VRUSHABH ANKUSHRAO CHANDEKAR
29	D2-01	JBTECH20511	BT200601ET	AKASH BECHAN YADAV
30	D2-02	JBTECH20465	BT200602ET	AKSHAY ASHOK MESHRAM
31	D2-03	JBTECH20520	BT200603ET	AKSHAY SUNIL PATIL

32	D2-04	JBTECH20507	BT200604ET	AMIR SABIR SHEIKH
33	D2-05	JBTECH20489	BT200605ET	ANKIT SURESH SHENDE
34	D2-07	JBTECH20529	BT200607ET	ANUJA AVINASH PATIL
35	D2-08	JBTECH20457	BT200608ET	ATUL ARUN RAMTEKE
36	D2-10	JBTECH20530	BT200610ET	BHARAT PARMESHWARAN TEWAR
37	D2-11	JBTECH20525	BT200611ET	DIKSHA SUNIL WASNIK
38	D2-13	JBTECH20518	BT200613ET	DISHANT SANDESH GAJBHIYE
39	D2-14	JBTECH20500	BT200614ET	HARISH GOVINDAJI MAKADE
40	D2-15	JBTECH20533	BT200615ET	KAJAL SANTOSH GHODICHOR
41	D2-16	JBTECH20472	BT200616ET	KAJOL NARAYAN KAMBLE
42	D2-17	JBTECH20466	BT200617ET	KHUSHBU RAKESH PATEL
43	D2-18	JBTECH20498	BT200618ET	KOMAL MORESHWAR THOTE
44	D2-19	JBTECH20510	BT200619ET	MOHD HUZAILFA A SALIM KHAN
45	D2-20	JBTECH20502	BT200620ET	PALLAVI RAJKUMAR KANOJE
46	D2-21	JBTECH20441	BT200621ET	PRACHIKA ANIL HUMNE
47	D2-22	JBTECH20615	BT200622ET	PRAJWAL GOPALRAO MOHOKAR
48	D2-23	JBTECH20456	BT200623ET	PRAJWALIT PRABHAKAR DEWAIKAR
49	D2-24	JBTECH20526	BT200624ET	PRANAY PADMAKAR THAKRE
50	D2-25	JBTECH20521	BT200625ET	PREMANAND RAMKRUSHNA NANDANWAR
51	D2-26	JBTECH20513	BT200626ET	PRIYA PREMRAJ BHAD
52	D2-27	JBTECH20454	BT200627ET	PUJA VIMALCHAND INDULKAR
53	D2-28	JBTECH20495	BT200628ET	ROHAN SIYARAM PATEL
54	D2-29	JBTECH20515	BT200629ET	SAGAR ARUN MAHAJAN
55	D2-30	JBTECH20473	BT200630ET	SAKSHI VIKAS NATHE
56	D2-31	JBTECH20463	BT200631ET	SAMRUDHA SANJAY GORSHETTIWAR
57	D2-32	JBTECH20603	BT200632ET	SHEETAL CHANDRAPRAKASH URKUDE
58	D2-33	JBTECH20477	BT200633ET	SHILVAN CHANDRASHEKHAR KAMBLE
59	D2-34	JBTECH20492	BT200634ET	SHIVANI SURENDRA DHABAI
60	D2-35	JBTECH20504	BT200635ET	SHIVENDRA KAMLESHWAR PATEL
61	D2-36	JBTECH20468	BT200636ET	SHUBHAM RAMESH SAGULALE
62	D2-37	JBTECH20506	BT200637ET	SOUMYA OMPRAKASH NAIDU
63	D2-38	JBTECH20633	BT200638ET	SOURABH RAJU CHINCHKHEDE
64	D2-39	JBTECH20485	BT200639ET	SURAKSHA SUKHADEV LANJEWAR
65	D2-40	JBTECH20517	BT200640ET	TARSEE SATOSH YADAV
66	D2-41	JBTECH20494	BT200641ET	VAISHALI TEJRAM DESHMUKH
67	D2-42	JBTECH20459	BT200642ET	VAISHNAVI RAVINDRA GAURKAR
68	D2-43	JBTECH20644	BT200643ET	VISHAL PRABHAKAR THAWARE

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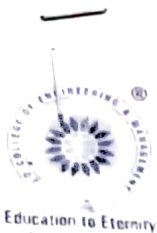
"Rectifying Ideas, Amplifying Knowledge"

Session 2021 -22

NAME OF SUBJECT:CONSUMER AFFAIR(ET5T006)

Semester:V

Sr. No.	Roll No	Student_Id	B.Tech.ID	Student name
1	ETC23	JBTECH18053	BT190293ET	ABHISHEK ABHAY SHANIWARE
2	ETC01	JBTECH19046	BT190046ET	AKANSHA RAJU POTBHARE
3	ETC12	JBTECH19066	BT190066ET	AKASH MANOHAR SAHASTRABUDDHE
4	ETC13	JBTECH19062	BT190062ET	ASHISH GAJANANRAO YESANKAR
5	ETC24	JBTECH18113	BT190294ET	BHUSHAN SHAILENDRA BHANDARAKAR
6	ETC17	JBTECH19299	BT190218ET	DAMINI VIJAY MANAPURE
7	ETC14	JBTECH19125	BT190125ET	GANESH ANANDRAO MUNGAL
8	ETC03	JBTECH19137	BT190136ET	GANGASAGAR GANGADHARRAO YAMMEWAR
9	ETC15	JBTECH19065	BT190065ET	GAURAV KISHOR ZADE
10	ETC25	JBTECH18080	BT190297ET	GAYATRI PADMAKAR BHOSKAR
11	ETC04	JBTECH19395	BT190251ET	MAYURI CHANDRAMANI BARMATE
12	ETC05	JBTECH19118	BT190118ET	NIKITA SUBHASH GANVIR
13	ETC06	JBTECH19138	BT190137ET	POOJA NARAYAN DUBUKWAD
14	ETC21	JBTECH19142	BT190141ET	PRACHI SANJAY SATPUTE
15	ETC16	JBTECH19148	BT190147ET	PRANAY PRADEEP NETANRAO
16	ETC22	JBTECH19409	BT190256ET	PRIYANKA DUDHNATH KOTPALLIWAR
17	ETC18	JBTECH19385	BT190242ET	RIUCHIKA MANOHAR CHATAP
18	ETC08	JBTECH19047	BT190047ET	ROHINI RAMAJI KUMBHALKAR
19	ETC20	JBTECH18407	BT190278ET	RUTIKA MOTIRAM KUNJAM
20	ETC09	JBTECH19221	BT190174ET	SAKSHI DILIP BANSOD
21	JOB	JBTECH18135		VISHAL RAJU SAMUNDRE
22	ETC19	JBTECH19140	BT190246ET	SAMEER NOKLAL PATLE
23	ETC19	JBTECH19149	BT190148ET	SARANG DHANRAJ BAWANKULE
24	ETC27	JBTECH18346	BT190295ET	SHRADDHA GANGADHAR URKUDE
25	ETC26	JBE17288	BT190191ET	SIDDHANT SHANKAR YELANE
26	ETC10	JBTECH19302	BT190219ET	VAIDEHI RAJEDNRA MESHRAM
27	ETC11	JBTECH19097	BT190097ET	VAISHNAVI SIDDHARTH MESHRAM
28	ETC28	JBTECH18041	BT190292ET	VRUSHABH ANKUSHRAO CHANDEKAR
29	D2-01	JBTECH20511	BT200601ET	AKASH BECHAN YADAV
30	D2-02	JBTECH20465	BT200602ET	AKSHAY ASHOK MESHRAM
31	D2-03	JBTECH20520	BT200603ET	AKSHAY SUNIL PATIL
32	D2-04	JBTECH20507	BT200604ET	AMIR SABIR SHEIKH
33	D2-05	JBTECH20489	BT200605ET	ANKIT SURESH SHENDE
34	D2-07	JBTECH20529	BT200607ET	ANUJA AVINASH PATIL
35	D2-08	JBTECH20457	BT200608ET	ATUL ARUN RAMTEKE
36	D2-10	JBTECH20530	BT200610ET	BHARAT PARMESHWARAN TEWAR
37	D2-11	JBTECH20525	BT200611ET	DIKSHA SUNIL WASNIK
38	D2-13	JBTECH20518	BT200613ET	DISHANT SANDESH GAJBHIYE
39	D2-14	JBTECH20500	BT200614ET	HARISH GOVINDAJI MAKADE
40	D2-15	JBTECH20533	BT200615ET	KAJAL SANTOSH GHODICHOR
41	D2-16	JBTECH20472	BT200616ET	KAJOL NARAYAN KAMBLE
42	D2-17	JBTECH20466	BT200617ET	KHUSHBU RAKESH PATEL
43	D2-18	JBTECH20498	BT200618ET	KOMAL MORESHWAR THOTE
44	D2-19	JBTECH20510	BT200619ET	MOHD HUZAILFA A SALIM KHAN
45	D2-20	JBTECH20502	BT200620ET	PALLAVI RAJKUMAR KANOJE
46	D2-21	JBTECH20441	BT200621ET	PRACHIKA ANIL HUMNE
47	D2-22	JBTECH20615	BT200622ET	PRAJWAL GOPALRAO MOHOKAR
48	D2-23	JBTECH20456	BT200623ET	PRAJWALIT PRABHAKAR DEWAIKAR
49	D2-24	JBTECH20526	BT200624ET	PRANAY PADMAKAR THAKRE
50	D2-25	JBTECH20521	BT200625ET	PREMANAND RAMKRUSHNA NANDANWAR
51	D2-26	JBTECH20513	BT200626ET	PRIYA PREMRAJ BHAD

52	D2-27	JBTECH20454	BT200627ET	PUJA VIMALCHAND INDULKAR
53	D2-28	JBTECH20495	BT200628ET	ROHAN SIYARAM PATEL
54	D2-29	JBTECH20515	BT200629ET	SAGAR ARUN MAHAJAN
55	D2-30	JBTECH20473	BT200630ET	SAKSHI VIKAS NATHE
56	D2-31	JBTECH20463	BT200631ET	SAMRUDHA SANJAY GORSHETTIWAR
57	D2-32	JBTECH20603	BT200632ET	SHEETAL CHANDRAPRAKASH URKUDE
58	D2-33	JBTECH20477	BT200633ET	SHILVAN CHANDRASHEKHAR KAMBLE
59	D2-34	JBTECH20492	BT200634ET	SHIVANI SURENDRA DHABAI
60	D2-35	JBTECH20504	BT200635ET	SHIVENDRA KAMLESHWAR PATEL
61	D2-36	JBTECH20468	BT200636ET	SHUBHAM RAMESH SAGULALE
62	D2-37	JBTECH20506	BT200637ET	SOUMYA OMPRAKASH NAIDU
63	D2-38	JBTECH20633	BT200638ET	SOURABH RAJU CHINCHKHEDE
64	D2-39	JBTECH20485	BT200639ET	SURAKSHA SUKHADEV LANJEWAR
65	D2-40	JBTECH20517	BT200640ET	TARSEE SATOSH YADAV
66	D2-41	JBTECH20494	BT200641ET	VAISHALI TEJRAM DESHMUKH
67	D2-42	JBTECH20459	BT200642ET	VAISHNAVI RAVINDRA GAURKAR
68	D2-43	JBTECH20644	BT200643ET	VISHAL PRABHAKAR THAWARE

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Session 2021 -22

Students Who studied Value Added Courses

NAME OF SUBJECT:CRT(ET6P001)
Semester:VI

Sr. No.	Roll No	Student_Id	B.Tech.ID	Student name
1	ETC23	JBTECH18053	BT190293ET	ABHISHEK ABHAY SHANIWARE
2	ETC01	JBTECH19046	BT190046ET	AKANSHA RAJU POTBHARE
3	ETC12	JBTECH19066	BT190066ET	AKASH MANOHAR SAHASTRABUDDHE
4	ETC13	JBTECH19062	BT190062ET	ASHISH GAJANANRAO YESANKAR
5	ETC24	JBTECH18113	BT190294ET	BHUSHAN SHAILENDRA BHANDARAKAR
6	ETC17	JBTECH19299	BT190218ET	DAMINI VIJAY MANAPURE
7	ETC14	JBTECH19125	BT190125ET	GANESH ANANDRAO MUNGAL
8	ETC03	JBTECH19137	BT190136ET	GANGASAGAR GANGADHARRAO YAMMEWAR
9	ETC15	JBTECH19065	BT190065ET	GAURAV KISHOR ZADE
10	ETC25	JBTECH18080	BT190297ET	GAYATRI PADMAKAR BHOSKAR
11	ETC04	JBTECH19395	BT190251ET	MAYURI CHANDRAMANI BARMATE
12	ETC05	JBTECH19118	BT190118ET	NIKITA SUBHASH GANVIR
13	ETC06	JBTECH19138	BT190137ET	POOJA NARAYAN DUBUKWAD
14	ETC21	JBTECH19142	BT190141ET	PRACHI SANJAY SATPUTE
15	ETC16	JBTECH19148	BT190147ET	PRANAY PRADEEP NETANRAO

16	ETC22	JBTECH19409	BT190256ET	PRIYANKA DUDHNATH KOTPALLIWAR
17	ETC18	JBTECH19385	BT190242ET	RIUCHIKA MANOHAR CHATAP
18	ETC08	JBTECH19047	BT190047ET	ROHINI RAMAJI KUMBHALKAR
19	ETC20	JBTECH18407	BT190278ET	RUTIKA MOTIRAM KUNJAM
20	ETC09	JBTECH19221	BT190174ET	SAKSHI DILIP BANSOD
21	JOB	JBTECH18135		VISHAL RAJU SAMUNDRE
22	ETC19	JBTECH19140	BT190246ET	SAMEER NOKLAL PATLE
23	ETC19	JBTECH19149	BT190148ET	SARANG DHANRAJ BAWANKULE
24	ETC27	JBTECH18346	BT190295ET	SHRADDHA GANGADHAR URKUDE
25	ETC26	JBE17288	BT190191ET	SIDDHANT SHANKAR YELANE
26	ETC10	JBTECH19302	BT190219ET	VAIDEHI RAJEDNRA MESHRAM
27	ETC11	JBTECH19097	BT190097ET	VAISHNAVI SIDDHARTH MESHRAM
28	ETC28	JBTECH18041	BT190292ET	VRUSHABH ANKUSHRAO CHANDEKAR
29	D2-01	JBTECH20511	BT200601ET	AKASH BECHAN YADAV
30	D2-02	JBTECH20465	BT200602ET	AKSHAY ASHOK MESHRAM
31	D2-03	JBTECH20520	BT200603ET	AKSHAY SUNIL PATIL
32	D2-04	JBTECH20507	BT200604ET	AMIR SABIR SHEIKH
33	D2-05	JBTECH20489	BT200605ET	ANKIT SURESH SHENDE
34	D2-07	JBTECH20529	BT200607ET	ANUJA AVINASH PATIL
35	D2-08	JBTECH20457	BT200608ET	ATUL ARUN RAMTEKE
36	D2-10	JBTECH20530	BT200610ET	BHARAT PARMESHWARAN TEWAR
37	D2-11	JBTECH20525	BT200611ET	DIKSHA SUNIL WASNIK
38	D2-13	JBTECH20518	BT200613ET	DISHANT SANDESH GAJBHIYE
39	D2-14	JBTECH20500	BT200614ET	HARISH GOVINDAJI MAKADE
40	D2-15	JBTECH20533	BT200615ET	KAJAL SANTOSH GHODICHOR
41	D2-16	JBTECH20472	BT200616ET	KAJOL NARAYAN KAMBLE
42	D2-17	JBTECH20466	BT200617ET	KHUSHBU RAKESH PATEL
43	D2-18	JBTECH20498	BT200618ET	KOMAL MORESHWAR THOTE
44	D2-19	JBTECH20510	BT200619ET	MOHD HUZAILFA A SALIM KHAN
45	D2-20	JBTECH20502	BT200620ET	PALLAVI RAJKUMAR KANOJE
46	D2-21	JBTECH20441	BT200621ET	PRACHIKA ANIL HUMNE
47	D2-22	JBTECH20615	BT200622ET	PRAJWAL GOPALRAO MOHOKAR
48	D2-23	JBTECH20456	BT200623ET	PRAJWALIT PRABHAKAR DEWAIKAR
49	D2-24	JBTECH20526	BT200624ET	PRANAY PADMAKAR THAKRE
50	D2-25	JBTECH20521	BT200625ET	PREMANAND RAMKRUSHNA NANDANWAR
51	D2-26	JBTECH20513	BT200626ET	PRIYA PREMRAJ BHAD
52	D2-27	JBTECH20454	BT200627ET	PUJA VIMALCHAND INDULKAR
53	D2-28	JBTECH20495	BT200628ET	ROHAN SIYARAM PATEL
54	D2-29	JBTECH20515	BT200629ET	SAGAR ARUN MAHAJAN
55	D2-30	JBTECH20473	BT200630ET	SAKSHI VIKAS NATHE
56	D2-31	JBTECH20463	BT200631ET	SAMRUDHA SANJAY GORSHETTIWAR
57	D2-32	JBTECH20603	BT200632ET	SHEETAL CHANDRAPRAKASH URKUDE
58	D2-33	JBTECH20477	BT200633ET	SHILVAN CHANDRASHEKHAR KAMBLE
59	D2-34	JBTECH20492	BT200634ET	SHIVANI SURENDRA DHABAI
60	D2-35	JBTECH20504	BT200635ET	SHIVENDRA KAMLESHWAR PATEL
61	D2-36	JBTECH20468	BT200636ET	SHUBHAM RAMESH SAGULALE
62	D2-37	JBTECH20506	BT200637ET	SOUMYA OMPRAKASH NAIDU
63	D2-38	JBTECH20633	BT200638ET	SOURABH RAJU CHINCHKHEDE
64	D2-39	JBTECH20485	BT200639ET	SURAKSHA SUKHADEV LANJEWAR
65	D2-40	JBTECH20517	BT200640ET	TARSEE SATOSH YADAV
66	D2-41	JBTECH20494	BT200641ET	VAISHALI TEJRAM DESHMUKH
67	D2-42	JBTECH20459	BT200642ET	VAISHNAVI RAVINDRA GAURKAR
68	D2-43	JBTECH20644	BT200643ET	VISHAL PRABHAKAR THAWARE

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KATOL ROAD, NAGPUR

An Autonomous Institute, with NAAC "A" Grade

Department of Electronics and Telecommunication Engineering

"Rectifying Ideas, Amplifying Knowledge"

Session 2021 -22

Students Who studied Value Added Courses

NAME OF SUBJECT:SKILL DEVELOPMENT

Semester:VI

Sr. No.	Roll No	Student_Id	B.Tech.ID	Student name
1	ETC23	JBTECH18053	BT190293ET	ABHISHEK ABHAY SHANIWARE
2	ETC01	JBTECH19046	BT190046ET	AKANSHA RAJU POTBHARE
3	ETC12	JBTECH19066	BT190066ET	AKASH MANOHAR SAHASTRABUDDHE
4	ETC13	JBTECH19062	BT190062ET	ASHISH GAJANANRAO YESANKAR
5	ETC24	JBTECH18113	BT190294ET	BHUSHAN SHAILENDRA BHANDARAKAR
6	ETC17	JBTECH19299	BT190218ET	DAMINI VIJAY MANAPURE
7	ETC14	JBTECH19125	BT190125ET	GANESH ANANDRAO MUNGAL
8	ETC03	JBTECH19137	BT190136ET	GANGASAGAR GANGADHARRAO YAMMEWAR
9	ETC15	JBTECH19065	BT190065ET	GAURAV KISHOR ZADE
10	ETC25	JBTECH18080	BT190297ET	GAYATRI PADMAKAR BHOSKAR
11	ETC04	JBTECH19395	BT190251ET	MAYURI CHANDRAMANI BARMATE
12	ETC05	JBTECH19118	BT190118ET	NIKITA SUBHASH GANVIR
13	ETC06	JBTECH19138	BT190137ET	POOJA NARAYAN DUBUKWAD
14	ETC21	JBTECH19142	BT190141ET	PRACHI SANJAY SATPUTE
15	ETC16	JBTECH19148	BT190147ET	PRANAY PRADEEP NETANRAO
16	ETC22	JBTECH19409	BT190256ET	PRIYANKA DUDHNATH KOTPALLIWAR
17	ETC18	JBTECH19385	BT190242ET	RIUCHIKA MANOHAR CHATAP
18	ETC08	JBTECH19047	BT190047ET	ROHINI RAMAJI KUMBHALKAR
19	ETC20	JBTECH18407	BT190278ET	RUTIKA MOTIRAM KUNJAM
20	ETC09	JBTECH19221	BT190174ET	SAKSHI DILIP BANSOD
21	JOB	JBTECH18135		VISHAL RAJU SAMUNDRE
22	ETC19	JBTECH19140	BT190246ET	SAMEER NOKLAL PATLE
23	ETC19	JBTECH19149	BT190148ET	SARANG DHANRAJ BAWANKULE
24	ETC27	JBTECH18346	BT190295ET	SHRADDHA GANGADHAR URKUDE
25	ETC26	JBE17288	BT190191ET	SIDDHANT SHANKAR YELANE
26	ETC10	JBTECH19302	BT190219ET	VAIDEHI RAJEDNRA MESHRAM
27	ETC11	JBTECH19097	BT190097ET	VAISHNAVI SIDDHARTH MESHRAM
28	ETC28	JBTECH18041	BT190292ET	VRUSHABH ANKUSHRAO CHANDEKAR
29	D2-01	JBTECH20511	BT200601ET	AKASH BECHAN YADAV
30	D2-02	JBTECH20465	BT200602ET	AKSHAY ASHOK MESHRAM
31	D2-03	JBTECH20520	BT200603ET	AKSHAY SUNIL PATIL
32	D2-04	JBTECH20507	BT200604ET	AMIR SABIR SHEIKH
33	D2-05	JBTECH20489	BT200605ET	ANKIT SURESH SHENDE
34	D2-07	JBTECH20529	BT200607ET	ANUJA AVINASH PATIL
35	D2-08	JBTECH20457	BT200608ET	ATUL ARUN RAMTEKE
36	D2-10	JBTECH20530	BT200610ET	BHARAT PARMESHWARAN TEWAR
37	D2-11	JBTECH20525	BT200611ET	DIKSHA SUNIL WASNIK
38	D2-13	JBTECH20518	BT200613ET	DISHANT SANDESH GAJBHIYE
39	D2-14	JBTECH20500	BT200614ET	HARISH GOVINDAJI MAKADE
40	D2-15	JBTECH20533	BT200615ET	KAJAL SANTOSH GHODICHOR
41	D2-16	JBTECH20472	BT200616ET	KAJOL NARAYAN KAMBLE
42	D2-17	JBTECH20466	BT200617ET	KHUSHBU RAKESH PATEL

43	D2-18	JBTECH20498	BT200618ET	KOMAL MORESHWAR THOTE
44	D2-19	JBTECH20510	BT200619ET	MOHD HUZAILFA A SALIM KHAN
45	D2-20	JBTECH20502	BT200620ET	PALLAVI RAJKUMAR KANOJE
46	D2-21	JBTECH20441	BT200621ET	PRACHIKA ANIL HUMNE
47	D2-22	JBTECH20615	BT200622ET	PRAJWAL GOPALRAO MOHOKAR
48	D2-23	JBTECH20456	BT200623ET	PRAJWALIT PRABHAKAR DEWAIKAR
49	D2-24	JBTECH20526	BT200624ET	PRANAY PADMAKAR THAKRE
50	D2-25	JBTECH20521	BT200625ET	PREMANAND RAMKRUSHNA NANDANWAR
51	D2-26	JBTECH20513	BT200626ET	PRIYA PREMRAJ BHAD
52	D2-27	JBTECH20454	BT200627ET	PUJA VIMALCHAND INDULKAR
53	D2-28	JBTECH20495	BT200628ET	ROHAN SIYARAM PATEL
54	D2-29	JBTECH20515	BT200629ET	SAGAR ARUN MAHAJAN
55	D2-30	JBTECH20473	BT200630ET	SAKSHI VIKAS NATHE
56	D2-31	JBTECH20463	BT200631ET	SAMRUDHA SANJAY GORSHETTIWAR
57	D2-32	JBTECH20603	BT200632ET	SHEETAL CHANDRAPRAKASH URKUDE
58	D2-33	JBTECH20477	BT200633ET	SHILVAN CHANDRASHEKHAR KAMBLE
59	D2-34	JBTECH20492	BT200634ET	SHIVANI SURENDRA DHABAI
60	D2-35	JBTECH20504	BT200635ET	SHIVENDRA KAMLESHWAR PATEL
61	D2-36	JBTECH20468	BT200636ET	SHUBHAM RAMESH SAGULALE
62	D2-37	JBTECH20506	BT200637ET	SOUMYA OMPRAKASH NAIDU
63	D2-38	JBTECH20633	BT200638ET	SOURABH RAJU CHINCHKHEDE
64	D2-39	JBTECH20485	BT200639ET	SURAKSHA SUKHADEV LANJEWAR
65	D2-40	JBTECH20517	BT200640ET	TARSEE SATOSH YADAV
66	D2-41	JBTECH20494	BT200641ET	VAISHALI TEJRAM DESHMUKH
67	D2-42	JBTECH20459	BT200642ET	VAISHNAVI RAVINDRA GAURKAR
68	D2-43	JBTECH20644	BT200643ET	VISHAL PRABHAKAR THAWARE

Students Who studied Value Added Courses

NAME OF SUBJECT:FINANCIAL MANAGEMENT (7TH SEMESTER)

Semester:VII

Sr. No.	Roll No	Student_Id	PRAN	Student name
1	1	JBE17328	40413820171137210077	DAMINI BALKRUSHANA CHAUDHARI
2	2	JBE17010	40413820171137210090	MOHIT MANOJ MADAVI
3	3	JBE17710	40413820171137210105	NIKHIL RAJU MAHURE
4	4	JBTECH18106	40413820181137210001	HARISH OMPRAKASH GOUPALE
5	5	JBTECH18306	40413820181137210005	BHAGYASHRI SHAMPRASAD PATLE
6	6	JBTECH18104	40413820181137210006	DEVANSHISH VASANT SHRIPAD
7	7	JBTECH18093	40413820181137210007	ADITYA VILASRAO DHAWALE
8	8	JBTECH18162	40413820181137210008	TWINKAL BABA BHAISARE
9	9	JBTECH18331	40413820181137210010	AISHWARYA MANIK SHENDE
10	10	JBE17218	40413820171137210068	SAHILI PRAMOD MESHRAM
11	11	JBTECH18304	40413820181137210017	SNEHA CHUDAMAN KUMBHARE
12	12	JBTECH18039	40413820181137210020	PRANAY ANIL CHAWHAN

13	13	JBTECH18207	40413820181137210024	ROSHAN BAIDNATH VARMA
14	14	JBTECH18033	40413820181137210027	DIKSHA ANAND INDURKAR
15	15	JBTECH18105	40413820181137210029	KUNAL DAYADHAN MUDDEMWAR
16	16	JBTECH18226	40413820181137210030	AVANI ANUKUL MESHRAM
17	17	JBTECH18307	40413820181137210031	HEMANT GANESH SHENDE
18	18	JBTECH18312	40413820181137210032	HANUMAN BABARAO JAMBHULKAR
19	19	JBTECH18229	40413820181137210036	RITESH RAVINDRA KHANGAR
20	20	JBTECH18224	40413820181137210039	RUTUJA NANDLAL MESHRAM
21	21	JBTECH18305	40413820181137210041	NAYAN SURESH GOKHALE
22	22	JBTECH18347	40413820181137210048	MAYUR TULSIRAM HATTIMARE
23	23	JBTECH18161	40413820181137210049	SHEFALI NANDKISHOR MESHRAM
24	24	JBTECH18311	40413820181137210050	DNYANDEEP MAHADEV KURZEKAR
25	25	JBTECH18396	40413820181137210053	SOMESHWAR CHHAGAN MUDDAMWAR
26	26	JBTECH18091	40413820181161210081	NILESH RAMBHAU PATHRABE
27	27	JBTECH18264	40413820181161210075	CHAITANYA MAHESH THISKE
28	28	JBTECH18225	40413820181137210011	LOKESH SEESHARAO YELANE
29	29	JBTECH19324	1941381372002	MEGHA RUPCHAND MESHRAM
30	30	JBTECH19159	1941381372011	PRATEEKSHA RAMESH KAWALE
31	31	JBTECH19205	1941381372025	NAMIRA IKRAM KHAN
32	32	JBTECH19252	1941381372026	NIKHIL MADHUKAR RAMTEKE
33	33	JBTECH19251	1941381372027	SHASHANK PURUSHOTTAM DONGARE
34	34	JBTECH19213	1941381372028	POOJA SUDHAKAR ZADE
35	35	JBTECH19212	1941381372029	DIKSHITA PRAKASHRAO BADWAIK
36	36	JBTECH19349	1941381372030	EKTA SURESH GAME
37	37	JBTECH19210	1941381372031	PRANALI RAJKUMAR KATHOUTE
38	38	JBTECH19215	1941381372032	PRIYA CHANDRABHAN DHOTE
39	39	JBTECH19303	1941381372033	SUVARNA SHYAMSUNDAR MOHILE
40	40	JBTECH19343	1941381372034	SAYALI MANGAL KAMBLE
41	41	JBTECH19304	1941381372035	ANAND RAJENDRA GAJBHIYE
42	42	JBTECH19171	1941381372045	SAKET PRABHAKAR JUNGHARE
43	43	JBTECH19371	1941381372048	SANJANA LALAJI NARDELWAR
44	44	JBE17566	40413820171137210082	ASMITA MORESHWAR BHIMTE
45	45	JBE17133	40413820171137210062	ROHIT MANOJ SHAHARE
46	46	JBE17423	40413820171137210007	ANIMESH PANDURANG PATIL
47	47	JBE17059	40413820171137210031	DAMINI MANISH MOGLEWAR
48	48	JBTECH19297	1941381372060	MANSI KEDAR TEMBHURNE
49	49	JBTECH19322	1941381372005	HARSHAL KIRAN SONEKAR
50	50	JBTECH19298	1941381372010	SHAHBAZ SHAFIQUE AHMED
51	51	JBTECH19300	1941381372012	HARSHAD KRUSHNARAO PAPADKAR
52	52	JBTECH19394	1941381372024	SHUBHANGI DAMODHAR DHOKE
53	53	JBTECH19291	1941381372037	SHARMIN FATEMA SHAHID ANJUM SIDDIQUI
54	54	JBTECH19311	1941381372038	VRUSHABH BHOJRAJ KUMBHARE
55	55	JBTECH19310	1941381372039	SHRAWAN RAMESH DHURVE
56	56	JBTECH19293	1941381372059	SWATI DEVIDAS BHAISARE
57	57	JBTECH19290	1941381372021	SHEERIN PARVEEN MOHD. HAMEED
58	58	JBTECH19325	1941381372016	VAISHNAVI SHANKAR LINGAYAT
59	59	JBE16606	1941381372019	PRANAY GANESHRAO MODI
60	60	JBE13217	1941381372018	ANKITA ANIL KAPSE
61	61	JBE16396	2041381372002	SHRUTIKA GENDALAL MANGATE
62	62	JBTECH18372	40413820181137210045	AMIT VINAYAKRAO HAJARE
63	63	JBE17268	40413820171137210099	DOLLY YADORAO BARAPATRE
64	64	JBE15063	2041381372004	VIDYA ISHWAR KINEKAR
65	65	JBE17368	2041381372003	GULSHAN RAJU GAIKWAD
66	66	JBTECH19423	1941381372050	MAHESH RUNNAWARE
67	67	JBE17208	2041381372001	NISHIGANDHA PRADEEP KADWE

Education to Eternity

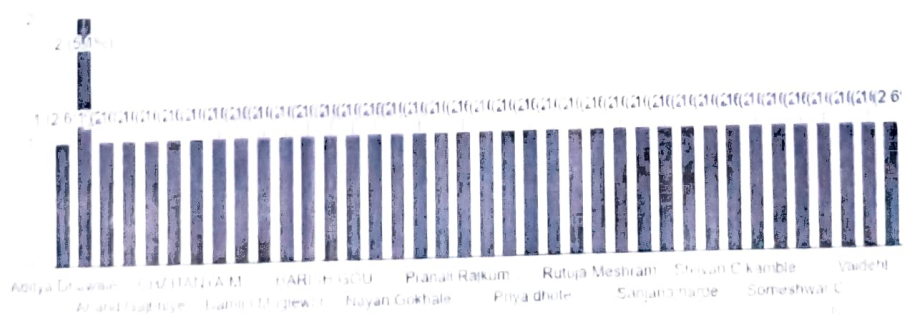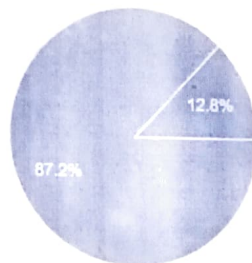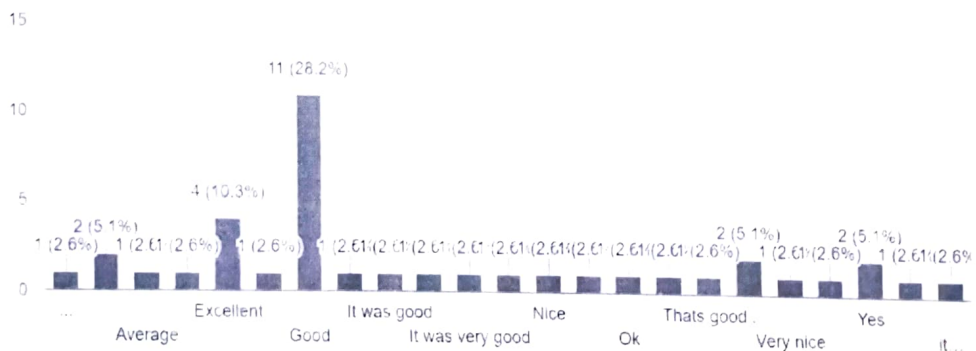| VISION	MISSION
To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

Report of "Webinar on Employability and skill development"

1) Name of the Event   : Webinar on Employability and skill development

2) Under the Aegis of   : Institute of Electronics & Telecommunication Engineers

3) Date & Time: June 03, 2021 to June 06, 2021 from 5.00 p.m. to 7:00 p.m.

4) Departmental Program: Prof. Mohammad Hassan
Coordinator

5) Resource Person : Mr. Akash Gajbhiye (Aptitude Trainer)

Nagpur, Maharashtra

6) Details of Event :

The Department of Electronics / Electronics & Telecommunication Engineering at J D College of Engineering and Management, Nagpur in association with IETE Nagpur centre organized a Webinar on **"Webinar on Employability and skill development"** on June 27, 2021. About 40 students of 3rd and 4th year of the department attended the Webinar.The Webinar was conducted by **Mr. Akash Gajbhiye (Aptitude Trainer) Nagpur, Maharashtra**. The webinar was aimed in making the students aware about the importance of skill development in our life while facing any kind of situation either its professional or personal. It focussed on how to build your skills.

The Webinar received an overwhelming response from all. At the end of the webinar, students got cleared with the doubt session by Experts. Prof. Neeta Thune co-ordinated the programme, constant support was provided by Prof. Avinash Ikhar, Academic Incharge and Prof.

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Department of Electronics and Telecommunication Engineering
"Rectifying Ideas, Amplifying Knowledge"
2020-21

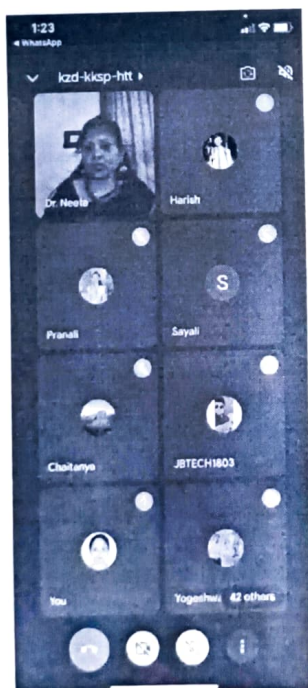Education to Eternity

VISION	MISSION
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N. N. Gyanchandani, Head ETC Department. This seminar was a part of events which college organizes regularly for the students to make them aware of the happenings in outer world.

7) Photographs of the event:

8) Attendance

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2020-21

VISION	MISSION
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3. ⌀   ⚡ 🔋 70% 🔋 10:43 am

← About this call

People   Information

E.   ETC 3RD YEAR (You)

🧑   akash Gajbhiye   ⬤⬤⬤   ⋮

🧑   akash Gajbhiye (Prese...   ✎   ⋮

🧑   akash Gajbhiye   ✎   ⋮

👤   Avani Meshram   ✎   ⋮

👤   Bhagyashri Patle   ✎   ⋮

👤   Chaitanya Thiske   ✎   ⋮

🧑   Damini chaudhari   ✎   ⋮

👤   Dikshita Badwaik   ✎   ⋮

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👤   IRTECH18 305 Navan   ✎   ⋮

Prof. M. Hassan   Prof. A.K.Ikhar/Dr. Neeta Thune   Prof.N.N. Gyanchandani
Event Cordinator   IETE Cordinator   HOD(EN/ETC)

VISION	MISSION
o be a Department providing high quality & globally competent knowledge of oncurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

Report of "Employability & Skill Development(Grammar & Comprehensions)"

1) Name of the Event : "Employability & Skill Development(Grammar & Comprehensions)"

2) Under the Aegis of : Institute of Electronics & Telecommunication Engineers

3) Date & Time : June 18, 2021 from 12 p.m. to 2 p.m.

4) Departmental Program Coordinator : Prof. Avinash K. Ikhar & Dr Neeta Thune

5) Resource Person : Ms. Arundati Sharma(Sr. Teacher Sandipani Jr. Colllege)

6) Details of Event :

The Department of Electronics & Telecommunication Engineering at J D College of Engineering and Management, Nagpur in association with IETE Nagpur centre organized a Webinar on"**Employability & Skill Development(Grammar & Comprehensions)**" on June 18, 2021. About 100 students of 3rd and 4th year of the department attended the Webinar. The Webinar was conducted by Ms. **Arundati Sharma (Sr. Teacher Sandipani Jr. Colllege).** The webinar was aimed in making the students aware about the importance of grammar & comprehension in our life while facing any kind of situation either its professional or personal. It focused on how to make strong communication with proper grammar. Madam was also discussed that how proper grammar usage is important while writing job application or cover letter, Professional presentation – planning, preparing and delivering presentation, Technical writing.

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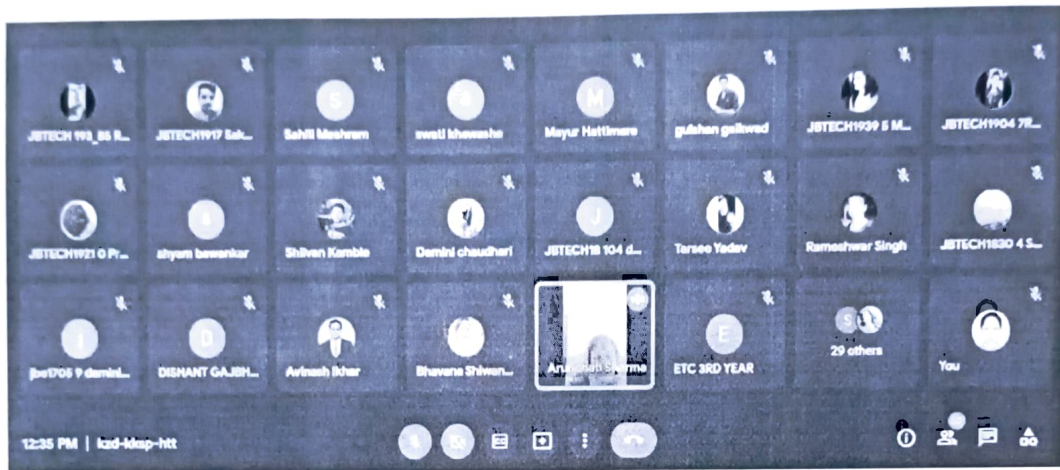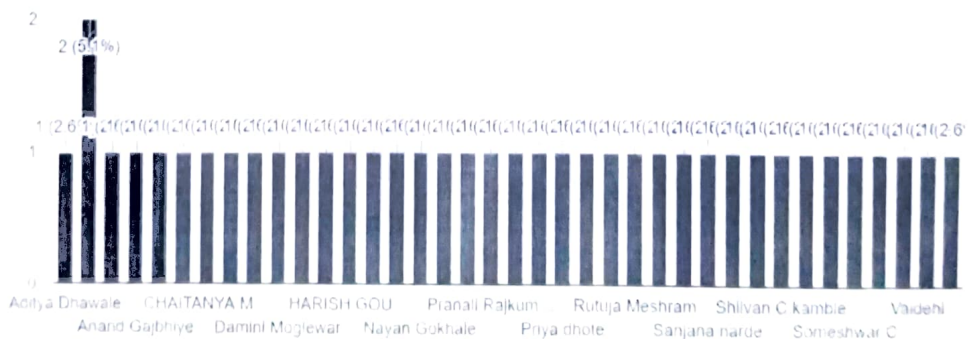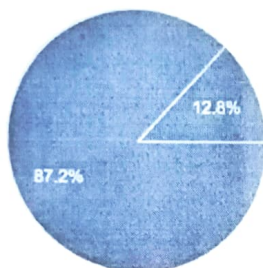*"Rectifying Ideas, Amplifying Knowledge"*
2020-21

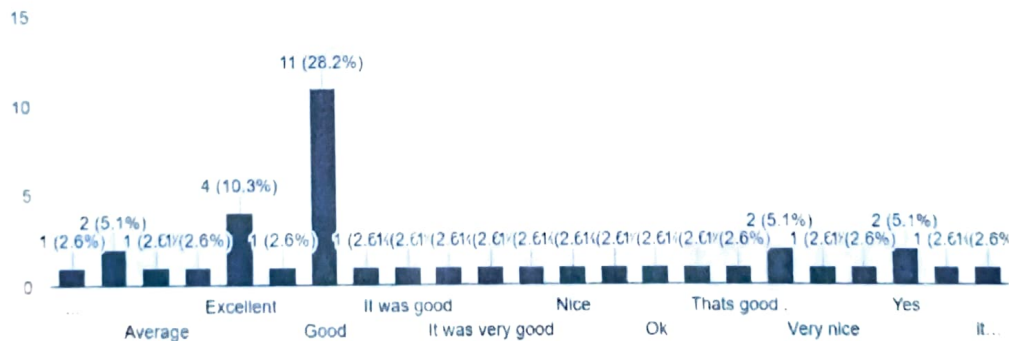| VISION	MISSION
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The Webinar received an overwhelming response from all. At the end of the webinar, students got cleared with the doubt session by Experts.

Dr.Neeta Thune has co-ordinated the programme ,constant support was provided by Prof. Avinash Ikhar, Academic Incharge and Prof. N. N. Gyanchandani, Head ETC Department. This seminar was a part of events which college organizes regularly for the students to make them aware of the happenings in outer world.

7) Photographs of the event:

J D College of Engineering
& Management, Nagpur

NAAC 'A' Grade

Department of Electronics and Telecommunication Engineering
Under the banner of IIIC,IIC, IQAC, IETE, IEI & ED Cell

Is Organising Webinar on

" EMPLOYABILITY AND SKILL DEVELOPMENT
(GRAMMAR AND COMPREHENSION) "

Date :- 18th June, 2021
Time :- 12 pm to 2 pm
Mode :- Google Meet

Joining link
Http://meet.google.com/kzd-kksp-htt

Ms. Arundhati Sharma
Sr. Teacher, Sandipani Jr. College
(M.A English Linguistic)

Dr. N. N Thune
IETE Co-ordinator

Prof. Avinash Ikhar
Academic Co-ordinator

Prof. N. N Gyanchandani
HOD, ETC Department

www.jdcoem.ac.in

VISION	MISSION
"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

8) Attendance

NAME

39 responses

Feedback:

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"Rectifying Ideas, Amplifying Knowledge"
2020-21

Education to Eternity

VISION	MISSION
To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

HOW YOU FIND THE SESSION
39 responses

- GOOD
- AVERAGE

12.8%

87.2%

HOW WAS THE DELIVERY STYLE
39 responses

Prof. Avinash K.Ikhar	**Dr. Neeta Thune**	**Prof.N.N. Gyanchandani**
Event Cordinator	**IETE Cordinator**	**HOD(ETC)**

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Report of "Employability & Skill Development(Problem Solving Techniques)"

1) Name of the Event : "Employability & Skill Development(Grammar & Comprehensions)"

2) Under the Aegis of : Institute of Electronics & Telecommunication Engineers

3) Date & Time : June 22, 2021 from 1 p.m. to 3 p.m.
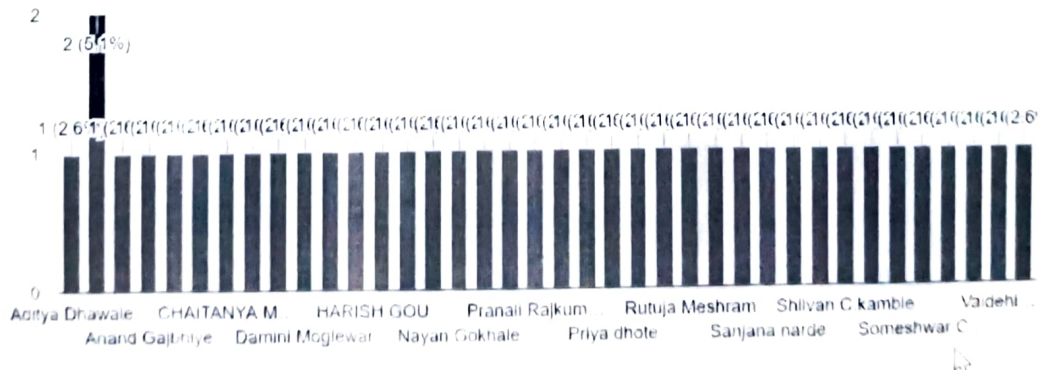
4) Departmental Program : Prof. Avinash K. Ikhar & Dr Neeta Thune
   Coordinator

5) Resource Person : Ms. Surabhi Pranav (Dean Capacity Building , JDCOEM)

6) Details of Event :

The Department of Electronics & Telecommunication Engineering at J D College of Engineering and Management, Nagpur in association with IETE Nagpur centre organized a Webinar on**"Employability & Skill Development(Problem Solving Techniques)"** on June 22, 2021. About 100 students of 3rd and 4th year of the department attended the Webinar. The Webinar was conducted by **Ms. Surabhi Pranav (Dean Capacity Building , JDCOEM).**

The webinar was aimed in making the students aware about the importance of Problem-Solving techniques in our life while facing any kind of situation either its professional or personal. It focussed on how to take decisions in tough situations as well as how we can keep our behaviour calm and balanced while giving interviews, viva or any other conversations.

The Webinar received an overwhelming response from all. At the end of the webinar, students got cleared with the doubt session by Experts.

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VISION

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Dr.Neeta Thune has co-ordinated the programme ,constant support was provided by Prof. Avinash Ikhar, Academic Incharge and Prof. N. N. Gyanchandani, Head ETC Department. This seminar was a part of events which college organizes regularly for the students to make them aware of the happenings in outer world.

7) Photographs of the event:

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VISION	MISSION
be a Department providing high quality & globally competent knowledge of current technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.
	2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

8) Attendance

NAME

39 responses

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Feedback:

HOW YOU FIND THE SESSION
39 responses

● GOOD
● AVERAGE

12.8%
87.2%

HOW WAS THE DELIVERY STYLE
39 responses

11 (28.2%)

4 (10.3%)

2 (5.1%)   1 (2.6%) 1 (2.6%) 1 (2.6%)   1 (2.6%)   1 (2.6%) 1 (2.6%) 1 (2.6%) 1 (2.6%) 1 (2.6%) 1 (2.6%) 1 (2.6%) 1 (2.6%) 1 (2.6%)   2 (5.1%)   2 (5.1%)   1 (2.6%) 1 (2.6%) 1 (2.6%)

Average   Excellent   Good   It was good   It was very good   Nice   Ok   Thats good .   Very nice   Yes   it...

Prof. Avinash K.Ikhar
IETE Cordinator

Dr. Neeta Thune
IETE Cordinator

Prof.N.N. Gyanchandani
HOD(ETC)

VISION	MISSION
To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

Report of "Webinar on Soft Skills & Communication Basics - I"

1) Name of the Event : Webinar on Soft Skills & Communication Basics - I

2) Under the Aegis of : Institute of Electronics & Telecommunication Engineers

3) Date & Time : June 25, 2021 from 1 p.m. to 3 p.m.

4) Departmental Program : Prof. Avinash K. Ikhar & Dr Neeta Thune
**   Coordinator**
5) Resource Person : Mr. Ritesh Chandekar, Public Speaker & Soft Skill Trainer

6) Details of Event :

The Department of Electronics / Electronics & Telecommunication Engineering at   J D College of Engineering and Management, Nagpur in association with IETE Nagpur centre organized a Webinar on **"Soft Skills & Communication Basics"** on June 25, 2021. About40 students of 3rd and 4th year of the department attended the Webinar. The Webinar was conducted by **Mr. Ritesh Chandekar, Public Speaker & Soft Skill Trainer**. The webinar was aimed in making the students aware about the importance of Public Speaking & Soft Skill in our life while facing any kind of situation either its professional or personal. It focussed on how to build Public Speaking & Soft Skill. Sir has also discussed Soft skills Vs Hard Skills, Interdisciplinary relevance, Global and national perspective on soft skills.

The Webinar received an overwhelming response from all. At the end of the webinar, students got cleared with the doubt session by Experts.Prof. Neeta Thune co-ordinated the programme ,constant support was provided by Prof. Avinash Ikhar, Academic Incharge and Prof. N. N. Gyanchandani, Head ETC Department. This seminar was a part of events which college organizes regularly for the students to make them aware of the happenings in outer world.

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7) Photographs of the event:

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8) Attendance

NAME

39 responses

Prof. Avinash K.Ikhar	Dr. Neeta Thune	Prof.N.N. Gyanchandani
Event Cordinator	**IETE Cordinator**	**HOD(ETC)**

VISION	MISSION
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Report of "Webinar on Analytical Reasoning and Quantitative Ability"

1) Name of the Event   : Webinar on Analytical Reasoning and Quantitative Ability

2) Under the Aegis of   : Institute of Electronics & Telecommunication Engineers

3) Date & Time: June 27, 2021 from 3 p.m. to 5:00 p.m.

4) Departmental Program: Prof. Mohammad Hassan
Coordinator

5) Resource Person : Mr. Akash Gajbhiye (Aptitude Trainer)

Nagpur, Maharashtra

6) Details of Event :

The Department of Electronics / Electronics & Telecommunication Engineering at J D College of Engineering and Management, Nagpur in association with IETE Nagpur centre organized a Webinar on **"Webinar on Analytical Reasoning and Quantitative Ability"** on June 27, 2021. About 40 students of 3rd and 4th year of the department attended the Webinar. The Webinar was conducted by **Mr. Akash Gajbhiye (Aptitude Trainer) Nagpur, Maharashtra**. The webinar was aimed in making the students aware about the importance of quantitative ability in our life while facing any kind of situation either its professional or personal. It focussed on how to build your analytical skills.

The Webinar received an overwhelming response from all. At the end of the webinar, students got cleared with the doubt session by Experts. Prof. Neeta Thune co-ordinated the programme, constant support was provided by Prof. Avinash Ikhar, Academic Incharge and Prof.

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N. N. Gyanchandani, Head ETC Department. This seminar was a part of events which colleg...

organizes regularly for the students to make them aware of the happenings in outer world.

7) Photographs of the event:

8) Attendance

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← About this call

People   Information

E. ETC 3RD YEAR (You)

akash Gajbhiye

akash Gajbhiye

akash Gajbhiye (Prese...

Avani Meshram

Chaitanya Thiske

Dikshita Badwaik

Harish Goupale

JBTECH 193_85 Ruchi...

JBTECH18 093Aditya...

JBTECH1830 4 Sneha ...

Prof. M. Hassan
Event Cordinator

Prof. A.K.Ikhar/Dr. Neeta Thune
IETE Cordinator

Prof.N.N. Gyanchandani
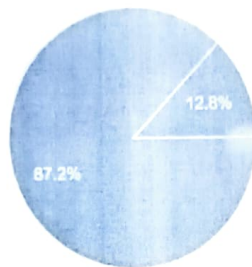**HOD(EN/ETC)**

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Report of "Webinar on Soft Skills & Communication Basics - II"

1) Name of the Event   : Webinar on Soft Skills & Communication Basics - II

2) Under the Aegis of   : Institute of Electronics & Telecommunication Engineers

3) Date & Time   : June 28, 2021 from 3 p.m. to 5 p.m.

4) Departmental Program : Prof. Avinash K. Ikhar & Dr Neeta Thune
   Coordinator
5) Resource Person   : Mr. Ritesh Chandekar, Public Speaker & Soft Skill Trainer

6) Details of Event :

The Department of Electronics & Telecommunication Engineering at J D College of Engineering and Management, Nagpur in association with IETE Nagpur centre organized a Webinar on **"Soft Skills & Communication Basics"** on June 28, 2021. About 40 students of 3rd and 4th year of the department attended the Webinar. The Webinar was conducted by **Mr. Ritesh Chandekar, Public Speaker & Soft Skill Trainer**. The webinar was aimed in making the students aware about the importance of Public Speaking & Soft Skill in our life while facing any kind of situation either its professional or personal. It focussed on how to build of Public Speaking & Soft Skill. Sir has also discussed How to develop an impressive resume, Different formats of resume – Chronological, Functional, Hybrid, Job application or cover letter, Professional presentation – planning, preparing and delivering presentation, Technical writing.

The Webinar received an overwhelming response from all. At the end of the webinar, students got cleared with the doubt session by Experts.Prof. Neeta Thune co-ordinated the programme ,constant support was provided by Prof. Avinash Ikhar, Academic Incharge and Prof. N. N. Gyanchandani, Head ETC Department. This seminar

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7) Photographs of the event:

J D College of Engineering & Management, Nagpur

NAAC 'A' Grade

Department of Electronics and Telecommunication Engineering
Under the banner of IIIC,IIC, IQAC, IETE, IEI, ISTE & ED Cell

Is Organising Webinar on

" SOFT SKILLS & COMMUNICATION BASICS 2 "

Date :- 28th June, 2021
Time :- 3 pm to 5 pm
Mode :- Google Meet

Joining link
Http://meet.google.com/kzl-kksp-hlt

Mr. Ritesh Chandekar
Public Speaker & SoftSkill Trainer

Dr. N. N Thune	Prof. Avinash Ikhar	Prof. N. N Gyanchandani
IETE Co ordinator	Academic Co ordinator	HOD, ETC Department

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39 responses

- GOOD
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12.8%

87.2%

HOW WAS THE DELIVERY STYLE

39 responses

Prof. Avinash K.Ikhar
Event Cordinator

Dr. Neeta Thune
IETE Cordinator

Prof.N.N. Gyanchandani
HOD(ETC)

1st Semester, Information Technology)

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	BSC		Engineering Mathematics- I	3	1	0	20	20	60	100	4
2	BSC		Engineering Physics	3	1	0	20	20	60	100	4
3	HSMC		Energy and Environment Engineering	3	0	0	20	20	60	100	3
4	ESC		Introduction to Computer programming	2	0	0	20	20	60	100	2
5	ESC		Workshop Practices	0	0	4	60	0	40	100	2
6	HSMC		Basic Electrical and Electronics Engineering	2	0	0	10	15	25	50	Audit
7	ESC		Introduction to Computer programming Lab	0	0	4	60	0	40	100	2
8	BSC		Engineering Physics Lab	0	0	2	60	0	40	100	1
			Induction Programme	3 Weeks							
				13	2	10					18

2nd Semester Information Technology

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	BSC		Engineering Mathematics- II	3	1	0	20	20	60	100	4
2	BSC		Engineering Chemistry	3	1	0	20	20	60	100	4
3	ESC		Engineering Graphics	1	0	0	20	20	60	100	1
4	HSMC		Communication Skills	2	0	0	60	0	40	100	2
5	HSMC		Basic Civil and Mechanical Engineering	2	0	0	10	15	25	50	Audit

6	BSC		Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC		Engineering Graphics Lab	0	0	4	60	0	40	100	2
8	HSMC		Communication Skills Lab.	0	0	4	60	0	40	100	2
			Societal Internship/ Field Training	Credit to be given in III Sem.							
				11	**2**	**10**					**16**
				23							

Curriculum for Semester- III [Second Year]

Sr. No.	Category of Subject	Course Name	Teaching Scheme			Credit	Activity	Total Hours
			L	T	P			
1	HSMC	Organization Behavior	2	0	0	2	0.5	2.5
2	HSMC	Universal Human Values	2	1	0	3	0.5	3.5
3	BSC	Mathematics-III	2	1	0	3	0.5	3.5
4	PCC	Digital Electronics and Fundamental of Microprocessors	3	0	0	3	0.5	3.5
5	PCC	Data structure using OOPs	2	1	0	3	0.5	3.5
6	ESC	Computer Architecture & Organization	3	0	0	3	0.5	3.5
7	PCC	Computer Graphics	3	0	0	3	0.5	3.5
8	PCC	Data structure using OOPs(Lab)	0	0	2	1		4
9	ESC	Digital Electronics and Fundamental of Microprocessors (Lab)	0	0	2	1		4
10	PCC	Computer Graphics (Lab)	0	0	2	1		4
			14	3	6	20	3.5	34.5

Additional Engagement:

Sr.No			
1	Library		
2	TG		
3	Softskills		
4	Aptitude		
5			

Curriculum for Semester- IV [Second Year]

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit	Mode of Teaching
				L	T	P	CA	MSE	ESE	Total		
1	PCC	IT4T001	Theory of Computation	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
2	PCC	IT4T002	Java Programming	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
3	PCC	IT4T003	Operating System	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
4	PCC	IT4T004	Computer Networks	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
5	PCC	IT4T005	DBMS	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
6	PCC	IT4T006	Discrete Mathematics & Graph Theory	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
7	PCC	IT4L007	DBMS(Lab)	0	0	2	60	0	40	100	1	Practical on PCs
8	PCC	IT4L008	Computer Networks(Lab)	0	0	2	60	0	40	100	1	Practical on PCs
9	PCC	IT4L009	Java Programming(Lab)	0	0	2	60	0	40	100	1	Practical on PCs
10	MC	IT4L010	Consumer Affairs	2	0	0	15	10	25	50	Audit	Chalk, Duster & PPT
12	PCC	IT4T012	NPTEL Course	2	0	0	25	0	25	50	2	
				18	2	6	345	130	525	1000	23	

Curriculum for Semester- V [Third Year]

Sr. No.		Course Name	Teaching Scheme	Evaluation Scheme	Credit	Mode of Teaching

	Category of Subject		L	T	P	CA	MSE	ESE	Total		
1	ESC	Embedded System & IoT	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
2	PCC	Cyber Security & Cryptography	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
3	PCC	Design and Analysis of Algorithm	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
4	OEC	Open Elective-1	3	1	0	20	20	60	100	4	Chalk, Duster & PPT
5	PEC	Elective -I	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
6	ESC	Embedded System & IoT (Lab)	0	0	2	60	20	40	100	1	Practical on PCs
7	PCC	Cyber Security & Cryptography (Lab)	0	0	2	60	0	40	100	1	Practical on PCs
8	PCC	Design and Analysis of Algorithm (Lab)	0	0	2	60	0	40	100	1	Practical on PCs
9	PROJECT	Mini Project	0	0	2	30	0	20	50	1	Practical on PCs
10	PROJECT	Field Training/ Industrial Visit	0	0	0	30	0	20	50	1	Offline, chalk & Talk ,PPT
11	MC	Innovation and Entrepreneurships Development	2	0	0	15	10	25	50	Audit	Offline, chalk & Talk ,PPT
			15	3	8	**355**	**130**	485	950	**21**	

Curriculum for Semester- VI [Third Year]

Sr. No.	Category of Subject	Course Name	Teaching Scheme			Evaluation Scheme				Credit	Mode of Teaching
			L	T	P	CA	MSE	ESE	Total		
1	ESC	Adhoc Wireless Networks	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
2	PCC	Machine Learning	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
3	PEC	Elective -II	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
4	PEC	Elective-III	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
5	OEC	Open Elective 2	3	1	0	20	20	60	100	4	Chalk, Duster & PPT
6	ESC	Adhoc Wireless Networks (Lab)	0	0	2	60	0	40	100	1	Practical on PCs
7	PCC	Machine Learning (Lab)	0	0	2	60	0	40	100	1	Practical on PCs
8	PCC	Multimedia (Lab)	0	0	2	60	0	40	100	1	Practical on PCs
9	PROJECT	Mini Project	0	0	4	30	0	20	50	1	Practical on PCs
10	PROJECT	CRT(Campus Recruitment Training)	0	0	2	50	0	0	50	1	Practical on PCs
11	PROJECT	Skill Development	0	0	2	15	0	35	50	1	Practical on PCs
12	MC	Intellectual Property Rights	2	0	0	15	10	25	50	Audit	
			16	2	14	390	110	500	1000	22	

Curriculum for Semester- VII [Fourth Year]

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit	Mode of Teaching
				L	T	P	CA	MSE	ESE	Total		
1	ESC	IT7T001	Data Science	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
2	PCC	IT7T002	Artificial Intelligence & Cognitive Robotics	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
2	PEC	IT7TE04	Elective-IV	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
3	PEC	IT7TE05	Elective -V	2	1	0	20	20	60	100	3	Chalk, Duster & PPT
5	OEC	IT7O003	OPEN Elective -III	3	0	0	20	20	60	100	4	Chalk, Duster & PPT
6	ESC	IT7L002	Data Science using R (Lab)	0	0	2	60	0	40	100	1	Practical on PCs
7	PEC	IT7L003	Middleware Technolgies(Lab)	0	0	2	60	0	40	100	1	Practical on PCs
8	PROJECT	IT7P004	Project Phase I	0	0	6	75	0	75	150	5	Practical on PCs
9	MC	IT7T005	Research Methodology	2	0	0	15	10	25	50	Audit	
				14	3	10	285	110	455	850	23	

Open Elective-3 : Cloud Computing & Storage Management

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit	Mode of Teaching
				L	T	P	CA	MSE	ESE	Total		
1	PROJECT	IT8 P001	Internship	3	0	0	20	20	60	100	7	Practical on PCs
3	PROJECT	IT8P002	Project Phase II	0	0	6	50	0	50	100	3	Practical on PCs
4	PCC	IT8T002	NPTEL Courses	0	0	0					2	
				6	1	6	155	40	175	200	12	

OR

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit	Mode of Teaching
				L	T	P	CA	MSE	ESE	Total		
1	PEC	IT8TE06	Elective –VI	3	0	0	20	20	60	100	3	Chalk, Duster & PPT
2	OEC	IT8O004	OPEN Elective -IV	3	1	0	60	20	40	100	4	Chalk, Duster & PPT
3	PROJECT	IT8P001	Project Phase II	0	0	6	50	0	50	100	3	Practical on PCs
4	PCC	IT8T002	NPTEL Courses	0	0	0					2	
				6	1	6	155	40	175	350	14	

Open Elective-4 : Big Data Analytics

Semester	Course Code	Name of the course	L	T	P	Credits
3	PCC	Data Structure using OOPs	2	1	0	3

Second Year]

	Prerequisites for the course
1.	Knowledge of computer programming languages, such as C or Java.
2.	Knowledge of basic algebra, calculus, and statistics.
3.	Experience with database systems, such as MySQL or MongoDB. With these prerequisites in place, you're ready to learn about data structures.

	Prior Reading Material/useful links
1.	https://www.brainkart.com/subject/Object-Oriented-Programming-and-Data-Structures_165/
2.	https://www.geeksforgeeks.org/data-structures/
3.	

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Understand the concept of ADT.
2	CO2	Identify data structures suitable to solve problems.
3	CO3	Develop and analyze algorithms for stacks, queues.
4	CO4	Develop algorithms for binary trees and graphs.
5	CO5	Implement sorting and searching algorithms.
6	CO6	Implement symbol table using hashing techniques

Syllabus:

	Course Contents	Hours
Unit I	**Complexity Analysis:** Time and Space complexity of algorithms, asymptotic analysis, big O and other notations, importance of efficient algorithms, program performance measurement, data structures and algorithms. **Hashing:** Implementation of Dictionaries, Hash Function, Collisions in Hashing, Open Addressing, Analysis of Search Operations	[7Hrs]
UNIT II	**ADT Array-Searching and sorting on arrays:** Linear search, binary search on a sorted array. Bubble sort, Insertion sort, merge sort and analysis; Emphasis on the comparison based sorting model, Radix sort, and bucket sort.	[8Hrs]
Unit III	**Stacks and Queues:** Abstract data types, sequential and linked implementations, representative applications such as parenthesis matching, towers of Hanoi, finding path in a maze, simulation of queuing systems, equivalence problem.	[7Hrs]

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Unit IV	**Linked Lists:** Abstract data type, sequential and linked representations, comparison of insertion, deletion and search operations for sequential and linked lists, exception and iterator classes for lists, doubly linked lists, circular lists, skip lists applications of lists in bin sort, radix sort, sparse tables	[7Hrs]
Unit V	**Trees and Graphs:** Binary trees and their properties, terminology, sequential and linked implementations, tree traversal methods and algorithms, heaps as priority queues, heap implementation, insertion and deletion operations, heap sort, heaps in Huffman coding, leftist trees. Graph Algorithms: Graphs and their Representations, Graph Traversal Techniques: Breadth First Search (BFS) and Depth First Search (DFS), Applications of BFS and DFS, Minimum Spanning Trees (MST)	[7Hrs]

	Text Books
1.	Mark Allen Weiss, Data Structures and Algorithm Analysis in C, 2nd Edition, Pearson Education,1997
2.	Reema Thareja, Data Structures Using C, Second Edition, Oxford University Press, 2011.

	Reference Books
1.	Thomas H. Cormen, Charles E. Leiserson, Ronald L.Rivest, Clifford Stein, "Introduction to Algorithms", Second Edition, Mcgraw Hill, 2002.
2.	Aho, Hopcroft and Ullman, Data Structures and Algorithms‖, Pearson Education,1983
3.	Stephen G. Kochan, :Programming in C‖, 3rd edition, Pearson Education
4	Ellis Horowitz, SartajSahni, Susan Anderson-Freed, —Fundamentals of Data Structures in C, Second Edition, University Press, 2008

	Useful Links
1.	https://www.youtube.com/results?search_query=Data+structure+using+OOPs
2.	https://www.youtube.com/watch?v=z9bZufPHFLU&list=PLfqMhTWNBTe0b2nM6JHVCnAkhQRGiZMSJ
3.	https://www.youtube.com/watch?v=cnT1oW5_ePM&list=PLfqMhTWNBTe0b2nM6JHVCnAkhQRGiZMSJ&index=3

Curriculum for Semester- IV [Second Year]

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
IV	IT4T002	Java Programming				

	Prerequisites for the course
1.	Basic understanding of programming concepts and fundamentals.
2.	Basic Knowledge of Computer & Algorithms

	Prior Reading Material/useful links
1.	https://www.coursera.org/projects/java-beginners-getting-started-
2.	https://www.udemy.com/course/mastering-object-oriented-design-in-java/
3	https://www.udemy.com/course/oop-learnit/

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Use the syntax and semantics of java programming language and basic concepts of OOP.
2	CO2	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
3	CO3	Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem
4	CO4	Apply the concepts of Multithreading and Exception handling to develop efficient and error free codes.
5	CO5	Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements

Syllabus:

	Course Contents	Hours
Unit I	**Basics of OOP:** Abstraction, Inheritance, Encapsulation, Classes, subclasses and super classes, Polymorphism and Overloading, message communication Procedure-Oriented vs. Object-Oriented Programming concept. **Introduction to Java Programming :** Basics of Java, Background/History of Java, Java and the Internet, Advantages of Java , Java Virtual Machine & Byte Code , Java Environment Setup ,Java Program Structure	[7 Hrs]

Unit II	**Primitive Data Types :** Integers, Floating Point type, Characters, Booleans , User Defined Data Type , Identifiers & Literals , Declarations of constants & variables , Type Conversion and Casting , Scope of variables & default values of variables declared , Wrapper classes , Comment Syntax , Garbage Collection **Arrays of Primitive Data Types:** Types of Arrays, Creation, concatenation and conversion of a string, Decision & Control Statements, Different Operators	[7 Hrs]
Unit III	**Class :** Defining classes, fields and methods, creating objects, accessing rules, this keyword, static keyword, method overloading, final keyword **Constructor:** Constructors: Default constructors, Parameterized constructors, Copy constructors, Passing object as a parameter, constructor overloading	[7 Hrs]
Unit IV	**Basics of Inheritance**: Inheritance, Types of inheritance: single, multiple, multilevel, hierarchical and hybrid inheritance, concepts of method overriding, extending class, super class, Abstract Class **Package :** Creating package, importing package, access rules for packages, class hiding rules in a package, Defining interface, inheritance on interfaces, implementing interface, multiple inheritance using interface	[8 Hrs]
Unit V	**Exception Handling :** Introduction, Built in classes for Exception Handling, Mechanism of Exception Handling in Java, Error Handling Exception Classes **Multithreading :** Creating thread, extending Thread class, implementing Runnable interface, life cycle of a thread, Thread priority & thread synchronization, exception handing in threads	[7 Hrs]

	Text Books
1.	Herbert Schildt, The Complete Reference-Java, Tata Mcgraw-Hill Edition, Eighth Edition, 2014.
2.	Nicholas S. Williams, Professional Java for Web Applications, Wrox Press, 2014.
3.	Complete Reference J2EE by James Keogh mcgraw publication

Reference Books

1.	Black Book "Java server programming" J2EE, 1st ed., Dream Tech Publishers, 2008. 3. Kathy walrath .
2.	Core Java, Volume II: Advanced Features by Cay Horstmann and Gary Cornell Pearson Publication.
3.	Spring in Action 3rd edition , Craig walls, Manning Publication.
4	Hibernate 2nd edition, Jeff Linwood and Dave Minter, Beginning Après publication
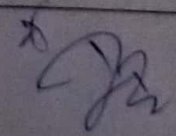
Useful Links

1.	https://www.udemy.com/course/java-programming-complete-beginner-to-advanced/
2.	https://www.simplilearn.com/java-full-stack-developer-certification-training-course
3	https://www.javatpoint.com/github

Semester	Course Code	Name of the course	L	T	P	Credits
IV	IT4L007	Database Management Systems (Lab)	0	0	2	1
1.	Knowledge of Procedural and / or Object-Oriented Programming (C / C++ / Java / Python),Data Structures and Algorithms					

Prior Reading Material/useful links

1.	https://www.udemy.com/course/relational-database-management-systemrdbms-complete-pack/
2.	https://www.coursera.org/learn/database-management
3	https://onlinecourses.nptel.ac.in/noc22_cs91/preview
4	https://www.simplilearn.com/what-is-database-management-article

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Apply the basic concepts of Database Systems and Applications.
2	CO2	Use the basics of SQL and construct queries using SQL in database creation and interaction.
3	CO3	Design a commercial relational database system (Oracle, MySQL) by writing SQL using the system.
4	CO4	Analyze and Select storage and recovery techniques of database system

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5	CO5	Implement basics of SQL and construct queries using SQL.

Syllabus:

	List of Experiments:
0	Concept design with E-R Model, Relational Model & Normalization
1.	Creating tables, Renaming tables, Data constraints (Primary key, Foreign key, Not Null), Data insertion into a table.
2.	Grouping data, aggregate functions, Oracle functions (mathematical, character functions).
3.	Sub-queries, Set operations, Joins.
4.	Creation of databases, writing SQL and PL/SQL queries to retrieve information from the databases.
5.	PL/SQL Procedure for Triggers & cursor implementation on DML
6.	PL/SQL block to implementation of factorial using function
7.	Design and Implementation of Database systems or packages for applications such as office automation, hotel management, hospital management.
8.	Deployment of Forms, Reports Normalization, Query Processing Algorithms in the above application project.
9.	Creation of IP address, subnet mask and default gateway in a routed network. CLOB, NCLOB, BLOB and BFILE.

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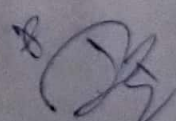
Semester	Course Code	Name of the course	L	T	P	Credits
V	IT5T001	Embedded System & IoT	3	0	0	20

Prerequisites for the course	
1.	C and C++ programming.
2.	Microcontrollers, or MCUs.
3.	Linux operating system.

Prior Reading Material/useful links	
1.	Digital System Design - Use of Microcontroller
2.	High Performance Embedded Computing
3.	Dependable Embedded Systems by **Author(s)** Jörg Henkel, Nikil Dutt

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Understand the knowledge of fundamentals of embedded system and peripherals.
2	CO2	Implements the fundamentals of firmware used in embedded systems to perform an application specific task.
3	CO3	Apply the knowledge of fundamentals of IOT
4	CO4	Apply the knowledge to choose between available technologies and devices that are stated for embedded systems and IOT challenges.
5	CO5	Design & develop embedded systems for various real-life scenarios.

Syllabus:

	List of Experiments:	Hours
Unit I	**Introduction to Embedded Systems** Introduction: Definition of Embedded System, Embedded Systems Vs General Computing Systems, History of Embedded Systems, Classification, Major Application Areas, Purpose of Embedded Systems. Core of the Embedded System, Memory selection for Embedded Systems, Sensors and Actuators, Communication Interface. Design and Development Process: Embedded SoC, Build process for Embedded Systems, Design Process in Embedded system, Design challenges in Embedded system design, Embedded system design technologies. ARM Microcontrollers and its Architecture.	[8 Hrs]
Unit II	**Embedded Firmware** Embedded Firmware Design Approaches- Embedded Firmware Development Languages - Embedded System Development Environment - IDE, Compiler, Linker - Types of File Generated on Cross Compilation- Simulator, Emulator and Debugging- Fundamental issues in Hardware Software Co-design- Integration and Testing of Embedded Hardware and Firmware.	[7Hrs]
Unit III	**Introduction to IOT** Definition and characteristics of IoT, Internet of Things: Emerging Trends, Economic Significance, Technical Building Blocks, Physical design of IoT, Things of IoT, IoT Protocols, Logical design of IoT, IoT functional blocks, IoT communication models, IoT Communication APIs, IoT enabling technologies, IoT levels, Domain specific IoTs, IoT Issues and Challenges, Applications	[7 Hrs]
Unit IV	**Fundamental IoT Mechanisms & Key Technologies** Horizontal, verticals and four pillars of IoT, M2M: The internet of devices, RFID: The internet of objects, WSN: The internet of transducer, SCADA: The internet of controllers, DCM: Device, Connect and Manage, Device: Things that talk, Connect: Pervasive Network, IoT Physical Devices and Endpoints: Basic building blocks of IoT device, Key IoT	[7 Hrs]

Technologies, Device Intelligence, Communication capabilities, Mobility support, Device Power, Sensor Technology.

Unit V	**Web of Things and Cloud of Things** **Web of Things:** Web of Things versus Internet of Things, Two Pillars of the Web, Architecture Standardization for WoT, Platform Middleware for WoT, Unified Multitier WoT Architecture, WoT Portals and Business Intelligence. **Cloud of Things:** Grid/SOA and Cloud Computing, Cloud Middleware, Cloud Standards – Cloud Providers and Systems, Mobile Cloud Computing, The Cloud of Things Architecture. Case Studies: Agriculture: Smart irrigation, Environment: Air Pollution Monitoring.	[7Hrs]

	Text Books
1.	Embedded System: Architecture, Programming and Design by Rajkamal, 3rd edition, 2010, McGraw Hill Education, 2015
2.	Wayne Wolf, Computers as Components - Principles of Embedded Computer System Design, Morgan Kaufmann Publisher, 2006.
3.	Arshdeep Bahga, Vijay Madisetti, "Internet of Things – A hands-on approach", Universities Press, 2015.
4.	Hakima Chaouchi, The Internet of Things, Connecting Objects to the Web, Wiley Publications

	Reference Books
1.	David E-Simon, An Embedded Software Primer, Pearson Education, 2007.
2.	Shibu K.V, "Introduction to Embedded System", Tata McGraw-Hill, 2014.
3.	Tammy Noergaard, Embedded Systems Architecture, Elsevier,2006
4.	Sriram V Iyer, Pankaj Gupta, Embedded Real Time Systems Programming, Tata Mc-Graw Hill, 2004.

	Useful Links
1.	https://nptel.ac.in/courses/108102045
2.	https://www.coursera.org/learn/iot

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Semester	Course Code	Name of the course	L	T	P	Credits
V	IT5T002	Cyber Security & Cryptography	2	1	0	20

Prerequisites for the course	
1.	Vulnerabilities in the Information Technology systems
2.	Anticipating and detecting threats
3.	Routing and switching
4	Being aware of the network architecture and protocol
5	Firewalls

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Prior Reading Material/useful links	
1.	http://nptel.ac.in/courses/106105031/lecture by Dr.Debdeep Mukhopadhyay IIT Kharagpur
2.	https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-033-computer-

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	To Understand basic concepts of Cyber security.
2	CO2	To apply various standards Symmetric Encryption algorithms to provide confidentiality and Asymmetric Encryption algorithms to achieve authentication.
3	CO3	To Compare and apply various authentication Techniques
4	CO4	To Evaluate and Communicate the human role in security systems with an emphasis on
5	CO5	To select and apply appropriate Intrusion detection and prevention techniques and to examine various security algorithms to Interpret security incidents

Syllabus:

Course Contents		Hours
Unit I	**Unit 1: Introduction to Cyber Security** Overview of cyber security , Internet Governance-Challenges and constraints, Cyber threats:- Cyber Warfare-Cyber Crime-Cyber terrorism ,Cyber Espionage, Need for comprehensive cyber security policy, need for nodal authority, Cyber security regulations, Roles of international law.	[7 Hrs]
Unit II	**Cryptography and Block Ciphers principles.** Introduction, Security approaches, Principles of security, Types of Security attacks, Security services, Security Mechanisms, A model for Network Security, Substitution and Transposition techniques, Symmetric and Asymmetric key cryptography, Steganography, Cryptographic independent dimensions. Cryptanalytic attack and brute force attack, Symmetric key Ciphers: Block Cipher principles, DES.	[7 Hrs]
Unit III	**UNIT 3 Public Key Cryptosystems and Authentication Requirements.** Principles of public key cryptosystems, RSA algorithm, Diffie-Hellman Key Exchange, introductory idea of Elliptic curve cryptography. Cryptographic Hash Functions: Message Authentication, Secure Hash Algorithm (SHA-512) Message authentication codes: Authentication requirements, Digital signature.	[7 Hrs]
Unit IV	**UNIT 4 Key Management, Distribution and Cyber Security Vulnerabilities**	[8 Hrs]

		Distribution of Public Keys, Kerberos, X.509 Authentication Service, PGP, SSL, IPSEC. Cyber Security Vulnerabilities-Overview, vulnerabilities in software, System administration, Complex Network Architectures, Weak Authentication, Poor Cyber Security Awareness. Cyber Security Safeguards- Overview, Access control, Audit, Authentication, Ethical Hacking	
Unit V		**Securing Web Application Services, Servers and cyber forensic** Basic security for HTTP Applications and Services, Basic Security for SOAP Services, Identity Management and Web Services, Security Considerations, Challenges, Intrusion detection and Prevention Techniques, System Integrity Validation, Honey pots, password management. Introduction to Cyber Forensics.	[7 Hrs]

Text Books

1.	. William Stallings, "Crpyptography and Network security Principles and Practices", Pearson/PHI.
2.	Wade Trappe, Lawrence C Washington, " Introduction to Cryptography with coding theory", Pearson.
3.	.J. Katz and Y. Lindell, Introduction to Modern Cryptography, CRC press, 2008.
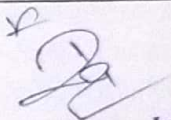
Reference Books

1.	Charles P. Pfleeger, Shari Lawrence Pfleeger – Security in computing – Prentice Hall of India.
2.	Golreich O, Foundations of Cryptography, Vol.1.2, Cambridge University Press, 2004
3.	Menezes, et.al, Handbook of Applied Cryptography, CRC Press, 2004.

Useful Links

1.	http://nptel.ac.in/courses/106105031/lecture by Dr.Debdeep Mukhopadhyay IIT Kharagpur
2.	https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-033-computer-

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Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
V	IT5T003	Design and Analysis of Algorithm	2	1	0	20

Prerequisites for the course	
1.	Basic knowledge of programming and mathematics
2.	Study of data structure very well.
3.	Basic understanding of Formal Language and Automata Theory.

Prior Reading Material/useful links	
1.	Introduction to Algorithms, by Thomas H. Cormen

2.	Computer Algorithms, by Horowitz and Sahni.

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs.
2	CO2	Compute complexity measures of algorithms, including recursive algorithms using recurrence relations
3	CO3	Design standard algorithms such as sorting, searching, and problems involving graphs
4	CO4	Develop efficient algorithms for simple computational tasks.
5	CO5	Gain understanding of concepts of time and space complexity, worst case, average case and best-case complexities and the big-O notation.

Syllabus:

Course Contents		Hours
Unit I	Introduction to Algorithm, Iterative Algorithm Design and Issue, Use of Loops, Efficiency of Algorithm, Estimating & Specifying Execution Time and Space, Order Notation (O, Θ, Ω Notations), Algorithm Strategies, Mathematical Analysis for Recursive and Non-Recursive algorithm.	[7 Hrs]
Unit II	Introduction to Divide and Conquer, Binary Search, Merge Sort, Quick Sort, Strassen's Matrix Multiplication, Finding median, Closest Pair, Convex Hulls Problem.	[7 Hrs]
Unit III	Greedy Methods, Fractional Knapsack Problem, Job Sequencing with Deadlines, Optimal Merge Pattern, Huffman Coding, Minimum Spanning Tree – Kruskal's and Prim's Algorithm, Dijkstra's Shortest Path Algorithm.	[7 Hrs]
Unit IV	Introduction to Dynamic Programming, Elements of Dynamic Programming, Multistage Graphs, Traveling Salesman Problem, Matrix-chain multiplication, Optimal Polygon Triangulation, Longest common subsequence, Floyd-Warshall algorithm	[8 Hrs]
Unit V	Introduction to Backtracking, N-Queen Problem, Backtracking Strategies, Search & Traversal Techniques – BFS, DFS, Sum of Subsets, Graph coloring, Hamiltonian Circuit Problem, Efficiency of Algorithms: Polynomial Time & Non-Polynomial Time Algorithms, NP-Complete, NP-Hard.	[7 Hrs]

Text Books	
1.	Thomas H. Cormen, Charles E Leiserson, Introduction to Algorithms, PHI Publication, 3rd Edition.
2.	2. Parag Dave, Himanshu Dave, Design and Analysis of Algorithm, Pearson Education India, 2nd Edition.

3.	3. S. Sridhar, Design and Analysis of Algorithms, Oxford University Press, India.

Reference Books

1.	. Aho, Ullman, Data Structure and Algorithms, Addison-Wesley Publication, 1st Edition, 1983. 2. Michel Goodrich, Roberto Tamassia, Algorithm Design - Foundation, Analysis & Internet Examples, Wiley Publication, 2nd Edition, 2006.
2.	George T. Heineman, Gary Pollice, Stanley Selkow, Algorithms in a Nutshell, A Practical Guide, O'Reilly Media, 2nd Edition, 2016.

Useful Links

1.	https://www.udemy.com/course/design-and-analysis-of-algorithm-/
2.	https://www.classcentral.com/course/swayam-design-and-analysis-of-algorithms-3984
3.	https://www.edx.org/course/algorithms-design-and-analysis

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Semester	Course Code	Name of the course	L	T	P	Credits
IV	IT4L010	Consumer Affairs				Audit

Prerequisites for the course

1.	Knowledge required to understand the state of your product before approaching the market strategy

Prior Reading Material/useful links

1.	https://www.coursera.org/learn/market-research/home/info
2.	https://www.coursera.org/learn/market-power
3	https://onlinecourses.nptel.ac.in/noc23_mg45/preview

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Remember the basic terminology related to Consumer Affairs
2	CO2	Understand the different approaches applied in different aspects of consumption, customer protection and consumer awareness and their evolution.
3	CO3	Apply the knowledge in different aspects of consumption, customer protection and consumer awareness.
4	CO4	Comprehend the business firms' interface with consumers and the consumer related regulatory and business environment.
5	CO5	Analyse: the norms applicable to different consumption patterns.

Syllabus:

Course Contents	Hours

Unit I	An Introduction to History and Development of Consumer Movement; An introduction to International Organizations and Agreements; Product Liabilities Including Tortious Liabilities; Role of Non-Government Organizations (NGOs)and Voluntary Consumer Organizations (VCOs);Importance	[7 Hrs]
Unit II	Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy to be provided; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties. Globalization and its Consequences; Unfair Trade Practice.	[7 Hrs]
Unit III	Features and Aim of Consumer Protection Act; Consumer Protection Act; Comparison between Pre and Post Legislation Period; Land Mark Judgements.	[7 Hrs]
Unit IV	Customer Awareness Importance, Companies' Behaviour and Customer Awareness Relevance, Understanding the Market and Companies' Behaviour, Companies' Practices Requiring Consumers' Protection, Customer Awareness Relevance and Strategies.	[8 Hrs]
Unit V	Leading Cases decided under Consumer Protection Act: Medical Negligence; Banking; Insurance; Housing & Real Estate; Electricity, Water, and Telecom Services; Education; Defective Product; Presenting a comprehensive solution to a selected case study.	[7 Hrs]

Text Books	
1.	Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. "Consumer Affairs" (2007) Delhi University Publication
2.	Aggarwal, V. K. (2003). Consumer Protection: Law and Practice. 5th Ed. Bharat Law House, Delhi
3.	Girimaji, Pushpa (2002). Consumer Right for Everyone Penguin Books.
4	Nader, Ralph (1973). The Consumer and Corporate Accountability. USA, Harcourt Brace Jovanovich, Inc.
5	Sharma, Deepa (2011).Consumer Protection and Grievance-Redress in India: A Study of Insurance Industry(LAP LAMBERT Academic Publishing GmbH & Co.KG, Saarbrucken, Germany

Reference Books	
1.	Empowering Consumers e-book, www.consumeraffairs.nic.in
2.	EBook www.bis.org8. The Consumer Protection Act, 1986 Consumer Protection Judgments (CPJ) (Relevant cases reported in various issues)
3.	Recent issues of magazines: Insight, published by CERC, Ahmedabad 'Consumer Voice', Published by VOICE Society, New Delhi.
4	Upbhokta Jagran, Ministry of Consumer Affairs, Govt, of India, New Delhi

Useful Links	
1.	www.ncdrc.nic.in
2.	www.fcamin.nic.in
3	www.consumeraffairs.nic.in

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Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VI	IT6TE03D	Machine Learning with Big Data	3	0	0	3

Prerequisites for the course	
1.	Linear algebra.
2.	Trigonometry.
3	Statistics.
4	Calculus (optional, for advanced topics)
5	Python Programming.

Prior Reading Material/useful links	
1.	https://www.knowledgehut.com/blog/big-data/big-data-books
2.	https://www.amazon.in/Machine-Learning-Data-Hands-Professionals/dp/8126553375
3.	https://www.bmc.com/blogs/big-data-science-books/

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Ability to identify the characteristics of datasets and compare the trivial data and big data for various applications.
2	CO2	Ability to select and implement machine learning techniques and computing environment that are suitable for the applications under consideration.
3	CO3	Ability to solve problems associated with batch learning and online learning, and the big data characteristics such as high dimensionality, dynamically growing data and in particular scalability issues.
4	CO4	Ability to understand and apply scaling up machine learning techniques and associated computing techniques and technologies
5	CO5	Ability to recognize and implement various ways of selecting suitable model parameters for different machine learning techniques.
6	CO6	Ability to integrate machine learning libraries and mathematical and statistical tools with modern technologies like hadoop and mapreduce.

Syllabus:

Course Contents	Hours

Unit I	Introduction: Types of Machine Learning , Machine Learning process, preliminaries, testing Machine Learning algorithms, turning data into probabilities, and Statistics for Machine Learning, Probability theory ,Probability Distributions ,Decision Theory.	[7 Hrs]
Unit II	Supervised Learning: Linear Models for Regression, Classification, Discriminant Functions, Probabilistic Generative Models, Probabilistic Discriminative Models , Decision Tree Learning , Bayesian Learning, Naïve Bayes , Ensemble Methods, Bagging, Boosting, Neural Networks , Multilayer Perception, Feed-forward Network, Error Back propagation ,Support Vector Machines	[8 Hrs]
Unit III	Unsupervised Learning: Clustering-K-means , EM Algorithm, Mixtures of Gaussians , Dimensionality Reduction, Linear Discriminant Analysis, Factor Analysis, Principal Components Analysis, Independent Components Analysis.	[7 Hrs]
Unit IV	Introduction to Big Data Analytics: Big Data Overview, State of the Practice in Analytics, Data Analytics Lifecycle, data analytics problems. Understanding features of R language, Understanding different Hadoop modes, Understanding Hadoop features, The HDFS and MapReduce architecture.	[7 Hrs]
Unit V	Understanding the basics of MapReduce, The Hadoop Map Reduce, The Hadoop Map Reduce fundamentals, writing a Hadoop Map Reduce example, learning the different ways to write MapReduce in R. Integrating R and Hadoop – the RHIPE architecture and RHadoop.	[7 Hrs]

Text Books

1.	Kevin P. Murphy, "Machine Learning: A Probabilistic Perspective", MIT Press, 2016.
2.	Ethem Alpaydin, "Introduction to Machine Learning", MIT Press, Third Edition, 2014.
3.	Tom Mitchell, "Machine Learning", McGraw-Hill, 1997.
4.	Big Data Analytics with R and Hadoop, Vignesh Prajapati, PACKT Publishing, 2013.
5	Fundamentals of Business Analytics, R N Prasad and S Acharya, Wiley India, 2011

Reference Books

1.	Christopher Bishop, "Pattern Recognition and Machine Learning" Springer, 2007.
2.	Stephen Marsland, "Machine Learning –An Algorithmic Perspective", Chapman andHall, CRC Press, Second Edition, 2014.
3.	Randal S, "Python Machine Learning, PACKT Publishing, 2016

Useful Links

1.	https://www.knowledgehut.com/blog/big-data/big-data-books

| 2. | https://www.amazon.in/Machine-Learning-Data-Hands-Professionals/dp/8126553375 |
| 3. | https://www.bmc.com/blogs/big-data-science-books/ |

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VI	IT6P006	Mini Project	0	0		

Evaluation Criteria: The total term work shall be of 50 marks. The 30 marks shall be distributed over internal assessments / reviews (at least 02 reviews) during the semester by a review committee. The remaining 5 marks shall be distributed for attendance. The Head of the Department shall constitute the review committee. The student shall make presentation on the progress made before the committee. The 20marks of the practical will be awarded based on

the performance in the practical exam conducted by the University at the end of the semester.
General Suggestions and Expectations / Guidelines
• The project shall be developed in C++/JAVA/PYTHON
• The students may choose the theory concepts they studied in different subjects as project topic.
• Interdisciplinary project proposals and innovative projects are encouraged and more appreciable.
• The project topic can be suggested by the staff member or it can be proposed by the students.
• The project topic shall be approved by the project in-charge.
• The Guides are advised to give projects and suggest project titles focusing more on the current field of research and ensure the level of innovation.
• A project team shall contain a maximum of 2 members.
• The project work should be properly distributed among the team members.
• Students should submit the project documentation at the beginning of the semester consisting of:
Title, Abstract Modules Split-up Deliverables for each review Data Model (If Any) Details of Team Members
• Reviews for the project work will be conducted at regular intervals by the panel of examiners formed by the Head of the Department.
• The student failing to attend the project review will be subject to strict action as decided by the Head of the Department.
• Throughout the semester at any point of time if students are found to be involved in any of the following:
Using project codes available on the Internet
Using project codes developed by someone elseUsing project work which is already submitted in other institute or university Such students shall bedeclared failed or penalized as decided by the Examiners.
• The students must arrange regular meetings with the guide and present progress of project work.

- A Spiral bound Project report to be prepared as per the guidelines and format given by the Department
- The guides are advised to check for the formatting of the presentation and project report.
- Students must submit a report well before the end of the semester.

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VI	IT6P007	Campus Recruitment Training	0	0	2	50

Prerequisites for the course	
1.	Communication Skills. Possessing good communication skills is a must these days if you wish to grab a seat in one of the big corporates. ...
2.	Problem-Solving.
3	Team Player.
4	Leadership Skills.

Prior Reading Material/useful links	
1.	https://www.amazon.in/Campus-Recruitment-Complete-Reference-Praxis/dp/B00LA3X7AQ
2.	https://easyengineering.net/campus-recruitment-complete-reference-by-praxis-groups/
3.	https://www.placementpreparation.io/blog/best-books-to-prepare-aptitude-for-campus-placements/

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Solve the problems easily by using Short-cut method with time management which will be helpful to them to clear the competitive exams for better job opportunity.
2	CO2	Analyze the Problems logically and approach the problems in a different manner.
3	CO3	Apply mathematical analysis of data to make connections, draw conclusions and solve problems.
4	CO4	Learn a series of techniques through practical activities to develop presenting skills and enhance confidence to expand the potential of the individual.
5	CO5	Create resume that describes their education, skills, experiences and measurable achievements with proper grammar, format and brevity.

Syllabus:

Course Contents		Hours
Unit I	**PART I: - QUANTITATIVE ABILITY** **Unit 1: - 03 hrs** Speed Maths Calculation, Number Systems, Ratio & Proportion, Percentage **Unit 2: - 03 hrs** Profit – Loss & Discount, Simple Interest & Compound Interest, Simple Equation and Age's **Unit 3:- 03 hrs** Averages Mixture & Allegation, Time and work, Time Speed & Distance, Permutation – Combination & Probability	[9 Hrs]

Unit II	**PART II: - REASONING ABILITY**
	Unit 1: - 03 hrs
	     Coding Decoding, Blood Relation, Direction sense, Number Series, Analogy
	Unit 2: - 03 hrs
	     Sitting Arrangement, Puzzles.
	Unit 3:- 03 hrs
	Syllogism, Statement course of action, Statement arguments, Statement Assumptions, Miscellaneous Type of Reasoning
		[9 Hrs]

Unit III	**PART III: - Employability Skills** **Unit 1: - Presentation Skills (02 hrs)** What is a presentation? Essential characteristics of Good presentation. Preparation of presentation: Identify the purpose, Analyze the audience, Design and organize the information, Medium of presentation and Visual aids Delivering Presentation: rehearsal, body Language, Handling questions, Tips to fight stage fear. **Unit 2: - Job Interview Skills (02 hrs)** Types of interviews, Focus of interview, dress code, importance of body language. Probable interview questions, Telephonic and video interview, Strategies for success at interview. **Unit 3: - Resume Building (02 hrs)** Meaning, Difference among Bio-data, Curriculum vitae and Resume. CV writing tips, The content of Resume, Structure of Resume	[6 Hrs]

Text Books	
1.	Prashant Sharma, SOFT SKILLS PERSONALITY DEVELOPMENT FOR LIFE SUCCESS. BPB Publication.
2.	P. D. Chaturvedi & Mukesh Chaturvedi, Business Communication: Concepts, Cases, and Applications 2nd Edition. Pearson Education.
3.	Barun Mitra, Personality Development and Soft Skills. Oxford University Press.
4.	R.S Agrawal, Quantitative Aptitude, Verbal and Non Verbal Reasoning.

Reference Books	
1.	Quantitative Aptitude for Competitive Examinations by RS Aggarwal. ...
2.	Quantitative Aptitude for CAT by Arun Sharma. ...
3.	Fast Track Objective Arithmetic by Arihant Publications. ...
4	Quick Learning Objective General English :- RS Aggarwal.

Useful Links	
1.	https://www.amazon.in/Campus-Recruitment-Complete-Reference-Praxis/dp/B00LA3X7AQ
2.	https://easyengineering.net/campus-recruitment-complete-reference-by-praxis-groups/
3.	https://www.placementpreparation.io/blog/best-books-to-prepare-aptitude-for-campus-placements/

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VII	IT7T001	Data Science	2	1	0	3

Prerequisites for the course	
1.	Knowledge of Statistics and Mathematics
2.	Programming skills (SAS, R, Python)
3.	Database and Excell Files

Prior Reading Material/Useful links	
1.	https://www.coursera.org/search?query=Python
2.	https://www.coursera.org/search?query=mysql
3.	https://www.projectpro.io/article/what-are-the-prerequisites-to-learn-data-science/257

Course Objectives:

Sr. No	Course Outcome	CO statement
1	CO1	To Understand the basic concepts used in data Science
2	CO2	To Understand data collection and pre-processing
3	CO3	To Understand problems solving using data science
4	CO4	To Introduce concepts of Data Collection and Data Pre-Processing
5	CO5	To develop skills in students to solve applications based problems on Data Science

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Build the fundamentals of Data Science.
2	CO2	Apply Data Collection and Data Preprocessing Strategies.
3	CO3	Compare and choose data visualization method for effective visualization of data
4	CO4	Implement regression models, model evaluation and validation
5	CO5	Test Multiple Parameters by using Grid Search

Syllabus:

	Course Contents	Hours
Unit I	**Introduction to Data Science :** What is Data Science, importance of data science, Big data and data Science, The current Scenario, Industry Perspective Types of Data: Structured vs. Unstructured Data, Quantitative vs. Categorical Data, Big Data vs. Little Data, Data science process, Role Data Scientist.	[7 Hrs]
Unit II	**Data Collection and Data Pre-Processing :** Data Collection Strategies, Data Pre-Processing Overview, Data Cleaning, Data Integration and Transformation, Data Reduction, Data Discretization.	[7 Hrs]
Unit III	**Exploratory Data Analytics :** Descriptive Statistics, Mean, Standard Deviation, Skewness and Kurtosis, Box Plots, Pivot Table, Heat Map, Correlation Statistics.	[7 Hrs]
Unit IV	**Model Development :** Simple and Multiple Regression, Model Evaluation using Visualization, Residual Plot, Distribution Plot, Polynomial Regression and Pipelines, Measures for In-sample Evaluation, Prediction and Decision Making, Feature Engineering	[8 Hrs]
Unit V	**Model Evaluation :** Generalization Error, Out-of-Sample Evaluation Metrics, Cross Validation, Overfitting, Under Fitting and Model Selection, Prediction by using Ridge Regression, Testing Multiple Parameters by using Grid Search	[7 Hrs]

	Text Books
1.	JojoMoolayil, "Smarter Decisions: The Intersection of IoT and Data Science", PACKT, 2016.

2.	Cathy O'Neil and Rachel Schutt , "Doing Data Science", O'Reilly, 2015
3.	David Dietrich, Barry Heller, Beibei Yang, "Data Science and Big data Analytics", EMC 2013
4.	Raj, Pethuru, "Handbook of Research on Cloud Infrastructures for Big Data Analytics", IGI Global.

Reference Books	
1.	Cathy O'Neil and Rachel Schutt. Doing Data Science, Straight Talk From The Frontline. O'Reilly.
2.	Jure Leskovek, Anand Rajaraman and Jeffrey Ullman. Mining of Massive Datasets. v2.1,Cambridge University Press.
3.	Laura Igual and Santi Segui, Introduction to Data Science: A Python Approach to Concepts, Techniques

Useful Links	
1.	https://nptel.ac.in/courses/106106179
2.	https://www.coursera.org/search?query=data%20science&
3.	https://github.com › topics › data-science-projects

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VII	IT7T002	Artificial Intelligence & Cognitive Robotic	2	1	0	3

Prerequisites for the course	
1.	Requires some programming experience and some mathematical fluency.
2.	Need a very strong background in linear algebra

Prior Reading Material/Useful links	
1.	https://see.stanford.edu/Course/CS229
2.	https://www.cognitivelearningbook.org/

Course Objectives:

Sr. No	Course Outcome	CO statement
1	CO1	Learn about knowledge for the design of robotics.

2	CO2	Understand robot kinematics and robot programming.
3	CO3	Understand application of Robots.
4	CO4	Learn about force and torque sensing.
5	CO5	To learn about application of robot.

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	List the objectives and functions of modern Artificial Intelligence.
2	CO2	Categorize an AI problem based on its characteristics and its constraints.
3	CO3	Have a glance at machine learning algorithms and extracting knowledge models from data.
4	CO4	Learn different logic formalisms and decision taking in planning problems
5	CO5	Learn how to analyze the complexity of a given problem and come with table

Syllabus:

	Course Contents	Hours
Unit I	Introduction to Artificial Intelligence ,Features of AI , Agents and Environments, structure of agents, problem solving agents, problem formulation, AI techniques- search knowledge.	[7 Hrs]
Unit II	Searching- Searching for solutions, uniformed search strategies – Breadth first search, depth first Search. Search with partial information (Heuristic search) Hill climbing, A* ,AO* Algorithms, Problem reduction, Game Playing-Adversial search, Games, mini-max algorithm, optimal decisions in multiplayer games, Problem in Game playing, Alpha-Beta pruning, Evaluation functions.	[7 Hrs]
Unit III	Knowledge Representation; Learning, Uncertainty, probabilistic reasoning-Bayesian Network, probabilistic reasoning over time-	[7 Hrs]

	Inference in temporal Model, Hidden Markov models- Kalman filters, Dynamic Bayesian Network, speech recognition	
Unit IV	Learning: Concept of learning, learning automation, genetic algorithm, learning byinductions, neural nets. Programming Language: Introduction to programming Language. Handling Uncertainties: Non-monotonic reasoning, Probabilistic reasoning, use of certainty factors, Fuzzy logic	[8 Hrs]
Unit V	AI in Cognitive Robotics: Robotic perception, localization, mapping-configuring space, planning uncertain movements, dynamics and control of movement, Ethics and risks of artificial intelligence in robotics. Case study of AI in robotics	[7 Hrs]

	Text Books
1.	Stuart Russell, Peter Norvig, Artificial Intelligence: A modern approach, Pearson Education, India.
2.	Negnevitsky, M, Artificial Intelligence: A guide to Intelligent Systems,. Harlow: Addison-Wesley,2002.
3.	E. Rich and K. Knight, "Artificial intelligence", TMH, 2nd ed..
4.	Nilsson, N. J. (1986). Principles of artificial intelligence. Morgan Kaufmann.

	Reference Books
1.	Craig, J. J. (2009). Introduction to robotics: mechanics and control, 3/E. Pearson Education India.
2.	6. D.W. Patterson, "Introduction to AI and Expert Systems", PHI, 1992.
3.	7. Peter Jackson, "Introduction to Expert Systems", AWP, M.A., 1992.

	Useful Links
1.	https://nptel.ac.in/courses/106105077/
2.	https://www.coursera.org/courses?query=robotics%20engineer
3	https://www.coursera.org/specializations/artificial-intelligence-overview

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VII	IT7L002	Data Science using R(Lab)	0	0	2	1

	Prerequisites for the course
1.	Knowledge of any programming language and core mathematics ,statisticswould be an added advantage.

	Prior Reading Material/Useful links
1.	https://www.simplilearn.com/learn-data-science-with-r-basics-skillup
2.	https://www.simplilearn.com/r-programming-free-course-skillup
3.	https://intellipaat.com/blog/r-for-data-science-tutorial/

Course Objectives:

Sr. No	Course Outcome	CO statement
1	CO1	Understand the R Programming Language.
2	CO2	Exposure on Solving of data science problems.
3	CO3	Understand The classification and Regression Model.

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	To Apply Data Collection and Data Preprocessing Strategies.
2	CO2	To Compare and choose data visualization method for effective visualization of data
3	CO3	To Implement regression models, model evaluation and validation

Syllabus:

	Course Contents	Hours
1	**R AS CALCULATOR APPLICATION** a. Using with and without R objects on console b. Using mathematical functions on console c. Write an R script, to create R objects for calculator application and save in a specified location in disk	
2	**DESCRIPTIVE STATISTICS IN R** a. Write an R script to find basic descriptive statistics using summary, str, quartile function on mtcars& cars datasets. b. Write an R script to find subset of dataset by using subset (), aggregate () functions on iris dataset	
3	**READING AND WRITING DIFFERENT TYPES OF DATASETS**	

	a. Reading different types of data sets (.txt, .csv) from Web and disk and writing in file in specific disk location. b. Reading Excel data sheet in R.	
4	**VISUALIZATIONS** a. Find the data distributions using box and scatter plot. b. Find the outliers using plot. c. Plot the histogram, bar chart and pie chart on sample data.	
5	**REGRESSION MODEL** Import a data from web storage. Name the dataset and now do Logistic Regression to find out relation between variables that are affecting the admission of a student in a institute based on his or her GRE score, GPA obtained and rank of the student. Also check the model is fit or not. Require (foreign), require (MASS).	
6	**MULTIPLE REGRESSION MODEL** Apply multiple regressions, if data have a continuous independent variable. Apply on above dataset.	

	Text Books
1.	Yanchang Zhao, "R and Data Mining: Examples and Case Studies", Elsevier, 1st Edition, 2012

	Useful Links
1.	http://www.r-bloggers.com/how-to-perform-a-logistic-regression-in-r/
2.	http://www.ats.ucla.edu/stat/r/dae/rreg.htm
3.	http://www.coastal.edu/kingw/statistics/R-tutorials/logistic.html
4.	http://www.ats.ucla.edu/stat/r/data/binary.csv

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
III		Universal Human Values	2	1	0	3
		Prerequisites for the course				
1.	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.					

	Prior Reading Material/useful links
1.	https://en.wikipedia.org/wiki/Universal_Human_Values
2.	https://openstax.org/details/books/ Universal_Human_Values
3.	https://www.skit.ac.in/techno-incubation-centre/universal-human-values-uhv.html

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Evaluate the significance of value inputs in formal education and start applying them in their life and profession
2	CO2	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc
3	CO3	Analyze the value of harmonious relationship based on trust and respect in their life and profession
4	CO4	Examine the role of a human being in ensuring harmony in society and nature.
5	CO5	Apply the understanding of ethical conduct to formulate the strategy for ethical life and profession.

Syllabus:

	Course Contents	Hours
Unit I	Module 1: Course Introduction - Need, Basic Guidelines, Content and Process for Value Education 1. Purpose and motivation for the course, recapitulation from Universal Human Values-I 2. Self-Exploration–what is it? - Its content and process; 'Natural Acceptance' and Experiential Validation- as the process for self-exploration 3. Continuous Happiness and Prosperity- A look at basic Human Aspirations 4. Right understanding, Relationship and Physical Facility- the basic requirements for fulfillment of aspirations of every human being with their correct priority 5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario 6. Method to fulfill the above human aspirations: understanding and living in harmony at various levels. Include practice sessions to discuss natural acceptance in human being as the innate acceptance for living with responsibility (living in relationship, harmony and co-existence) rather than as arbitrariness in choice based on liking-disliking	[8Hrs]

		[7Hrs]
Unit II	UNDERSTANDING HARMONY IN THE HUMAN BEING - HARMONY IN MYSELF! 7. UNDERSTANDING HUMAN BEING AS A CO-EXISTENCE OF THE SENTIENT 'I' AND THE MATERIAL 'BODY' 8. UNDERSTANDING THE NEEDS OF SELF ('I') AND 'BODY' - HAPPINESS AND PHYSICAL FACILITY 9. UNDERSTANDING THE BODY AS AN INSTRUMENT OF 'I' (I BEING THE DOER, SEER AND ENJOYER) 10. UNDERSTANDING THE CHARACTERISTICS AND ACTIVITIES OF 'I' AND HARMONY IN 'I' 11. UNDERSTANDING THE HARMONY OF I WITH THE BODY: SANYAM AND HEALTH; CORRECT APPRAISAL OF PHYSICAL NEEDS, MEANING OF PROSPERITY IN DETAIL 12. PROGRAMS TO ENSURE SANYAM AND HEALTH. INCLUDE PRACTICE SESSIONS TO DISCUSS THE ROLE OTHERS HAVE PLAYED IN MAKING MATERIAL GOODS AVAILABLE TO ME. IDENTIFYING FROM ONE'S OWN LIFE. DIFFERENTIATE BETWEEN PROSPERITY AND ACCUMULATION. DISCUSS PROGRAM FOR ENSURING HEALTH VS DEALING WITH DISEASE	
Unit III	Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship 13. Understanding values in human-human relationship; meaning of Justice (nine universal values in relationships) and program for its fulfillment to ensure mutual happiness; Trust and Respect as the foundational values of relationship 14. Understanding the meaning of Trust; Difference between intention and competence 15. Understanding the meaning of Respect, Difference between respect and differentiation; the other salient values in relationship 16. Understanding the harmony in the society (society being an extension of family): Resolution, Prosperity, fearlessness (trust) and co-existence as comprehensive Human Goals 17. Visualizing a universal harmonious order in society- Undivided Society, Universal Orderfrom family to world family. Include practice sessions to reflect on relationships in family, hostel and institute as extended family, real life examples, teacher-student relationship, goal of education etc. Gratitude as a universal value in relationships. Discuss with scenarios. Elicit examples from students' lives	[7 Hrs]
Unit IV	Understanding Harmony in the Nature and Existence - Whole existence as Coexistence 18. Understanding the harmony in the Nature 19. Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self regulation in nature 20. Understanding Existence as Co-existence of mutually interacting units in all-pervasive space	[7Hrs]

	21. Holistic perception of harmony at all levels of existence. Include practice sessions to discuss human being as cause of imbalance in nature (film "Home" can be used), pollution, depletion of resources and role of technology etc.	
Unit V	Implications of the above Holistic Understanding of Harmony on Professional Ethics 22. Natural acceptance of human values 23. Definitiveness of Ethical Human Conduct 24. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order 25. Competence in professional ethics: a. Ability to utilize the professional competence for augmenting universal human order b. Ability to identify the scope and characteristics of people friendly and eco-friendly production systems, c. Ability to identify and develop appropriate technologies and management patterns for above production systems. 26. Case studies of typical holistic technologies, management models and production systems 27. Strategy for transition from the present state to Universal Human Order: a. At the level of individual: as socially and ecologically responsible engineers, technologists and managers b. At the level of society: as mutually enriching institutions and organizations 28. Sum up. Include practice Exercises and Case Studies will be taken up in Practice (tutorial) Sessions eg. to discuss the conduct as an engineer or scientist etc	[7Hrs]

Text Books
1. Human Values and Professional Ethics by R R Gaur ,R Sangal, G P Bagaria, Excel Books, New Delhi, 2010

Reference Books	
1.	Jeevan Vidya: Ek Parichaya,A Nagaraj,Jeevan Vidya Prakashan ,Amarkantak, 1999.
2.	Human Values ,A.N. Tripathi, New Age Intl. Publishers,NewDelhi,2004.
3.	The Story of My Experiments with Truth-by Mohandas Karamchand Gandhi
4.	Economy of Permanence-J C Kumarappa
5.	Bharat Mein Angreji Raj -Pandit Sunderlal

Useful Links	
1.	https://www.uhv.org.in/uhv2notes

	21. Holistic perception of harmony at all levels of existence. Include practice sessions to discuss human being as cause of imbalance in nature (film "Home" can be used), pollution, depletion of resources and role of technology etc.	
Unit V	Implications of the above Holistic Understanding of Harmony on Professional Ethics 22. Natural acceptance of human values 23. Definitiveness of Ethical Human Conduct 24. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order 25. Competence in professional ethics: a. Ability to utilize the professional competence for augmenting universal human order b. Ability to identify the scope and characteristics of people friendly and eco-friendly production systems, c. Ability to identify and develop appropriate technologies and management patterns for above production systems. 26. Case studies of typical holistic technologies, management models and production systems 27. Strategy for transition from the present state to Universal Human Order: a. At the level of individual: as socially and ecologically responsible engineers, technologists and managers b. At the level of society: as mutually enriching institutions and organizations 28. Sum up. Include practice Exercises and Case Studies will be taken up in Practice (tutorial) Sessions eg. to discuss the conduct as an engineer or scientist etc	[7Hrs]

Text Books	
1.	Human Values and Professional Ethics by R R Gaur ,R Sangal, G P Bagaria, Excel Books, New Delhi, 2010

Reference Books	
1. .	Jeevan Vidya: Ek Parichaya,A Nagaraj,Jeevan Vidya Prakashan ,Amarkantak, 1999.
2.	Human Values ,A.N. Tripathi, New Age Intl. Publishers,NewDelhi,2004.
3.	The Story of My Experiments with Truth-by Mohandas Karamchand Gandhi
4.	Economy of Permanence-J C Kumarappa
5.	Bharat Mein Angreji Raj -Pandit Sunderlal

Useful Links	
1.	https://www.uhv.org.in/uhv2notes

| 2. | https://www.studocu.com/in/document/dr-apj-abdul-kalam-technical-university/btech/unit-2-notesuhv-ai-notes/21024098 |
| 3. | https://www.studocu.com/in/document/sanjivani-college-of-engineering-kopargaon/computer-engg/unit-2-notes-document-universal-human-values-syllabus-and-question-bank/27914870 |

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits
VI	IT6T009	Intellectual Property Right (IPR)	2	0	0	15

Prerequisites for the course	
1.	better identification, planning, commercialization, rendering, and thereby protection of invention or creativity.

Prior Reading Material/useful links	
1.	https://www.amazon.in/Textbook-Intellectual-Property-Rights/dp/B09T6YDB5N
2.	https://dst.gov.in/sites/default/files/E-BOOK%20IPR.pdf
3.	https://www.icsi.edu/docs/webmodules/Publications/9.4%20Intellectual%20Property%20Rights.pdf

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Provide an understanding of the law relating to Intellectual Property and Competition in India.
2	CO2	Understand the concept of Intellectual Property and Intellectual Property Rights with special reference to India.
3	CO3	Appreciate the significance of Intellectual Property in modern times, in the light of its international legal regime.
4	CO4	Study the important Agreements, Treaties and Conventions relating to Intellectual Property Rights.
5	CO5	Understand the workings of grant of Patent, Patentability, Licensing and Revocation at National and International levels.

Syllabus:

Course Contents		Hours
Unit I	Introduction to IPRs, Basic concepts and need for Intellectual Property - Patents, Copyrights, Geographical Indications, IPR in India and Abroad Function of IPR. Public good, Incentive theory, different forms of IPR , Industrial Property, technological Research, Inventions and Innovations – Important examples of IPR.	[7 Hrs]

Unit II	Practical aspects of registration of Copy Rights, Trademarks, Patents, Geographical Indications, Trade Secrets and Industrial Design registration in India and Abroad .Introduction to competition Law, Anti-competitive agreements, Abuse of dominance, Regulation of combinations,	[8 Hrs]
Unit III	International Treaties and Conventions on IPRs, TRIPS Agreement, PCT Agreement, Patent Act of India, Patent Amendment Act, Design Act, Trademark Act, Geographical Indication Act.	[7 Hrs]
Unit IV	The relationship and Interaction between IPR and competition law The economics of US Anti trustlaw,IP and competition issues,Technology transfer agreements. The EU experience with IP and Competition Law	[7 Hrs]
Unit V	Market allocation, Horizontal agreements, Vertical agreements, licensing issues.Indian Competition Act and IPR protection. Digital Innovations and Developments as Knowledge Assets – IP Laws, Cyber Law and Digital Content Protection – Unfair Competition – Meaning and Relationship between Unfair Competition and IP Laws – Case Studies	[7 Hrs]

Text Books

1.	Fundamentals of IP for Engineers: K.Bansl &P.Bansal
2.	Intellectual property right, Deborah, E. BoDcboux, Cengageleam'ng.
3.	Inrelletul property right - Unleasbing the knowledgeconomy, PmbuddhaGanguli, Tata MccrawHiU Publishing Company Ltd

Reference Books

1.	Eleclronic resource guide ERc published online by the American Society of Intellectual Propery Rights md Develolment Policy: Repod of rhe
2.	Commission on InrellectualPrcpertyRidls, London Sepiedber 2002

Useful Links

1	https://www.amazon.in/Textbook-Intellectual-Property-Rights/dp/B09T6YDB5N
2	https://dst.gov.in/sites/default/files/E-BOOK%20IPR.pdf
3	https://www.icsi.edu/docs/webmodules/Publications/9.4%20Intellectual%20Property%20Rights.pdf

Program: B.Tech. in Information Technology

Semester	Course Code	Name of the course	L	T	P	Credits

	Development

Prerequisites for the course

1.	Some of the most important skills and traits that are helpful for entrepreneurs include Critical Thinking, Creativity, Risk-Taking.
2.	Problem-Solving, Networking, Leadership,
3.	Communication Skills.

Prior Reading Material/useful links

1.	https://executive.mit.edu/course/entrepreneurship-development-program/a056g00000URaMsAAL.html
2.	https://www.surrey.ac.uk/postgraduate/entrepreneurship-innovation-management-msc
3.	https://www.kingston.ac.uk/postgraduate/courses/innovation-management-and-entrepreneurship/

Course Outcomes:

Sr. No	Course Outcome number	CO statement
1	CO1	Identify and validate of ideas.
2	CO2	Remember Patent registration of Innovation.
3	CO3	Understand roles and responsibilities of Entrepreneurship.
4	CO4	Implement the ethical and legitimacy challenges that face entrepreneurs with new ventures.
5	CO5	Gain knowledge and skills needed to run a business.

Syllabus:

Course Contents		Hours
Unit I	Innovation : Concept of creativity, innovation, invention, discovery. Methods for development of creativity, convergent ,divergent thinking etc. Introduction to Intellectual Property Rights (IPR), Patent and laws related to patents	[7 Hrs]
Unit II	Entrepreneurship Concept of entrepreneurship, its relations in economic developments, Concept of entrepreneur, characteristics of an Entrepreneur, Types of entrepreneurs, Qualities of entrepreneur,Factors affecting growth of entrepreneurship.	[7 Hrs]
Unit III	Role of Entrepreneurial Bodies Theory of achievement, motivation, Medelland's. experiment, Women entrepreneurship, Role of SSI, it's advantages, limitations, policies governing small scale industries, Procedure to set up small scale industrial unit, Advantages and limitations of SSI.	[7 Hrs]

		[7Hrs]
Unit IV	**Role of Entrepreneurial Support** Factors governing project selection, Market survey, Preparation ofproject report. Financial, technical & market analysis of project. Entrepreneurial support systems, Role of consultancy organization like,District Industrial Centre, State Industrial Development Corporation, Financial institution, Latest SSI schemes of DIC (to be confirmed from DIC from time to time).	
		[8Hrs]
Unit V	**Launching of Small Business** Finance and Human Resource Mobilization Operations Planning -Market and Channel Selection - Growth Strategies - Product Launching – Incubation, Venture capital, IT startups. **Management of Small Business** Monitoring and Evaluation of Business - Preventing Sickness and Rehabilitation of Business Units- Effective Management of smallBusiness.	

Text Books

	Entrepreneurship Development, S. S. Khanka, S. Chand Publishers.
	Scarborough, N. M. (2011), "Essentials of Entrepreneurship and Small Business Management", 6th Edition. New Jersey: Prentice Hall.
	Hisrich, Robert. Michael Peters and Dean Shepherd, Mathew. (2014). Entrepreneurship. New Delhi: Tata McGraw-Hill Education.

Reference Books

	Creativity Innovation; Entrepreneurship, Zechariah James Blanchard, Needle Rat Business Publishers.
	Allen, K. R. (2011),"Launching New Ventures: An Entrepreneurial Approach", 6th Edition. Mason, Ohio: South-Western Cengage Learning.
	Poornima M(2014), Entrepreneurship Development and Small Enterprise, Pearson Education.

	https://executive.mit.edu/course/entrepreneurship-development-program/a056g00000URaMsAAL.html
	https://www.surrey.ac.uk/postgraduate/entrepreneurship-innovation-management-msc
	https://www.kingston.ac.uk/postgraduate/courses/innovation-management-and-entrepreneurship/

Teaching Plan

JAIDEV EDUCATION SOCIETY'S
J D COLLEGE OF ENGINEERING AND MANAGEMENT
KATOL ROAD, NAGPUR
Website: www.jdcoem.ac.in E-mail: info@jdcoem.ac.in
An Autonomous Institute, with NAAC "A" Grade
Department of Information Technology
"Rectifying Ideas, Amplifying Knowledge"
2021-22 (Odd Sem)

VISION

"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."

MISSION

1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.
2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

Teaching Plan		
Year/Semester : 2nd/3rd		

	Teaching Plan	
Course :B. Tech in Information Technology	Subject Code :IT3T007	
Name of the Teacher : Prof. Chetan P Padole	Section :IT	
Subject:Universal Human Values	Lecture	2
Periods per Week (each 60 min)	Tutorial	-
	Practical	-

Course Objective						**Course Outcomes**			

Course Objective

1. Students are expected to become more aware of their surroundings, society, social problems and their sustainable solutions, while keeping human relationships and human nature in mind.
2. They would have better critical ability.
3. They would also become sensitive to their commitment towards what they believe in (humane values. Humane relationships and humane society).
4. Develop Empathy

Course Outcomes

Sensitization of student towards self, family (relationship), society and nature. Understanding (or developing clarity) of nature, society and larger systems, on the basis of human relationships and resolved individuals. Strengthening of self-reflection.

Development of commitment and courage to act.
Justify the need of this education 6.Take steps to create a better world

Sr. No	Lec No	Topic Code	Contents to be Covered	Planned Teaching Dates	Actual Teaching Date	Text Books (Page no) Reference Book (Page no)	URL's (NPTEL/OnlineMaterial /PPt/Video)	Applications (R&D/ Industry)	Learning Outcomes	CO mapping
Unit I –Need,BasicGuidelines,Content and Process for Value Education										
1	1	1	Self-Exploration– what is it? - Its content and process;	21-09-2021	21-09-2021	Module 1 Aicte 45-46	https://youtu.be/G5EO8 DbqH94	Applied in Day to day to lives	Sensitization of student towards self, family	1
2	2	2	Continuous Happiness and Prosperity	24-09-2021	24-09-2021	Module 1 Aicte 61	www.youtube.com%2Fw atch%3Fv%3D38CXcE_Q 1Ug&usg=AOvVaw3jEJt4 Twu2LNyIDe1lU1OI	Applied in Day to day to lives	Sensitization of student towards self, family	2
3	3	3	Right understanding, Relationship and Physical Facility- the basic requirements	28-09-2021	28-09-2021	Module 1 Aicte 63	https://youtu.be/jSrC- EWYIJQ	Applied in Day to day to lives	Sensitization of student towards self, family	2

					Module 1 Aicte 65	https://youtu.be/webOQ VOuNSg	Applied in Day to day to lives	Understanding (or developing clarity	2
4	4	for fulfillment of aspiration Understanding Happiness and Prosperity correctly	1-10-2021	1-10-2021	Module 1 Aicte 65	https://youtu.be/webOQ VOuNSg	Applied in Day to day to lives	Understanding (or developing clarity	2
5	5	in choice based on liking-disliking	5/10/2021	5-10-2021	Module 1 Aicte 65	https://youtu.be/webOQ VOuNSg	Applied in Day to day to lives	Understanding (or developing clarity	2
6	6	A critical appraisal of the current scenario. Method to fulfill the above human aspirations	8/10/2021	8/10/2021	Module 1 Aicte 69	https://www.youtube.co m/watch?v=mw_AW8v6 OIc	Applied in Day to day to lives	Understanding (or developing clarity	2

NIT -2 Understanding Harmony in the Human Being-Harmony in Myself

7	7	Understanding human being as a co- existence of the sentient 'I' and the material 'Body	12-10-2021	12-10-2021	Module 2 Aicte 93	https://youtu.be/webOQ VOuNSg	Applied in Day to day to lives	Strengthening of self- reflection.	1
8	8	Understanding the needs of Self ('I') and 'Body' - happiness and physical facility	22-10-2021	12-10-2021	Module 2 Aicte 93	https://www.slideshare. net/InstaRemedy/consu mer-rights-in-india-73526804	Applied in Day to day to lives	Understanding (or developing clarity) of nature, society and larger systems, on the basis of human relationships and resolved individuals.	2
9	9	Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer)	26-10-2021	22-10-2021	Module 2 Aicte 95	https://www.slideshare. net/maheswarijaikumar/ consumer-protection-act-india	Applied in Day to day to lives	Understanding (or developing clarity) of nature, society and larger systems, on the basis of human relationships and resolved individuals.	3
10	10	Understanding the characteristics and	29-10-2021	22-10-2021	Module 2 Aicte 110	https://www.youtube.co m/watch?v=qV7F1RgUT AE	Applied in Day to day to lives	Strengthening of self- reflection.	3

		activities of 'I' and harmony in 'I'						
11	11	Understanding the harmony of I with the Body: Sanyam and Health; correct appraisal of Physical needs, meaning of Prosperity in detail	9-11-2021	26-10-2021	Module 2 Aicte 115	https://www.youtube.com/watch?v=iqePwXRnX-8	Applied in Day to day to lives	Strengthening of self-reflection.	3
12	12	Programs to ensure Sanyam and Health. Include practice sessions to discuss the role others have played in making material goods available to me.	12-11-2021	29-10-2021	Module 2 Aicte 125	https://www.youtube.com/watch?v=BxmIxKdAZ5g https://www.youtube.com/watch?v=fYbLzYUdo68	Applied in Day to day to lives	Sensitization of student towards self, family (relationship), society and nature	1

UNIT-3 Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship

13	13	Understanding values in human- human relationship; meaning of Justice (nine universal values in relationships)	16-11-2021	9-11-2021	Module 3Aicte	https://www.youtube.com/watch?v=fYbLzYUdo68	Applied in Day to day to lives	Understanding (or developing clarity	2
14	14	Understanding the meaning of Trust; Difference between intention and competence	23-11-2021	12-11-2021	Module 3Aicte	https://www.youtube.com/watch?v=FtIhyf3jymE	Applied in Day to day to lives	Strengthening of self-reflection.	2,3
15	15	Understanding the meaning of Respect, Difference between	26-11-2021		Module 3Aicte		Applied in Day to day to lives	Strengthening of self-reflection.	

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		respect and differentiation; the other salient values in relationship		16-11-2021			https://www.youtube.co m/watch?v=g5dIH_PCI9k		2,3,5
16	16	Understanding the harmony in the society (society being an extension of family)	30-11-2021	23-11-2021	Module 3 Aicte	https://www.youtube.co m/watch?v=0LkUpBUep 2Y	Applied in Day to day to lives	Understanding (or developing clarity	2,4
17	17	Visualizing a universal harmonious order in society- Undivided Society, Universal Orderfrom family to world family	3-12-2021	26-11-2021 30-11-21	Module 3 Aicte	https://www.youtube.co m/watch?v=Tfcbgk2kKx 4	Applied in Day to day to lives	Understanding (or developing clarity	3

NIT-4Understanding Harmony in the Nature and Existence - Whole existence as Coexistence

18	18	Understanding the harmony in the Nature	7-12-2021	3-12-2021	Module 4 Aicte	https://www.youtube.co m/watch?v=MDNwVnA2l JM	Applied in Day to day to lives	Strengthening of self-reflection.	2,3
19	19	Interconnectedness and mutual fulfillment among the four orders of nature-	10-12-2021	7-12-2021	Module 4 Aicte	https://www.youtube.co m/watch?v=M7t2Y5qplB w	Applied in Day to day to lives	Strengthening of self-reflection.	2,3,5
20	20	Understanding Existence as Co-existence of mutually interacting units in all-pervasive space	14-12-2021 17-12-2021	14-12-2021	Module 4 Aicte	https://www.youtube.co m/watch?v=yALcUgV58c M	Applied in Day to day to lives	Understanding (or developing clarity	2,4
21	21	Holistic perception of harmony at all levels of existence	21-12-2021 24-12-2021	17-12-2021	Module 4 Aicte	https://www.youtube.co m/watch?v=qV7F1RgUT AE	Applied in Day to day to lives	Understanding (or developing clarity	3

UNIT-5 Implications of the above Holistic Understanding of Harmony on Professional Ethics

18	22	Natural acceptance of human values, Definitiveness of Ethical Human Conduct	28-12-2021	21-12-2021 24-12-2021	Module 5 Aicte	https://www.youtube.com/watch?v=d3MmunWiuh0	Applied in Day to day to lives	Strengthening of self-reflection.	2,3
19	23	Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order Competence in professional ethics:	31-12-2021 3-01-2022	28-12-2021 31-12-2021	Module 5 Aicte	https://www.youtube.com/watch?v=Y3JibW_oNls	Applied in Day to day to lives	Strengthening of self-reflection.	2,3,5
20	24	Case studies of typical holistic technologies, management models and production systems Strategy for transition from the present state to Universal Human Order	7-01-2022	3-01-2022 7-01-2022	Module 5 Aicte	https://www.slideshare.net/GuptaPandiri/professional-ethics-amp-ht-ps-mm-case-studies-74720427	Applied in Day to day to lives	Understanding (or developing clarity	2,4
21	25	Sum up. Include practice Exercises and Case Studies will be taken up in Practice (tutorial) Sessions eg. to discuss the conduct as an engineer or scientist etc.	10-01-2022	10-01-2022	Module 5 Aicte		Applied in Day to day to lives	Understanding (or developing clarity	3

Assignment Plan

Assignment No.	Topic	Given Date	Submission Date	Mapped With CO
1	Assignment 1	01/11/2021	18/11/2021	CO1, CO2
2	Assignment 2	21/12/2021	01/12/2021	CO3, CO4
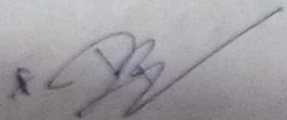
Text Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Human Values and Professional Ethics by	R R Gaur, R Sangal, G P Bagaria	Excel Books, New Delhi	2010
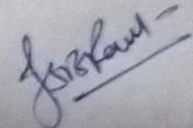
Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	Jeevan Vidhya EK Parichaya	ANagaraj	Jeevan VidhyaPrakashan ,Amarkantak	1999
R2	Human Values	A.N.Tripathi	New Age Inti.Publishers,New Delhi	2004

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	me/Page no/Year
P1	Reinventing the Universal Structure of Human Values: Development of a New Holistic Values Scale to Measure Indian Values	Rajat Sharma	Journal of Management Policy and Practice	https://doi.org/10.1177/097168582193945	Vol 27, Issue 2, 2021
P2	An Exploration of Personal Assumptions About Self-Construction and Self-Discovery	Michael D. Berzonsky	An International Journal of Theory and Research	https://doi.org/10.1080/15283488.2016.1229609	Volume 16, 2016 - Issue 4
P3	How do people interpret the value concept? Development and evaluation of the value conceptualization scale using a mixed method approach	Lena Seewann	Journal of Beliefs & Values	https://doi.org/10.1080/13617672.2019.1707748	Volume 41, 2020 - Issue 4.
P4	The relationship between nature connectedness and happiness: a meta- analysis	Colin A. Capaldi	ORIGINAL RESEARCH article	https://doi.org/10.3389/fpsyg.2014.00976	Front. Psychol., 08 September 2014

Prof. Chetan P Padole
Subject Teacher

Prof. Sonali A Zunke
Academic Incharge

Prof. Supriya SSawwashere
HOD (CS/IT)

Teaching scheme

Branch:Mechanical Engineering	Branch Code: ME

1ST Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext.Pra.	Total	
1	HSMC	HU1T001	Communication Skills	2	0	0	60	0	40	100	2
2	BSC	MA1T001	Engineering Mathematics- I	3	1	0	20	20	60	100	4
3	BSC	ME1T002	Engineering Chemistry	3	1	0	20	20	60	100	4
4	ESC	ME1T003	Engineering Graphics	1	0	0	20	20	60	100	1
5	HSMC	HU1L001	Communication Skills Lab.	0	0	4	60	0	40	100	2
6	BSC	ME1L002	Engineering Chemistry Lab	0	0	2	60	0	40	100	1
7	ESC	ME1L003	Engineering Graphics Lab	0	0	4	60	0	40	100	2
8			Induction Programme	3 Weeks							
9	ESC	ME1T004	Basic Civil and Mechanical Engineering	2	0	0	10	15	25	50	Audit
				11	2	10					16

2nd Semester

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE/Ext. Pra.	Total	
1	HSMC	HU2T002	Introduction to Computer programming	2	0	0	20	20	60	100	2
2	BSC	MA2T001	Engineering Mathematics- II	3	1	0	20	20	60	100	4
3	BSC	ME2T005	Engineering Physics	3	1	0	20	20	60	100	4
4	ESC	ME2T006	Energy and Environment Engineering	3	0	0	20	20	60	100	3
5	ESC	WS2L001	Workshop Practices	0	0	4	60	0	40	100	2
6	HSMC	HU2L002	Introduction to Computer programming Lab	0	0	4	60	0	40	100	2
7	BSC	ME2L005	Engineering Physics Lab	0	0	2	60	0	40	100	1
8			Societal Internship/ Field Training	Report submission						50	1
9	ESC	ME2T007	Basic Electrical and Electronics Engineering	2	0	0	10	15	25	50	Audit
				13	2	10					19
					25						

Curriculum for Semester- III [Second Year]

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	BSC	ME3T001	Applied Math's-III	3	1	0	20	20	60	100	4
2	ESC	ME3T002	Rigid Body Mechanics	3	0	0	20	20	60	100	3
3	PCC	ME3T003	Material Science	3	0	0	20	20	60	100	3
4	PCC	ME3T004	Engineering Thermodynamics	3	0	0	20	20	60	100	3
5	PCC	ME3T005	Theory Of Machines-I	3	0	0	20	20	60	100	3
6	PCC	ME3T006	Manufacturing Engineering-I	3	0	0	20	20	60	100	3
7	PCC	ME3L003	Material Science Lab	0	0	2	60	0	40	100	1
8	PCC	ME3L006	Manufacturing Engineering-I Lab	0	0	2	60	0	40	100	1
9	ESC	ME3L007	Machine Drawing and Computer Graphics	1	0	2	60	0	40	100	2
10	HSMC	ME3T008	Universal Human Value	3	0	0	20	20	60	100	3
				22	**2**	**6**	**320**	**140**	**540**	**1000**	**26**

Teaching Scheme

For

B. Tech. Mechanical Engineering Programme

Curriculum for Semester- IV [Second Year]

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	BSC	ME4T001	Numerical Method	3	1	0	20	20	60	100	4
2	ESC	ME4T002	Basic Electronic Engineering	3	1	0	20	20	60	100	4
3	ESC	ME4T003	Product Design and Development	2	0	0	20	20	60	100	2
4	PCC	ME4T004	Manufacturing Engineering-II	3	0	0	20	20	60	100	3
5	PCC	ME4T005	Strength Of Materials	3	0	0	20	20	60	100	3
6	PCC	ME4T006	Fluid Mechanics & Fluid Machines	3	0	0	20	20	60	100	3
7	PCC	ME4L004	Manufacturing Engineering Lab	0	0	2	60	0	40	100	1
8	PCC	ME4L005	Strength Of Materials Lab	0	0	2	60	0	40	100	1
9	PCC	ME4L006	Fluid Mechanics & Fluid Machines Lab	0	0	2	60	0	40	100	1
10	PROJECT	ME4F007	Industrial visit	0	0	0	0	0	50	50	1
11	MC	ME4T008	Innovation and Entrepreneurship Development	2	0	0	10	15	25	50	Audit
											23

5thSemester Mechanical Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	PCC	ME5T001	Heat Transfer	3	0	0	20	20	60	100	3
2	PCC	ME5T002	Theory Of Machines-II	3	0	0	20	20	60	100	3
3	PCC	ME5T003	Measurement and Quality Control	3	0	0	20	20	60	100	3
4	PEC	ME5TE01	Elective-I	3	0	0	20	20	60	100	3
5	OEC	ME5O001	Open elective I	4	0	0	20	20	60	100	4
6	PCC	ME5L001	Heat Transfer Lab	0	0	2	60	0	40	100	1
7	PCC	ME5L002	Theory Of Machines-II Lab	0	0	2	60	0	40	100	1
8	PCC	ME5L003	Measurement and Quality Control Lab	0	0	2	60	0	40	100	1
9	PROJECT	ME5P004	Mini Project	0	0	0	0	0	50	50	1
10	MC	ME5T005	Consumer Affair	2	0	0	10	15	25	50	Audit
				18	0	6	290	115	495	900	20

Course Code	PEC-I	Course Code	Open Elective-I
ME5TE01A	Renewable Energy Sources	ME5O001A	Automobile Vehicle Maintenance
ME5TE01B	Analysis and Synthesis of Mechanisms	ME5O001B	Product Development
ME5TE01C	Advanced Manufacturing Technology		

6thSemester Mechanical Engineering

Sr. No.	Category of Subject	Course Code	Course Name	Teaching Scheme			Evaluation Scheme				
				L	T	P	CA	MSE	ESE	Total	Credit
1	HSMC	ME6T001	Operation Research	3	0	0	20	20	60	100	3
2	PCC	ME6T002	Applied Thermodynamics	2	1	0	20	20	60	100	3
3	PCC	ME6T003	Design of Machine Element	2	1	0	20	20	60	100	3
4	PEC	ME6TE01	Elective-II	3	0	0	20	20	60	100	3
5	OEC	ME6O002	Open elective II	3	1	0	20	20	60	100	4
6	PCC	ME6L002	Applied Thermodynamics Lab	0	0	2	60	0	40	100	1
7	PCC	ME6L003	Design of Machine Element Lab	0	0	2	60	0	40	100	1
8	ESC	ME6L004	Computer Graphics Lab	1	0	2	60	0	40	100	2
9	PROJECT	ME6P005	Campus Recruitment Training	0	0	2	50	0	0	50	1
10	PROJECT	ME6P006	Skill Development	0	0	2	50	0	0	50	1
11	PROJECT	ME6P007	Mini Project	0	0	0	0	25	0	25	50
12	MC	ME6T008	Research Methodology	2	0	0	10	15	25	50	Audit
				16	3	10	380	115	505	1000	23

Course Code	PEC-II	Course Code	Open Elective-II
ME6TE02A	Power plant engineering	ME6O002A	Solar Technologies
ME6TE02B	Automobile Engineering	ME6O002B	Industrial Safety
ME6TE02C	Industrial Engineering		

B. Tech. Mechanical Engineering

Course Structure for Semester VII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC701	PCC 29	Mechatronics	2	1	--	20	20	60	100	3
BTMEC702	PCC 30	CAD/CAM	2	1	--	20	20	60	100	3
BTMEC703	PCC 31	Manufacturing Processes - III	2	1	--	20	20	60	100	3
BTMEC704A	PEC 2	Fluid Machinery	2	1	--	20	20	60	100	3
BTMEC704B		Industrial Engineering and Management								
BTMEC704C		Finite Element Method								
BTMEC704D		Surface Engineering								
BTMEC704E		Refrigeration and Air Conditioning								
BTAMC704C		Automobile Design (Product Design, PLM, CAE, Catia)								
BTMEC705A	OEC 5	Engineering Economics	3	--	--	--	--	--	--	Audit (AU/ NP)
BTMEC705B		Intellectual Property Rights								
BTMEC705C		Wind Energy								
BTMEC705D		Knowledge Management								
BTMEL706	PCC 32	Manufacturing Processes Lab - II	--	--	2	30	--	20	50	1
BTMEL707	PCC 33	Mechatronics Lab	--	--	2	30	--	20	50	1
BTMEL708	PCC 34	CAD/CAM Lab	--	--	2	30	--	20	50	1
BTMES709	Project 4	Seminar	--	--	2	30	--	20	50	1
BTMEF710	Project 5	Field Training /Internship/Industrial Training III	--	--	--	--	--	50	50	1
BTMEP711	Project 6	Project Stage-I**	--	--	6	30	--	20	50	3
		Total	11	4	14	230	80	390	700	20

**In case of students opting for Internship in the eighth semester, the Project must be industry-based.

B. Tech. Mechanical Engineering
Course Structure for Semester VIII [Fourth Year] w.e.f. 2020-2021

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	CA	MSE	ESE	Total	
BTMEC801A	PEC 3	Biomechanics	2	1	--	20	20	60	100	3
BTMEC801B		Power Plant Engineering								
BTMEC801C		Robotics								
BTMEC801D		Tool Design								
BTAMC801C		Body - In - White & Trims								
BTMEC802A	PEC 4	Product Life Cycle Management	2	1	--	20	20	60	100	3
BTMEC802B		Machine Tool Design								
BTMEC802C		Tool Condition Monitoring								
BTMEC802D		Mechanical Vibration								
BTMEC802E		Steam and Gas Turbines								
BTMEC803A	PEC 5	Non-conventional Machining	2	1	--	20	20	60	100	3
BTMEC803B		Cryogenic Systems								
BTMEC803C		Process Equipment Design								
BTMEC804A	PEC 6	Design of Piping Systems	2	1	--	20	20	60	100	3
BTMEC804B		Advanced IC Engines								
BTMEC804C		Design of Air Conditioning Systems								
BTMEC804D		Sheet Metal Engineering								
BTMEC805A	OEC 6	Design of Experiments	2	1	--	20	20	60	100	3
BTMEC805B		Entrepreneurship Development								
BTMEC805C		Plant Maintenance								
BTMEP806	Project 7	Project Stage-II	--	--	12	50	--	100	150	6
		Total	10	5	12	150	100	400	650	21

Course Title : Communication Skills

Course Objectives:

The main objective of the subject is to enhance the employability skills of engineering students as well as communication skills at workplace.

The sub-objectives are:

1) To develop students' reading skills and pronunciation.
2) To develop technical communication skills through drafting, letter writing, and précis writing.
3) To develop literary skills through essay writing.
4) To develop public speaking skills of the students.
5) To expose the students to the ethics of English language by teaching grammar

Unit 1: Communication and Communication Processes   (06 hrs)

Introduction to Communication, Types and functions of Communication, Barriers to Communication and overcoming them, Role of Communication Skills in Society

Reading: Introduction to Reading, Barriers to Reading, Types of Reading: Skimming, Scanning, Intensive and Extensive, Strategies for Reading Comprehension.

Listening : Importance of Listening, Types of Listening, Barriers to Listening.

Unit 2: English Grammar   (06 hrs)

Grammar: Forms of Tenses, Articles, Prepositions, Use of Auxiliaries and Modal Auxiliaries, Sentence Structures, Use of phrases and clauses in sentences, Importance of proper punctuation, Common Errors. Misplaced modifiers.

Unit 3: Professional Verbal Communication   (06 hrs)

Components of an effective talk, Idea of space and time in public speaking, Tone of voice, Body language, Timing and duration of speech, Audio-Visual Aids in speech. Presentation Skills, Group Discussion and Job Interviews

Unit 4: Developing Business Writing Skills, Styles and Practice   (06 hrs)

Writing Emails, Report Writing: Format, Structure and Types, Letter Writing: Types, Parts, Layouts, Writing Job Application Letter and Resume.

Nature and Style of sensible Writing and Practice: Describing, Defining, Classifying, Providing examples or evidence, writing introduction and conclusion, Writing Practices: Comprehension, Précis Writing, Essay Writing

Unit 5: Study of Sounds in English and Vocabulary Building   (06 hrs)

Introduction to phonetics, Study of Speech Organs, Study of Phonemic Script, Articulation of Different Sounds in English.

Vocabulary Building: The concept of Word Formation, Root words from foreign languages and their use in English, Use of prefixes and suffixes from foreign languages in English to form derivatives, Synonyms, antonyms, and words syllables.

Text book:

Mohd. Ashraf Rizvi, Communication Skills for Engineers, Tata McGraw Hill

Reference Books:

1) Sanjay Kumar, Pushp Lata, Communication Skills, Oxford University Press, 2016

2) Meenakshi Raman, Sangeeta Sharma, Communication Skills, Oxford University Press, 2017

3) Teri Kwal Gamble, Michael Gamble, Communication Works, Tata McGraw Hill Education, 2010

4) Anderson, Kenneth. Joan Maclean and Tossny Lynch. Study Speaking: A Course in Spoken English for Academic Purposes. Cambridge: CUP, 2004.

5) Aswalthapa, K. Organisational Behaviour, Himalayan Publication, Mumbai (1991).

6) Atreya N and Guha, Effective Credit Management, MMC School of Management, Mumbai (1994).

7) Balan,K.R. and Rayudu C.S., Effective Communication, Beacon New Delhi (1996).

8) Bellare, Nirmala. Reading Strategies. Vols. 1 and 2. New Delhi. Oxford University Press, 1998.

9) Bhasker, W. W. S & Prabhu, N. S.: English through Reading, Vols. 1 and 2. Macmillan, 1975.

10) Black, Sam. Practical Public Relations, E.L.B.S. London (1972).

11) Blass, Laurie, Kathy Block and Hannah Friesan. Creating Meaning. Oxford: OUP, 2007.

12) Bovee Courtland,L and Thrill, John V. Business Communication, Today McGraw Hill, New York, Taxman Publication (1989).

Course Title : Communication Skills-Lab

List of Practical Sessions (Any 6 practical sessions can be conducted):

1) Pronunciation, Intonation, Stress and Rhythm(02 hrs)
2) Introduction to Phonemic symbols (02 hrs)
3) Articulation of sounds in English with proper manner (02 hrs)
4) Practice and exercises on articulation of sounds (02 hrs)
5) Read Pronunciations/transcriptions from the dictionary (02 hrs)
6) Practice and exercises on pronunciations of words (02 hrs)
7) Introduce yourself (02 hrs)
8) Importance of Business Communication with the help of a case study.(02hrs)
9) Listening Skills/ Comprehension(02 hrs)
10) Common Everyday Situations: Conversations and Dialogues(02 hrs)
11) Communication at Workplace(02 hrs)
12) Rapid reading sessions (02 hrs)
13) Draft Email(02 hrs)
14) Resume Writing(02hrs)
15) Drafting Business Letter(02 hrs)
16) Preparing technical paper using IEEE format(02 hrs)
17) Extempore (02 hrs)
18) Elocution (02 hrs)
19) Group discussion (02 hrs)
20) Participating in a debate (02 hrs)
21) Presentation techniques (02 hrs)
22) Interview techniques – Job Interviews, Telephonic Interviews (02hrs)
23) Mock interviews and practice sessions (02 hrs)

JAIDEV EDUCATION SOCIETY'S
J D COLLEGE OF ENGINEERING AND MANAGEMENT
KATOL ROAD, NAGPUR
Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere
Website: www.jdcoem.ac.in   E-mail: info@jdcoem.ac.in
An Autonomous Institute, with NAAC "A" Grade
Basic Science and Humanities Department
2021-22 (Odd Sem)

VISION	MISSION
To lay a robust foundation for an institute to reach its zenith.	The department is making its paramount efforts, 1. Achieving academic excellence through rigorous teaching, learning and evaluation practices. 2. To develop an ability to apply knowledge of basic science and mathematics to excel in the field of engineering. 3. To provide salutary environment for the betterment of faculty and students.

Course: B. Tech. All branches	**Year/Semester :** First Year/Sem I
Name of the Teacher : Dr.Asha A. Dave	**Subject Code :** HU1T001
Subject : Communication Skill	**Section ME/CE/EE**

	Theory	2
	Practical	4

Course Outcomes	Course Objective
Define communication, reading, listening and phonetics 2.Classify different types and functions of communication, reading, listening 3.Demonstrate ability to write/speak error free while making optimum use of business 4.Distinguish among various levels of communication barriers while developing an understanding 5.Evaluate effective ways of conducting speech, presentation, group discussion and job	1.To develop Students Reading Skills and Pronunciation 2.To develop technical communication skillsthrough drafting, letter writingand precise writing. 3. To develop literary skills through essay writing 4. To develop public speaking skills of the students.

6.Organize their thoughts for effective presentation and writing	5.To expose students to the ethics of English language by teaching grammar
	6.To enhance the employability skills of Engineering students as well as communication skills at work place.

TEACHING PLAN

NAME OF THE TEACHER: - Dr.Asha A. Dave
SUBJECT: -**COMMUNICATION SKILLS**   SUBJECT CODE   :-   **HU1T001**
YEAR/SEM: -**FIRST YEAR/ SEM I**   DEPARTMENT: -ME/CE/EE

S r. N o	Lect. No	Topic Code	Contents to be Covered	Planned Teaching Dates	Text Books (Page no)	Reference Book (Page no)	URL's (NPTEL/OnlineMaterial/PPt/Video)	Applications (R&D/Indust ry)	Learning Outcomes
UNIT-I Communication and Communication Processes
1	1	1.01	Introduction to Communication, Types and functions of Communication		T1 (Pg:4-12)	R1 (Pg:4-12)	Video: https://www.youtube.com/watch?v=-DHeRk4cwtY Material: https://thebusinesscommunication.com/what-is-communication-functions-of-communication/	P1	Students should be able to define and describe the types and function of communication.
2	2	1.02	Barriers to Communication and overcoming them, Role of Communication Skills in Society		T1 (Pg:15-16)	R1 (Pg:25-36)	Video: https://www.youtube.com/watch?v=slq1nAhZuqE Material: https://www.toppr.com/guides/business-correspondence-and-reporting/communication/barriers-in-communication/	P2	Students should be able understand the barrier for effective communication and how they can overcome them.

3	3	1.03	Introduction to Reading, Barriers to Reading		T1 (Pg:248-249)	R1 (Pg:223)	Video: https://www.youtube.com/watch?v=slq1nAhZuqE Material: https://www.ques10.com/p/12688/discuss-some-of-the-barriers-to-effective-readin-1/	P3	Students should be able to understand the barriers of reading and how they can become a good reader.
4	4	1.04	Types of Reading: Skimming, Scanning, Intensive and Extensive reading, Strategies for Reading Comprehension		T1 (Pg:265-268)	R1 (Pg:224)	Video: https://www.youtube.com/watch?v=RtcXr0_201A Material: https://www.howtolearn.com/2012/08/different-reading-techniques-and-when-to-use-them/	P4	Students should be able to use different reading techniques to solve reading comprehension questions in lesser time.
5	5	1.05	Importance of Listening, Types of Listening		T1 (Pg:74-76)	R1 (Pg:63-65)	Video: https://www.youtube.com/watch?v=22gzvSindTU	P5	Students should understand the importance and types of listening.
6	6	1.06	Barriers to Listening		T1 (Pg:78-80)	R1 (Pg:65-67)	Video: https://www.youtube.com/watch?v=o6JGi2voyDM	P6	Students should know the barriers for effective listening and how they can overcome them to become good listeners.
			UNIT-II Study of Sounds in English and Vocabulary Building						
7	7	2.01	Introduction to phonetics, Study of Speech Organs		T1 (Pg:120)	R1 (Pg:73-74)	Video: https://www.youtube.com/watch?v=4KDkHvvksAE	P7	Students should know the basics of phonetics and how the speech organs work while speaking.
8	8	2.02	Study of Phonemic Script		T1 (Pg:121-	R2 (Pg:75-76)	Video: https://www.youtube.com/watch?	P8	Students should be able to read and write the transcription of sounds of the words and

					123)		v=JfwVXfl0EnI	phrases.
9	9	2.03	Articulation of Different Sounds in English		T1 (Pg:129)	R2 (Pg:81-96)	Video: https://www.youtube.com/watch?v=72M770xTvaU https://www.youtube.com/watch?v=d1HZPx8DuDw	P9	Students should be able to understand the ways to produce speech.
10	10	2.04	The concept of Word Formation, Root words from foreign languages and their use in English		T1 (Pg:580-582)	R1 (Pg:437-449)	Material: https://wordpandit.com/root-words-in-english/	P10	Students should be able to expand their vocabulary by understanding the concept of word formation and how root words are taken from other languages to form English words.
11	11	2.05	Use of prefixes and suffixes from foreign languages in English to form derivatives		T1 (Pg:583-586)	R1(Pg: 437-449)	Video: https://www.youtube.com/watch?v=1ffjfpMl9-4	P11	Students should get acquainted with the prefixes and suffixes and how to use them to form words.
12	12	2.06	Synonyms, antonyms, and standard abbreviations		T1 (Pg:586-588)	R1 (Pg: 437-449)	Material: https://www.toppr.com/guides/english/vocabulary/synonyms-and-antonyms/ https://www.englisch-hilfen.de/en/words/abbreviations.htm	P12	Students should get the knowledge of synonyms and antonyms and some standard abbreviations used in English language.

UNIT-III English Grammar

13	13	3.01	Forms of Tenses		T1 (Pg:552-554)	R2 (Pg:42-50)	Video: https://www.youtube.com/watch?v=th8SNmRW69w	P13	Students should be able to apply the correct rules of tenses to form grammatically correct sentences.

14	14	3.02	Articles, Preposition		T1 (Pg:547-551)	R2 (Pg:14-41)	Video: https://www.youtube.com/watch?v=Cc5i5jnqM4g https://www.youtube.com/watch?v=duMo2VoFAQY	P14	Students should be able to use the proper articles and prepositions at proper place.
15	15	3.03	Use of Auxiliaries and Modal Auxiliaries		T1 (Pg:551-552)	R3 (Pg:90-95)	Video: https://www.youtube.com/watch?v=wVYcMIOMsQc	P15	Students should be able to use appropriate auxiliaries.
16	16	3.04	Sentence Structures, Use of phrases and clauses in sentences		T1 (Pg:)	R3 (Pg:157-159)	Video:https://www.youtube.com/watch?v=4dr5lN1jqRE	P16	Students should be able to construct grammatically correct sentences.
17	17	3.05	Importance of proper punctuation		T1 (Pg:)	R2 (Pg:122-132)	Video: https://www.youtube.com/watch?v=bY5ChVDRLus	P17	Students should be able to use the correct punctuation marks.
18	18	3.06	Common Errors. Misplaced modifiers		T1 (Pg:505-521)	R2 (Pg:107-111)	Video: https://www.youtube.com/watch?v=1Dax90QyXgI	P18	Students should get acquainted with the common errors in English and how to avoid them.
UNIT-IV Professional Verbal Communication									
19	19	4.01	Components of an effective talk, Idea of space and time in public speaking		T1 (Pg:133)	R4 (Pg:91-107)	Video: https://www.youtube.com/watch?v=-FOCpMAww28	P19	Students should be able to understand the components to become effective public speakers.
20	20	4.02	Tone of voice, Body language		T1 (Pg:114)	R1 (Pg:178)	Video: https://www.youtube.com/watch?v=bSx6Zg9Ibgw https://www.youtube.com/watch?	P20	Students should be able to use tone of voice and body language for effective communication.

					T1	R1			
						v=cFLjudWTuGQ			
2 1	21	4.03	Timing and duration of speech, Audio-Visual Aids in speech		T1 (Pg:)	R1 (Pg:)	Video: https://www.youtube.com/watch?v=MGobKltZtII	P21	Students should be able to use different audio-visual aids.
2 2	22	4.04	Presentation Skills		T1 (Pg: 121-141)	R1 (Pg:113-137)	Video: https://www.youtube.com/watch?v=dEDcc0aCjaA	P22	Students should be able to use presentation skills to give betters presentations.
2 3	23	4.05	Group Discussion		T1 (Pg:187-208)	R1 (Pg:185-190)	Video: https://www.youtube.com/watch?v=BguYUJ7cWrs	P23	Students should understand importance and rules to participate in group discussion.
2 4	24	4.06	Job Interviews		T1 (Pg:157-183)	R1 (Pg:143-156)	Video: https://www.youtube.com/watch?v=1mHjMNZZvFo	P24	Students should be able to know the commonly asked questions in interviews and how to face interviews.
UNIT-V Developing Business Writing Skills, Styles and Practice									
2 5	25	5.01	Writing Emails		T1 (Pg: 491-500)	R1 (Pg:401-411)	Video: https://www.youtube.com/watch?v=3Tu1jN65slw	P25	Students should be able to write professional emails.
2 6	26	5.02	Report Writing: Format, Structure and Types		T1 (Pg:503-516)	R1 (Pg:284-315)	Material: https://www.openpolytechnic.ac.nz/current-students/study-tips-and-techniques/assignments/how-to-write-a-report/	P26	Students should know the format of report writing and how to write reports.

2 7	27	5.03	Letter Writing: Types, Parts, Layouts, Writing Job Application Letter		T1 (Pg:391-409)	R1 (Pg:368-386)	Material: https://www.wikihow.com/Write-a-Letter	P27	Students are able to write the business letters.
2 8	28	5.04	Resume		T1(Pg:438-458)	R1 (Pg:160-169)	Material: https://www.wikihow.com/Make-a-Resume	P28	Students are able to write good resumes.
2 9	29	5.05	Describing, Defining, Classifying, Providing examples or evidence	31/10/2019	T1 (Pg:)	R1 (Pg:274) R2 (Pg: 290-299)	Video: https://slideplayer.com/slide/5986568/	P29	Students learn different styles of writing.
3 0	30	5.06	Writing Practices: Comprehension, Précis Writing, Essay Writing		T1 (Pg:377-385)	R2 (Pg:300-385)	Video: https://www.youtube.com/watch?v=o9aVjBHEEbU https://www.youtube.com/watch?v=xKvm46W9Tm0 Material: https://grammar.yourdictionary.com/writing/how-to-write-an-essay.html	P30	Students should learn different types of writing.

*T=Text Book; R= Reference Book; C= Company name; P= Research Paper

Total number of lectures as per syllabus: - 30Total number of lectures as per planned: - 30

Final Outcome of the Subject (Maximum 6 Outcomes):

Students should be able to:

CO1. Define communication, reading, listening and phonetics.

CO2. Classify different types and functions of communication, reading, listening, speech organs, and sounds in English, types of reports, letters.

CO3. Demonstrate ability to write/speak error free while making optimum use of business vocabulary, grammar, tone of voice, body language.
CO4. Distinguish among various levels of communication barriers while developing an understanding of analytical writing.
CO5. Evaluate effective ways of conducting speech, presentation, group discussion and job interviews.
CO6. Organize their thoughts for effective presentation and writing.

TextBooks:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Effective Technical Communication	M Ashraf Rizvi	Tata McGraw-Hill Education	Second Edition/2005

Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	Technical Communication Principles and Practice	Meenakshi Raman, Sangeeta Sharma	Oxford University Press	Third Edition/ 2015
R2	Professional Communication Skills	Er. A.K. Jain, Dr. Pravin S.R.Bhatia, Dr. A.M. Sheikh	S. Chand	Fifth Edition/ 2011
R3	High School English Grammar and Composition	Wren & Martin	S Chand	2008
R4	How to Develop Self-Confidence & Influence People by Public Speaking	Dale Carnegie	Simon & Schuster, Inc.	1956

Company/Industry:

Code	Company/Industry Name	Website	Detailed Information

Research Paper:

Code	Title of the Paper	First Author Name	Journal/Conference Name	DOI no.	Issue/Volume/Page no/Year
P1	Communication Skills for the 21st Century Engineer	Marc J. Riemer	UNESCO International Centre for Engineering Education (UICEE) Faculty of Engineering, Monash University, Clayton, Melbourne, VIC 3800, Australia	http://www.wiete.com.au/journals/GJEE/Publish/vol11no1/Riemer.pdf	Global J. of Engng. Educ., Vol.11, No.1 Published in Australia
P2	Barriers to Effective Communication	Dr. Radhika Kapur		https://www.researchgate.net/publication/323794732_Barriers_to_Effective_Communication	March 2018

P3	Reading difficulties as barriers to learning experienced by learners entering the intermediate phase	Dorcas Joan Naiken	University of South Africa	https://core.ac.uk/download/pdf/85157470.pdf	November 2016
P4	How Can Students Improve Their Reading Comprehension Skill?	Abbas Pourhosein Gilakjani	Journal of Studies in Education	https://www.researchgate.net/publication/303742915_How_Can_Students_Improve_Their_Reading_Comprehension_Skill DOI: 10.5296/jse.v6i2.9201	June 2016 ISSN 2162-6952 2016, Vol. 6, No. 2
P5	The Types and the Functions of the Listening Activities in Turkish and English Course Books1	Derya Eken	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/275544385_The_Types_and_the_Functions_of_the_Listening_Activities_in_Turkish_and_English_Course_Books1 DOI: 10.1016/j.sbspro.2014.09.355	October 2014
P6	Keys to Effective Listening and Presenting: An Action Plan	Tharindu Dananjaya Weerasinghe, T J R Thisera	Kelaniya Journal of Human Resource Management	https://www.researchgate.net/publication/313828241_Keys_to_Effective_Listening_and_Presenting_An_Action_Plan DOI: 10.4038/kjhrm.v9i1-2.11	Volume 09-Number 01-January 2014 & Number 02-July 2014
P7	Speech Production	Dani Byrd, Elliot Saltzman	The Handbook of Brain Theory and Neural Networks, Second edition, (M.A. Arbib, Ed.), Cambridge, MA: The MIT Press, 2002	https://www.researchgate.net/publication/2489347_Speech_Production	March 2002
P8	Phonemic Awareness: Clarifying What We Know	Marilyn Chapman		https://www.researchgate.net/publication/252718468_Phonemic_Awareness_Clarifying_What_We_Know	January 2003

P9	DIFFICULTIES IN ARTICULATION OF SOME CONSONANT SOUNDS	GEORGE KUPARADZE		https://www.researchgate.net/publication/308478067_DIFFICULTIES_IN_ARTICULATION_OF_SOME_CONSONANT_SOUNDS_On_the_material_of_English_and_Georgian	September 2016
P10	The Significance of the Words Borrowed Into English Language	V. Chandra Sekhar Rao		https://www.researchgate.net/publication/324273536_The_Significance_of_the_Words_Borrowed_Into_English_Language	April 2018
P11	Prefixes of Degree in English: A Cognitive-Corpus Analysis	Zeki Hamawand	Open Journal of Modern Linguistics 01(02)	https://www.researchgate.net/publication/267990519_Prefixes_of_Degree_in_English_A_Cognitive-Corpus_Analysis DOI: 10.4236/ojml.2011.12003	January 2011
P12	On the use of antonyms and synonyms from a domain perspective p	Debela Tesfaye, Carita Paradis	Conference: Word Knowledge and Word Usage: Representations and processes in the Mental Lexicon., At Pisa	https://www.researchgate.net/publication/275210472_On_the_use_of_antonyms_and_synonyms_from_a_domain_perspective	March 2015
P13	Tense in English	Laura Adrienne Michaelis	The Handbook of English Linguistics, pp.220 - 243	https://www.researchgate.net/publication/228045646_Tense_in_English DOI: 10.1002/9780470753002.ch10	January 2008
P14	Information Structure and English Article Pedagogy	Peter Master	System 30(3):331-348	https://www.researchgate.net/publication/2	September 2002

				23357198_Informatio n_Structure_and_Engl ish_Article_Pedagogy DOI: 10.1016/S0346-251X(02)00018-0	
P15	HEDGING THROUGH THE USE OF MODAL AUXILIARIES IN ENGLISH ACADEMIC DISCOURSE	Tofan Hardjanto	HUMANIORA	https://www.research gate.net/publication/3 10663354_HEDGING_ THROUGH_THE_USE_ OF_MODAL_AUXILIAR IES_IN_ENGLISH_ACA DEMIC_DISCOURSE DOI: 10.22146/jh.v28i1.11412	VOLUME 28 No. 1 February 2016
P16	Difficulties of Building English Sentences in Writing	Badraddin ALawad Balal, Sabir Ahmed Hago	Conference: The European Eonference on Language Learning ECLL 2015, At Dubai, UAE	https://www.research gate.net/publication/2 83256681_Difficulties _of_Building_English_ Sentences_in_Writing	February 2015
P17	An Analysis of English Punctuation: The Special Case of Comma	Murat Bayraktar, Bilge Say, Varol Akman	International Journal of Corpus Linguistics	https://www.research gate.net/publication/2 8762309_An_Analysis _of_English_Punctuati on_The_Special_Case _of_Comma DOI: 10.1075/ijcl.3.1.03bay	July 1998
P18p	COMMON GRAMMATICAL ERRORS IN THE USE OF ENGLISH AS A FOREIGN LANGUAGE: A CASE IN STUDENTS' UNDERGRADUATE THESES	Bambang Sugeng	LITERA	https://www.research gate.net/publication/3 30680801_COMMON _GRAMMATICAL_ERR ORS_IN_THE_USE_OF _ENGLISH_AS_A_FOR EIGN_LANGUAGE_A_C ASE_IN_STUDENTS'_U NDERGRADUATE_THE SES DOI: 10.21831/ltr.v15i1.1041 5	Volume 15, Nomor 1, April 2016

P19	Enhancing the development of speaking skills for non-native speakers of English	Kamonpan Boonkit	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/248607406_Enhancing_the_development_of_speaking_skills_for_non-native_speakers_of_English DOI: 10.1016/j.sbspro.2010.03.191	2(2):1305-1309 · December 2010
P20	Language and Body Language	Vijendra Pratap Singh		https://www.researchgate.net/publication/324246401_Language_and_Body_Language	April 2018
P21	The Impact of Audio-Visual Aids (AVA) and Computerize Materials (CM) on University ESP Students' Progress in English Language	Ali Al-Khayyat	International Journal of Education and Research	https://www.researchgate.net/publication/325285878_The_Impact_of_Audio-Visual_Aids_AVA_and_Computerize_Materials_CM_on_University_ESP_Students'_Progress_in_English_Language	Vol. 4 No. 1 January 2016
P22	Developing Presentation Skills in the English Language Courses for the Engineering Students of the 21st Century Knowledge Society: A Methodological Approach	Catana Elisabeta Simona	Procedia - Social and Behavioral Sciences	https://www.researchgate.net/publication/282457434_Developing_Presentation_Skills_in_the_English_Language_Courses_for_the_Engineering_Students_of_the_21st_Century_Knowledge_Society_A_Methodological_Approach DOI: 10.1016/j.sbspro.2015.08	August 2015

					.261	
P23	The Use of Small Group Discussion and Snowballing Techniques: An Effort to enhance EFL Students' Self –Efficacy and Speaking Skill	Ade Silvana, Martin Kustati, Darmayanti Darmayanti	AL-TA'LIM JOURNAL, 25 (1), 2018, (77-86)	https://www.researchgate.net/publication/326792181_The_Use_of_Small_Group_Discussion_and_Snowballing_Techniques_An_Effort_to_enhance_EFL_Students'_Self_-_Efficacy_and_Speaking_Skill DOI: 10.15548/jt.v25i1.409	28 th February 2018
P24	Better English for Better Employment Opportunities	Dr. Meenu Pandey, Prabhat Kumar Pandey	International Journal of Multidisciplinary Approach and Studies	https://www.researchgate.net/publication/264788119_Better_English_for_Better_Employment_Opportunities	Volume 01, No.4, July - Aug 2014
P25	Students writing emails to faculty: An examination of E-politeness among native and non-native speakers of English	Sigrun Biesenbach-Lucas	Language, Learning and Technology	https://www.researchgate.net/publication/259703275_Students_writing_emails_to_faculty_An_examination_of_E-politeness_among_native_and_non-native_speakers_of_English	11(2):59-81 · June 2007
P26	Report Writing Skills of Engineering Students	Su-Hie Ting, Syaharom Abdullah	The Second International Conference on the Roles of the Humanities and Social Sciences in Engineering	https://www.researchgate.net/publication/228295799_Report_Writing_Skills_of_Engineering_Students	12-14 November 2010
P27	Letters and Letter Writing in Early Modern	Gabriella Del Lungo	Journal of Early Modern Studies	https://www.researc	April 2014

	Culture: An Introduction	Camiciotti		hgate.net/publication/307742338_Letters_and_Letter_Writing_in_Early_Modern_Culture_An_Introduction DOI: 10.13128/JEMS-2279-7149-14163	
P28	THE QUALITIES OF A GOOD CV AND RESUME	Adrian Wallwork		https://www.researchgate.net/publication/315404987_THE_QUALITIES_OF_A_GOOD_CV_AND_RESUME DOI: 10.1007/978-1-4939-0647-5_1	June 2014
P29					
P30	Reading Skills and Reading Comprehension in English for Specific Purposes	Milevica Bojovic	Conference: The International Language Conference on the Importance of Learning Professional Foreign Languages for Communication between Cultures, At Celje, Slovenia	https://www.researchgate.net/publication/261213403_Reading_Skills_and_Reading_Comprehension_in_English_for_Specific_Purposes	23 and 24 September 2010

Dr.Asha A. Dave   Dr. U. V. Rathod   Dr. Amit N. Gupta

Subject Teacher   Academic Incharge, BSHD   HOD, BSHD

ME3T009	Innovation & Entrepreneurship Development	Audit

COURSE OBJECTIVES

1. To understand the importance of Innovation and Idea Generation

2. To understand the concept of entrepreneurship.

COURSE OUTCOMES

At the end of the course students will be able to

1. Identify and validate of ideas.

2. Remember Patent registration of Innovation.

3. Understand roles and responsibilities of Entrepreneurship.

Unit 1: Innovation [06 Hours]

Concept of creativity, innovation, invention, discovery. Methods for development of creativity, convergent & divergent thinking etc. Introduction to Intellectual Property Rights (IPR), Patent and laws related to patents.

Unit 2: Entrepreneurship [06 Hours]

Concept of entrepreneurship, its relations in economic developments, Eventuation of concept of entrepreneur, characteristics of an Entrepreneur, Types of entrepreneurs, Qualities of entrepreneur, Factors affecting growth of entrepreneurship

Unit 3: Role of Entrepreneurial Bodies [06 Hours]

Theory of achievement, motivation, Medelland's. experiment, Women entrepreneurship, Role of SSI, it's advantages & limitations, policies governing small scale industries, Procedure to set up small scale industrial unit, Advantages and limitations of SSI.

Unit 4: Role of Entrepreneurial Support [06 Hours]

Factors governing project selection, Market survey, Preparation of project report. Financial, technical & market analysis of project. Entrepreneurial support systems, Role of consultancy organization like, District Industrial Centre, State Industrial Development Corporation, Financial institution, Latest SSI schemes of DIC (to be confirmed from DIC from time to time.

Text Book

1) Entrepreneurship Development, S. S. Khanka, S. Chand Publishers.

Reference Book

1) Creativity Innovation & Entrepreneurship, Zechariah James Blanchard, Needle Rat Business Publishers.

Campus Recruitment Training

About CRT Training Campus Recruitment training (CRT) at is designed to aid candidates in their preparation for Recruitment through Campuses or outside campuses (i.e On campus or off campus). Students in their final step of graduation looking for placement in reputed organizations can make use of this training to get trained to deliver their best in the selection processes of organizations.

COURSE OBJECTIVES

1. To enhance the problem solving skills, to improve the basic mathematical skills and to help students who are preparing for any type of campus recruitment drive.
2. To groom the students to the corporate level
3. To ensure that all eligible students are employed by the end of the final year of study.

COURSE OUTCOMES

At the end of the course students will be able to

1. Solve the problems easily by using Short-cut method with time management which will be helpful to them to clear the competitive exams for better job opportunity.
2. Analyze the Problems logically and approach the problems in a different manner.
3. Students will be able to apply mathematical analysis of data to make connections, draw conclusions and solve problems.
4. Students will learn a series of techniques through practical activities to develop presenting skills and enhance confidence to expand the potential of the individual.
5. Students can produce a resume that describes their education, skills, experiences and measurable achievements with proper grammar, format and brevity.
6. Students demonstrate an ability to target the resume to the presenting purpose
7. Demonstrate professional behavior(s) including preparedness, professional attire, and respectful presentation during interviews.

PART I: - QUANTITATIVE ABILITY

Unit 1: - 03 hrs

Speed Maths Calculation, Number Systems, Ratio & Proportion, Percentage

Unit 2: - 03 hrs

Profit – Loss & Discount, Simple Interest & Compound Interest, Simple Equation and Age's

Unit 3:- 03 hrs

Averages Mixture & Allegation, Time and work, Time Speed & Distance, Permutation – Combination & Probability

PART II: - REASONING ABILITY

Unit 1: - 03 hrs

Coding Decoding, Blood Relation, Direction sense, Number Series, Analogy

Unit 2: - 03 hrs

Sitting Arrangement, Puzzles.

Unit 3:- 03 hrs

Syllogism, Statement course of action, Statement arguments, Statement Assumptions, Miscellaneous Type of Reasoning

PART III: - Employability Skills

Unit 1: - Presentation Skills (02 hrs)

What is a presentation? Essential characteristics of Good presentation.

Preparation of presentation: Identify the purpose, Analyze the audience, Design and organize the information, Medium of presentation and Visual aids

Delivering Presentation: rehearsal, body Language, Handling questions, Tips to fight stage fear.

Unit 2: - Job Interview Skills (02 hrs)

Types of interviews, Focus of interview, dress code, importance of body language.

Probable interview questions, Telephonic and video interview, Strategies for success at interview.

Unit 3: - Resume Building (02 hrs)

Meaning, Difference among Bio-data, Curriculum vitae and Resume.

CV writing tips, The content of Resume, Structure of Resume

Books

1. Prashant Sharma, SOFT SKILLS PERSONALITY DEVELOPMENT FOR LIFE SUCCESS. BPB Publication.
2. P. D. Chaturvedi & Mukesh Chaturvedi, Business Communication: Concepts, Cases, and Applications 2nd Edition. Pearson Education.
3. Barun Mitra, Personality Development and Soft Skills. Oxford University Press.
4. Dr.K.Alex, *Soft Skills Know yourself and Know the World*. S.ChandPublishing, 2014
5. R.S Agrawal, Quantitative Aptitude.
6. Arun Sharma, How to Prepare for Quantitative Aptitude.
7. R. S Agrawal, Verbal and Non Verbal Reasoning.
8. R.V.Praveen,Quantitative Aptitude and Reasoning, 2nd Revised Edition 2013, Prentice-Hall of India Pvt.Ltd.
9. G. K. Ranganath, C. S. Sampangiram and Y. Rajaram, A text Book of business Mathematics, 2008, Himalaya Publishing House

JAIDEV EDUCATION SOCIETY'S
J D COLLEGE OF ENGINEERING AND MANAGEMENT
KATOL ROAD, NAGPUR
Website: www.jdcoem.ac.in   E-mail: info@jdcoem.ac.in
An Autonomous Institute, with NAAC "A" Grade
Department Of Mechanical Engineering
"Igniting minds to illuminate the world"
2022-23 (Odd Sem)

VISION	MISSION
To be a **center** of excellence of learning and research in Mechanical Engineering.	The department is making its paramount efforts, 1. To provide high quality, innovative and research environment in Mechanical Engineering. 2. To impart soft skill and hard skill to achieve institutional vision..

Teaching Plan

Course	: B. Tech in Mechanical Engineering	Year/Semester	: 6th Semester (3rd Year)
Name of the Teacher : Prof. Sumedh Gawande		**Subject Code** :	
Subject :Aptitude		**Section** :ME – A&B	

Periods per Week (each 60 min)	Lecture	2
	Practical	-
	Tutorial	-

Course Objective	Course Outcomes
1. To develop an an individual for CRT, competitive exams, entrance exams. 2. Questions have practical as well as theoretical approach and discussion in forum option is good for explanations so that one can understand them easily and conceptually. 3. By practicing Quantitative Aptitude Objective Questions and Answers Practice daily for good results and to learn and master various Quantitative Aptitude subjects.	1. Understand and practice quantitative aptitude. 2. Understand and practice Logical reasoning 3. Understand and practice verbal reasoning. 4. Understand different placement practice techniques.

Sr. No	Lec. No	Contents to be Covered	Planned Teaching Dates	Text Books (Page no) Reference Book (Page no)	URL's (NPTEL/Online Material/PPT/Video)	Applications (R&D/ Industry)	Learning Outcomes
1	1	Speed Math's Calculation	Day 1	T1 (Pg: 51-179)	------	Campus Drive selection process	Students should solve fast math problem
2	2	Speed Math's Calculation	Day 2	T1 (Pg: 51-179)	-----	-----	Students should solve fast math problem
3	3	Number System	Day 3	T1 (Pg:3-50)	----	-----	Students should understand different number system
4	4	Ration and Proportion	Day 4	T2 (Pg:426-475)	----	-----	Students should able to solve ratio problem
5	5	Percentage	Day 5	T2 (Pg:308-373)	----	-----	Students should analyze and solve percentage problem
6	6	Profit Loss and Discount	Day 6	T2 (Pg:374-425)	----	-----	Students should solve profit loss and discount problem
7	7	Simple Interest	Day 7	T2 (Pg:641-662)	----	-----	Students should simplify Simple interest problem
8	8	Compound Interest	Day 8	T2 (Pg:663-687)	----	-----	Students should simplify Compound interest problem
9	9	Simple equation and Age's	Day 7	T2 (Pg:264-277)	----	-----	Students should clear age problem concept
10	10	Average	Day 8	T2 (Pg:206-239)	----	-----	Student should understand concept of Average
11	11	Mixture and Allegations	Day 9	T1 (Pg:633-640)	--------	-----	Students should analyze Mixture Allegations
12	12	Time and Work	Day 10	T1 (Pg:526-561)	----	-----	Students should explain different Time and Work
13	13	Time speed And Distance	Day 11	T1 (Pg:562-599)	----	-----	Students should explain different Time

							Speed and Distance
14	14	Permutation and Combination	Day 12	T1 (Pg:841-849)	----	-----	Students should Permutation and Combination
15	15	Probability	Day 13	T1 (Pg:850-860)	----	-----	Students should explain Probability
16	16	Coding And Decoding	Day 14	T3 (Pg.4.1-4.46)	----	-----	Students should understand Coding And Decoding
17	17	Blood Relation	Day 15	T3 (Pg.5.1-5.19)	----	-----	Students should identify different Blood Relation
18	18	Direction Sense	Day 16	T3 (Pg.8.1-8.19)	----	-----	Students should remember steps and sequence of Direction Sense
19	19	Number Series	Day 17	T3 (Pg.1.3-1.26)	----	-----	Students should apply different combination of Number Series
20	20	Analogy	Day 18	T3 (Pg.2.1-2.74)	----	-----	Students should understand Analogy question..
21	21	Sitting Arrangements	Day 19	T3 (Pg.6.1-6.73)	----	-----	Students should solve and understand Sitting Arrangements
22	22	Puzzle	Day 20	T3 (Pg.6.1-6.73)	----	-----	Students should solve and understand Puzzle
23	23	Syllogism	Day 21	T2 (Pg:323-340)	----	-----	Students should understand Syllogism question
24	24	Statement Course of Action	Day 22	T2 (Pg:4.14.25)	----	-----	Students should analyze Statement Course of Action
25	25	Statement Argument	Day 23	T2 (Pg:2.1-2.27)	----	-----	Students should bale to understand Statement and Argument
26	26	Statement Assumption	Day 24	T2 (Pg:3.1-3.44)	----	-----	Students should able to understand Statement Assumption

27	27	Miscellaneous Type of Reasoning	Day 25	T2 (Pg:9.1-16.18)	----	-----	Students should be able to compute the Miscellaneous Type of Reasoning
28	28	Practice	Day 26		----	-----	Able to understandLeaky Bucket
29	29	Practice	Day 27		----	-----	Able to understandToken Bucket algorithm
30	30	Practice	Day 28		----	-----	Able to understandDomain Name Space (DNS), DDNS
31	31	Practice	Day 29		----	-----	Able to understandTELNET, EMAIL
32	32	Practice	Day 30		----	-----	Able to understandFile Transfer Protocol (FTP), WWW
33	33	Practice	Day 31		----	-----	Able to understandHTTP, SNMP
34	34	Practice	Day 32		----	-----	Able to understandBluetooth
35	35	Practice	Day 33		----	-----	Able to understandFirewalls
36	36	Practice	Day 34		----	-----	Able to understandBasic concepts of Cryptography

*T=Text Book;   R= Reference Book;   C= Company name;   R= Research Paper

Total number of lectures as per syllabus: - 36   Total number of lectures as per planned: -36

Text Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
T1	Quantitative Aptitude	Dr. R. S. Agrawal	S. CHAND	Edition 2017
T2	How to Prepare for Quantitative Aptitude	Arun Sharma	McGraw Hill Education	Eighth edition
T3	Quantitative Aptitude and Reasoning	R. V. Pravin	Prentice-Hall	Second Edition 2013
T4	Verbal and Non-Verbal Reasoning	Dr. R. S. Agrawal	S CHAND	Edition 2018

Reference Books:

Code	Title of the Book	Author Name/Designation/ Organization	Publisher	Edition/ Publication Year
R1	A text book of Business Mathematics	G Ranganath , C Sampangiram and Y Rajaram	Himalaya	Edition 2015

Company/ Industry:

There are nearly 200 companies where students have to opportunities to apply their aptitude and reasoning skill of got placed. Includes Time and work, percentage, Speed and distance, simplification, Etc.

Prof. Sumedh Gawande   **Prof. Sidhharth Gosh**   **Prof. Suhas Rawatkar**

Course Coordinator   **Academic Incharge**   **HOD ME**

NON-CONVENTIONAL ENERGY RESOURCES

PROF. PRATHAP HARIDOSS

Department of Metallurgical and Materials Engineering

IIT Madras

TYPE OF COURSE : Rerun | Elective | UG/PG
COURSE DURATION : 12 weeks (24 Jan' 22 - 15 Apr' 22)
EXAM DATE : 24 Apr 2022

PRE-REQUISITES : Course will be accessible to most students who have completed their first two years of study at an Undergraduate level.

INTENDED AUDIENCE : Interested students

COURSE OUTLINE :
This course looks at the operating principle of a range of non-conventional energy resources, materials used, characterization, and key performance characteristics. The technologies looked at will include, Solar energy, Wind, Batteries, Fuel cells, and Geothermal conversion. The advantages and limitations of these technologies in comparison to conventional sources of energy will also be examined.

ABOUT INSTRUCTOR :
Prof. Prathap Haridoss is a Professor in the Department of Metallurgical and Materials Engineering at IIT Madras. He works in the areas of Fuel Cell and Carbon nanomaterials. He has a B.Tech in Metallurgical Engineering from IIT Madras, and a PhD in Materials Science and Engineering from the University of Wisconsin-Madison, USA. Before he joined as a faculty at IIT Madras, he served as a Senior Scientist at Plug Power, a Fuel Cell company in New York. He has 3 US patents, several International Journal publications, and has published a book titled "Physics of Materials, Essential Concepts of Solid State Physics".

COURSE PLAN :

Week 1**:** Scale of quantities, Impact of current energy usage, Conventional sources of energy

Week 2**:** Overview of non-conventional energy resources, Consumption by sector

Week 3**:** Solar energy incident on earth, solar spectrum

Week 4**:** Overview of solar energy technologies, Solar Thermal devices

Week 5**:** Solar Photo-voltaic devices, Performance and durability of solar devices

Week 6**:** Wind energy, technology and geographical aspects

Week 7**:** Geothermal and Biomass

Week 8**:** Battery basics, types

Week 9**:** Testing, performance of batteries

Week 10**:** Fuel cell types, Fuel processing, concept to product.

Week 11**:** Characterization and durability of fuel cells

Week 12**:** Flywheels and super capacitors

Roll No: **NPTEL22GE14S43931098**

To
PRAMOD HARISHCHANDRA INGLE
C/O SURESH GAIKWAD, H. NO 1349,
GANESH COLONY SANGAM ROAD WANADONGRI
NAGPUR
MAHARASHTRA - 441110
PH. NO :8390358773

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

Elite

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

PRAMOD HARISHCHANDRA INGLE

for successfully completing the course

Non-conventional Energy Resources

with a consolidated score of **65** %

Online Assignments	17.03/25	Proctored Exam	48/75

Total number of candidates certified in this course: **2009**

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: **NPTEL22GE14S43932546**

To
GAUTAM CHHAGAN DAMAHE
AT KHAMARI BUJ,POST NERI,TAHSIL MOHADI
DISTRICT BHANDARA
BHANDARA
MAHARASHTRA - 441905
PH. NO :7387554930

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to

GAUTAM CHHAGAN DAMAHE

for successfully completing the course

Non-conventional Energy Resources

with a consolidated score of **55** %

Online Assignments	23.13/25	Proctored Exam	31.5/75

Total number of candidates certified in this course: **2009**

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

FUNDAMENTALS OF AUTOMOTIVE SYSTEMS

PROF. C. S. SHANKAR RAM
Department of Design Engineering
IIT Madras

TYPE OF COURSE : Rerun | Core | UG/PG
COURSE DURATION : 12 weeks (24 Jan' 22 - 15 Apr' 22)
EXAM DATE : 23 Apr 2022

PRE REQUISITES: Rigid Body Dynamics (done in 1st year BE), Thermodynamics, Fluid Mechanics

INTENDED AUDIENCE: 3rd/4th year undergraduate and 1st year M.Tech./M.S./Ph.D. students

COURSE OUTLINE :

The objective of this course is to provide a fundamental understanding of the various systems of a typical automobile.

Course Outcomes: At the end of this course, the participant should be able to:

1.   acquire fundamental knowledge of the various systems of an automobile,

2.   associate the functions of each system with its design and layout, depict the various systems using simple schematics, and apply concepts learnt in core undergraduate courses to synthesize mathematical models of the various systems.

ABOUT INSTRUCTOR :

Prof. C. S. Shankar Ram is currently a professor in the Department of Engineering Design, Indian Institute of Technology Madras, Chennai, India. He received his Bachelor of Engineering (B. E.) in Mechanical Engineering from Motilal Nehru Regional Engineering College, Allahabad, India, and his M. S. and Ph. D. from Texas A&M University, USA. His research interests are in the areas of dynamics and control with applications to automotive and transportation systems. He teaches courses on Control Systems, Fundamentals of Automotive Systems and Control of Automotive Systems at IIT Madras

COURSE PLAN :

Week 1 : Course Overview, Classification of Internal Combustion Engines, Engine Components, Operation of Four Stroke Engines

Week 2 : Two Stroke Engines, Engine Cycles

Week 3 : Engine Performance, Supercharging, Combustion in Spark Ignition Engines

Week 4 : Combustion in Compression Ignition Engines, Carburetion, Fuel Introduction Systems

Week 5 : Engine Emissions, Emission Control Systems, Automotive Powertrain

Week 6 : Automotive Clutch, Transmission, Powertrain Analysis

Week 7 : Transmission Matching and Introduction to Brake System

Week 8 : Components of Brake System, Hydraulic Brake

Week 9 : Air Brake, Antilock Brake System

Week 10 : Braking Analysis, Introduction to Steering System, Manual Steering System

Week 11 : Power Steering System, Wheel Alignment, Introduction to Suspension System

Week 12 : Components of Suspension System, Dependent and Independent Suspension, Introduction to Electric and Hybrid Powertrain, Tyres.

Roll No: NPTEL22DE02S13931744

To
YASHWANT SUDHAKAR HAJARE
PADMAVATI NAGAR,GODHANI,NAGPUR.
PADMAVATI NAGAR ,GODHANI,NAGPUR.
NAGPUR
MAHARASHTRA - 441111
PH. NO :8956450070

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

YASHWANT SUDHAKAR HAJARE

for successfully completing the course

Fundamentals of Automotive Systems

with a consolidated score of   **49**   %

Online Assignments	18.94/25	Proctored Exam	30/75

Total number of candidates certified in this course: **713**

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

Roll No: **NPTEL22DE02S23932287**

To
SUSOBHAN MAITY
FETRI, NAGPUR, MAHARASHTRA
MOTIDHANA, SHAHPUR, BETUL, M.P
NAGPUR
MAHARASHTRA - 441501
PH. NO :7000480631

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

SUSOBHAN MAITY

for successfully completing the course

Fundamentals of Automotive Systems

with a consolidated score of **50** %

Online Assignments	20.19/25	Proctored Exam	30/75

Total number of candidates certified in this course: **713**

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: **NPTEL22DE02S23931891**

To
GAUTAM CHHAGAN DAMAHE
AT KHAMARI BUJ,POST NERI,TAHSIL MOHADI
DISTRICT BHANDARA
BHANDARA
MAHARASHTRA - 441905
PH. NO :7387554930

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

GAUTAM CHHAGAN DAMAHE

for successfully completing the course

Fundamentals of Automotive Systems

with a consolidated score of **54** %

Online Assignments	23.94/25	Proctored Exam	30/75

Total number of candidates certified in this course: **713**

Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2022
(12 week course)

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

AUTODESK

Mar 7, 2022

ABHIJIT PURUSHOTTAM KAMALE

has successfully completed

Introduction to Mechanical Engineering Design and Manufacturing with Fusion 360

an online non-credit course authorized by Autodesk and offered through Coursera

Andrew Anagnost, President and Chief Executive Officer of Autodesk, Inc.

EDUCATION FOR EVERYONE · coursera · COURSE CERTIFICATE

Verify at:

AUTODESK

Feb 28, 2022

Ankur Rajesh Dongre

has successfully completed with honors

Introduction to Mechanical Engineering Design and Manufacturing with Fusion 360

an online non-credit course authorized by Autodesk and offered through Coursera

Andrew Anagnost, President and Chief Executive Officer of Autodesk, Inc.

AUTODESK

Mar 4, 2022

JYOTI RAKESHKUMAR YADAV

has successfully completed with honors

Introduction to Mechanical Engineering Design and Manufacturing with Fusion 360

an online non-credit course authorized by Autodesk and offered through Coursera

Andrew Anagnost, President and Chief Executive Officer of Autodesk, Inc.

AUTODESK

COURSE
CERTIFICATE

Feb 13, 2022

Kritika Bhambri

has successfully completed

Introduction to Mechanical Engineering Design and Manufacturing with Fusion 360

an online non-credit course authorized by Autodesk and offered through Coursera

EDUCATION FOR EVERYONE

coursera

COURSE CERTIFICATE

Andrew Anagnost, President and Chief Executive Officer of Autodesk, Inc.

AUTODESK

Jun 8, 2022

Mrudul Gopal Khurpude

has successfully completed

Introduction to Mechanical Engineering Design and Manufacturing with Fusion 360

an online non-credit course authorized by Autodesk and offered through Coursera

Andrew Anagnost, President and Chief Executive Officer of Autodesk, Inc.

AUTODESK

Mar 1, 2022

Nalini Madhukar Paunikar

has successfully completed

Introduction to Mechanical Engineering Design and Manufacturing with Fusion 360

an online non-credit course authorized by Autodesk and offered through Coursera

Andrew Anagnost, President and Chief Executive Officer of Autodesk, Inc.

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ANKUR ANIL VAIDHYA

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