Jayawant Shikshan Prasarak Mandal's
JSPM Narhe Technical Campus
S.No.12/2/2 and 14/9 Narhe, **Tal**: Haveli, **Dist.**:Pune-411041
Phone No: + 91 20 2460 8700, 701, 702 **Fax**: + 91 20 2460 8888
Web: www.jspmntc.edu.in
Approved by AICTE New Delhi and DTE Maharashtra
Affiliated to Savitribai Phule Pune University

Prof.(Dr.)T. J.Sawant
B.E,(Elec.), PGDM,Ph.D
Founder - Secretary

Prof.(Dr.) R.K.Lad
B.E.(Civil),M.E.(Env.Engg.),Ph.D(Engg.)
DIRECTOR

Institution offers a course on Human Values and Professional ethics.

Department of Civil Engineering

S. N	Courses offered	Year (Pattern)	Content
1.	Audit Course 1Awareness to Civil Engineering Practices	SE(2015 Course)	Professional Ethics
2.	Audit Course 2Road Safety Management	SE(2015 Course)	Human Values
3.	Soft Skills	SE(2015 Course)	Professional Ethics
4.	Employability Skills development	TE(2015 Course)	Human Values and Professional Ethics

Department of Computer Engineering

S. N	Courses offered	Year (Pattern)	Content
1.	Humanities and Social Sciences	SE(2008 Course)	Human Values
2.	Soft Skills	SE(2008 Course)	Professional Ethics
3.	Finance & Management Information Systems	TE (2008 Course)	Human Values
4.	Soft Skills	SE(2012 Course)	Professional Ethics
5.	Software Engineering and Project Management	TE(2015 Course)	Human Values and Professional Ethics
6.	Soft Skills	SE(2015 Course)	Professional Ethics
7.	Audit Course 1	SE(2015 Course)	Human Values
8.	Audit Course 2	SE(2015 Course)	Human Values, Professional Ethics
9.	Audit Course 3	TE(2015 Course)	Human Values, Professional Ethics
10.	Audit Course 4	TE(2015 Course)	Human Values, Professional Ethics
11.	Seminar and Technical Communication	TE(2015 Course)	Human Values, Professional Ethics

Department of Mechanical Engineering

S.N.	Courses offered	Year (Pattern)	Content
1.	Industrial Management/Business Management	TE (2008 &2012)	Professional Ethics and Human Values
2.	Soft Skills/Employability Skill Development	SE (2012 & 2015)	Professional Ethics and Human Values

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Department of Electronics and Telecommunication Engineering

S.N.	Courses offered	Year (Pattern)	Content
1.	Soft Skills	SE(2012 Course)	Professional Ethics
2.	Value Education	SE(2015 Course)	Human Values
3.	Soft Skills	SE(2015 Course)	Professional Ethics
4.	Audit Course	TE (2015 Course)	Human Values

MBA

S.N.	Courses offered	Year (Pattern)	Content
1.	Introduction to Human Rights and Duties	MBA(2013 Course)	Human Values- Dignity , Liberty, Equality , Justice, Unity in Diversity, Ethics and Morals

MCA

S.N.	Courses offered	Year (Pattern)	Content
1.	Soft Skills	MCA(2015Course)	Professional Ethics
2.	Soft Skills	MCA(2013Course)	Professional Ethics
3.	Soft Skills	MCA(2012Course)	Professional Ethics

Institute offers the Human Values and Professional Ethicscourses for faculty as well. Objectives are to create awareness on professional ethics and Human Values, to provide basic familiarity about faculty as responsible Experimenters, Research Ethics, and Codes of Ethics.

JSPM Narhe Technical Campus Pune Narhe

Dr. R.K. Lad
Director

Savitribai Phule Pune University
S.E. (Civil Engineering) 2015 Course

Semester I												
Course Code	**Course**	**Teaching Scheme Hours / Week**			**Semester Examination Scheme of Marks**						**Credit**	
		Theory (TH)	**Tutorials (TUT)**	**Practical (PR)**	**In-Sem**	**End-Sem**	**TW**	**PR**	**OR**	**Total**	**TH / TUT**	**PR/OR/ TW**
201001	Building Technology and Materials	04	--	02	50	50	50	--	--	150	04	01
207001	Engineering Mathematics III	04	01	--	50	50	50	--	--	150	05	
201006	Surveying	04	--	02	50	50	--	50	--	150	04	01
201002	Strength of Materials	04	--	02	50	50	--	--	50	150	04	01
201003	Geotechnical Engineering	04	--	02	50	50	--	--	50	150	04	01
	Audit Course 1 Awareness to Civil Engineering Practices	--	--	--	--	--	--	--	--	--	Grade	
Total		**20**	**01**	**08**	**250**	**250**	**100**	**50**	**100**	**750**	**25**	

Note: For audit courses students are given certificate by the institutes based on the assignment submitted by them.

Abbreviations: TW: Term Work, **OR:** Oral, **PP:** Passed (Only for non credit courses), **NP:** Not Passed (Only for non credit courses).

Savitribai Phule Pune University
S.E. (Civil Engineering) 2015 Course

Semester II												
Course Code	**Course**	**Teaching Scheme Hours / Week**			**Semester Examination Scheme of Marks**						**Credit**	
		Theory (TH)	**Tutorials (TUT)**	**Practical (PR)**	**In-Sem**	**End-Sem**	**TW**	**PR**	**OR**	**Total**	**TH / TUT**	**PR/OR/ TW**
201004	Fluid Mechanics I	04	--	02	50	50	--	--	50	150	04	01
201005	Architectural Planning and Design of Buildings	04	--	02	50	50	--	50	--	150	04	01
201008	Structural Analysis I	03	01	--	50	50	--	--	--	100	04	--
207009	Engineering Geology	04	--	02	50	50	50	--	--	150	04	01
201007	Concrete Technology	04	--	02	50	50	--	--	50	150	04	01
201010	Soft Skill	--		02	--	--	50	--	--	50	--	01
	Audit Course 2 Road Safety Management	--	--	--	--	--	--	--	--	--	Grade	
		19	**01**	**10**	**250**	**250**	**100**	**50**	**100**	**750**	**25**	

Note: For audit courses students are given certificate by the institutes based on the assignment submitted by them.

Abbreviations: TW: Term Work, **OR:** Oral, **PP:** Passed (Only for non credit courses), **NP:** Not Passed (Only for non credit courses).

Savitribai Phule Pune University, Pune
S.E. (Civil Engineering) 2015 Course
201010: Soft Skill
Credits: 01

Teaching Scheme: **Examination Scheme:**

Practical: 02 hrs/week **Term Work : 50 Marks**

Prerequisites: Basic communication and writing skills in English.

Course Objectives:

1) To help the students in building interpersonal skills.
2) To develop skill to communicate clearly.
3) To enhance team building and time management skills.
4) To learn active listening and responding skills.

Course Outcomes:

On completion of the course, learner will be able to:

1) Make use of techniques for self-awareness and self-development.
2) Apply the conceptual understanding of communication into everyday practice.
3) Understand the importance of teamwork and group discussions skills.
4) Develop time management and stress management.
5) Apply business etiquette skills effectively an engineer requires.

Course Contents

UNIT I: Self Awareness & self Development (04 hrs)

a) Self Awareness: Self Assessment, Self Appraisal, SWOT, Goal setting: Personal & career: Self Assessment, Self-Awareness, Perceptions and Attitudes, Positive Attitude, Values and Belief Systems, Self-Esteem, Self appraisal, Personal Goal setting.

b) Self Development: Career Planning, Personal success factors, Handling failure, Depression and Habit, relating SWOT analysis & goal setting, prioritization.

UNIT II: Communication Skill (06 hrs)

a) Communication: Importance, types, barriers of communication, effective communication.

b) Speaking Skills: Public Speaking, Presentation skills, Group discussion: Importance of speaking effectively, speech process, message, audience, speech style, feedback, conversation and oral skills, fluency and self expression, body language phonetics and spoken English, speaking techniques, word stress, correct stress patterns, voice quality, correct tone, types of tones, positive image projection techniques.

c) Listening Skills: Law of nature: you have 2 ears and 1 tongue so listen twice and speak once is the best policy, Empathic listening, and Avoid selective listening.

d) Group Discussion: characteristics, subject knowledge, oral and leadership skills, team management, strategies and individual contribution and consistency.

e) Presentation skills: planning, preparation, organization, delivery.

f) Written Skills: Formal & Informal letter writing, Report writing, Resume writing: Sentence structure, sentence coherence, emphasis. Paragraph writing. Letter writing skills: form and structure, style and tone. Inquiry letters, Instruction letters, complaint letters, Routine business letters, Sales Letters etc.

UNIT III: Corporate / Business Etiquettes (02 hrs)

a) Corporate / Business Etiquettes: Corporate grooming & dressing, Email & telephone etiquettes, etiquettes in social & office setting: Understand the importance of professional behaviour at the work place, Understand and Implement etiquettes in workplace, presenting oneself with finesse and making others comfortable in a business setting.

b) Importance of first impression, Grooming, Wardrobe, Body language, Meeting etiquettes (targeted at young professionals who are just entering business environment) , Introduction to Ethics in engineering and ethical reasoning, rights and responsibilities.

UNIT IV: Interpersonal relationship (04 hrs)

a) Team work: Team effectiveness, Group discussion, Decision making : Team Communication. Team, Conflict Resolution, Team Goal Setting, Team Motivation Understanding Team Development, Team Problem Solving, Building the team dynamics. Multicultural team activity.

b) Group Discussion (GD): Preparation for a GD, Introduction and definitions of a GD, Purpose of a GD, Types of GD, Strategies in a GD , Conflict management, Do's and Don'ts in GD.

UNIT V: Leadership skills (02 hrs)

a) Leadership: Leaders' role, responsibilities and skill required - Understanding good Leadership behaviors, Learning the difference between Leadership and Management, Gaining insight into your Patterns, Beliefs and Rules.

b) Leadership Qualities: Defining Qualities and Strengths of leadership, Determining how well you perceive what's going on around you, interpersonal Skills and Communication Skills, Learning about Commitment and How to Move Things Forward, Making Key Decisions, Handling Your and Other People's Stress, Empowering, Motivating and Inspiring Others, Leading by example, effective feedback.

UNIT VI: Other skills (02 hrs)

a) Time management: The Time management matrix, apply the Pareto Principle (80/20 Rule) to time management issues, to prioritise using decision matrices, to beat the most common time wasters, how to plan ahead, how to handle interruptions , to maximize your personal effectiveness, how to say "no" to time wasters, develop your own individualized plan of action.

b) Stress management: understanding the stress & its impact, techniques of handling stress

c) Skills: Problem solving skill, Confidence building Problem solving skill, Confidence building.

Books:

Text:

1. Communication Skills by Sanjay Kumar and Pushpa Lata, Oxford University Press.
2. Developing Communication Skill by Krishna Mohan, Meera Banerji, McMillan India Ltd.
3. English for Business Communication by Simon Sweeney, Cambridge University Press.

Reference:

1. Ethics in Engineering Practice and Research by Caroline & Whitbeck, Cambridge University Press.
2. NASSCOM-Global Business Foundation Skills: Accenture, Convergys, Dell et.al. Foundation Books: Cambridge University Press.
3. Basic Managerial Skills by E. H. McGrath, Eastern Economy Edition, Prentice hall India.
4. Personality Development and Group Discussions by Barun K. Mitra, Oxford University Press.
5. Group Discussions and Interview Skills by Priyadarshi Patnaik , Foundation Books , Cambridge University Press.
6. Thinks and Grow Rich by Napoleon Hill, Ebury Publishing, ISBN 9781407029252.
7. Awaken the Giant Within by Tony Robbins HarperCollins Publishers, ISBN-139780743409384.
8. Change Your Thoughts; Change Your Life by Wayne Dyer, Hay House India, ISBN-139788189988050.
9. The Power of Your Subconscious Mind by Dr Joseph Murphy Maanu Graphics , ISBN-13 9789381529560.
10. The new Leaders by Daniel Coleman Sphere Books Ltd , ISBN-139780751533811
11. The 80/20 Principal by Richard Koch, Nicholas Brealey Publishings , ISBN-13 9781857883992.
12. Time management from inside out by Julie Morgenstern, Owl Books (NY), ISBN-13 9780805075908.
13. Wonderland of Indian Manageress by Sharu Ranganekar, Vikas Publishing Houses, ISBN-13 9788125942603.
14. You can win by Shiv Khera, Macmillan, ISBN-139789350591932.
15. The Ace of Soft Skills by Attitude, Communication and Etiquette for Success: Gopalaswamy Ramesh, Mahadevan Ramesh.

Savitribai Phule Pune University, Pune
S.E. (Civil Engineering) 2015 Course

Road Safety Management
Audit Course
(Certificate to be issued by institute based on performance assessment)

Road transport remains the least safe mode of transport, with road accidents representing the main cause of death of people. The boom in the vehicle population without adequate road infrastructure, poor attention to driver training and unsatisfactory regulation has been responsible for increase in the number of accidents. India's vehicle population is negligible as compared to the World statistics; but the comparable proportion for accidents is substantially large.

The need for stricter enforcement of law to ensure greater safety on roads and an environment-friendly road transport operation is of paramount importance. Safety and security are growing concerns for businesses, governments and the traveling public around the world, as also in India. It is, therefore, essential to take new initiatives in raising awareness, skill and knowledge of students as one of the ibid stake holders who are expected to follow the rules and policies of the government in order to facilitate safety of individual and safe mobility of others.

Course Objectives:

1) To provide basic overview on road safety & traffic management issues in view of the alarming increase in vehicular population of the country.
2) To explain the engineering & legislative measures for road safety.
3) To discuss measures for improving road safety education levels among the public.

Course Outcomes:

On completion of the course, learners will:

1) Show changes in awareness levels, knowledge and understanding.
2) Demonstrate a change in attitudes / behavior e.g. against drink-drive.
3) Utilize remedial education for those who make mistakes and for low level offences where this is more effective than financial penalties and penalty points.
4) Improve road safety together leading to casualty reduction

Course Contents

1. Existing Road Transport Scenario
2. Accident Causes & Remedies
3. Road Accident Investigation & Investigation Methods
4. Vehicle Technology – CMVR & Road Safety
5. Regulatory / Legislative Provisions for Improving Road Safety
6. Behavioral Training for Drivers for Improving Road Safety
7. Road Engineering Measures for Improving Road Safety

Guidelines for Conduction (Any one or more of following but not limited to) 1. Guest Lectures. 2. Visits and reports. 3. Assist authorities like RTO for audits (e.g. Particular road safety audit as critical on-site assessment of the shortcomings in the various elements of the road). 4. Mini Project
Guidelines for Assessment (Any one of following but not limited to) 1. Written Test 2. Practical Test 3. Presentation 4. Report

Savitribai Phule University of Pune

Third Year Civil Engineering

(2015 Course)

Semester I

Course Code	Course	Teaching Scheme hour/week			Semester Examination Scheme of marks						Credit	
		Theory	Tutorial	Practical	In-Sem	End-Sem	T W	OR	PR	Total	TH/TUT	PR/OR/TW
301001	Hydrology and water resource engineering.	03	--	02	30	70	--	50	--	**150**	03	01
301002	Infrastructure Engineering and Construction Techniques	03	--	--	30	70	--	--	--	**100**	04	--
301003	Structural Design-I	04	--	04	30	70	50	50	--	**200**	04	02
301004	Structural Analysis-II	04	--	--	30	70	--	--	--	**100**	03	--
301005	Fluid Mechanics-II	04	--	02	30	70	--	50	--	**150**	04	01
301006	Employability Skills development	--	--	02	--	--	50	--	--	**50**	--	01
Total		18	--	10	**150**	**350**	**100**	**150**		**750**	**18**	**05**

Semester II

Course Code	Course	Teaching Scheme hour/week			Semester Examination Scheme of marks						Credit	
		Theory	Tutorial	Practical	In-Sem	End-Sem	T W	OR	PR	Total	TH/TUT	PR/OR/TW
301007	Advanced Surveying	03	--	02	30	70	50	--	--	**150**	03	01
301008	Project Management and Engineering Economics	04	--	--	30	70	--	--	--	**100**	04	--
301009	Foundation Engineering	03	--	--	30	70	--	--	--	**100**	03	--
301010	Structural Design-II	04	--	04	30	70	50	50	--	**200**	04	02
301011	Environmental Engineering-I	04	--	02	30	70	--	--	50	**150**	04	01
301012	Seminar	--	--	01	--	--	--	50	--	**50**	--	01
Total		18	--	09	**150**	**350**	**100**	**100**	**50**	**750**	**18**	**05**

Savitribai Phule Pune University

TE Civil (2015 Course) w.e.f. June 2017

301006 Employability Skills Development

Teaching scheme	Examination scheme
Practical: 2 hours/week	Term Work: 50 Marks

How to handle this course? (02 hours)

This course has been introduced with the objective of enhancing the employability of the students through development of their skills. Following topics and their contents are expected to be explored through following 10 activities.

1. Expert lectures 2.Group discussions 3.Case study analysis 4.Group presentations 5.Company and corporate visits 6.Mock interviews and exercises 7.Demo presentations 8. Audio-video shows 9. Use of e-resources 10.Games.

The term work will consist of detailed report of any 8 out of above 10 activities. The activities which need to be performed in a group will have a group of not more than 6 students. However, the report for the term work will be prepared at individual level.

Unit I (02 hours)

a) What is Employability? What are Employability Skills? Focus on what skills do employers expect from graduates? Career planning with action plan.

Unit –II (02 hours)

b) Interpersonal Skills-Critical Thinking, Assertiveness, Decision Making, Problem Solving, Negotiation, Building Confidence, Time Management, Personal Presentation, Assertiveness, Negotiation, Avoiding Stress.

Unit –III (02 hours)

c) Presentation Skills-Presentation Skills What is a Presentation? Writing Your Presentation Coping with Nerves

Unit –IV (02 hours)

d) Communication Skills-Verbal Communication, Written Communication, Difference between C.V. Bio data and Resume

Unit –V (02 hours)

e) Commercial Awareness-Professional etiquettes and manners, Global negotiating and Persuading, Integrity. Global trends and statistics about civil engineering businesses.

Unit-VI **(02 hours)**

f) Personal skills-Leadership, Ability to work in a team, Conceptual ability, Subject Knowledge and competence, Analysing and investigating, Planning, Flexibility, Self, Lifelong Learning, ,Stress Tolerance, Creativity

Reference Reading

1. Cambridge English for Job Hunting—Colm Downes---Cambridge University Press(ISBN-978-0- 521-14470-4)
2. Polyskills--Foundation books-- Cambridge University Press—(ISBN 978-81-7596-916-2)
3. Global Business Foundation Skills-- Foundation books-- Cambridge University Press—(ISBN 978-81-7596-783-0)

E-Resources

www.skillsyouneed.com/general/employability-skills.html-
*www.kent.ac.uk/careers/sk/top-ten-skills.htm*www.skillsyouneed.com/general/employability-
www.fremont.k12.ca.us/cms/lib04/.../Domain/.../employability-skills.pdf

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Revised Syllabus
Master of Business Administration
(MBA)
Incorporating
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TWO YEAR FULL TIME FOUR SEMESTER POST GRADUATE DEGREE PROGRAMME

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MBA II Year Curriculum Applicable w.e.f. AY 2014-15

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Annexure I - Detailed Programme Structure

Table IV – A: Generic Core Courses

	Generic Core Courses	Credits	Semester	Concurrent Evaluation	Online Evaluation	University Evaluation (Subjective)	Total Marks
101	Accounting for Business Decisions	3	I	30	20	50	100
102	Economic Analysis for Business Decisions	3	I	30	20	50	100
103	Legal Aspects of Business	3	I	30	20	50	100
104	Business Research Methods	3	I	30	20	50	100
105	Organizational Behaviour	3	I	30	20	50	100
106	Basics of Marketing	3	I	30	20	50	100
201	Marketing Management	3	II	30	20	50	100
202	Financial Management	3	II	30	20	50	100
203	Human Resource Management	3	II	30	20	50	100
204	Decision Science	3	II	30	20	50	100
205	Operations & Supply Chain Management	3	II	30	20	50	100
206	Management Information Systems	3	II	30	20	50	100
301	Strategic Management	3	III	30	20	50	100
302	Enterprise Performance Management	3	III	30	20	50	100
303	Startup and New Venture Management	3	III	30	20	50	100
304	Summer Internship Project	6	III	50	00	100	150
401	Managing for Sustainability	3	IV	30	20	50	100
402	Dissertation	2	IV	50	00	00	50

Note: Each Generic Core Course is a Full Credit course of 45 hours. Out of 45 hours, 35 hours shall be devoted to teaching – learning sessions and 10 hours for evaluation/projects.

30 marks shall be reserved for concurrent evaluation to be carried out by the Institute, 20 marks shall be reserved for online mid-term evaluation to be conducted by the University and 50 marks shall be reserved for term end written examination to be conducted by the University.

Course 304 - SIP shall have 6 Credits and 150 marks. (50 Marks for Concurrent Evaluation & 100 Marks for University Evaluation)

Course 402 – Dissertation shall have 2 Credits and 50 marks Concurrent Evaluation.

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Table IV – B: Generic Elective Courses

	Generic Elective Courses	Credits	Semester	Concurrent Evaluation	Total Marks
107	Management Fundamentals	2	I	50	50
108	Business Communication Lab	2	I	50	50
109	MS Excel & Advanced Excel Lab	2	I	50	50
110	Selling & Negotiation Skills Lab	2	I	50	50
111	Business, Government & Society	2	I	50	50
112	Leadership Lab	2	I	50	50
113	Personality Development Lab	2	I	50	50
114	Foreign Language - I Lab	2	I	50	50
115	Enterprise Analysis - Desk Research	2	I	50	50
207	Emotional Intelligence and Managerial Effectiveness Lab	2	II	50	50
208	Statistical Software Lab	2	II	50	50
209	MS Project Lab	2	II	50	50
210	Life Skills Lab	2	II	50	50
211	Geopolitics & the World Economic System	2	II	50	50
212	Business Systems & Procedures	2	II	50	50
213	Computer Aided Personal Productivity Tools Lab	2	II	50	50
214	Foreign Language - II Lab	2	II	50	50
215	Industry Analysis - Desk Research	2	II	50	50

Note: Each Generic Elective Course is a Half Credit course of 30 hours. Out of 30 hours 25 hours shall be devoted to teaching – learning sessions and 5 hours for evaluation/projects.

50 marks shall be devoted for concurrent evaluation to be carried out by the Institute.

There shall not be any evaluation by the University (online / subjective) for all Half Credit Courses.

University of Pune

Table IV – C: Subject Core Courses

	Subject Core Courses (Marketing)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305MKT	Contemporary Marketing Research	3	III	30	20	50	100
306MKT	Consumer Behaviour	3	III	30	20	50	100
403MKT	Services Marketing	3	IV	30	20	50	100
404MKT	Sales and Distribution Management	3	IV	30	20	50	100
	Subject Core Courses (Finance)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305 FIN	Financial Regulatory Framework	3	III	30	20	50	100
306 FIN	Merchant Banking and Financial Services	3	III	30	20	50	100
403 FIN	International Finance	3	IV	30	20	50	100
404 FIN	Corporate Finance	3	IV	30	20	50	100
	Subject Core Courses (Information Technology)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305 IT	I T Management	3	III	30	20	50	100
306 IT	E-Business	3	III	30	20	50	100
403 IT	Software Project Management	3	IV	30	20	50	100
404 IT	Enterprise Resource Planning (ERP)	3	IV	30	20	50	100
	Subject Core Courses (Operations Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305 OPE	Planning & Control of Operations	3	III	30	20	50	100
306 OPE	Inventory Management	3	III	30	20	50	100
403 OPE	Operations Strategy	3	IV	30	20	50	100
404 OPE	Total Quality Management	3	IV	30	20	50	100
	Subject Core Courses (Human Resources Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305 HR	Labour Laws	3	III	30	20	50	100
306 HR	Performance Management	3	III	30	20	50	100
403 HR	Industrial Relations	3	IV	30	20	50	100
404 HR	Strategic Human Resource Management	3	IV	30	20	50	100

University of Pune

	Subject Core Courses (International Business Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305 IB	International Business Economics	3	III	30	20	50	100
306 IB	Export Documentation and Procedures	3	III	30	20	50	100
403 IB	International Business Environment	3	IV	30	20	50	100
404 IB	Indian Economy and Trade Dependencies	3	IV	30	20	50	100
	Subject Core Courses (Supply Chain Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305 SCM	Essentials of Supply Chain Management	3	III	30	20	50	100
306 SCM	Logistics Management	3	III	30	20	50	100
403 SCM	Strategic Supply Chain Management	3	IV	30	20	50	100
404 SCM	Knowledge Management in Supply Chains	3	IV	30	20	50	100
	Subject Core Courses (Rural & Agribusiness Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305RABM	Agriculture and Indian Economy	3	III	30	20	50	100
306RABM	Rural Marketing I	3	III	30	20	50	100
403RABM	Rural Credit and Finance	3	IV	30	20	50	100
404RABM	Rural Marketing II	3	IV	30	20	50	100

University of Pune

	Subject Core Courses (Family Business Management)	Credits	Semester	Concurrent Evaluation	Online Evaluation	University Evaluation (Subjective)	Total Marks
305FBM	Essentials of Family Business Management – I	3	III	30	20	50	100
306 FBM	Managing Innovation - I	3	III	30	20	50	100
403 FBM	Essentials of Family Business Management – II	3	IV	30	20	50	100
404 FBM	Managing Innovation – II	3	IV	30	20	50	100
	Subject Core Courses (Technology Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Online Evaluation**	**University Evaluation (Subjective)**	**Total Marks**
305TM	Fundamentals of Technology Management	3	III	30	20	50	100
306TM	Managing Innovation – I	3	III	30	20	50	100
403TM	Technology Competition and Strategy	3	IV	30	20	50	100
404TM	Managing Innovation – II	3	IV	30	20	50	100

Note: Each Subject Core Course is a Full Credit course of 45 hours. Out of 45 hours, 35 hours shall be devoted to teaching – learning sessions and 10 hours for evaluation/projects.

30 marks shall be reserved for concurrent evaluation to be carried out by the Institute, 20 marks shall be reserved for online mid-term evaluation to be conducted by the University and 50 marks shall be reserved for term end written examination to be conducted by the University.

University of Pune

Table IV – D: Subject Elective Courses

	Subject Elective Courses (Marketing Management)	Credits	Semester	Concurrent Evaluation	Total Marks
307MKT	Integrated Marketing Communications	2	III	50	50
308MKT	Product Management	2	III	50	50
309MKT	Strategic Brand Management	2	III	50	50
310MKT	Personal Selling Lab	2	III	50	50
311MKT	Qualitative Marketing Research	2	III	50	50
312MKT	Customer Relationship Management	2	III	50	50
313MKT	Marketing and the Law	2	III	50	50
314MKT	Finance for Marketing Professionals	2	III	50	50
315MKT	Marketing of Financial Services - I	2	III	50	50
316MKT	Tourism Marketing	2	III	50	50
317MKT	Agricultural Marketing	2	III	50	50
318MKT	Business to Business Marketing	2	III	50	50
405MKT	Retail Marketing	2	IV	50	50
406MKT	Rural Marketing	2	IV	50	50
407MKT	Service Operations Management	2	IV	50	50
408MKT	International Marketing	2	IV	50	50
409MKT	Export Documentation & Procedures	2	IV	50	50
410MKT	Marketing Strategy	2	IV	50	50
411MKT	Marketing Decision Models	2	IV	50	50
412MKT	Marketing of High Technology Products	2	IV	50	50
413MKT	E-Marketing	2	IV	50	50
414MKT	Marketing to Emerging Markets & Bottom of the Pyramid	2	IV	50	50
415MKT	Marketing of Financial Services - II	2	IV	50	50
416MKT	Cross Cultural Relationship Marketing	2	IV	50	50

	Subject Elective Courses (Financial Management)	Credits	Semester	Concurrent Evaluation	Total Marks
307 FIN	Income Tax – I	2	III	50	50
308 FIN	Project Finance	2	III	50	50
309 FIN	Strategic Cost Management	2	III	50	50
310 FIN	Corporate Financial Reporting	2	III	50	50
311 FIN	International Financial Reporting Standards	2	III	50	50
312 FIN	Corporate Financial Restructuring	2	III	50	50
313 FIN	Equity Research	2	III	50	50
314 FIN	Credit Analysis and Appraisal	2	III	50	50

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315 FIN	Banking Operations - I	2	III	50	50
316 FIN	Treasury Management	2	III	50	50
317 FIN	Financial Instruments and Derivatives	2	III	50	50
318 FIN	Financial Statement Analysis	2	III	50	50
319 FIN	Futures & Options	2	III	50	50
320 FIN	Back Office Operations	2	III	50	50
321 FIN	Principles of Insurance	2	III	50	50
322 FIN	Rural Financial Institutions	2	III	50	50
323 FIN	Social finance for Inclusive Growth - I	2	III	50	50
405 FIN	Income Tax – II	2	IV	50	50
406 FIN	Infrastructure Finance	2	IV	50	50
407 FIN	Behavioral Finance	2	IV	50	50
408 FIN	Financial Modeling Using Excel	2	IV	50	50
409 FIN	Indirect Taxation	2	IV	50	50
410 FIN	Financial Risk Management	2	IV	50	50
411 FIN	Online Trading of Financial Assets	2	IV	50	50
412 FIN	Banking Operations – II	2	IV	50	50
413 FIN	Wealth & Portfolio Management	2	IV	50	50
414 FIN	Fixed Income Securities	2	IV	50	50
415 FIN	Technical Analysis	2	IV	50	50
416 FIN	Commodity Markets and Derivatives	2	IV	50	50
417 FIN	Practice of Life Insurance	2	IV	50	50
418 FIN	Information Systems Audit	2	IV	50	50
419 FIN	Practice of General Insurance	2	IV	50	50
420 FIN	Financing Rural Development	2	IV	50	50
421 FIN	Social finance for Inclusive Growth - II	2	IV	50	50

	Subject Elective Courses (Information Technology Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Total Marks**
307 IT	Software Engineering	2	III	50	50
308 IT	Mobile Computing with Android	2	III	50	50
309 IT	RDBMS with Oracle	2	III	50	50
310 IT	Software Quality Assurance	2	III	50	50
311 IT	E-Learning	2	III	50	50
312 IT	Software Marketing	2	III	50	50
313 IT	Business Intelligence and Analytics	2	III	50	50
314 IT	Cyber Laws	2	III	50	50
315 IT	IT for Retailing	2	III	50	50
316 IT	Technical Writing	2	III	50	50
405 IT	Web Designing and Multimedia	2	IV	50	50

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406 IT	Network Technologies and Security	2	IV	50	50
407 IT	Data Base Administration	2	IV	50	50
408 IT	Software Testing	2	IV	50	50
409 IT	Information Security and Audit	2	IV	50	50
410 IT	Data Warehousing and Data Mining	2	IV	50	50
411 IT	Geographical Information Systems	2	IV	50	50
412 IT	E-Governance	2	IV	50	50
413 IT	Internet Marketing	2	IV	50	50
414 IT	Microsoft Office 2010 Lab	2	IV	50	50

	Subject Elective Courses (Operations Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Total Marks**
307 OPE	Productivity Management	2	III	50	50
308 OPE	Maintenance Management	2	III	50	50
309 OPE	Facilities Planning	2	III	50	50
310 OPE	Manufacturing Resource Planning	2	III	50	50
311 OPE	Technology Management	2	III	50	50
312 OPE	Six Sigma	2	III	50	50
313 OPE	Designing Operations Systems	2	III	50	50
314 OPE	Toyota Production System	2	III	50	50
315 OPE	Project Management	2	III	50	50
316OPE	Theory of Constraints	2	III	50	50
405 OPE	Quality Management Standards	2	IV	50	50
406 OPE	World Class Manufacturing	2	IV	50	50
407 OPE	Business Process reengineering	2	IV	50	50
408 OPE	Enterprise Resource Planning	2	IV	50	50
409 OPE	Financial Perspectives in Operations Management	2	IV	50	50
410 OPE	Service Operations Management	2	IV	50	50
411 OPE	Modeling Techniques for Operations	2	IV	50	50
412 OPE	Business Process Management	2	IV	50	50
413 OPE	Challenges and Opportunities in Operations Management	2	IV	50	50
414 OPE	Lean Manufacturing	2	IV	50	50

	Subject Elective Courses (Human Resources Management)	**Credits**	**Semester**	**Concurrent Evaluation**	**Total Marks**
307 HR	Employee Health & Safety	2	III	50	50
308 HR	Employee Welfare	2	III	50	50
309 HR	HR Audit	2	III	50	50
310 HR	Human Resource Information System	2	III	50	50

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Semester	III	Specialization	HRM
Course Code	310HR	Type	Subject - Elective
Course Title	Human Resource Information System		

Course Objectives:	
1	To learn fundamental principles of HRIS
2	Developing specific HRIS skills competencies needed by professionals

Syllabus:

Unit Number	Contents	Number of Sessions
1	**Introduction To Human Resource Management And Human Resource Information Systems:** Evolution of Human Resource Management and Human Resource Information Systems: The Role of Information Technology, Database Concepts and Applications in Human Resource Information Systems, Systems Considerations in the Design of an HRIS: Planning for Implementation	5 + 1
2	**Determining Human Resource Information System's Needs:** Human Resource Information Systems Needs Analysis, System Design and Acquisition, HR Metrics and Workforce Analytics, Cost Justifying Human Resource Information Systems Investment	5 + 1
3	**Resource Information Systems ImplementationAndAcceptance:** Human Resource Information Systems Project Management, Change Management: Implementation, Integration and Maintenance of the Human Resource Information Systems	3 + 1
4	**Human Resource Information Systems Applications:** Human Resource Administration and Human Resource Information Systems, Talent Management 1: Job Analysis and Human Resource Planning, Recruitment and Selection in an Internet Context, Training and Development: Issues and Human Resource Information Systems Applications, Performance Management, Compensation, Benefits, Payroll and the Human Resource Information Systems, International Human Resource Management	7 + 1
5	**Special Topics In Human Resource Information Systems:** Information Security and Privacy in Human Resource Information Systems, The Future of Human Resource Information Systems: Emerging Trends in Human Resource Management and Information Technology	5 + 1

Learning Resources:		
1	Text Books	Human Resource Information Systems- Basics, Application, Future and Direction by Dr. Michael Kavanagh and Dr. Mohan Thite
2	Reference Books	Human Resource Information System by P.K.Gupta and Sushil Chaabra
3	Supplementary Reading Material	Human Resource Management by Gary Dessler, Pearson Publication
4	Websites	http://smallbusiness.chron.com/advantages-disadvantages-human-resource-information-system-2107.html
5	Journals	International Journal of Human Resource Management Human Resource Management Journal Human Resource Management

Under Revision

Course Structure for S.E. (Electronics/Electronics & Telecommunication Engineering)

2012 Course (w.e.f. June-2013)

SEMESTER-I										
Subject Code	**Subject**	**Teaching Scheme Hrs/Week**			**Examination Scheme**					**Marks**
		Lect	**Tut**	**Pr**	**Theory Online**	**Tw**	**Pr**	**Or**	**Theory Paper**	**Total**
204181	Signals & Systems	4	1	-	50	25	-	-	50	125
204182	Electronic Devices & Circuits	4	-	2	50	-	50	-	50	150
204183	Network Theory	3	1	-	50	25	-	-	50	125
204184	Data structures & Algorithms	4	-	2	50	-	-	50	50	150
204185	Digital Electronics	4	-	2	50	-	50	-	50	150
204186	Electronic Measuring Instruments & Tools	1	-	2	-	50	-	-	-	50
	Total	**20**	**2**	**8**	**250**	**100**	**100**	**50**	**250**	**750**
SEMESTER-II										
Subject Code	**Subject**	**Teaching Scheme Hrs/Week**			**Examination Scheme**					**Marks**
		Lect	**Tut**	**Pr**	**Theory Online**	**Tw**	**Pr**	**Or**	**Theory Paper**	**Total**
207005	Engineering Maths-III	4	1	-	50	25	-	-	50	125
204187	Integrated Circuits	3	-	2	50	-	50	-	50	150
204188	Control Systems	3	1	-	50	25	-	-	50	125
204189	Analog Communication	4	-	2	50	-	50	-	50	150
204190	Computer Organization	3	-	-	50	-	-	-	50	100
204191	Object Oriented Programming	2	-	2	-	25	-	50	-	75
204192	Soft Skills	1	-	2	-	25	-	-	-	25
	Total	20	2	8	250	100	100	50	250	750

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204192 Soft Skills

Teaching Scheme:
Lectures: 1 Hrs/ Week
Practical : 2 Hr/Week

Examination Scheme:
Term work : 25 Marks

Course Objectives and Outcomes

The objective of this course to help the students to develop as team member, leader and all round professional in the long run. This course would focus on over all personality development of the student and to improve his technical writing and documentation.

Having successfully completed this course, the student will be able to:

1. Communicate, interact and present his ideas to the other professionals.
2. Understand and aware of importance, role and contents of soft skills through instructions, knowledge acquisition, demonstration and practice.
3. Have right attitudinal and behavioral aspects, and build the same through activities.
4. Possess right professional and social ethical values.

UNIT I: Self Awareness and self Development **2L**

Self-Assessment, Self-Awareness, Perceptions and Attitudes, Positive Attitude, Values and Belief Systems, Self-Esteem, Self appraisal, Personal Goal setting, Career Planning, Personal success factors, Handling failure, Emotional Intelligence, Lateral thinking, Depression and Habit, relating SWOT analysis & goal setting, prioritization.

UNIT II: Communication Skill **2L**

Importance of communication, Aspects of communication, communication through words, communication through body language, communication through technology, Oral communication, Listening Skills, Group Discussion and Interview Skills, Presentation skills: preparing the presentation, performing the presentation, Written communication: Reading comprehension, précis

writing, Business and technical reports, Styles, Business correspondence, Memorandum writing, Notice, Agenda and Minutes, Research papers and articles, Advertising and job Description, Mechanics of Manuscript preparation.

UNIT III: Interpersonal relationship **3L**

Team work, Team effectiveness, Group discussion, Decision making - Team Communication. Team, Conflict Resolution, Team Goal Setting, Team Motivation Understanding Team Development, Team Problem Solving, Building the team dynamics, Multicultural Diversity and Socialising

UNIT IV: Leadership Skills **2L**

Leaders: their skills, roles, and responsibilities. Vision, Empowering and delegation, motivating others, organizational skills, team building, Organizing and conducting meetings, decision making, giving support, Vision, Mission, Coaching, Mentoring and counselling, Appraisals and feedback, conflict, Power and Politics, Public Speaking.

UNIT V: Other Skills **2L**

Managing Time, Managing Stress, Meditation. Improving personal memory, Study skills that include Rapid Reading, Notes Taking, Self learning, Complex problem solving and creativity, listening skills and speaking skills, Corporate and Business Etiquettes.

Unit VI: Ethics in Engineering Practice and Research **3L**

Introduction to ethical reasoning and engineer ethics, Right and responsibilities regarding Intellectual property, workplace rights and responsibilities, Central Professional Responsibilities of Engineers, Responsibility for environment.

Term Work/Assignments

1. SWOT analysis
2. Personal & Career Goal setting – Short term & Long term
3 Presentation Skill
4. Letter/Application/Notice/Agenda/Minutes writing
5. Report writing
6. Listening skills using Language laboratory
7. Group discussion
8. Resume writing
9. Team Activity
10. Public Speaking

*** Perform any 8 exercises out of above 10 with exercise no. 6 as compulsory.**

Text Books:

1. Developing Communication Skill : Krishna Mohan, MeeraBanerji,- MacMillan India Ltd.
2. B N Ghosh, : Managing Soft Skills for Persanality Development " Mc Graw Hill
3. Ethics in Engineering Practice and Research: Caroline Whitbeck, Cambridge University press
4. A Course In Communication Skills : Kiranmai Dutt , Cambridge University press
5. English for Business Communication : Simon Sweeney , Cambridge University Press
6. Basics Of Communication In English : Francis Sounderaj, MacMillan India Ltd.
7. Group Discussions and Interview Skills : Priyadarshi Patnaik , Cambridge University Press
8. Professional Presentations : Malcolm Goodale, Cambridge University Press
9. An Introduction to Professional English And Soft Skills : Das , Cambridge University Press
10. A practical course in Effective English speaking skills , G.K.Gangal, PHI Publication
11. A practical course in Effective English writing skills , G.K.Gangal, PHI Publication

Reference Books:

1. A course in Listening and Speaking Vol I &Vol II, V.Sasikumar, P. Kiranmai, Geetha Rajeevan, Cambridge University Press
2. A Handbook For English Language Laboratories : E. Sureshkumar , Cambridge University Press.

3. Cambridge English For Job Hunting : ColmDownes, Cambridge University Press
4. Communication Skills : Sanjay Kumar and Pushpa Lata , Oxford University Press
5. Personality Development and Group Discussions: Barun K. Mitra, Oxford University Press
6. The Complete Letter Writter :MacMillan India Ltd.
7. Simple Ways To Manage Stress :PramodBatra, MacMillan India Ltd.
8. You Can Win (New Edition with CD): Shiv Khera , MacMillan India Ltd.
9. Rob Younge's Insider Guide To Successful Interviews , MacMillan India Ltd.
10. Study Writing – A Course In Writing Skills : Hamp-Lyons &Heasley, Cambridge University Press
11. Essential Grammar in Use with Answers - With CD : Raymond Murphy, Cambridge University Press
12. E Writing – 21st Century Tools for Effective Communication :Booher , MacMillan India Ltd.
13. Creative English Communication : Krishnaswamy , MacMillan India Ltd.
14. NASSCOM-Global Business Foudation Skills: Cambridge University Press
15. Time management from inside out: Julie Morgenstern, Owl Books (NY),ISBN-139780805075908
16. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success: Gopalaswamy Ramesh, Mahadevan Ramesh , Pearson Education

SE(E&TC/Electronics Engineering) 2015 Course

(With effect from Academic Year 2016-17)

Semester II

Course Code	Course	Teaching Scheme Hours / Week			Semester Examination Scheme of Marks						Credit	
		Theory	Tutorials	Practicals	In-Sem (on line)	End-Sem (Theory)	TW	PR	OR	Total	TH/TUT	PR+OR
207005	Engineering Mathematics III	4	1	-	50	50	25	-	-	125	5	-
204187	Integrated Circuits	4	-	2	50	50	25	50	-	175	4	1
204188	Control Systems	3	-	-	50	50	-	-	-	100	3	-
204189	Analog Communication	3	-	2	50	50	-	50	-	150	3	1
204190	Object Oriented Programming	3	-	4	50	50	-	-	50	150	3	2
204191	Employability Skill Development	2	-	2	-	-	50	-	-	50	2	1
204193	**Audit Course 2**	--	--	--	--	--	--	--	--	--		
	Total	19	1	10	250	250	100	100	50	750	20	05
									Total Credits		**25**	

Abbreviations:

TH: Theory
TW: Term Work
OR: Oral
TUT: Tutorial
PR: Practical

Note: Interested students of S.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

204191 EMPLOYABILITY SKILL DEVELOPMENT

Credits:Th – 02, Pr -01

Subject Code:

Teaching Scheme		**Examination Scheme**
Theory / Week	**: 2 Hrs**	**Term Work: 50 Marks**
Practical /Week	**: 2Hrs.**	

Course Objectives:

1. To develop analytical abilities
2. To develop communication skills
3. To introduce the students to skills necessary for getting, keeping and being successful in a profession.
4. To expose the students to leadership and team-building skills.

Course Outcomes: On completion of the course, student will be able to:

1. Have skills and preparedness for aptitude tests.
2. Be equipped with essential communication skills (writing, verbal and non-verbal)
3. Master the presentation skill and be ready for facing interviews.
4. Build team and lead it for problem solving.

Unit I :Soft Skills & Communication basics (4Hrs)

Soft skills Vs hard skills, Skills to master, Interdisciplinary relevance, Global and national perspectives on soft skills. Resume, Curriculum vitae, 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

Unit II: Arithmetic and Mathematical Reasoning (4 Hours)

Aspects of intelligence, Bloom taxonomy, multiple intelligence theory, Number sequence test, mental arithmetic (square and square root, LCM and HCF, speed calculation, reminder theorem)

Unit III: Analytical Reasoning and Quantitative Ability (4 Hours)

Matching, Selection, Arrangement, Verifications (Exercises on each of these types). Verbal aptitude (Synonym, Antonym, Analogy)

Unit IV: Grammar and Comprehension (4 Hours)

English sentences and phrases, Analysis of complex sentences, Transformation of sentences, Paragraph writing, Story writing, Reproduction of a story, Letter writing, précis writing, Paraphrasing and e-mail writing.

Unit V: Skills for interviews (4Hours)

Interviews- types of interviews, preparatory steps for job interviews, interview skill tips, Group discussion- importance of group discussion, types of group discussion, difference between group discussion, panel discussion and debate, personality traits evaluated in group discussions, tips for successful participation in group discussion, Listening skills- virtues of listening, fundamentals of good listening, Non-verbal communication-body movement, physical appearance, verbal sounds, closeness, time.

Unit VI: Problem Solving Techniques (4 Hours)

Problem solving model: 1. Define the problem, 2. Gather information, 3. Identify various solution, 4. Evaluate alternatives, 5. Take actions, 6. Evaluate the actions.

Problem solving skills: 1. Communicate. 2. Brain storming, 3. Learn from mistakes.

Text Books:

1. R. Gajendra Singh Chauhan, Sangeeta Sharma, “Soft Skills- An integrated approach to maximize personality”, ISBN: 987-81-265-5639-7, First Edition 2016, Wiley.
2. Wren and Martin, "English grammar and Composition", S. Chand publications.
3. R. S. Aggarwal, "A modern approach to verbal reasoning", S. Chand publications.

Reference Books:

1. Philip Carter, "The Complete Book Of Intelligence Test", John Willey & Sons Ltd.
2. Philip Carter, Ken Russell, "Succeed at IQ test", Kogan Page
3. Eugene Ehrlich, Daniel Murphy, "Schaum’s Outline of English Grammar", McGraw Hills.
4. David F. Beer, David A. McMurrey, “A Guide to Writing as an Engineer”, ISBN : 978-1-118-30027-5 4th Edition, 2014, Wiley.

List of Practical:

1. Every student should collect five questions of each type
   a. Number sequence
   b. Mental arithmetic
   c. Square, square roots
   d. LCM, HCF
   e. Speed calculations

   Note: Teacher should distribute the question set randomly amongst the students.

2. Write up on
    a. Blooms taxonomy
    b. Multiple intelligence theory
    c. Every student should identify his/her strength and weaknesses
    d. Action plan to improve the weaknesses
3. Every student should collect five questions of each type
    a. Matching
    b. Selection
    c. Arrangements
    d. Verifications

    Note: Teacher should distribute the question set randomly amongst the students.

4. Every student should collect five questions of each type
    a. Verbal aptitude
    b. Synonym
    c. Antonym
    d. Analogy

Note: Teacher should distribute the question set randomly amongst the students.

5. Solve exercises from book (Wren and Martin, "English grammar and Composition") based on
    a. English sentences and phrases
    b. Paragraph writing
    c. Story writing
    d. Letter writing
6. Formulate suitable assignment to solve a real problem using problem solving techniques
7. Practice tests (aptitude, analytical abilities, logical reasoning)
8. Extempore, group discussions and debate.
9. Technical report writing and Seminar Presentation.
10. Mock interviews.

Third Engineering-E&TC (2015 Course)

(With effect from Academic Year 2017-18)

Semester I												
Course Code	**Course**	**Teaching Scheme Hours / Week**			**Semester Examination Scheme of Marks**						**Credits**	
		Theory	**Tutorials**	**Practicals**	**In-Sem**	**End-Sem**	**TW**	**PR**	**OR**	**Total**	**TH/TW**	**PR+OR**
304181	Digital Communication	4	--	--	30	70	--	--	--	100	4	--
304182	Digital Signal Processing	4	--	--	30	70	--	--	--	100	4	--
304183	Electromagnetics	3	1	--	30	70	--	--	--	100	4	--
304184	Microcontrollers	3	--	--	30	70	--	--	--	100	3	1
304185	Mechatronics	3	--	--	30	70	--	--	--	100	3	1
304191	Signal Processing and Communications Lab (DC/DSP)	--	--	4	--	--	50	50		100	--	2
304192	Microcontrollers and Mechatronics Lab	--	--	4	--	--	50	50		100		
304193	Electronics System Design	2	--	2	--	--	-	--	50	50	2	1
	Audit Course 3	--	--	--	--	--	--	--	--	--	----	
	Total	19	1	10	150	350	100	100	50	750		
										Total Credits	**25**	

Abbreviations:

TH: Theory **OR: Oral**
TW: Term Work **PR: Practical**

Note: Interested students of T.E (Electronics/E&TC) can opt any one of the audit course from the audit courses prescribed by BoS (Electronics/Computer/IT/Electrical/Instrumentation)

Audit Course 3

Japanese Language Audit Course

With changing times, the competitiveness has gotten into the nerves and 'Being the Best' at all times is only the proof of it. Nonetheless, 'being the best' differs significantly from 'Communicating the best'! The best can merely be communicated whilst using the best… suited Language!!

Japanese is the new trend of 21st century. Not only youngsters but even the professionals seek value in it. It is the engineer's companion in current times with an assertion of a thriving future. Pune has indisputably grown to become a major center of Japanese Education in India while increasing the precedence for Japanese connoisseurs.

Japanese certainly serves a great platform to unlock a notoriously tough market & find a booming career. While the companies prefer candidates having the knowledge of the language, it can additionally help connect better with the native people thus prospering in their professional journey. Learning Japanese gives an extra edge to the 'resume' since the recruiters consciously make note of the fact it requires real perseverance and self-discipline to tackle one of the most complex languages.

It would be easy for all time to quit the impossible; however it takes immense courage to reiterate the desired outcomes, recognize that improvement is an ongoing process and ultimately soldier on it.

The need of an hour is to introduce Japanese language with utmost professionalism to create awareness about the bright prospects and to enhance the proficiency and commitment. It will then prove to be the ultimate path to the quest for professional excellence!

Course Objectives:

- To meet the needs of ever growing industry with respect to language support.
- To get introduced to Japanese society and culture through language.

Course Outcomes:

On completion of the course

- One will have ability of basic communication.
- One will have the knowledge of Japanese script.
- One will get introduced to reading , writing and listening skills
- One will develop interest to pursue professional Japanese Language course.

Course Duration: 4 semesters (3 units / semester)

Unit 1 : Introduction to Kanji Script,

Describing one's daily routine. To ask what someone does.

Expressions of Giving & Receiving.

Unit 2 : Adjectives (Types of adjectives)

Asking impression or an opinion about a thing / person / place that the listener

Has experienced, visited, or met

Describing things / person / places with the help of the adjectives.

Unit 3 : Expressions of Like & Dislikes. Expressing one's ability, hobby

Comparison between objects, persons & cities

Audit Course 3

Cyber and Information Security

Course objective :

1.Students will able to learn the issues of security in IT

2. Students will able to investigate various security threats in IT

Course Outcomes :

On completion of course students

1. will increase the awareness about cyber security

2. will increase the awareness about information and network security

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Basic Concepts of Technology and Law

Basics of Information Technology, Basics of Indian Legal System, Information Technology Act 2000 (Amended), Relevant Amendments in all other laws.E-ContractThe essence of digital contracts, Law of Contract, Construction of E-contracts, Issues of security, Employment contracts, Consultant Agreements and Digital signature

Intelligent Property Issues in Cyber space: Doman names and related issues, Copyright in digital media, Patents in cyber world. Rights of Neitzens and E- Governance:Privacy and freedom issues in cyber world, E-Governance, Cyber crimes and Cyber laws.

Information Security Fundamentals:Background, Importance, Statistics, National and International Scenario, Goals of security, Confidentiality, Privacy, Integrity, Non-repudiation, Availability.

Essentials of computer security - Sources of security threats – Intruders, Viruses, Worms and related threats - Threat identification - Threat analysis -Vulnerability identification and Assessment.

Security Investigation: Need for Security, Business Needs, Threats, Attacks, Legal, Ethical and Professional Issues Access Control, Intrusion Detection and Server Management, Firewalls: Overview of Identification and Authorization, Overview of IDS, Intrusion, Detection Systems and Intrusion Prevention Systems, User Management, Overview of Firewalls, Types of Firewalls, DMZ and firewall features

Security Policies and Management: Security Policy Design, Designing Security Procedures, Risk Management and Assessment Techniques, Security stan

dards, Security Models.Security Management Practices, Security Laws, Information Classificatio

n Process, Risk Management, Security Proceduresand Guidelines, Business Continuity and Disaster Recovery, Ethics and Best Practices, Security Assurance

University of Pune

Syllabus for Masters of Computer Application

For Academic Year 2012-2013

Semester I				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
1	IT11	Computer Organization	30	70
2	IT12	C Programming	30	70
3	IT13	Software Engineering	30	70
4	BM11	Principles and Practices of Management and Organizational Behavior	30	70
5	BM12	Business Process Domains with Cost and Financial Accounting	70	
6	MT11	Discrete Mathematics	30	70
7	IT11P	Mini project using C	70	
8	SS1L	Soft Skill – Word Power, Business English	30	
9	BM12L	Business Process Domains with Cost and Financial Accounting	30	
		Total	**350**	**350**

Semester II				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
1	IT21	Object Oriented Programming with C++	30	70
2	IT22	Database Management System	30	70
3	IT23	Operating system Concepts	30	70
4	BM21	Management Information System and Business Intelligence	30	70
5	IT24	Enterprise Resource Planning	30	70
6	BM22	Soft Skills	70	
7	IT21L	Mini Project using C++	50	
8	IT22L	Mini Project based on RDBMS Concept	50	
9	SS2L	Soft Skill – Group Discussion	30	
		Total	**350**	**350**

Semester III				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
1	IT31	Web Technologies	30	70
2	IT32	Data Communication And Computer Networks	30	70
3	IT33	Data Structure using C++	30	70
4	IT34	Advanced Database management System	30	70
5	IT35	Object Oriented Analysis And Design	30	70
6	MT31	Research Methodology and Tools	70	
7	IT31P	Mini Project based on Web Technology	50	
8	IT31L	Mini Project based on Data Structure concept	50	
9	SS3L	Soft Skill – Technical Writing	30	
		Total	**350**	**350**

Colleges are encouraged to invite the ERP vendors and demonstrate Programming languages used for developing and customization of ERP and also study the Post implementation changes in the organization.

Semester II				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
6	BM22	Soft Skills	70	

Objectives:

1. To encourage the all round development of students by focusing on soft skills.
2. To make student aware about the importance, the role and the content of soft skills through instruction, knowledge acquisition, and practice.
3. To develop and nurture the soft skills that help develop student as a team member, leader, and all round professional in long run have been identified and listed here for references. As the time professional in long run have been identified and listed here for references the time allotment for the soft skill laboratory as small and the fact that the skills are nurtured over years, students are encouraged to follow these skills as self study and self driven process.

GuideLine: List of Reference Books is mentioned Topicwise at the end of Soft Skills Syllabus.

Sr. No	Topic Details	Nos. Of Sessions	%	References
1	1.1 Self Development and Assessment 1.2 Self-Assessment 1.3 Self-Awareness, 1.4 Perception and Attitudes 1.5 Values and Belief System 1.6 Personal Goal Setting 1.7 Career Planning, 1.8 Self-Esteem, 1.9 Building of Self-Confidence	10	15	
2	2.1 Components of communication, Principles of communication barriers, listening skills Verbal Communication 2.2 Includes Planning 2.3 Preparation 2.4 Delivery, Feedback and Assessment of activities like Public speaking Group Discussion Oral Presentation skills, Perfect Interview Listening and observation skills, Body language 2.5 Use of Presentation graphics, 2.6 Use of Presentation aids, Study of communication.	10	25	

3	3.1 Written Communication 3.2 Technical Writing-Technical Reports 3.3 Project Proposals, 3.4 Brochures, 3.5 Newsletters, 3.6 Technical Articles 3.7 Technical Manuals 3.8 Official/Business Correspondence Business letters Memos 3.9 Progress report, Minutes of meeting, Event reporting, Use of style, Grammar and Vocabulary for effective technical writing, 3.10 Use of: Tools, Guidelines for technical writing, Publishing	12	25	
4	4.1 Ethics and Etiquettes 4.2 Business Ethics 4.3 Etiquettes in social as well as Office settings 4.4 Email etiquettes 4.5 Telephone Etiquettes 4.6 Engineering ethics and ethics as an IT professional, Civic Sense.	3	15	
5	5.1 Other Skills 5.2 Managing time 5.3 Meditation 5.4 Understanding roles of Engineer and their Responsibility 5.5 Exposure to work environment And culture in today's job Places 5.6 Improving Personal Memory, Study skills that include Rapid reading, Notes taking, Complex problem solving, creativity.	5	20	

Guidelines for term-work: Marks 50 List of Possible Assignments:

1. Write a personal essay and or resume or statement of purpose which may include:
   - Who am I (family background, past achievements, past activities of significance)
   - Strength and weakness (how to tackle them) (SWOT analysis)
   - Personal Short-term Goals, long-term goals and action plan to achieve them
   - Self-assessment on soft-skills
2. Student could review and present to a group from the following ideas
   - Book review
   - Biographical Sketch
   - Any topic such as an inspirational story/personal values/beliefs/current topic
   - Ethics and etiquettes and social responsibilities as professional.
3. Student will present to a group from the following ideas

- Multimedia based oral presentation on any topic of choice (Business/Technical)
- Public speaking exercise in the form of debate or elocution on any topic of Choice

4. Student will undergo two activities related to verbal/non-verbal skills from Following
   - Appearing for mock personal interviews
   - Participating in group discussion on current affairs/Social Issue/ethics and etiquettes
   - Participating in games, role-playing exercises to highlight nonverbal skills.
5. Student will submit one technical document from the following:
   - Project proposal
   - Product brochure
   - Literature survey on any one topic
   - User Manual
   - Technical Help
6. Student will submit one business document from the following
   - A representative official correspondence
   - Minutes of meeting
   - Work progress report
7. Students will participate in one or two activities from following:
   - Team games for team building
   - Situational games fro role playing as leaders, members -Organizing mock events -Conducting meetings
8. Faculty may arrange one or more sessions from following :
   - Yoga and mediation
   - Stress management, relaxation exercises and fitness exercises -Time management and personal planning sessions -Improving memory skills -Improving leadership skills -Improving English conversation skills -Reading comprehension skills & notes taking skills 9. Students' own SWOT Analysis

Students are expected to keep a personal record of any six activities that they conduct in the soft skill laboratory in the form of a journal. All students need note to do the same assignments. Institute having a freedom within the framework to customize set of activities to be followed.

Assessment Guidelines for term-work assessment

1. Written Communications 20 marks
   - Students could submit for example
   - Personal resume, essay
   - Technical document or business document
2. Spoken communication 20 marks
   - One elocution event of say 8-10 minutes individually
   - One group discussion or group presentation event
3. Overall participation in soft skills based lab activities 10 marks
   - Attendance and enthusiasm
   - Participation and contribution in event management, organizing
   - Group games, group exercises, interpersonal skills observed

- Quality of journal for soft skills laboratory indicating personal progress, participation.

4. Guidelines for batch wise Time management for laboratory sessions
   (Two hour session at a time)
   - Batches could be of size 25 to 30 students.
   - Written communication exercises could be done for whole batch at same time.
     (3 Sessions)
   - Spoken communications exercises can be done with around 10-15 students covered in one two hour slot so total need for exercises.
     (2 sessions)
5. Group discussions could be done for groups of 5-8 students at a time for half so total need for two group discussions for each student of the batch will be required.
   (2 sessions)
6. Sessions could be organized for trainers to give directions, knowledge, experience sharing or common viewing of training material on Video etc.
   (4 sessions)
7. Group exercises for team building, role playing and interaction with professional.
   (3 sessions)

References for students for self-improvement by self-study

Topic 1: Any good book like

1. You Can Win - Shiv Khera - Macmillan Books - 2003 Revised Edition
2. 7 Habits of Highly effective people - Stephen Covey, Pocket Books
3. Business Communication? Asha Kaul, PHI
4. Business Communication - M. Balasubramanyam

Topic 2 and 3:

1. John Collin, "Perfect Presentation", Video Arts MARSHAL
2. Jenny Rogers " Effective Interviews", Video Arts MARSHAL
3. Raman Sharma, " Technical Communications", OXFORD
4. Sharon Gerson, Steven Gerson "Technical writing process and product", Pearson Education Asia, LPE third edition.
5. R. Sharma, K. Mohan, Business correspondence and report writing", TAG McGraw Hill ISBN 0-07-044555-9
6. Video for technical education catalog, National education and Information Films Ltd. Mumbai.
7. Management training and development catalog, National education and Information Films Ltd. Mumbai.
8. XEBEC, "Presentation Book 1,2,3", Tata McGraw-Hill, 2000,ISBN 0-40221-3

Topic 4 and 5:

1. Tim Hindle, "Reducing Stress", Essential Manager series Dk Publishing
2. Sheila Cameron, "Business student Handbook", Pitman Publishing
3. Dr. R. L. Bhatia, " Managing time for competitive edge"

4. Lorayne Lucas "Memory Book"
5. Robert Heller, "Effective leadership", Essential Manager series Dk Publishing
6. Newstrom Keith Davis," Organizational Behavior', Tata McGraw-Hill, 0-07-460358-2

It is proposed that expert from industry be invited to conduct lectures and workshops to understand the industry soft-skill requirement.

Semester II				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
7	IT21L	Mini Project using C++	50	

Objective : This project work provides hands-on for OOP and C++ language learnt in theory session.

C++ Programming concepts on class, inheritance, abstraction, encapsulation, dynamic binding, polymorphism, I/IO systems, exception handling should be covered

Semester II				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
8	IT22L	Mini Project based on DBMS concept	50	

Objective : This project work will enhance database handling, data manipulation and data processing skills through SQL & PL/SQL, which will help them in developing data centric computer applications.

Sr. No.	Topic Details
1	Overview of RDBMS, Oracle introduction
2	Introduction of SQL DDL, DML, DTL Basic Data Types Char, varchar/varchar2, long, number, Fixed & floating point Date, CLOB, BLOB
3	Table Constraint definition Commands to create table
4	Commands for table handling Alter table, Drop table, Insert records
5	Commands for record handling Update, Delete Select with operators like arithmetic, comparison, logical Query Expression operators Ordering the records with orderby Grouping the records
6	SQL functions Date, Numeric, Character, conversion Group functions avg, max, min, sum, count
7	Set operations Union, Union all, intersect, minus
8	Join concept Simple, equi, non equi, self, outer join

Semester I		
Subject Code	**Subject Title**	**Useful Websites**
IT11	Computer Organization	www.intel.com www.intel.in
IT12	C Programming	http://www.lysator.liu.se/c/bwk-tutor.html (Brian W. Kernighan)
IT13	Software Engineering	http://www.research.ibm.com/softeng/
BM11	Principles and Practices of Management And Organizational Behavior	
*BM12	Business Process Domains with Cost And Financial Accounting*	
MT11	Discrete Mathematics	

Semester II		
Subject Code	**Subject Title**	**Useful Websites**
IT21	Object Oriented Programming with C++	www.cplusplustutor.com
IT22	Database Management System	www.oracle.com
IT23	Operating system Concepts	http://windows.microsoft.com http://www.linux.org/ http://www.redhat.com/
BM21	Management Support System And Business Intelligence	http://www.ibm.com/in/en/
IT24	Enterprise Resource Planning	http://www.sap.com/
*BM22	Soft Skills*	

Semester III		
Subject Code	**Subject Title**	**Useful Websites**
IT31	Web Supporting Technologies	www.w3schools.com www.devguru.com
IT32	Data Communication And Computer Networks	http://www.cisco.com/web/learning/le21/learning_events_home.html
IT33	Data Structure using C++	
IT34	Advanced Database management System	www.oracle.com www.nosqldatabases.com http://www.ibm.com/in/en/
IT35	Object Oriented Analysis And Design	http://www-01.ibm.com/software/in/rational/
*MT31	Research Methodology and Tools*	http://www-01.ibm.com/software/in/analytics/spss/

Semester IV		
Subject Code	**Subject Title**	**Useful Websites**
IT41	Java Programming	http://www.java.com http://www.oracle.com
IT42	Mobile Computing	

MCA SYLLABUS STRUCTURE 2015-2018

SEMESTER I				
Subject Title	**Subject Code**	**CP**	**EXT**	**INT**
1. Fundamentals of Computer	IT11	4	70	30
2. C Programming with Data Structure	IT12	4	70	30
3. Software Engineering	IT13	4	70	30
4. Database Management System	IT14	4	70	30
5. Principles and Practices of Management and Organizational Behavior	BM11	4	70	30
6. Business Process Domains*	BM12	2	-	70
Practical*				
7. C and DS Lab	IT12L	2	-	50
8. DBMS Lab	IT14L	2	-	50
Soft Skills *				
9. Word Power	SS11	1	-	30
Semester I Total Marks			**E**	**I**
		27	**350**	**350**

SEMESTER II				
Subject Title	**Subject Code**	**CP**	**Ext.**	**Int.**
1. Essentials of Operating System	IT21	4	70	30
2. Web Technologies	IT22	4	70	30
3. Core Java	IT23	4	70	30
4. Essentials of Networking	IT24	4	70	30
5. Discrete Mathematics	MT21	4	70	30
6. Essentials of Marketing*	BM21	2	-	70
Practical *				
7. Mini Project using Web Technology	IT22L	2	-	50
8. Core Java Lab	IT23L	2	-	50
Soft Skills *				
9. Oral Communication	SS21	1	-	30
Semester II Total Marks		**-**	**E**	**I**
		27	**350**	**350**

COMMON SUBJECTS FOR SEMESTER IV				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
3	SSC41	Soft Skill – Interview*	30	-

Objective :
Preparing resumes & CV-Covering letter (effective usage of MSWord)
Self introduction during interviews
Interviews – Types of Interviews, preparing for interviews (Opening, body-answer Q, close-ask Q), Types of questions, facing interviews, reviewing performance
Participating in mock interviews

Reference Books:

1. Interview Skills –Presenting Yourself With Confidence by Sajitha Jayaprakash, Himalaya Publishing House.
2. Enhancing Employability @ SOFT SKILLS by Shalini Verma, Pearson

SEMESTER IV TRACK I: SOFTWARE AND APPLICATION DEVELOPMENT				
Sr. No.	**Subject Code**	**Subject Title**	**Internal**	**External**
4	T1-IT41	Advance Java	30	70

Objectives:
Students will be able to do socket programming, develop server side applications with database handling using servlets, JSP, JDBC and Hibernet and Springs framework.

Sr. No	**Topic Details**	**% Weightage**	**No. of Sessions**
1	**Networking with Java** • Networking basics - Sockets, port - Proxy servers • java.net – networking classes and interfaces • Implementing TCP/IP based Server and Client • Datagrams – Datagram packet, Datagram server and client • URL connections • Multithreaded Chat Server • Multithreaded socket Programming	**12**	5
2	**JDBC** • Java database connectivity, JDBC Architecture, JDBC API, • Types of JDBC drivers • Steps to create JDBC Application • Writing first JDBC applications • Types of statement objects (Statement, PreparedStatement & CallableStatement) • Types of resultset, ResultSetMetadata • Inserting and updating records • JDBC and AWT • Connection pooling	13	5

University of Pune

Structure for Mechanical Engineering with effect from academic year 2013 – 14

S. E. (Mechanical) and S. E. (Automobile) Semester – I

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Practical	Theory		TW	PR	OR^{+}	Total
					Paper	Online				
207002	Engineering Mathematics – III*	4	1	--	50	50	25^{++}	--	--	**125**
202041	Manufacturing Process-I	3	--	--	50	50	--	--	--	**100**
202042	Computer Aided Machine Drawing*	1	--	2	--	--	--	50	--	**50**
202043	Thermodynamics*	4	--	2	50	50	--	--	50	**150**
202044	Material Science	3	1	--	50	50	25^{++}	--	--	**125**
202045	Fluid Mechanics	3	--	2	50	50	--	--	50	**150**
202046	Workshop Practice II	--	--	2	--	--	25	--	--	**25**
202047	Soft Skills			2	--	--	25	--	--	**25**
Total of Semester – I		**18**	**2**	**10**	**250**	**250**	**100**	**50**	**100**	**750**

+ Under Oral head, examination should be based on term work completed during practical and theory syllabus

++ Term work marks should be based on term work completed in tutorial sessions

S. E. (Mechanical) and S. E. (Automobile) Semester – II

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Practical	Theory		TW	PR	OR^{+}	Total
					Paper	Online				
202048	Theory of Machines-I*	4	--	2	50	50	25$^{\$}$	--	--	**125**
202049	Engineering Metallurgy	3	--	2	50	50	--	--	50	**150**
202050	Applied Thermodynamics	4	--	2	50	50	25	--	50	**175**
202051	Strength of Materials*	3	--	2	50	50	--	--	50	**150**
203152	Electronics and Electrical Engineering*	4	--	2	50	50	25	--	--	**125**
202053	Machine Shop-I	--	--	2	--	--	25	--	--	**25**
Total of Semester – II		**18**	**--**	**12**	**250**	**250**	**100**	**--**	**150**	**750**

+ Under Oral head, examination should be based on term work completed during practical and theory syllabus

$ Common Oral will be based on both TOM-I and TOM-II term work at end of First Semester of T.E.

*** Subjects Common with Mechanical Sandwich**

University of Pune, Pune

S.E. (Mechanical & Automobile) – I (2012 Pattern)

SOFT SKILLS (202047)

Teaching scheme — **Examination Scheme**

Practical: 2 Hrs/week — Term work: 25 marks

Unit I : Self Awareness & self Development: 04 Hrs.

a) Self Assessment, Self Appraisal, SWOT, Goal setting - Personal & career - Self-Assessment, Self-Awareness, Perceptions and Attitudes, Positive Attitude, Values and Belief Systems, Self-Esteem, Self appraisal, Personal Goal setting,

b) Career Planning, Personal success factors, Handling failure, Depression and Habit, relating SWOT analysis & goal setting, prioritization.

Unit II: Communication Skill 06 Hrs.

a) Importance of communication, types, barriers of communication, effective communication

b) Speaking Skills – Public Speaking, Presentation skills, Group discussion- Importance of speaking effectively, speech process, message, audience, speech style, feedback, conversation and oral skills, fluency and self expression, body language phonetics and spoken English, speaking techniques, word stress, correct stress patterns, voice quality, correct tone, types of tones, positive image projection techniques.

c) Listening Skills: Law of nature- you have 2 ears and 1 tongue so listen twice and speak once is the best policy, Empathic listening, Avoid selective listening-

d) Group Discussion - characteristics, subject knowledge, oral and leadership skills, team management, strategies and individual contribution and consistency.

e) Presentation skills - planning, preparation, organization, delivery.

f) Written Skills – Formal & Informal letter writing, Report writing, Resume writing - Sentence structure, sentence coherence, emphasis. Paragraph writing. letter writing skills - form and structure, style and tone. Inquiry letters, Instruction letters, complaint letters,
Routine business letters, Sales Letters etc.

Unit III: Corporate / Business Etiquettes 02 Hrs.

Corporate grooming & dressing, Email & telephone etiquettes, etiquettes in social & office setting- Understand the importance of professional behaviour at the work place, Understand and Implement etiquettes in workplace, presenting oneself with finesse and making others comfortable in a business setting. Importance of first impression, Grooming, Wardrobe, Body language, Meeting etiquettes (targeted at young professionals who are just entering business environment) , Introduction to Ethics in engineering and ethical reasoning, rights and responsibilities,

Unit IV: Interpersonal relationship 04 Hrs.

a) Team work, Team effectiveness, Group discussion, Decision making - Team Communication. Team, Conflict Resolution, Team Goal Setting, Team Motivation Understanding Team Development, Team Problem Solving, Building the team dynamics. Multicultural team activity

b) Group Discussion- Preparation for a GD, Introduction and definitions of a GD, Purpose of a GD, Types of GD, Strategies in a GD , Conflict management, Do's and Don'ts in GD

Unit V: Leadership skills 02 Hrs

Leaders' role, responsibilities and skill required - Understanding good Leadership behaviours, Learning the difference between Leadership and Management, Gaining insight into your Patterns, Beliefs and Rules, Defining Qualities and Strengths of leadership, Determining how well you perceive what's going on around you, interpersonal Skills and Communication Skills, Learning about Commitment and

How to Move Things Forward, Making Key Decisions, Handling Your and Other People's Stress, Empowering, Motivating and Inspiring Others, Leading by example, effective feedback

Unit VI: Other skills 02Hrs.

a) Time management- The Time management matrix, apply the Pareto Principle (80/20 Rule) to time management issues, to prioritise using decision matrices, to beat the most common time wasters, how to plan ahead, how to handle interruptions , to maximise your personal effectiveness, how to say "no" to time wasters, develop your own individualised plan of action

b) Stress management- understanding the stress & its impact, techniques of handling stress

c) Problem solving skill, Confidence building Problem solving skill, Confidence building

Term Work/Assignments

Term work will consist the record of any 8 assignments of following exercises

1. SWOT analysis
2. Personal & Career Goal setting – Short term & Long term
3 Presentation Skill
4. Letter/Application writing
5. Report writing
6. Listening skills
7. Group discussion
8. Resume writing
9. Public Speaking
10. Stress management
11. Team Activity-- Use of Language laboratory

*** Perform any 8 exercises out of above 11 with exercise no. 11 as compulsory.**

Teaching Methodology

Each class should be divided into three batches of 20-25 students each. The sessions should be activity based and should give students adequate opportunity to participate actively in each activity. Teachers and students must communicate only in English during the session. Specific details about the teaching methodology have been explained in every activity given below.

Practical Assignments (Term work)

Minimum 8 assignments are compulsory and teachers must complete them during the practical sessions within the semester. The teacher should explain the topics mentioned in the syllabus during the practical sessions followed by the actual demonstration of the exercises. . Students will submit report of their exercise (minimum 8) assignments as their term work at the end of the semester but it should be noted that the teacher should assess their assignment as soon as an activity is conducted. The continual assessment process should be followed.

1. **SWOT analysis**

The students should be made aware of their goals, strengths and weaknesses, attitude, moral values, self confidence, etiquettes, non-verbal skills, achievements etc. through this activity. The teacher should explain to them on how to set goals, SWOT Analysis, Confidence improvement, values, positive attitude, positive thinking and self esteem. The teacher should prepare a questionnaire which evaluate students in all the above areas and make them aware about these aspects.

2. **Personal & Career Goal setting – Short term & Long term**

3 **Presentation Skills**

Students should make a presentation on any informative topic of their choice. The topic may be technical or non-technical. The teacher should guide them on effective presentation skills. Each student should make a presentation for at least 10 minutes.

4. **Letter/Application writing**

Each student will write one formal letter, and one application. The teacher should teach the students how to write the letter and application. The teacher should give proper format and layouts.

5. **Report writing**

The teacher should teach the students how to write report .. The teacher should give proper format and layouts. Each student will write one report based on visit / project / business proposal etc.

6. **Listening skills**

The batch can be divided into pairs. Each pair will be given an article (any topic) by the teacher. Each pair would come on the stage and read aloud the article one by one. After reading by each pair, the other students will be asked questions on the article by the readers. Students will get marks for correct answers and also for their reading skills. This will evaluate their reading and listening skills. The teacher should give them guidelines on improving their reading and listening skills. The teacher should also give passages on various topics to students for evaluating their reading comprehension.

7. **Group discussion**

Each batch is divided into two groups of 12 to 14 students each. Two rounds of a GD for each group should be conducted and teacher should give them feedback.

8. **Resume writing**

Each student will write one formal letter, and one application. The teacher should teach the students how to write the letter and application. The teacher should give proper format and layouts.

9. **Public Speaking**

Any one of the following activities may be conducted:

a. **Prepared speech** (topics are given in advance, students get 10 minutes to prepare the speech and 5 minutes to deliver.
b. **Extempore speech (**students deliver speeches spontaneously for 5 minutes each on a given topic)
c. **Story telling (Each student narrates a fictional or real life story for 5 minutes each)**
d. **Oral review** (Each student orally presents a review on a story or a book read by them)

10. **Team Activity**-- Use of Language laboratory

Text Books:

1 Communication Skills : Sanjay Kumar and Pushpa Lata , Oxford University Press
2 Developing Communication Skill : Krishna Mohan, Meera Banerji,- McMillan India Ltd.
3 English for Business Communication : Simon Sweeney , Cambridge University Press

Books for references:

1.NASSCOM-Global Business Foudation Skills: Accenture,Convergys,Dell et.al. Foundation Books : Cambridge University Press
2. Basic Managerial Skills for all E. H. McGrath, Eastern Economy Edition, Prentice hall India.
3. Personality Development and Group Discussions,Barun K. Mitra, Oxford University Press
4 Group Dissussions and Interview Skills : Priyadarshi Patnaik : Foundation Books : Cambridge University Press
5.Thinks and Grow Rich: Napoleon Hill, Ebury Publishing, ISBN 9781407029252
6. Awaken the Giant Within: Tony Robbins HarperCollins Publishers, ISBN-139780743409384
7. Change Your Thoughts, Change Your Life: Wayne Dyer, Hay House India, ISBN-139788189988050
8 Habits of Highly Effective People: Stephen Covey Pocket Books, ISBN-13

9781416502494
9The Power of Your Subconscious Mind: Dr Joseph Murphy Maanu Graphics , ISBN-13 9789381529560
10- The new Leaders: Daniel Coleman Sphere Books Ltd , ISBN-139780751533811
11 The 80/20 Principal: by Richard Koch, Nicholas Brealey Publishings , ISBN-13 9781857883992
12 Time management from inside out: Julie Morgenstern, Owl Books (NY), ISBN-13 9780805075908
13.Wonderland of Indian Manageress: Sharu Ranganekar, Vikas Publishing Houses, ISBN-13 9788125942603
14. You can win: Shiv Khera, Macmillan, ISBN-139789350591932
15. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success: Gopalaswamy Ramesh, Mahadevan Ramesh

Structure of S.E. (Mechanical Engineering/ Automobile Engineering)
2015 Course

Semester-I

Subject Code	Subject	Teaching Scheme Hours/Week			Examination Scheme					Total Marks	Credits	
		L	Tut.	PR	In-Sem (online)	End-Sem	TW	PR.	Oral		Lect/Tut	PR/OR
207002	Engineering Mathematics – III	04	01	-	50	50	25	-	-	125	05	-
202041	Manufacturing Process-I	03	-	02	50	50	50	-	-	150	03	01
202042	Computer Aided Machine Drawing	01	-	02	--	--		50	-	50	01	01
202043	Thermodynamics	04	-	02	50	50	-	-	50	150	04	01
202044	Material Science	03	01	-	50	50	25	-	-	125	03	01
202051	Strength of Materials	04	-	02	50	50	-	-	50	150	04	01
202055	Audit course											
					--	--						
	Total	**19**	**02**	**08**	**250**	**250**	100	50	100	**750**	**20**	**05**
	Total of Part-I	**29 Hrs**				**750**					**25**	

Note: Material Science and Engineering Mathematics-III practical may be carried out fortnightly for two hours, so that the tutorial hours may be used as practical.

Semester-II

Subject Code	Subject	Teaching Scheme Hours/Week			Examination Scheme					Total Marks	Credits	
		L	Tut.	PR	In-Sem (online)	End-Sem	TW	PR.	Oral		Lect/Tut	PR/OR
202045	Fluid Mechanics	04	-	02	50	50	-	50	-	150	04	01
202047	Soft Skills	-	-	02	--	--	25	-	-	25	-	01
202048	Theory of Machines – I	04	01	-	50	50	25	-	25	150	04	01
202049	Engineering Metallurgy	03	01	-	50	50	-	-	25	125	03	01
202050	Applied Thermodynamics	04	-	02	50	50	-	50	-	150	04	01
203152	Electrical and Electronics Engineering	03	-	02	50	50	25	-	-	125	03	01
202053	Machine Shop – I	-	-	02	--	--	25	-	-	25	-	01
	Total	**18**	**02**	**10**	**250**	**250**	**100**	**100**	**50**	**750**	**18**	**07**
	Total of Part-II	**30 Hrs**				**750**					**25**	

Note: Theory of Machine-I and Engineering Metallurgy practical may be carried out fortnightly for two hours, so that the tutorial hours may be used as practical.

202047: Soft Skills

Teaching Scheme:	Credits	Examination Scheme:
TH: -- hr/week	Th/Tut: --	TH In-Sem: --
		End-Sem: --
PR: 02 hrs/week	PR: 01	PR: --
		OR: --
		TW: 25

Course Objectives:

- To develop students overall personality.
- To understand and aware about importance, role and contents of soft skills through instructions, knowledge aquisitiion, demonstration and practice.To improve his writing and documentation skills.

Course Outcomes:
On completion of the course, learner will be able to–

- Improved communication, interaction and presentation of ideas.
- Right attitudinal and behaviouralchange
- Developed right-attitudinal and behavioral change

Course Contents

Term Work/Assignments
Term work will consist the record of any 6 assignments of following exercises

1. **SWOT analysis** **(4 Hrs)**

Student should do his/her SWOT analysis & submit the report.
Method of Execution
Explain the meaning & benefits of SWOT analysis to students. Give them time to think on their strength, weakesses, opportunities & threats. Ask them to write their own SWOT anlalysis

2. **Listening Skills** **(4 Hrs)**

Listen to a short audio book and make notes out of it & make a report.
Method of Execution
Ask every students to download any freely available english audio book of one hour duration. Also ask them to listen it carefully and write it's review on journal paper

3. Oral presentation skills/Speaking Skills (4 Hrs)

Hold the poster of any inspirational personality & speak about his/her life for five minutes.

Method of Execution

The personality can be from the fields like sports, politics, literature, entertainment etc. Ask every students to read & study about therespective personality & deliver the oral presentation infront of his/her batchmates.

4. **Resume writing (4 Hrs)**

Design a cover letter & resume for yourself.

Method of Execution

Show some of the different resumes according to respective job profiles to students & ask them to prepare their own resume. Also guide them to write a cover letter for any job application.

5. **Corporate / Business Etiquettes (4 Hrs)**

Apply to any five internship openings over internet by writing an email to the company HR. Students must submit email print.

Method of Execution: Tell students about any five recent internship openings & ask them to apply for same through email with resume as an attachment. Ask students to take a sent mail print for submission record

6. **Group Discussion (4 Hrs)**

Organize the group discussion on a current topics in a batch of ten students & ask every student to make minutes of meeting & submit.

Method of Execution: Take some of the current topics for group discussion, divide students in two batches of ten students in each, Allot 10 minutes time & one topic for discussion, meanwhile instructor have to assess each student's performance & give feedback to respective student. Also ask students to write the minutes of the meeting from same GD

7. **Team Activity (4 Hrs)**

Make a 20 minutes english video documentary & post it on a social media. Also provide the link of the same as submission record.

Method of Execution: Make a group of four students & guide them to choose a topic for making a video documenatry. Video can be posted on facebook, twitter or youtube.The video can be recorded on cellphone as well

Books:

Text:

1. Basics Of Communication In English : Francis Sounderaj, MacMillan India Ltd.2
2. English for Business Communication : Simon Sweeney , Cambridge University Press
3. An Introduction to Professional English And Soft Skills : Das , Cambridge University Press

Reference:

1. A course in Listening and Speaking Vol I &Vol II, V.Sasikumar, P. Kiranmai, Geetha Rajeevan, Cambridge University Press
2. Cambridge English For Job Hunting : ColmDownes, Cambridge University Press
3. The Complete Letter Writer :MacMillan India Ltd
4. E Writing – 21st Century Tools for Effective Communication :Booher , MacMillan India Ltd
5. NASSCOM-Global Business Foundation Skills: Cambridge University Press

University of Pune

T. E. (Mechanical) Semester – I
(w.e.f. Academic year 2014-15)

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Pract.	Theory		TW	PR	OR	Total
					In Sem.	End Sem.				
302041	Design of Machine Elements – I	4	--	2	30#	70@	25**	--	--	**125**
302042	Heat Transfer	4	--	2	30	70	--	50*	--	**150**
302043	Theory of Machines-II	4	--	2	30	70	--	--	50$	**150**
302044	Metrology and Quality Control	3	--	2	30	70	--	--	50	**150**
302045	Hydraulics and Pneumatics	3	--	2	30	70	25	--	--	**125**
302046	Skill Development	--	--	2	--	--	50	--	--	**50**
Total of Semester – I		**18**	**--**	**12**	**150**	**350**	**100**	**50**	**100**	**750**

*** Evaluation should be on performance in practical examination and oral based on Term Work**
$Common Oral will be based on both TOM-I and TOM-II term work at end of First Semester of T.E.

T. E. (Mechanical) Semester – II

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Pract.	Theory		TW	PR	OR	Total
					In Sem.	End Sem.				
302047	Numerical Methods and Optimization	4	--	2	30	70	--	50	--	**150**
302048	Design of Machine Elements -II	4	--	2	30#	70@	25	--	50**	**175**
302049	Turbo Machines	4	--	2	30	70	25		--	**125**
302050	Mechatronics	3	--	2	30	70	25	--	--	**125**
302051	Manufacturing Process-II	3	--	--	30	70	--	--	--	**100**
302052	Machine Shop -II	--	--	2	--	--	25	--	--	**25**
302053	Seminar	--	--	2			--	--	50	**50**
Total of Semester – II		**18**		**12**	**150**	**350**	**100**	**50**	**100**	**750**

Important Notes

1. ***In-Sem Theory examination will be conducted, approximately one and half month after the commencement of each semester***
2. ***In-Sem Theory examination will be based on first three units from Syllabus and will be conducted by the University of Pune***
3. ***Total time allotted for In-Sem Theory examination will be 1 hr***
4. ***(#) Total time allotted for In-Sem Theory examination (DME-I and DME-II) will be 1 hr 30 min.***
5. ***Total time allotted for End-Sem Theory examination will be 2 hrs 30 min***
6. ***(@)Total time allotted for End-Sem Theory examination (DME-I and DME-II) will be 3 hrs***
7. ***** Common oral based on both DME-I and DME-II term work***

University of Pune

T.E. (Mechanical) - 2012 Course

Skill Development [302046]

Code	Subject	Teaching Scheme (Weekly Load in hrs)			Examination Scheme (Marks)					
		Lect.	Tut	Pract.	Theory		TW	PR	OR	Total
					In Sem.	End Sem.				
302046	Skill Development	--	--	2	--	--	50	--	--	**50**

COURSE OBJECTIVES

1. To develop the skill for assemble and disassemble of machines.
2. To have knowledge of the different tools and tackles used in machine assembly shop.
3. Use of theoretical knowledge in practice.
4. Practical aspect of the each component in the assembly of the machine.

Term-Work

1) Following type of set up should be made available to the students for assemble and disassemble of the machine. (Any one for each batch)

   Dismantling and assembly of mechanical system like IC engine, Machine Tool sub system, practical mechanisms etc.

   OR

   Skills in various processes involved in Mechanical systems like RAC equipments, Piping systems, Hydraulic & Pneumatic systems, Control systems, Automation systems etc. (Any one system for each batch)

2) Participation in National Level Technical Competition (excluding paper presentation)

   OR

   Any other type of skill acquired, by the students, which will be very much useful for his employment.

A. The assessment has to be carried out based on close monitoring of involvement and intellectual contribution of student.

B. The student should maintain the record of work in the form of diary (may be 100 page note book) with dates (not expected as Journal or a huge write-up with figures) and has to be submitted at the end of semester.

C. The batch teacher should make continuous assessment of the concerned students / batch.

T. E. (Mechanical) Structure (2008 Course)

With effect from June 2010

Code	Subject	Teaching Scheme		Examination Scheme				
		L	P/D	P	TW	Or	Pr	Total
	Semester I							
302041	Machine Design - I **	4	2	100	50			150
302042	Heat Transfer	4	2	100			50	150
302043	Theory of machines II	4	2	100		50		150
302044	Industrial Engineering & Technology Management	4		100				100
302045	Computer Oriented Numerical Methods	4	2	100			50	150
302046	Seminar ***		2		50			50
	Total of First Semester	**20**	**10**	**500**	**100**	**50**	**100**	**750**
	Semester II							
302047	Machine Design II **	4	2	100		50		150
311048	Metrology & Quality Control	4	2	100	25			125
302049	Turbo Machines	4	2	100		50		150
302050	Mechatronics	4	2	100	50			150
302051	Refrigeration & Air Conditioning	4	2	100	25			125
311052	Workshop Practice II		2		50			50
	Total of Second Semester	**20**	**12**	**500**	**150**	**100**		**750**

** Theory paper of 4 hours duration.

*** The term work marks of seminar shall be as mentioned in the syllabus

Legend :

L	Lecture	TW	Term work
P/D	Practical/ Drawing	Or	Oral
P	Paper	Pr	Practical

University of Pune, Pune
T. E. (Mechanical) Part I (2008 Course)
302044 INDUSTRIAL ENGINEERING & TECHNOLOGY MANAGEMENT

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/ Week	Theory	100 Marks

Section I Hrs

1 **Management Science** 8

Basic concepts and functions of management, Contribution of Taylor and Fayol to scientific management, Motivation and Control, Maslow's hierarchy of needs, Vroom's expectancy theory, Leadership Styles, Contingency theory, Managerial grid.

Plant Locations, Layout and material Handling

Location: Importance and factors affecting plant location, Single and Multi-facility location problems, Layout: Need, Importance, Objectives and Principles of good plant layout, Types of layout and applications, Material Handling: Objectives, functions, principles of material handling, Types of material handling equipment and selection,

2 **Productivity and Work study** 8

Productivity: Definition and Types, Kinds of Productivity measures, productivity improvement methods.

Work Study: Introduction, Techniques of work study, Method study – procedure, recording techniques, Principles of motion economy, Micro-motion analysis, Work measurement – Time study, work/ activity sampling, Predetermined motion time standards, Job evaluation and Merit rating – Procedure and Methods.

3 **Production Planning and Inventory Control** 10

Introduction, Functions of PPC, Forecasting models – moving average, exponential smoothing, Capacity planning, aggregate production planning – cost computation for pure and mixed strategies. Inventory control – Purpose, types, functions, basic EOQ, safety stock inventory control systems (Numerical treatment), selective control of inventory ABC, FMS, VED.

Project Management: PERT/ CPM, Cost accounting and control, elements of cost, depreciation, method for calculating depreciation, break even analysis, standard costing, variance analysis, zero based budgeting.

Section II

4 **Technology Management** 8

Concept and meaning of technology, evolution and growth of technology, role and significance of management and technology, impact of technology on society and business, forms of technology, process technology, and product technology.

Competitive advantages through new technologies: Product development,- from scientific breakthrough to marketable product – role of government in technology development. Linkage between technology, development and competition, managing research and development (R& D) Managing intellectual property.

5 **Technological Forecasting and Assessment** 8

Exploratory: Intuitive, extrapolation, growth curves, technology monitoring, normative: relevance tree, morphological analysis, mission flow diagram

Technology Assessment: Technology choice, Technological leadership and follower ship, technology acquisition, meaning of innovation and creativity, innovation management

6 **Technology Strategy** 10

Concepts, types, key principles, framework for formulating technology strategy, technology forecasting: techniques and application, Technology Diffusion and

Absorption: Rate of diffusion, innovation time and innovation cost, speed of diffusion, Project Management in adoption and implementation of new technologies, technology transfer process (IPR)

Reference Books:

1. Tarek Khalli, 'Management of Technology' McGraw-Hill. New Delhi.
2. V K Narayanan, 'Managing Technology and Innovation for Competitive Advantage', Pearson Education Asia
3. Gaynor, 'Handbook Of Technology Management', Mcgraw Hill,
4. Dinesh seth, Subhash C. Rastogi, 'Global management solutions – Cleanage learning
5. S.N.Chary, 'Production & Operation Management,' Tata McGraw Hill, New Delhi.
6. ILO, Introduction to work study
7. Khanna O.P. - Industrial Engg.& management, Dhanpatrai publications, New Delhi
8. Curie R.M.& Faraday, work study
9. Bewoor A. K., 'Production planning control' Satya Publication, New Delhi, 2004.
10. Arnold J.R. – Introduction to materials management, prentice Hall India Ltd.
11. Gopalkrishnan, "Materials Management," John Wiley Publications,
12. L. C. Jhamb, "Materials Management," Everest Publications

UNIVERSITY OF PUNE
SE (COMPUTER ENGINEERING) 2008 COURSE

Term – I

Subject Code No.	Subject	Teaching Scheme Hours / Week		Examination Scheme				Total Marks
		Lect	Pract	Paper	TW	Pract	Oral	Total
210241	Discrete Structures	04	----	100	---	---	---	100
210242	**Programming & problem solving**	**04**	**----**	**100**	**---**	**---**	**---**	**100**
210243	Digital Electronics and Logic Design	04	----	100	---	---	---	100
210244	Data Structures and Algorithms	04	----	100	---	---	---	100
207005	**Humanities and Social science**	**03**	**----**	**100**	**---**	**----**	**----**	**100**
210246	Programming Laboratory		04	---	25	50	---	075
210247	Digital Electronics Laboratory	---	04	---	25	50	---	075
210248	Soft Skills	---	02	---	50	---	---	050
	Total	**19**	**10**	**500**	**100**	**100**	**---**	**700**
	Total of Part I (A)	**29 Hrs**		**700**				

Term – II

Subject Code No.	Subject	Teaching Scheme Hours / Week		Examination Scheme				Total Marks
		Lect	Pract	Paper	TW	Pract	Oral	Total
207003	Eng. Maths – III	04	---	100	---	---	---	100
210249	Microprocessors and Interfacing Techniques	04	---	100				100
210250	Data Structures	04	---	100	---	---	---	100
210251	Computer Graphics	03	---	100	---	---	---	100
210252	Computer Organization	03	---	100	---	---	---	100
210253	Object Oriented Programming & Computer Graphics Laboratory	02	02	---	50	50	---	100
210254	Microprocessors and interfacing Laboratory	---	04	---	50	50	---	100
210255	Data Structures Laboratory	---	04	---	50	50	---	100
	Total	**20**	**10**	**500**	**150**	**150**	**---**	**800**
	Total of Part II (B)	**30 Hrs**		**800**				
	Grand Total (A) + (B)			**1500**				

207005: HUMANITIES AND SOCIAL SCIENCES

Teaching Scheme **Examination Scheme**
Lectures: 3 Hrs/week **Theory: 100 Marks**

Learning Objectives

This course will lead to the learning of

1. Human and social development;
2. Contemporary national and international affairs;
3. Emergence of Indian society and Economics,
4. Sectoral development and Economic development and related issues (such as international economics, WTO, RBI, etc).

Outcome

Making engineering and technology students aware of the various issues concerning man and society. These issues will help to sensitize students to be broader towards the social, cultural, economic and human issues, involved in social changes.

Methodologies

1. Suitable case studies should be discussed
2. Student group discussion activity.
3. Social Networking activity.

Unit I: Indian Society (6 hrs)

Structure of Indian Society, Indian Social Demography– Social and Cultural, Differentiations: caste, class, gender and tribe; Institutions of marriage, family and kinship- Secularization –Social Movements and Regionalism- Panchayatraj Institutions; Indian constitution; Affirmative Action Programme of the Government-various reservations and commissions.

Unit II: Social Development (6 hrs)

Scientific approach to the study of human beings. Evolution of human kind, social change and evolution. Industrial revolution. National policy on education, health and health care and human development.

Unit III: Sectoral Development (6 hrs)

Agriculture : Technology changes , Green revolutions , Employment Rural & Urban , Government Schemes .

Industrial Development : Strategies , Public & Private Sectors, Categories , infrastructure , transport & communication , Consumer Awareness.

Unit IV: Environment & Ecology (6 hrs)

Ecosystems: Structure, Working, components.

Pollution: Water & Air Pollution, Global Warming, Control Strategies, International Treaties.

Energy Sources: Renewable & Non Renewable, Hydro power, Biomass, Ocean, Geothermal & Tidal.

Global Environmental Issues: Population Growth, Soil Degradation, Loss of Biodiversity.

Unit V: Economic Development (6 hrs)

Need for planned economic development – Law of demand and supply. Planning objectives, five year plans, priorities and problems. Population and development.
Indian Economics – basic features, natural recourses population size and composition, national income concepts, micro economics of India, inflation.

Unit VI : Banking & Trades (6 hrs)

Financial Analysis, Ratios, Cost Analysis,, financial Institutions, Finance Commissions, Budget Analysis.
Indian Banking, Role of Reserve bank of India
International Economy, WTO, International aid for economic growth.

Reference Books:

1. Krugman, International Economics, Pearson Education.
2. Prakash, The Indian Economy, Pearson Education.
3. Thursen Gerald, Engineering Economics, Prentice Hall.
4. C.S. Rao, Environmental Pollution Control Engineering, New Age International Pvt. Ltd.
5. Rangarajan, Environmental Issues in India, Pearson Education.
6. University of Delhi, The Individual & Society, Pearson Education.
7. Wikipedia.org / wiki /social studies.
8. M. N. Srinivas, Social change in modern India, 1991, Orient Longman.
9. David Mandelbaum, Society in India, 1990, Popular.
10. David Newman,"Exporing the architecture of everday life", Pine Forge Press, 7th edition.

210248: SOFT SKILLS

Teaching Scheme **Examination Scheme**
Practical: 2 Hrs/week **Term Work: 50 marks**

Learning Objectives

1. To encourage the all round development of students by focusing on soft skills.
2. To make the engineering students aware of the importance, the role and the content of soft skills through instruction, knowledge acquisition, demonstration and practice.
3. To develop and nurture the soft skills of the students through individual and group activities.
4. To expose students to right attitudinal and behavioral aspects, and to build the same through activities.

The coverage of soft skills that help develop a student as a team member, leader, all round professional in the long run have been identified and listed here for reference. As the time allotment for the soft kills laboratory is small and the fact that these skills are nurtured over years, students are encouraged to follow up on these skills as self-study and self driven process.

UNIT I: Self-Development and Assessment
Self-Assessment, Self-Awareness, Perceptions and Attitudes, Positive Attitude, Values and Belief Systems, Personal Goal setting, Career Planning, Self-Esteem, Building of Self Confidence, Personal success factors, Handling failure, Depression and Habit, SWOT analysis, prioritization, Emotional Intelligence (EI) and Emotional Quotients (EQ), Self appraisal

UNIT II: Interpersonal Relations
Nature of groups and teams, Team effectiveness, Group discussions and decision making, Emotional Intelligence (EI) and Emotional Quotients (EQ), and its effect on team, Cross Cultural Aspects, Inter dependence, Peer Reviews

UNIT III:. Ethics and Social Responsibilities
Personal professional and corporate ethics, Ethical dilemma, Corporate social responsibilities: Green computing, Social accounting, Auditing, Civic sense.

UNIT IV: Corporate
Corporate grooming and dressing, Etiquettes in social as well as office settings, Email Etiquettes, Telephone Etiquettes, Contemporary issues in corporate life: diversity, Attrition, Work life balance, Hygiene and health.

UNIT V: Leadership Skills
Leaders: their skills, roles, and responsibilities. Vision, Empowering and delegation, motivating others, organizational skills, team building, Organizing and conducting meetings, decision making, giving support, Vision, Mission, Coaching, Mentoring and counseling, Appraisals and feedback, conflict, Power and Politics, Public Speaking.

UNIT VI: Other Skills
Managing Time, Managing Stress, Meditation. Improving personal memory, Study skills that include Rapid Reading, Notes Taking, Self learning, Complex problem solving and creativity.

References (Note: No textbooks have been assigned for the subject as this is a lab based course)

Topic 1: Any good books like

1. Stephen Covey, "7 Habits of highly effective people"
2. Daniel Goleman " Working with Emotional Intelligence"

Topic 2 -6

(Note: Organizational behavior books give a formal theoretical, in depth approach to topics here. We don't expect that rigor here as this course is expected to just give a general idea to students about the concepts involved (through some trainer sessions, group discussions..) And focus more on usable skills practice that they can use in their personal and professional life honed through lab assignments)

1. Organizational Behavior (Special Indian Edition), 4/e
   Steven McShane, Mary Ann Von Glinow, Radha R Sharma,
2. Organizational Behaviour**:** Dipak Kumar Bhattacharyya oxford press
3. Essentials of Organizational Behavior Global Edition
   10th Edition Stephen Robbins, Timothy Judge
4. Tim Hindle, "Reducing Stress", Essential Manager Series DK publishing.
5. Dr R L Bhatia, "Managing Time for a competitive edge".
6. Lorayne, Lucas "Memory Book".
7. Robert Heller, "Effective leadership", Essential Managers DK publishers.

LIST OF SUGGESTED ASSIGNMENTS

1. Write a Personal essays and resume or statement of purpose which MAY include some of the following:
   a. Who am I (family background, past achievements, past activities of significance).
   b. Strengths and weaknesses (how to tackle them) (SWOT analysis).
   c. Personal short-term goals, long-term goals and schedule and prioritization to achieve them.
   d. Self-assessment on your soft skills capabilities.
   e. Self appraisal on your last year at college
   f.. Self assessment on your EQ
2. Students could review and present to a group from following ideas:
   a. Book review.
   b. Biographical sketch.
   c. Any topic such as an inspirational story/personal values/beliefs/current topic, speeches.
   d. Ethics and etiquettes and social responsibilities as a professional.
   e. Success Factors.
3. Students will present to a group from following ideas:
   a. Public speaking exercise in form of debate or elocution on current affairs/socials issues/ethics and etiquettes
   b. Public speaking exercise in form of debate or elocution on Contemporary issues in corporate life: diversity, Attrition, Work life-Balance, Hygiene and health.
   c. Preparing Vision/Mission/Goals statements for
      - College
      - Hypothetical Organization
4. Students will participate in FEW activities from following:
   a. Team games for team building.
   b. Situational games for role playing as leaders, members.

c. Organizing mock events.
d. Conducting meetings and documenting.
e. Group discussion current affairs/socials issues/ethics and etiquettes
f. Group discussions on Contemporary issues in corporate life: diversity, Attrition, Work life balance, Hygiene and health.

5. Faculty may arrange one or more sessions from following:
Yoga and meditation.
Stress management, relaxation exercises, and fitness exercises.
Time management and personal planning sessions.
Improving memory skills.
Improving leadership skills.
Improving English conversation skills.
Reading comprehension skills and Notes taking skills.

Students are expected to keep a personal record of ANY SIX activities that they undertook in the Soft skills Laboratory in the form of a journal. All students need not do the same assignments. Colleges have a freedom within the framework to customize set of activities to be followed, sessions to be conducted and references to follow.

Guidelines for Conduction and Assessment of Laboratory Work

1. This laboratory can be seen as a departmental activity with one of the faculty as coordinator.
2. Professionals from HRD departments of companies could assist in training sessions based on individual college contacts.
3. Certain activities can even be team activities such as Group Discussion..
4. Popular science, INTERNET, Magazines, Newspapers, and Training MEDIA from BCL, BBC, Management Institutes, and Management Gurus can also be used as resources.
5. Generally an exercise can be designed to allow multiple skills exposure for example a group task encouraging discussions, team building, value sharing, leadership and role play all at the same time.

ASSESMENT Guidelines Evaluation can be based on

1. Overall participation in soft skills based lab activities
Attendance and enthusiasm, Participation and contribution in event management, organizing, Group games, group exercises, and interpersonal skills observed.
2. Quality of journal for soft skills laboratory indicating personal progress, participation.

Guidelines for batch wise Time management for laboratory sessions (Two hour session at a time)

A Semester allows for 12-14 sessions. Students can do Lot of preparation at leisure time.

1. Batches could be of size 25 to 30 students.
2. Group discussions could be done for groups of 5-8 students at a time (2 sessions)
3. Sessions could be organized for trainers to give directions, knowledge, experience sharing. AND/OR Sessions of common viewing of training material on Video etc. **(4 sessions)**
4. Group exercises for team building, role-playing and interaction with professional. **(3 sessions)**
5. Some individual presentations / write-ups **(3 sessions)**

Course Structure for SE Computer Engineering

2012 Course (w.e.f. June 2013)

Subject Code	Subject	Teaching Scheme Hrs/Week			Examination Scheme					Mark
		Lect.	Tutorials	Pract	Paper	Tw	Pr	OR	Online	Total
SEM – I										
210241	Discrete Structures	4	—	—	50	—	—	—	50	100
210242	Data Structures and Problem Solving	4	—	4	50	—	50	—	50	150
210243	Digital Electronics and Logic Design	3	—	2	50	25	—	—	50	125
210244	Operating System and Administration	3	—	2	50	25	50	—	50	175
210245	Microprocessor Architecture	3	—	2	50	25	—	50	50	175
210246	Soft Skills	1	—	2	—	25	—	—	—	025
	Total of Semester – I	**18**	—	**12**	**250**	**100**	**100**	**50**	**250**	**750**
SEM – II										
Subject Code	**Subject**	**Teaching Scheme Hrs/Week**			**Examination Scheme**					**Mark**
		Lect.	**Tutorials**	**Pract**	**Paper**	**Tw**	**Pr**	**Or**	**Online**	**Total**
207003	Engineering Maths - III	4	1	—	50	25	—	—	50	125
210247	Object Oriented and multi-core Programming	4	—	4	50	25	50	—	50	175
210248	Microprocessors and Interfacing Techniques	3	—	4	50	—	50	—	50	150
210249	Computer Graphics and Gaming	3	—	—	50	—	—	—	50	100
210250	Computer Organization	3	—	—	50	—	—	—	50	100
210251	Programming Laboratory	—	—	4	—	50	—	50	—	100
	Total of Semester – II	**17**	1	**12**	**250**	**100**	**100**	**50**	**250**	**750**

210246 SOFT SKILLS

Teaching Scheme **Examination Scheme**
Lectures: 1 Hrs/week **Term Work: 25 Marks**
Practical: 2 Hrs/week

UNIT I: (04 hours)

Self Awareness & self Development –

a) Self Assessment , Self Appraisal, SWOT, Goal setting - Personal & career - Self-Assessment, Self-Awareness, Perceptions and Attitudes, Positive Attitude, Values and Belief Systems, Self-Esteem, Self appraisal, Personal Goal setting,

b) Career Planning, Personal success factors, Handling failure, Depression and Habit, relating SWOT analysis & goal setting, prioritization.

UNIT II: Communication Skill (06 hours)

a) Importance of communication, types, barriers of communication, effective communication

b) Speaking Skills – Public Speaking, Presentation skills, Group discussion- Importance of speaking effectively, speech process, message, audience, speech style, feedback, conversation and oral skills, fluency and self expression, body language phonetics and spoken English, speaking techniques, word stress, correct stress patterns, voice quality, correct tone, types of tones, positive image projection techniques.

c) Listening Skills: Law of nature- you have 2 ears and 1 tongue so listen twice and speak once is the best policy, Empathic listening, Avoid selective listening-

d) Group Discussion - characteristics, subject knowledge, oral and leadership skills, team management, strategies and individual contribution and consistency.

e) Presentation skills - planning, preparation, organization, delivery.

f) Written Skills – Formal & Informal letter writing, Report writing, Resume writing - Sentence structure, sentence coherence, emphasis. Paragraph writing. letter writing skills - form and structure, style and tone. Inquiry letters, Instruction letters, complaint letters,
Routine business letters, Sales Letters etc.

UNIT III: Corporate / Business Etiquettes (02 hours)

Corporate grooming & dressing, Email & telephone etiquettes, etiquettes in social & office setting- Understand the importance of professional behaviour at the work place, Understand and Implement etiquettes in workplace, presenting oneself with finesse and making others comfortable in a business setting. Importance of first impression, Grooming, Wardrobe, Body language, Meeting etiquettes (targeted at young professionals who are just entering business environment) , Introduction to Ethics in engineering and ethical reasoning, rights and responsibilities,

UNIT IV: Interpersonal relationship (04 hours)

a) Team work, Team effectiveness, Group discussion, Decision making - Team Communication. Team, Conflict Resolution, Team Goal Setting, Team Motivation Understanding Team Development, Team Problem Solving, Building the team dynamics. Multicultural team activity

b) Group Discussion- Preparation for a GD, Introduction and definitions of a GD, Purpose of a GD, Types of GD, Strategies in a GD , Conflict management, Do's and Don'ts in GD

UNIT V: Leadership skills (02 hours) Leaders' role, responsibilities and skill required - Understanding good Leadership behaviours, Learning the difference between Leadership and Management, Gaining insight into your Patterns, Beliefs and Rules, Defining Qualities and Strengths of leadership, Determining how well you perceive what's going on around you, interpersonal Skills and Communication Skills, Learning about Commitment and How to Move Things Forward, Making Key Decisions, Handling Your and Other People's Stress, Empowering, Motivating and Inspiring Others, Leading by example, effective feedback

UNIT VI: Other skills (02 hours)

a) Time management- The Time management matrix, apply the Pareto Principle (80/20 Rule) to time management issues, to prioritise using decision matrices, to beat the most common time wasters, how to plan ahead, how to handle interruptions , to maximise your personal effectiveness, how to say "no" to time wasters, develop your own individualised plan of action

b) Stress management- understanding the stress & its impact, techniques of handling stress

c) Problem solving skill, Confidence building Problem solving skill, Confidence building

Term Work/Assignments

Term work will consist the record of any 8 assignments of following exercises

1. SWOT analysis
2. Personal & Career Goal setting – Short term & Long term
3 Presentation Skill
4. Letter/Application writing
5. Report writing
6. Listening skills
7. Group discussion
8. Resume writing
9. Public Speaking
10. Stress management
11. Team Activity-- Use of Language laboratory

*** Perform any 8 exercises out of above 11 with exercise no. 11 as compulsory.**

Teaching Methodology

Each class should be divided into three batches of 20-25 students each. The sessions should be activity based and should give students adequate opportunity to participate actively in each activity. Teachers and students must communicate only in English during the session. Specific details about the teaching methodology have been explained in every activity given below.

Practical Assignments (Term work)

Minimum 8 assignments are compulsory and teachers must complete them during the practical sessions within the semester. The teacher should explain the topics mentioned in the syllabus during the practical sessions followed by the actual demonstration of the exercises. . Students will submit report of their exercise (minimum 8) assignments as their term work at the end of the semester but it should be noted that the teacher should assess their assignment as soon as an activity is conducted. The continual assessment process should be followed.

1 Communication Skills : Sanjay Kumar and Pushpa Lata , Oxford University Press
2 Developing Communication Skill : Krishna Mohan, Meera Banerji,- McMillan India Ltd.
3 English for Business Communication : Simon Sweeney , Cambridge University Press

Books for references:

1.NASSCOM-Global Business Foudation Skills: Accenture,Convergys,Dell et.al. Foundation Books : Cambridge University Press
2. Basic Managerial Skills for all E. H. McGrath, Eastern Economy Edition, Prentice hall India.
3. Personality Development and Group Discussions,Barun K. Mitra, Oxford University Press
4 Group Dissussions and Interview Skills : Priyadarshi Patnaik : Foundation Books : Cambridge University Press
5.Thinks and Grow Rich: Napoleon Hill, Ebury Publishing, ISBN 9781407029252
6. Awaken the Giant Within: Tony Robbins HarperCollins Publishers, ISBN-139780743409384
7. Change Your Thoughts, Change Your Life: Wayne Dyer, Hay House India, ISBN-139788189988050
8 Habits of Highly Effective People: Stephen Covey Pocket Books, ISBN-13 9781416502494
9The Power of Your Subconscious Mind: Dr Joseph Murphy Maanu Graphics , ISBN-13 9789381529560
10- The new Leaders: Daniel Coleman Sphere Books Ltd , ISBN-139780751533811
11 The 80/20 Principal: by Richard Koch, Nicholas Brealey Publishings , ISBN-13 9781857883992
12 Time management from inside out: Julie Morgenstern, Owl Books (NY), ISBN-13 9780805075908
13.Wonderland of Indian Manageress: Sharu Ranganekar, Vikas Publishing Houses, ISBN-13 9788125942603
14. You can win: Shiv Khera, Macmillan, ISBN-139789350591932
15. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success: **Gopalaswamy Ramesh, Mahadevan Ramesh**

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
(With effect from Academic Year 2016-17)

Semester I

Course Code	Course Name	Teaching Scheme Hours / Week			Examination Scheme & Marks						Credit	
		Theory	Tutorial	Practical	In-Sem	End-Sem	TW	PR	OR	Total	TH + TUT	PR
210241	Discrete Mathematics	04	--	--	50	50	--	--	--	100	04	--
210242	Digital Electronics and Logic Design	04	--	--	50	50	--	--	--	100	04	--
210243	Data Structures and Algorithms	04	--	--	50	50	--	--	--	100	04	--
210244	Computer Organization and Architecture	04	--	--	50	50	--	--	--	100	04	--
210245	Object Oriented Programming	04	--	--	50	50	--	--	--	100	04	--
210246	Digital Electronics Lab	--	--	02	--	--	25	50	--	75	--	01
210247	Data Structures Lab	--	--	04	--	--	25	50	--	75	--	02
210248	Object Oriented Programming Lab	--	--	02	--	--	25	50	--	75	--	01
210249	Soft Skills	--	--	02	--	--	25	--	--	25	--	01
Total											20	05
210250	Audit Course 1	--	--	--	--	--	--	--	--	--	Grade	
Total		20	--	10	250	250	100	150	--	750	25	

Abbreviations:

TW: Term Work
OR: Oral
PR: Practical
TH: Theory
TUT: Tutorial
Sem: Semester

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
(With effect from Academic Year 2016-17)
Semester II

Course Code	Course Name	Teaching Scheme Hours / Week			Examination Scheme & Marks						Credits	
		Theory	Tutorial	Practical	In-Sem	End-Sem	TW	PR	OR	Total	TH+ TUT	PR
207003	Engineering Mathematics III	04	01	--	50	50	25	--	--	125	05	--
210251	Computer Graphics	04	--	--	50	50	--	--	--	100	04	--
210252	Advanced Data Structures	04	--	--	50	50	--	--	--	100	04	--
210253	Microprocessor	04	--	--	50	50	--	--	--	100	04	--
210254	Principles of Programming Languages	03	--	--	50	50	--	--	--	100	03	--
210255	Computer Graphics Lab	--	--	02	--	--	25	50	--	75	--	01
210256	Advanced Data Structures Lab	--	--	04	--	--	25	50	--	75	--	02
210257	Microprocessor Lab	--	--	04	--	--	25	50	--	75	--	02
Total											20	05
210258	Audit Course 2		--	--	--	--	--	--	--	--	Grade	
Total		19	01	10	250	250	100	150	--	750	25	

Abbreviations:

TW: Term Work
OR: Oral
PR: Practical
TH: Theory
TUT: Tutorial
Sem: Semester

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210249: Soft Skills

Teaching Scheme:	Credit	Examination Scheme:
PR: 02 Hours /Week	01	TW: 25 Marks

Course Objectives:

- To encourage the all round development of students by focusing on soft skills.
- To make the engineering students aware of the importance, the role and the content of soft skills through instruction, knowledge acquisition, demonstration and practice.
- To develop and nurture the soft skills of the students through individual and group activities.
- To expose students to right attitudinal and behavioral aspects and to build the same through activities

Course Outcomes:

On completion of the course, student will be able to–

- Effectively communicate through verbal/oral communication and improve the listening skills
- Write precise briefs or reports and technical documents.
- Actively participate in group discussion / meetings / interviews and prepare & deliver presentations.
- Become more effective individual through goal/target setting, self motivation and practicing creative thinking.
- Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality.

Course Contents

Unit I	Self-Development

Introduction to soft skills, Self-Management: Self-Evaluation, Self-Discipline, Self-Criticism, Self-Awareness, Self-Esteem, Positive Thinking, Perceptions and Attitudes, Values and Belief Systems, Personal success factors, Handling failure, Knowing Yourself, identifying one's strengths and weaknesses, SWOT analysis, Johari's Window, Career Planning & Goal setting, prioritization, Managing self – emotions, ego, pride, stress; Personality development.

Unit II	Communication Skills

Significance of Communication- types, barriers of communication, effective communication, Verbal and non-verbal Communication, Speaking Skills – Importance of speaking effectively, speech process, message, audience, speech. Style, feedback, conversation and oral skills, fluency and self expression, body language phonetics and spoken English, speaking techniques, word stress, correct stress patterns, voice quality, correct tone, types of tones, positive image projection techniques, Public Speaking, Group discussion, Listening Skills: Virtues of Listening, Barriers and filters, Fundamentals of Good Listening, Reading Skills: Comprehension, reading research papers, Communication in a Digital World.

Unit III	**Language and Writing Skills**

Vocabulary: One - Word Substitutes, Words often Confused - Pairs of Words, Synonyms and Antonyms, Foreign Phrases, Phrasal verbs derived from the dynamic verbs, Business Writing: Note Making, Letter writing, Writing Formal Letters. Technical Report Writing, Memo, Notices/Circulars Agenda and Minutes of a Meeting, E-Mail, Essay writing. Employment Communication: Job Application, Preparation of CV and Resume writing. Presentation skills: Professional Presentation, Nature of Oral Presentation, Planning a Presentation, Preparing the Presentation, Delivering the Presentation.

Unit IV	**Leadership and Team Building**

Introduction, Leader and Leadership, Leadership Traits, Culture and Leadership: Salient Features of Corporate Culture, Leadership Styles, Leadership Trends, Team Building: Team Development Stages, Types of Teams: Cross-functional Team, Problem-solving Team, Inter- personal relations: Types of feelings, steps to deal with complex feelings. Assertiveness and Confidence building. Types of Conflict and resolutions. Emotions, emotional empathy and emotional intelligence.

Unit V	**Stress and Time Management**

Introduction, Stress in Today‘s Time: Identify the Stress Source, Signs of Stress, Ways to Cope with Stress : Healthier Ways to Combat Stress, Steps to be Taken in the Organizations : Open communication, Time Management, Working towards Your Goals, Smart Work, Prioritize your Tasks,4 Ds of Decision Making.

Unit VI	**Ethics, Etiquette and Mannerism**

Professional Etiquette: Etiquette at Meetings, Etiquette at Dining. Involuntary Awkward Actions, Public Relations Office(PRO)‘s Etiquettes, Technology Etiquette : Phone Etiquette, Email Etiquette, Social Media Etiquette, Video Conferencing Etiquette, Interview Etiquette, Dressing Etiquettes : for Interview, offices and social functions, Ethical Values: Importance of Work Ethics, Problems in the Absence of Work Ethics.

Books:

Text:

1. Gajendra Singh Chauhan, Sangeeta Sharma: Soft Skills – An Integrated Approach to Maximize Personality, WILEY INDIA, ISBN:13:9788126556397.

References:

1. Indrajit Bhattacharya, –An Approach to Communication Skills", Delhi, Dhanpat Rai, 2008.
2. Simon Sweeney, –English for Business Communication", Cambridge University Press, ISBN 13:978-0521754507.
3. Sanjay Kumar and Pushpa Lata, –Communication Skills", Oxford University Press, ISBN 10:9780199457069.
4. Atkinson and Hilgard's, –Introduction to Psychology", 14th Edition, Geoffrey Loftus, ISBN-10:0155050699 © 2003
5. Kenneth G. Mcgee, –Heads Up: How to Anticipate Business Surprises & Seize Opportunities First", Harvard Business School Press, Boston, Massachusetts, 2004, ISBN 10:1591392993.
6. Krishnaswami, N. and Sriraman, T, –Creative English for Communication", Macmillan.

Guidelines for Instructor's Manual

The instructor‘s manual is to be developed as a hands-on resource and reference. The instructor's manual need to include prologue (about University/program/ institute/ department/foreword/preface etc), University syllabus, conduction & Assessment guidelines, topics under consideration concept objectives, outcomes, guidelines, references.

Guidelines for Student's Lab Journal and TW Assessment

The student must prepare the journal in the form of **report** elaborating the activities performed in the lab. Continuous assessment of laboratory work is to be done based on overall performance and lab assignments performance of student. Each lab assignment assessment will assign grade/marks based on parameters with appropriate weightage. Suggested parameters for overall assessment as well as each lab assignment assessment include- timely completion, performance, punctuality, neatness, enthusiasm, participation and contribution in various activities-SWOT analysis, presentations, team activity, event management, group discussion, Group exercises and interpersonal skills and similar other activities/assignments.

Guidelines for Soft skills Lab Conduction

The instructor may frame assignments to enhance skills supporting career aspects. Multiple set of activity based assignments can be prepared and distributed among batches. Every student must be given adequate opportunity to participate actively in each activity. An exercise can be designed to allow multiple skills exposure for example a group task encouraging discussions, team building, value sharing, leadership and role play all at the same time.

Suggested List of Laboratory Assignments

1.	**SWOT analysis** The students should be made aware of their goals, strengths and weaknesses, attitude, moral values, self confidence, etiquettes, non-verbal skills, achievements etc. through this activity. SWOT Analysis, Confidence improvement, values, positive attitude, positive thinking and self esteem. The concern teacher should prepare a questionnaire which evaluate students in all the above areas and make them aware about these aspects.
2.	**Personal & Career Goal setting – Short term & Long term** The teacher should explain to them on how to set goals and provide template to write their short term and long term goals.

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210250: Audit Course 1

In addition to credits, it is recommended that there should be audit course in preferably in each semester from second year to supplement knowledge and skills. A student will be awarded the bachelor's degree if he/she earns 190 credits and clears all the audit courses specified in the syllabus. The student will be awarded grade as AP on successful completion of audit course.

The student may opt for one of the audit courses per semester, starting from second year first semester. Though not mandatory, such a selection of the audit courses helps the learner to explore the subject of interest in greater details resulting in achieving the very objective of audit course's inclusion. List of options offered is provided. Each student has to choose one audit course from the list per semester. Evaluation of audit course will be done at institute level itself. Method of conduction and method of assessment for audit courses are suggested.

Criteria:

The student registered for audit course shall be awarded the grade AP (Audit Course Pass) and shall be included such AP grade in the Semester grade report for that course, provided student has the minimum attendance as prescribed by the Savitribai Phule Pune University and satisfactory in-semester performance and secured a passing grade in that audit course. No grade points are associated with this 'AP' grade and performance in these courses is not accounted in the calculation of the performance indices SGPA and CGPA. Evaluation of audit course will be done at institute level itself. (Ref- http://www.unipune.ac.in/Syllabi_PDF/revised-2015/engineering/UG_RULE_REGULATIONS_FOR_CREDIT_SYSTEM-2015_18June.pdf)

Guidelines for Conduction and Assessment (Any one or more of following but not limited to)

- Lectures/ Guest Lectures
- Visits (Social/Field) and reports
- Demonstrations
- Surveys
- Mini Project
- Hands on experience on specific focused topic

Guidelines for Assessment (Any one or more of following but not limited to)

- Written Test
- Demonstrations/ Practical Test
- Presentations
- IPR/Publication
- Report

Audit Course 1 Options

Course Code	Audit Course Title
AC1-I	Road Safety
AC1-II	Humanities and Social Sciences
AC1-III	Environmental Studies
AC1-IV	Smart Cities
AC1-V	Foreign Language (one of Japanese/Spanish/French/German). Course contents for **Japanese (Module 1)** are provided. For other languages institute may design suitably.

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210250: Audit Course 1
AC1-I: Road Safety

Road transport remains the least safe mode of transport, with road accidents representing the main cause of death of people. The boom in the vehicle population without adequate road infrastructure, poor attention to driver training and unsatisfactory regulation has been responsible for increase in the number of accidents. India's vehicle population is negligible as compared to the World statistics; but the comparable proportion for accidents is substantially large.

The need for stricter enforcement of law to ensure greater safety on roads and an environment-friendly road transport operation is of paramount importance. Safety and security are growing concerns for businesses, governments and the traveling public around the world, as also in India. It is, therefore, essential to take new initiatives in raising awareness, skill and knowledge of students as one of the ibid stake holders who are expected to follow the rules and policies of the government in order to facilitate safety of individual and safe mobility of others.

Course Contents:

1. Existing Road Transport Scenario
2. Accident Causes & Remedies
3. Road Accident Investigation & Investigation Methods
4. Vehicle Technology – CMVR & Road Safety
5. Regulatory / Legislative Provisions for Improving Road Safety
6. Behavioral Training for Drivers for Improving Road Safety
7. Road Safety Education
8. Road Engineering Measures for Improving Road Safety

References:

1. –Road Accidents in India Issues & Dimensions" , Ministry of Road Transport & Highways Government of India (www.unescap.org/sites/default/files/2.12.India_.pdf)
2. –Road Safety in India- Insights and analysis", http://indiatransportportal.com/wp-content/uploads/2012/11/Road_safety_2012.pdf
3. Road User's Handbook, ROADS & MARITIME PUBLICATIONS
4. –Improving Road Safety in Developing Countries", The national Academic Press

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210250: Audit Course 1
AC1-II: Humanities and Social Sciences

Objective of Humanities and Social Science (HSS) is to produce well-rounded engineers, not only having good technological skills but also with the ability to interact with different organs of an organization.

HSS is concerned with society and the relationships among individuals within a society. It in turn has many branches, each of which is considered a "social science". The main social sciences include economics, political science, human geography, demography and sociology. In a wider sense, social science also includes some fields in the humanities such as anthropology, archaeology, psychology, history, law and linguistics.

Course Objectives:

- Human and social development;
- Contemporary national and international affairs;
- Emergence of Indian society and Economics

Course Outcomes:

On completion of the course, student will be able to–

- Making engineering and technology students aware of the various issues concerning man and society.
- These issues will help to sensitize students to be broader towards the social, cultural, economic and human issues, involved in social changes
- Able to understand the nature of the individual and the relationship between the self and the community
- Understanding major ideas, values, beliefs, and experiences that have shaped human history and cultures

Course Contents

1. **Indian Society :** Structure of Indian Society, Indian Social Demography– Social and Cultural, Differentiations: caste, class, gender and tribe; Institutions of marriage, family and kinship- Secularization –Social Movements and Regionalism- Panchayatraj Institutions; Indian constitution; Affirmative Action Programme of the Government- various reservations and commissions.

2. **Social Development**: Scientific approach to the study of human beings. Evolution of human kind, social change and evolution. Industrial revolution. National policy on education, health and health care and human development.

3. **Sectoral Development: Agriculture:** Technology changes, Green revolutions, Employment Rural & Urban, Government Schemes. Industrial Development: Strategies, Public & Private Sectors, Categories, infrastructure, transport & communication, Consumer Awareness.

4. **Environment & Ecology:** Ecosystems: Structure, Working, components. Pollution: Water & Air Pollution, Global Warming, Control Strategies, International Treaties. Energy Sources: Renewable & Non Renewable, Hydro power, Biomass, Ocean, Geothermal & Tidal. Global Environmental Issues: Population Growth, Soil Degradation, Loss of Biodiversity.

References:

1. Krugman, ―International Economics", Pearson Education, ISBN-13:000-01334-23646
2. Prakash, ―The Indian Economy", Pearson Education, ISBN-8131758931
3. Thursen Gerald, ―Engineering Economics", Prentice Hall, ISBN-10:0138221227
4. C.S. Rao, ―Environmental Pollution Control Engineering", New Age International Pvt. Ltd, ISBN-812241835X
5. Rangarajan, ―Environmental Issues in India, Pearson Education", ISBN-10:8131708101
6. University of Delhi, ―The Individual & Society", Pearson Education. ISBN-8131704173
7. Wikipedia.org / wiki /social studies.
8. M. N. Srinivas, ―Social change in modern India, 1991", Orient Longman, ISBN-10:812500422X
9. David Mandelbaum, ―Society in India", 1990, Popular, ISBN-10:8171540139
10. David Newman, ―Exploring the architecture of everyday life", Pine Forge Press, 7th edition, ISBN-10:1452275947

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210250: Audit Course 1
AC1-III: Environmental Studies

Environmental studies are the field that examines this relationship between people and the environment. An environmental study is an interdisciplinary subject examining the interplay between the social, legal, management, and scientific aspects of environmental issues.

Course Objectives:

- Understanding the importance of ecological balance for sustainable development.
- Understanding the impacts of developmental activities and mitigation measures.
- Understand and realize the multi-disciplinary nature of the environment, its components, and inter-relationship between man and environment
- Understand the relevance and importance of the natural resources in the sustenance of life on earth and living standard

Course Outcomes:

On completion of the course, student will be able to–

- Comprehend the importance of ecosystem and biodiversity
- To correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention
- Identify different types of environmental pollution and control measures
- To correlate the exploitation and utilization of conventional and non-conventional resources

Course Contents:

1. **Natural Resources:** Introduction, Renewable and non-renewable, Forest, water, mineral, food, energy and land resources, Individual and conservation of resources, Equitable use of resources.
2. **Ecosystems:** Concept, Structure, Function, Energy flow, Ecological succession, Forest, grassland, desert and aquatic ecosystems - Introduction, characteristic features, structure and function.
3. **Biodiversity:** Genetic, Species and ecological diversity, Biogeographical classification of India, Value and hot spots, Biodiversity at global, national and local levels, India as mega-biodiversity nation, Threats to biodiversity, Endangered and endemic species of India, Conservation of Biodiversity, Endangered and endemic species, Conservation of biodiversity.
4. **Pollution:** Definition, Causes, effects and control measures of the pollution – Air, soil, Noise, Water, Marine and Thermal and Nuclear Pollution, Solid waste management, Role of Individual in Prevention of Pollution, Pollution case studies, Disaster management

References:

1. Bharucha, E., ―Textbook of Environmental Studies", Universities Press (2005), ISBN-10:8173715408
2. Mahua Basu, ―Environmental Studies", Cambridge University Press, ISBN-978-1-107-5317-3

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210250: Audit Course 1
AC1-IV: Smart Cities

We breathe in a world defined by urbanization and digital ubiquity, where mobile broadband connections outnumber fixed ones, machines dominate a new "internet of things," and more people live in cities than in the countryside. This course enables us to take a broad historical look at the forces that have shaped the planning and design of cities and information technologies from the rise of the great industrial cities of the nineteenth century to the present. This course considers the motivations, aspirations, and shortcomings of them all while offering a new civics to guide our efforts as we build the future together, one click at a time.

Course Objectives:

- To identify urban problems
- To study Effective and feasible ways to coordinate urban technologies.
- To study models and methods for effective implementation of Smart Cities.
- To study new technologies for Communication and Dissemination.
- To study new forms of Urban Governance and Organization.

Course Outcomes:

On completion of the course, learner will be able to–

- Better understanding of the dynamic behavior of the urban system by going beyond the physical appearance and by focusing on representations, properties and impact factors
- Exploration of the city as the most complex human-made organism with a metabolism that can be modeled in terms of stocks and flows
- Knowledge about data-informed approaches for the development of the future city, based on crowd sourcing and sensing
- Knowledge about the latest research results in for the development and management of future cities
- Understanding how citizens can benefit from data-informed design to develop smart and responsive cities

Course Contents:

Urbanization and Ubiquity - The slow emergence of learning cities in an urbanizing world Cities as collective learners, what do we know?- Framing a view -A gamut of learning types - Secrets of knowing and accelerating change - Why some cities learn and others do not.

References:

1. Anthony M. Townsend, W. W. Norton & Company –Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia", ISBN: 0393082873, 9780393082876.
2. Tim Campbell, Routledge –Beyond Smart Cities: How Cities Network, Learn and Innovate", Routledge, ISBN: 9781849714266.
3. Stan Geertman, Joseph Ferreira, Jr. Robert Goodspeed, John Stillwell, –Planning Support System ms and Smart Cities", Lecture notes in Geo information and Cartography, Springer.

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210250: Audit Course 1
AC1-V: Foreign Language- Japanese (Module 1)

About course:

With changing times, the competitiveness has gotten into the nerves and _Being the Best' at all times is only the proof of it. Nonetheless, _being the best' differs significantly from _Communicating the best'. The best can merely be communicated whilst using the best suited Language!

Japanese is the new trend of 21st century. Not only youngsters but even the professionals seek value in it. It is the engineer's companion in current times with an assertion of a thriving future. Pune has indisputably grown to become a major center of Japanese Education in India while increasing the precedence for Japanese connoisseurs.

Japanese certainly serves a great platform to unlock a notoriously tough market & find a booming career. While the companies prefer candidates having the knowledge of the language, it can additionally help connect better with the native people thus prospering in their professional journey. Learning Japanese gives an extra edge to the _resume' since the recruiters consciously make note of the fact it requires real perseverance and self-discipline to tackle one of the most complex languages.

It would be easy for all time to quit the impossible; however it takes immense courage to reiterate the desired outcomes, recognize that improvement is an ongoing process and ultimately soldier on it. The need of an hour is to introduce Japanese language with utmost professionalism to create awareness about the bright prospects and to enhance the proficiency and commitment. It will then prove to be the ultimate path to the quest for professional excellence!

Course Objectives:

- To meet the needs of ever growing industry with respect to language support.
- To get introduced to Japanese society and culture through language.

Course Outcomes:

On completion of the course student

- will have ability of basic communication.
- will have the knowledge of Japanese script.
- will get introduced to reading , writing and listening skills
- will develop interest to pursue professional Japanese Language course.

Course Contents:

1 : Introduction to Japanese Language. Hiragana basic Script, colors, Days of the week

2 : Hiragana : modified Kana, double consonant, Letters combined with ya, yu, yo
Long vowels, Greetings and expressions

3 : Self Introduction, Introducing other person, Numbers, Months, Dates, Telephone numbers, Stating one's age.

References:

1. Minna No Nihongo, –Japanese for Everyone", Elementary Main Text book 1-1 (Indian Edition), Goyal Publishers & Distributors Pvt. Ltd.
2. http://www.tcs.com (http://www.tcs.com/news_events/press_releases/Pages/TCS-Inaugurates-Japan-centric-Delivery-Center-Pune.aspx)

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210258: Audit Course 2

In addition to credits, it is recommended that there should be audit course in preferably in each semester from second year to supplement their knowledge and skills. Student will be awarded the bachelor's degree if he/she earns 190 credits and clears all the audit courses specified in the syllabus. The student will be awarded grade as AP on successful completion of audit course.

The student may opt for one of the audit courses per semester, starting in second year first semester. Though not mandatory, such a selection of the audit courses helps the learner to explore the subject of interest in greater detail resulting in achieving the very objective of audit course's inclusion. List of options offered is provided. Each student has to choose one audit course from the list per semester. Evaluation of audit course will be done at institute level itself. Method of conduction and method of assessment for audit courses are suggested.

Criteria:

The student registered for audit course shall be awarded the grade AP(Audit Course Pass) and shall be included such AP grade in the Semester grade report for that course, provided student has the minimum attendance as prescribed by the Savitribai Phule Pune University and satisfactory in-semester performance and secured a passing grade in that audit course. No grade points are associated with this 'AP' grade and performance in these courses is not accounted in the calculation of the performance indices SGPA and CGPA. Evaluation of audit course will be done at institute level itself. (Ref- http://www.unipune.ac.in/Syllabi_PDF/revised-2015/engineering/UG_RULE_REGULATIONS_FOR_CREDIT_SYSTEM-2015_18June.pdf)

Guidelines for Conduction and Assessment (Any one or more of following but not limited to)

- Lectures/ Guest Lectures
- Visits (Social/Field) and reports
- Demonstrations
- Surveys
- Mini Project
- Hands on experience on specific focused topic

Guidelines for Assessment (Any one or more of following but not limited to)

- Written Test
- Demonstrations/ Practical Test
- Presentations
- IPR/Publication
- Report

Audit Course 2 Options

Audit Course Code	Audit Course Title
AC2-I	Water Management
AC2-II	Intellectual Property Rights and Patents
AC2-III	The Science of Happiness
AC2-IV	Stress Relief: Yoga and Meditation
AC2-V	Foreign Language (one of Japanese/Spanish/French/German) Course contents for **Japanese(Module 2)** are provided. For other languages institute may design suitably.

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210258: Audit Course 2
AC2-I: Water Management

Water is a vital resource for all life on the planet. Only three percent of the water resources on Earth are fresh and two-thirds of the freshwater is locked up in ice caps and glaciers. One fifth of the remaining one percent is in remote, inaccessible areas. As time advances, water is becoming scarcer and having access to clean, safe, drinking water is limited among countries. Pure water supply and disinfected water treatment are prerequisites for the well-being of communities all over the world. One of the biggest concerns for our water-based resources in the future is the sustainability of the current and even future water resource allocation. This course will provide students a unique opportunity to study water management activities like planning, developing, distributing and optimum use of water resources. This course covers the topics that management of water treatment of drinking water, industrial water, sewage or wastewater, management of water resources, management of flood protection.

Course Objectives:

- To develop understanding of water recourses.
- To study global water cycle and factors that affect this cycle.
- To analyze the process for water resources and management.
- To study the research and development areas necessary for efficient utilization and management of water recourses.

Course Outcomes:

On completion of the course, learner will be able to–

- Understanding of the global water cycle and its various processes
- Understanding of climate change and their effects on water systems
- Understanding of Drinking treatment and quality of groundwater and surface water
- Understanding of the Physical, chemical, and biological processes involved in water treatment and distribution.

Course Contents:

1. Understanding _water‘-Climate change and the global water cycle, Understanding global hydrology
2. Water resources planning and management-Water law and the search for sustainability: a comparative analysis, Risk and uncertainty in water resources planning and management
3. Agricultural water use -The role of research and development for agriculture water use
4. Urban water supply and management - The urban water challenge, Water sensitive urban design

References:

1. R. Quentin Graft, Karen Hussey, Quentin Graft, Karen Hussey, Publisher, "Water Resources Planning and Management”, Cambridge University Press, ISBN: 9780511974304, 9780521762588.
2. P. C. Basil, "Water Management in India”, ISBN: 8180690970, 2004.
3. C.A. Brebbia, "Water Resources Management”, ISBN: 978-1-84564-960-9

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210258: Audit Course 2
AC2-II: Intellectual Property Rights and Patents

Intellectual property is the area of law that deals with protecting the rights of those who create original works. It covers everything from original plays and novels to inventions and company identification marks. The purpose of intellectual property laws is to encourage new technologies, artistic expressions and inventions while promoting economic growth.

Innovation and originality have great potential value. Whatever line of activity you are engaged in, future success depends on them. The last few years have seen intellectual property rights become an issue of general interest: the smart phone –patent wars", the introduction of Digital Rights management (DRM) and the rise of generic pharmaceuticals and open-source software are just some examples that have been in the public eye. Protecting your intellectual rights appropriately should be a top priority. Yet too many people embark on their chosen professions without even a basic awareness of intellectual property.

Course Objectives:

- To encourage research, scholarship, and a spirit of inquiry
- To encourage students at all levels to develop patentable technologies.
- To provide environment to the students of the Institute for creation, protection, and commercialization of intellectual property and to stimulate innovation.

Course Outcomes:

On completion of the course, learner will be able to–

- Understand the fundamental legal principles related to confidential information, copyright, patents, designs, trademarks and unfair competition
- Identify, apply and assess principles of law relating to each of these areas of intellectual property
- Apply the appropriate ownership rules to intellectual property you have been involved in creating

Course Contents:

- **Introduction to Intellectual Property Law –** The Evolutionary Past - The IPR Tool Kit- Para -Legal Tasks in Intellectual Property Law
- **Introduction to Trade mark –** Trade mark Registration Process – Post registration Procedures – Trade mark maintenance - Transfer of Rights – Inter partes Proceeding – Infringement - Dilution Ownership of Trade mark
- **Introduction to Copyrights – –** Principles of Copyright Principles -The subjects Matter of Copy right – The Rights Afforded by Copyright Law – Copy right Ownership, Transfer and duration – Right to prepare Derivative works
- **Introduction to Trade Secret –** Maintaining Trade Secret – Physical Security – Employee Limitation - Employee confidentiality agreement

References:

1. Debirag E. Bouchoux: –Intellectual Property". Cengage learning ISBN-10:1111648573
2. Ferrera, Bird, Darrow, –Cyber Law. Texts & Cases", South- ISBN:0-324-39972-3
3. Prabhuddha Ganguli: –Intellectual Property Rights" TMH, ISBN-10:0070077177

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210258: Audit Course 2
AC2-III : The Science of Happiness

Everybody wants to be happy. One can explore innumerable ideas about what happiness is and how we can get some. But not many of those ideas are based on science. That's where this course comes in. The "The subject "Science of Happiness" aims to teach the pioneering science of positive psychology, which explores the ancestry of a happy and meaningful life. Clinical psychologists have been dealing with miserable feelings since their discipline was established. In the last 30 years, neuroscientists have made major headway in the understanding of the sources of anger, depression, and fear.

Today, whole industries profit from this knowledge—producing pills for every sort of pathological mood disturbance. But until recently, few neuroscientists focused on the subject of happiness. This course focuses on discovering how cutting-edge research can be applied to their lives. Students will learn about the Intra-disciplinary research supporting this view, spanning the fields of psychology, neuroscience, evolutionary biology, and beyond. The course offers students practical strategies for tapping into and nurturing their own happiness, including trying several research-backed activities that foster social and emotional well-being, and exploring how their own happiness changes along the way.

Course Objectives:

- To understand the feeling of happiness
- To study the sources of positive feelings
- To analyze the anatomy of the happiness system
- To study the effect of thoughts and emotions on the happiness system

Course Outcomes:

On completion of the course, learner will be able to–

- Ability to understand what happiness is and why it matters to you
- Ability to learn how to increase your own happiness
- Understanding of the power of social connections and the science of empathy
- Ability to understand what is mindfulness and its real world applications

Course Contents:

1. Happiness: what is it?
2. The secret of smiling
3. The autonomy of positive feelings
4. Positive feelings as a compass
5. The happiness system
6. Foundations: Emotions, Motivation and nature of Well being
7. Subjective well being
8. Love and well being
9. Optimal well being
10. Religion, Spirituality and well being

References:

1. Happier, Stefan Klein , "The Science of Happiness, How Our Brains Make Us Happy and what We Can Do to Get", Da Capo Press, ISBN 10: 156924328X, 13: 978-1569243282.
2. C. Compton, Edward Hoffman, "Positive Psychology: The Science of Happiness and Flourishing", William, Cengage Learning, 2012, ISBN10: 1111834121.

Savitribai Phule Pune University
Second Year of Computer Engineering (2015 Course)
210258: Audit Course 2
AC2-IV: Stress Relief: Yoga and Meditation

The concepts and practices of Yoga originated in India about several thousand years ago. Its founders were great Saints and Sages. The great Yogis presented rational interpretation of their experiences of Yoga and brought about a practical and scientifically sound method within every one‘s reach. Yoga today, is no longer restricted to hermits, saints, and sages; it has entered into our everyday lives and has aroused a worldwide awakening and acceptance in the last few decades. The science of Yoga and its techniques have now been reoriented to suit modern sociological needs and lifestyles.

Yoga is one of the six systems of Vedic philosophy. The Yoga advocates certain restraints and observances, physical discipline, breathe regulations, restraining the sense organs, contemplation, meditation and Samadhi. The practice of Yoga prevents psychosomatic disorders and improves an individual‘s resistance and ability to endure stressful situations.

Course Objectives:

- To impart knowledge about the basic technique and practice of yoga, including instruction in breath control, meditation, and physical postures
- To gain an intellectual and theoretical understanding of the principles embodied in the Yoga Sutras, the Bhagavad-Gita, and other important texts and doctrines
- Relaxation and stress reduction ,Personal insight and self understanding, Personal empowerment, Gaining wisdom and spiritual discernment
- Awakening the abilities or powers of the Super conscious mind

Course Outcomes:

On completion of the course, learner will be able to–

- Students understanding of philosophy and religion as well as daily life issues will be challenged and enhanced.
- Enhances the immune system.
- Intellectual and philosophical understanding of the theory of yoga and basic related Hindu scriptures will be developed.
- Powers of concentration, focus, and awareness will be heightened.

Course Contents:

1. Meaning and definition of yoga – Scope of Yoga - Aims and Objectives of Yoga – Misconception about yoga.
2. Ayurveda: an introduction to this system of health care derived from the Vedic tradition Anatomy and Physiology as they relate to Yoga
3. Yoga Philosophy and Psychology

References:

1. B.K.S. Iyengar, –BKS Iyengar Yoga The Path to Holistic Health”, DK publisher, ISBN-13: 978-1409343479
2. Osho, –The Essence of Yoga”, Osho International Foundation, ISBN: 9780918963093

Savitribai Phule Pune University, Pune
Second Year of Computer Engineering (2015 Course)
210258: Audit Course 2
AC2-V: Foreign Language (Japanese) Module 2

With changing times, the competitiveness has gotten into the nerves and _Being the Best' at all times is only the proof of it. Nonetheless, _being the best' differs significantly from _Communicating the best'. The best can merely be communicated whilst using the best suited Language!!

Course Objectives:

- To meet the needs of ever growing industry with respect to language support.
- To get introduced to Japanese society and culture through language.

Course Outcomes:

On completion of the course student-

- will have ability of basic communication.
- will have the knowledge of Japanese script.
- will get introduced to reading, writing and listening skills for language Japanese.
- will develop interest to pursue professional Japanese Language course.

Course Contents:

- Katakana basic Script, Denoting things (nominal & prenominal demonstratives), Purchasing at the Market / in a shop / mall (asking & stating price)
- Katakana : Modified kana, double consonant, letters with ya, yu, yo, Long vowels, Describing time, describing starting & finishing time (kara ~ made), Point in time (denoting the time when any action or the movement occurs)
- Means of transport (Vehicles), Places, Countries, Stating Birth date, Indicating movement to a certain place by a vehicle

References:

1. Minna No Nihongo, –Japanese for Everyone", (Indian Edition), Goyal Publishers & Distributors Pvt. Ltd.
2. http://www.tcs.com (http://www.tcs.com/news_events/press_releases/Pages/TCS-Inaugurates-Japan-centric-Delivery-Center-Pune.aspx)

UNIVERSITY OF PUNE
TE (COMPUTER ENGINEERING)- 2008 COURSE

Term-I

Sub Code	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Lect	Pract	Th	TW	Pr	Or	
310241	Database Management Systems	03	—	100	—	—	—	100
310242	Data Communications	03	—	100	—	—	—	100
310243	Microprocessors and Micro-controllers	03	—	100	—	—	—	100
310244	Digital Signal Processing	04	—	100	—	—	—	100
310245	Theory of Computation	03	—	100	—	—	—	100
310246	RDBMS and Visual Programming Laboratory	02	04	—	50	50	—	100
310247	Signal Processing Laboratory	—	04	—	25	—	50	075
310248	Hardware Laboratory	—	04	—	25	50	—	075
Total		**18**	**12**	**500**	**100**	**100**	**50**	**750**
Total of Part I (A)		**30 Hrs**		**750**				

Term-II

Sub Code	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Lect	Pract	Th	TW	Pr	Or	
310249	Principles of Programming Languages	03	—	100	—	—	—	100
310250	Computer Networks	03	—	100	—	—	—	100
310251	**Finance and Management Information Systems**	**04**	**—**	**100**	**—**	**—**	**—**	**100**
310252	**Systems Programming & Operating Systems**	**04**	**—**	**100**	**—**	**—**	**—**	**100**
310253	Software Engineering	03	—	100	—	—	—	100
310254	Software Laboratory	—	04	— -	25	50	—	075
310255	Computer Networks	01	04	—	25	—	50	075
310256	Software Development Tools Laboratory	—	02	—	50	—	—	050
310257	Seminar and Technical Communication	—	02	—	50	—	—	050
Total		**18**	**12**	**500**	**150**	**50**	**50**	**750**
Total of Part II (B)		**30 Hrs**		**750**				
Grand Total				**1500**				

Th: Theory Tw: Term Work Pr: Practical Or: Oral

310251: FINANCE & MANAGEMENT INFORMATION SYSTEMS

Teaching Scheme: **Examination Scheme:**
Lectures: 3 Hrs/Week **Theory: 100 Marks**

Unit I: Basic of management theory & practice
Evolution of management thoughts, system approach to management process, functions of manager, social responsibilities of manager. International management and Multinational Corporation, cultural differences in international management. Quality perspective, HR management and selection, performance appraisal and carrier strategies **(6 hrs)**

Unit II: Finance
Overview of financial management: goal of financial management, fundamental principle of finance, risk return trade off, forms of business organization .**Financial statements taxes and cash flow**: balance sheet, profit and loss account, finance topics, taxes, free cash flow. Time value of money: time lines and notations, present and future value of single amount. **Mergers & acquisition**: Mergers, acquisition, takeover, privatization, Divestitures. Corporate Security: Share, debentures & International Security **(8 hrs)**

Unit III: Basics of MIS -Decision making:
Concepts, process and organizational decision making, role of MIS in decision making. Development process of MIS: MIS plan, development & implementation of MIS. Strategies design of MIS, business process reengineering, relevance of IT, DSS concepts, philosophy and application, knowledge management and system. **(8 hrs)**

Unit IV: E-business
E-business enterprise: Organization of business in digital form, e-business, e-commerce, e-communication, e-collaboration and real time enterprise. Modern business technology: security and businesses, web enabled business management, CMS, ECM, enterprise portal. **(6 hrs)**

Unit V : Enterprise and global management
Enterprise management system: EMS, ERP, SCM, CRM. Information security challenges, Global management: outsourcing and off-shoring, cultural, political and economical challenges, global business IT strategies and applications, global IT platform, global data access issues. **(6 hrs)**

Unit VI: Laws and case studies
Law: cyber law, IT act, right to information act, IPR law, IT impact on society.
Case studies: Refer case studies given in the text book **(6 hrs)**

Text books:

1. W.S. Jawadekar, "Management information system, text and cases: A digital firm perspective" 4th edition, Tata Mcgraw hill, 2009
2. J.A.O'Brien, "Management information system", 9th edition, Tata Mcgraw hill, 2009
3. H. Koontz, "Essentials of management: An international perspective", 8th edition, Tata Mcgraw hill, 2010
4. P. Chandra, "Financial management theory and practice", 6th edition, Tata Mcgraw hill, 2007

References Books:

1. P.K.Goel, "Business law for managers", priztantra, 2009
2. V. Sharan, "Fundamentals of financial management", Pearson, 2nd edition
3. E.Turban, "Information technology for management", 6th edition, Wiley edition, 2008
4. R. Mclead, "Management information system", 10th edition, Pearson

310257: SEMINAR AND TECHNICAL COMMUNICATION

Teaching Scheme **Examination Scheme**
Practical: 2 Hrs/Week **Term Work: 50 Marks**

Objective:

- To explore the basic principles of communication (verbal and non-verbal) and active, empathetic listening, speaking and writing techniques.
- To expose the student to new technologies, researches, products, algorithms, protocols etc.

Instructions for student

- Each student will select a topic in the area of Computer Engineering and Technology preferably keeping track with recent technological trends and development.
- The topic must be selected in consultation with the institute guide.
- Each student will make a seminar presentation in the term making use of audio/visual aids for a duration of 20-25 minutes and submit the seminar report in the form of bound journal (two copies) duly signed by the guide and Head of department.
- Attendance at seminars for all students is compulsory.
- A panel of staff members from the institute will assess the seminar internally during the presentation.

Format of the Seminar Report

- Title Page with Title of the topic, Name of the candidate with Exam Seat Number, Roll Number, Name of the Guide, Name of the Department, Institution and Year
- Seminar Approval Sheet
- Abstract
- Table of Contents, List of Figures, List of Tables and Nomenclature
- Introduction with section describing organization of the report
- Literature Survey
- Details of Analytical and/or experimental work, if any
- Discussions and Conclusions
- Acknowledgement,
- References

Note:

1. The total workload of the seminar head can be calculated as follows:
   Total Workload = (Number of students*2)/9
2. The maximum number of seminars assigned to every eligible faculty should not be more than 9.

Savitribai Phule University of Pune
Third Year Computer Engineering (2015 Course)
(with effect from 2017-18)

Semester I

Course Code	Course	Teaching Scheme Hours / Week			Examination Scheme and Marks						Credit	
		Theory	Tutorial	Practical	In-Sem	End-Sem	TW	PR	OR	Total	TH/ TUT	PR
310241	Theory of Computation	03	--	--	30	70	--	--	--	100	03	--
310242	Database Management Systems (DBMS)	03	--	--	30	70	--	--	--	100	03	--
310243	Software Engineering & Project Management	03	--	--	30	70	--	--	--	100	03	--
310244	Information Systems & Engineering Economics	03	--	--	30	70	--	--	--	100	03	--
310245	Computer Networks (CN)	04	--	--	30	70	--	--	--	100	04	--
310246	Skills Development Lab	--	02	04	--	--	50	--	50	100	02	02
310247	DBMS Lab	--	--	04	--	--	25	50	--	75	--	02
310248	CN Lab	--	--	02	--	--	25	50	--	75	--	01
										Total Credit	18	05
	Total	16	02	10	150	350	100	100	50	750	23	
310249	Audit Course 3										Grade	

310249-Audit Course 3 (AC3) Options:

AC3-I: Cyber Security
AC3-II: Professional Ethics and Etiquettes
AC3-III: Emotional Intelligence
AC3-IV: MOOC- Learn New Skills
AC3-V: Foreign Language (Japanese- Module 3)

Abbreviations:

TW: Term Work **TH:** Theory **OR:** Oral **TUT**: Tutorial **PR**: Practical **Sem:** Semester

Savitribai Phule University of Pune
Third Year Computer Engineering (2015 Course)
(with effect from 2017-18)

Semester II

Course Code	Course	Teaching Scheme Hours / Week			Examination Scheme and Marks						Credit	
		Theory	Tutorial	Practical	In-Sem	End-Sem	TW	PR	OR	Total	TH/ TUT	PR
310250	Design & Analysis of Algorithms	04	--	--	30	70	--	--	--	100	04	
310251	Systems Programming & Operating System (SP & OS)	04	--	--	30	70	--	--	--	100	04	--
310252	Embedded Systems & Internet of Things (ES & IoT)	04	--	--	30	70	--	--	--	100	04	--
310253	Software Modeling and Design	03	--	--	30	70	--	--	--	100	03	--
310254	Web Technology	03	--	--	30	70	--	--	--	100	03	--
310255	Seminar & Technical Communication	--	01	--	--	--	50	--	--	50	01	--
310256	Web Technology Lab	--	--	02	--	--	25	50	--	75	--	01
310257	SP & OS Lab	--	--	04	--	--	25	50	--	75	--	02
310258	ES & IoT Lab	--	--	02	--	--	50	--	--	50	--	01
										Total Credit	19	04
	Total	18	01	08	150	350	150	100	--	750	23	
310259	Audit Course 4										Grade	

310259-Audit Course 4(AC4) Options:

AC4-I: Digital and Social Media Marketing **AC4-II:** Green Computing
AC4-III: Sustainable Energy Systems **AC4-IV:** Leadership and Personality Development
AC4-V: Foreign Language (Japanese- Module 4)

Abbreviations:

TW: Term Work **TH:** Theory **OR:** Oral **TUT**: Tutorial **PR**: Practical **Sem**: Semester

Savitribai Phule Pune University
Third Year of Computer Engineering (2015 Course)
310243: Software Engineering and Project Management

Teaching Scheme:	Credit	Examination Scheme:
TH: 03 Hours/Week	03	In-Sem (Paper): 30 Marks End-Sem (Paper): 70 Marks

Prerequisite Courses: Fundamentals of Programming Languages (110003, 110011)

Course Objectives:

- To learn and understand the principles of Software Engineering
- To be acquainted with methods of capturing, specifying, visualizing and analyzing software requirements.
- To apply Design and Testing principles to S/W project development.
- To understand project management through life cycle of the project.
- To understand software quality attributes.

Course Outcomes:

On completion of the course, student will be able to–

- Decide on a process model for a developing a software project
- Classify software applications and Identify unique features of various domains
- Design test cases of a software system.
- Understand basics of IT Project management.
- Plan, schedule and execute a project considering the risk management.
- Apply quality attributes in software development life cycle.

Course Contents

Unit I	Introduction to Software Engineering, Software Process Models	07 Hours

Software Engineering Fundamentals: Nature of Software, Software Engineering Principles, The Software Process, Software Myths. **Process Models :**A Generic Process Model, Prescriptive Process Models: The Waterfall, Incremental Process(RAD), Evolutionary Process, Unified Process, Concurrent. **Advanced Process Models & Tools:** Agile software development: Agile methods, Plan-driven and agile development, Extreme programming Practices, Testing in XP, Pair programming. Introduction to agile tools: JIRA, Kanban,
Case Studies: An information system (mental health-care system), wilderness weather system

Unit II	Software Requirements Engineering& Analysis	08 Hours

Requirements Engineering: User and system requirements, Functional and non-functional requirements, Types & Metrics, A spiral view of the requirements engineering process. **Software Requirements Specification (SRS):** The software requirements Specification document, The structure of SRS, Ways of writing a SRS, structured & tabular SRS for an insulin pump case study, **Requirements elicitation & Analysis:** Process, Requirements validation, Requirements management. **Case Studies:** The information system.
Case study - Mental health care patient management system (MHC-PMS).

Unit III	Design Engineering	08 Hours

Design Process & quality, Design Concepts, The design Model, Pattern-based Software Design. **Architectural Design :**Design Decisions, Views, Patterns, Application Architectures, **Modeling Component level Design:** component, Designing class based components, conducting component-level design, **User Interface Design:** The golden rules, Interface Design steps & Analysis, Design Evaluation, **Case Study:** Web App Interface Design

Unit IV	Project Management: Process, Metrics, Estimations & Risks	08 Hours

Project Management Concepts: The Management Spectrum, People, Product, Process, Project, The W5HH Principle, Metrics in the Process and Project Domains, Software Measurement : size & function oriented metrics(FP & LOC), Metrics for Project and Software Quality, P**roject Estimation :**Observations on Estimation, Project Planning Process, Software Scope and feasibility, Resources: Human Resources, Reusable software, Environmental Resources. Software Project Estimation, Decomposition Techniques, Empirical Estimation Models: Structure, COCOMO II, Estimation of Object-oriented Projects, Specialized Estimation **Case Study:** Software Tools for Estimation, **Project Scheduling:** Basic Concepts, Defining a Task Set for the Software Project, Defining Task Network, Scheduling with time-line charts, Schedule tracking Tools:- Microsoft Project, Daily Activity Reporting & Tracking (DART)

Unit V	Project Management: Risk Management, Configuration Management, Maintenance & Reengineering	07 Hours

Project Risk Management : Risk Analysis & Management: Reactive versus Proactive Risk Strategies, Software Risks, Risk Identification, Risk Projection, Risk Refinement, Risk Mitigation, Risks Monitoring and Management, The RMMM plan for case study project

Software Configuration Management : The SCM repository, SCM process, Configuration management for WebApps, **Case study:** CVS and Subversion Tools, Visual Source Safe from Microsoft & Clear Case. **Maintenance & Reengineering:** Software Maintenance, Software Supportability, Reengineering, Business Process Reengineering, Software Reengineering, Reverse Engineering, Restructuring, Forward Engineering

Unit VI	Software Testing	07 Hours

Introduction to Software Testing, Principles of Testing, Testing Life Cycle, Phases of Testing, Types of Testing, Verification & Validation, Defect Management, Defect Life Cycle, Bug Reporting, GUI Testing, Test Management and Automation.

Books:

Text:

1. Roger Pressman, “Software Engineering: A Practitioner’s Approach”, McGraw Hill, ISBN 0–07–337597–7
2. Ian Sommerville, “ Software Engineering”, Addison and Wesley, ISBN 0-13-703515-2

References:

1. Carlo Ghezzi, “Fundamentals of Software Engineering", Prentice Hall India, ISBN-10: 0133056996
2. Rajib Mall, “Fundamentals of Software Engineering”, Prentice Hall India, ISBN-13: 978-8120348981
3. Pankaj Jalote, “An Integrated Approach to Software Engineering”, Springer, ISBN 13: 9788173192715.
4. S K Chang, “Handbook of Software Engineering and Knowledge Engineering”, World Scientific, Vol I, II, ISBN: 978-981-02-4973-1
5. Tom Halt, “Handbook of Software Engineering”, Clanye International, ISBN-10: 1632402939

Savitribai Phule Pune University
Third Year of Computer Engineering (2015 Course)
310249: Audit Course 3

In addition to credits, it is recommended that there should be audit course in preferably in each semester from second year to supplement their knowledge and skills. Student will be awarded the bachelor's degree if he/she earns 190 credits and clears all the audit courses specified in the syllabus. The student will be awarded grade as AP on successful completion of audit course. The student may opt for one of the audit courses per semester, starting in second year first semester. Though not mandatory, such a selection of the audit courses helps the learner to explore the subject of interest in greater detail resulting in achieving the very objective of audit course's inclusion. List of options offered is provided. Each student has to choose one audit course from the list per semester. Evaluation of audit course will be done at institute level itself. Method of conduction and method of assessment for audit courses are suggested.

Criteria:

The student registered for audit course shall be awarded the grade AP (Audit Course Pass) and shall be included such AP grade in the Semester grade report for that course, provided student has the minimum attendance as prescribed by the Savitribai Phule Pune University and satisfactory in-semester performance and secured a passing grade in that audit course. No grade points are associated with this 'AP' grade and performance in these courses is not accounted in the calculation of the performance indices SGPA and CGPA. Evaluation of audit course will be done at institute level itself. (Ref- http://www.unipune.ac.in/Syllabi_PDF/revised-2015/engineering/UG_RULE_REGULATIONS_FOR_CREDIT_SYSTEM-2015_18June.pdf)

Guidelines for Conduction and Assessment (Any one or more of following but not limited to)

- Lectures/ Guest Lectures
- Visits (Social/Field) and reports
- Demonstrations
- Surveys
- Mini Project
- Hands on experience on specific focused topic

Guidelines for Assessment (Any one or more of following but not limited to)

- Written Test
- Demonstrations/ Practical Test
- Presentations
- IPR/Publication
- Report

Audit Course 3 Options

AC3- I	Cyber Security
AC3-II	Professional Ethics and Etiquettes
AC3-III	Emotional Intelligence
AC3-IV	MOOC-Learn New Skills
AC3-V	Foreign Language (one of Japanese/ Spanish/French/German). Course contents for **Japanese (Module 3) are provided. For other languages institute may design suitably.**

Note: It is permitted to opt one of the audit courses listed at SPPU website too, if not opted earlier http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202017/Forms/AllItems.aspx

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310249: Audit Course 3
AC3 – I: Cyber Security

Effective information security at the enterprise level requires participation, planning, and practice. It is an ongoing effort that requires management and staff to work together from the same script. Fortunately, the information security community has developed a variety of resources, methods, and best practices to help modern enterprises address the challenge. Unfortunately, employing these tools demands a high degree of commitment, understanding, and skill attributes that must be sustained through constant awareness and training.

Course Objectives:

- To assess the current security landscape, including the nature of the threat, the general status of common vulnerabilities, and the likely consequences of security failures;
- To critique and assess the strengths and weaknesses of general cyber security models, including the CIA triad
- To appraise the interrelationships among elements that comprise a modern security system, including hardware, software, policies, and people;
- To assess how all domains of security interact to achieve effective system-wide security at the enterprise level.

Course Outcome:

On completion of the course, learner will be able to–

- Compare the interrelationships among security roles and responsibilities in a modern information-driven enterprise—to include interrelationships across security do mains (IT, physical, classification, personnel, and so on)
- Assess the role of strategy and policy in determining the success of information security;
- Estimate the possible consequences of misaligning enterprise strategy, security policy, and security plans;

Course Contents:

1. **Cyber Security Basics:** Introduction, Elements of Information security, Security Policy, Techniques, Operational Model of Network Security, Terminologies in Network Security
2. **Introduction to Cryptography:** Introduction, Encryption Methods: Symmetric, Asymmetric, Public Key and Management, Authentication methods, Digital Signatures
3. **Security requirements:** Electronic Mail Security: Pretty Good Privacy, MIME, S/MIME, And Comparison. WEB Security, Secure Electronic Transaction(SET).
4. **Intrusion and Firewall:** Introduction to threats, Intrusion detection, IDS: Need, Methods, Types of IDS, Password Management, Limitations and Challenges, Firewall Introduction, Characteristics and types, Benefits and limitations. Firewall architecture, Trusted Systems, Access Control
5. **Security perspective of Hacking and its counter majors :** Introduction to Hacking, Counter majors: General Strategies

Books:

1. William Stallings, “Cryptography and Network Security”, Pearson, ISBN:978-93-325-1877-3
2. Oded Goldreich, “Foundations of Cryptography: Basic Tools”, Cambridge University Press, ISBN-10: 0521035368; ISBN-13: 978-0521035361
3. Jonathan Katz and Yehuda Lindell, “Introduction to Modern Cryptography”, CRC Book

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310249: Audit Course 3
AC3 – II: Professional Ethics and Etiquettes

Professional ethics is the underlying concept behind the successful accomplishment of any act of a professional towards achieving the individual and societal goals. These goals should ultimately result in morally, legally, ethically and even culturally acceptable good things for all. Engineers being special group of professionals need to be more conscious of their acts since their duties, rights and responsibilities permeate into the society and the surroundings. To practice professional ethics, understanding of values and concepts are essential.

Course Objectives:

- To create awareness on professional ethics and Human Values.
- To provide basic familiarity about Engineers as responsible Experimenters, Research Ethics, Codes of Ethics, Industrial Standards.
- To inculcate knowledge and exposure on Safety and Risk.
- To expose students to right attitudinal and behavioral aspects

Course Outcome:

On completion of the course, learner will be able to–

- understand the basic perception of profession, professional ethics, various moral issues & uses of ethical theories
- Understand various social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
- Follow Ethics as an engineering professional and adopt good standards & norms of engineering practice.
- apply ethical principles to resolve situations that arise in their professional lives

Course Contents:

1. **Human Values And Engineering Ethics:** Morals, values and Ethics, Integrity, Work ethic, Civic virtue , Valuing time, Cooperation**,** Commitment, Empathy, Self-confidence , stress management, Senses of Engineering Ethics, Kohlberg‟s theory, Gilligan‟s theory, Models of professional roles, Uses of Ethical Theories.
2. **Research Ethics and Codes of Ethics:** Industrial standardization, ethical code and its importance, ethical accountability, law in engineering, engineering as social experimentation.
3. **Safety, Responsibilities And Rights:** Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis and Reducing Risk collegiality, Collective Bargaining , Confidentiality , Conflicts of Interest, Professional Rights, Employee Rights, Intellectual Property Rights (IPR), Discrimination, Utilitarianism
4. **Professional Etiquette:** Etiquette at Meetings, Public Relations Office(PRO)’s Etiquettes, Technology Etiquette Phone Etiquette, Email Etiquette, Social Media Etiquette, Video Conferencing Etiquette, Interview Etiquette, Dressing Etiquettes : for Interview, offices and social functions, Ethical Values: Importance of Work Ethics.

Books:

1. Caroline Whitbeck, “Ethics in Engineering Practice and Research”, Cambridge Press, ISBN:978-1-107-66847-8
2. Prabhuddha Ganguli: ―Intellectual Property Rights‖ Tata Mc-Graw –Hill, New Delhi, ISBN-10:0070077177
3. Professional Ethics and Etiquette (Mastering Career Skills), Checkmark, ISBN-10: 0816071179
4. A Alavudeen, ”Professional Ethics And Human Values” Firewall, ISBN13 : 8131803066

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310249: Audit Course 3
AC3 – III: Emotional Intelligence

This Emotional Intelligence (EI) training course will focus on the five core competencies of emotional intelligence: self-awareness, self-regulation, motivation, empathy and interpersonal skills. Participants will learn to develop and implement these to enhance their relationships in work and life by increasing their understanding of social and emotional behaviors, and learning how to adapt and manage their responses to particular situations. Various models of emotional intelligence will be covered.

Course Objectives:

- To develop an awareness of EI models
- To recognize the benefits of EI
- To understand how you use emotion to facilitate thought and behavior
- To know and utilize the difference between reaction and considered response

Course Outcomes:

On completion of the course, learner will be able to–

- Expand your knowledge of emotional patterns in yourself and others
- Discover how you can manage your emotions, and positively influence yourself and others
- Build more effective relationships with people at work and at home
- Positively influence and motivate colleagues, team members, managers
- Increase your leadership effectiveness by creating an atmosphere that engages others
- Apply EI behaviors and supports high performance

Course Contents:

1. **Introduction to Emotional Intelligence (EI) :** Emotional Intelligence and various EI models, The EQ competencies of self-awareness, self-regulation, motivation, empathy, and interpersonal skills, Understand EQ and its importance in life and the workplace
2. **Know and manage your emotions:** emotions, The different levels of emotional awareness, Increase your emotional knowledge of yourself, Recognize ‘negative’ and ‘positive’ emotions. The relationship between emotions, thought and behavior, Discover the importance of values, The impact of not managing and processing ‘negative’ emotions, Techniques to manage your emotions in challenging situations
3. **Recognize emotions in others :** The universality of emotional expression, Learn tools to enhance your ability to recognize and appropriately respond to others' emotions, Perceiving emotions accurately in others to build empathy
4. **Relate to others**: Applying EI in the workplace, the role of empathy and trust in relationships, Increase your ability to create effective working relationships with others (peers, subordinates, managers, clients, Find out how to deal with conflict, Tools to lead, motivate others and create a high performing team.

Books:

1. Daniel Goleman,” Emotional Intelligence – Why It Matters More Than IQ,” , Bantam Books, ISBN-10: 055338371X13: 978-0553383713
2. Steven Stein , “The EQ Edge” , Jossey-Bass, ISBN : 978-0-470-68161-9
3. Drew Bird , “The Leader’s Guide to Emotional Intelligence” , ISBN: 9781535176002

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310249: Audit Course 3
AC3 – IV: MOOC-learn New Skill

Course Objectives:

- To promote interactive user forums to support community interactions among students, professors, and experts
- To promote learn additional skills anytime and anywhere
- To enhance teaching and learning on campus and online

Course Outcome:

On completion of the course, learner will acquire additional knowledge and skill.

About Course:

MOOCs (Massive Open Online Courses) provide affordable and flexible way to learn new skills, pursue lifelong interests and deliver quality educational experiences at scale. Whether you're interested in learning for yourself, advancing your career or leveraging online courses to educate your workforce, SWYAM, NPTEL, edx or similar ones can help.

World's largest SWAYAM MOOCs, a new paradigm of education for anyone, anywhere, anytime, as per your convenience, aimed to provide digital education free of cost and to facilitate hosting of all the interactive courses prepared by the best more than 1000 specially chosen faculty and teachers in the country. SWAYAM MOOCs enhances active learning for improving lifelong learning skills by providing easy access to global resources.

SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

This is done through an indigenous developed IT platform that facilitates hosting of all the courses, taught in classrooms from 9th class till post-graduation to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India. More than 1,000 specially chosen faculty and teachers from across the Country have participated in preparing these courses.
The courses hosted on SWAYAM is generally in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology. In order to ensure best quality content are produced and delivered, seven National Coordinators have been appointed: These are NPTEL for engineering and UGC for post-graduation education.

Guidelines:

Instructor is requested to promote students to opt for courses with proper mentoring. The departments will take care of providing necessary infrastructural facilities and other facilities for the learners.

References:

1. https://swayam.gov.in/
2. https://onlinecourses.nptel.ac.in/
3. https://www.edx.org

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310249: Audit Course 3
AC3 – V: Foreign Language(Japanese Module 3)

Prerequisite Courses: **Audit Course AC1-V(210250), AC2-V(210258)**

About Course:

With changing times, the competitiveness has gotten into the nerves and _Being the Best‘ at all times is only the proof of it. Nonetheless, _being the best‘ differs significantly from Communicating the best‘. The best can merely be communicated whilst using the best suited Language!

Japanese is the new trend of 21st century. Not only youngsters but even the professionals seek value in it. It is the engineer‘s companion in current times with an assertion of a thriving future. Pune has indisputably grown to become a major center of Japanese Education in India while increasing the precedence for Japanese connoisseurs.

Japanese certainly serves a great platform to unlock a notoriously tough market & find a booming career. While the companies prefer candidates having the knowledge of the language, it can additionally help connect better with the native people thus prospering in their professional journey. Learning Japanese gives an extra edge to the _resume‘ since the recruiters consciously make note of the fact it requires real perseverance and self-discipline to tackle one of the most complex languages.

It would be easy for all time to quit the impossible; however it takes immense courage to reiterate the desired outcomes, recognize that improvement is an ongoing process and ultimately soldier on it. The need of an hour is to introduce Japanese language with utmost professionalism to create awareness about the bright prospects and to enhance the proficiency and commitment. It will then prove to be the ultimate path to the quest for professional excellence!

Course Objectives:

- To meet the needs of ever growing industry with respect to language support.
- To get introduced to Japanese society and culture through language.

Course Outcome:

On completion of the course, learner will be able to–

- Have ability of basic communication.
- Have the knowledge of Japanese script.
- Get introduced to reading, writing and listening skills for language Japanese.
- Develop interest to pursue professional Japanese Language course

Course Contents:

1. Introduction to Kanji Script, Describing one’s daily routine. To ask what someone does. Expressions of Giving & Receiving.
2. Adjectives (Types of adjectives), Asking impression or an opinion about a thing / person / place that the listener, has experienced, visited, or met, Describing things / person / places with the help of the adjectives.
3. Expressions of Like & Dislikes. Expressing one’s ability, hobby, Comparison between objects, persons & cities, which resulted from a certain action in the past.

References:

1. Minna No Nihongo, ―Japanese for Everyone‖, Elementary Main Text book 1-1 (Indian Edition), Goyal Publishers & Distributors Pvt. Ltd.

2. http://www.tcs.com (http://www.tcs.com/news_events/press_releases/Pages/TCS-Inaugurates-Japan-centric-Delivery-Center-Pune.aspx

Savitribai Phule Pune University
Third Year of Computer Engineering (2015 Course)
310259: Audit Course 4

In addition to credits, it is recommended that there should be audit course in preferably in each semester from second year to supplement their knowledge and skills. Student will be awarded the bachelor degree if he/she earns 190 credits and clears all the audit courses specified in the syllabus. The student will be awarded grade as AP on successful completion of audit course. The student may opt for one of the audit courses per semester, starting in second year first semester. Though not mandatory, such a selection of the audit courses helps the learner to explore the subject of interest in greater detail resulting in achieving the very objective of audit course's inclusion. List of options offered is provided. Each student has to choose one audit course from the list per semester. Evaluation of audit course will be done at institute level itself. Method of conduction and method of assessment for audit courses are as suggested.

Criteria:

The student registered for audit course shall be awarded the grade AP (Audit Course Pass) and shall be included such AP grade in the Semester grade report for that course, provided student has the minimum attendance as prescribed by the Savitribai Phule Pune University and satisfactory in-semester performance and secured a passing grade in that audit course. No grade points are associated with this 'AP' grade and performance in these courses is not accounted in the calculation of the performance indices SGPA and CGPA. Evaluation of audit course will be done at institute level itself. (Ref- http://www.unipune.ac.in/Syllabi_PDF/revised-2015/engineering/UG_RULE_REGULATIONS_FOR_CREDIT_SYSTEM-2015_18June.pdf)

Guidelines for Conduction and Assessment (Any one or more of following but not limited to)

- Lectures/ Guest Lectures
- Visits (Social/Field) and reports
- Demonstrations
- Surveys
- Mini Project
- Hands on experience on specific focused topic

Guidelines for Assessment (Any one or more of following but not limited to)

- Written Test
- Demonstrations/ Practical Test
- Presentations
- IPR/Publication
- Report

Audit Course 3 Options

AC4- I	Digital and Social Media Marketing
AC4-II	Green Computing
AC4-III	Sustainable Energy Systems
AC4-IV	Leadership and Personality Development
AC4-V	Foreign Language (one of Japanese/ Spanish/French/German). Course contents for **Japanese (Module 4) are provided. For other languages institute may design suitably.**

Note: It is permitted to opt one of the audit courses listed at SPPU website too, if not opted earlier
http://collegecirculars.unipune.ac.in/sites/documents/Syllabus%202017/Forms/AllItems.aspx

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310259: Audit Course 4
AC4 – I: Digital & Social Media Marketing

The importance of social media's role in modern marketing efforts can no longer be ignored. It's an integral component in almost all successful marketing strategies. With this increasing emphasis on integrated social media strategies, there is an Irrefutable need for marketing professionals and organizations to have end- to- end social media expertise. Through case studies, interactive sessions, and class exercises, students will learn best practices and develop the skills to connect business objectives with social media strategy, platforms and tactics. Topics will include choosing appropriate platforms, creating effective and engaging social media content, content management, social listening and creating a social media policy

Course Objectives:

- Identify best practices for Social Media Marketing, including platform level best practices.
- Connect business objectives to appropriate Social Media tactics.
- Create strong content that engages their target audience with their marketing message.

Course Outcome:

On completion of the course, learner will be able to–

- Create editorial calendars to manage content distribution.
- Use Social Listening tools to create timely, relevant content.
- Create Social Media policies that combine business objectives with appropriate use of social media channels and content.

Course Contents:

1. Introductions and review class objectives, Discuss class goals and individual goals, Fill out questionnaire, Introduction to Blogging, Create a blog post for your project. Include headline, imagery, links and post.
2. Introduction to Facebook and channel advertising and campaigns, Introduction to Twitter and channel advertising and campaigns, Creative Campaign examples across social channels
3. Introduction to both Google+ and LinkedIn. Provide an overview on LinkedIn advertising, Create Google+ and LinkedIn outlines for your project and include: types of posts and an example post for each platform.
4. Introduction to both Instagram and Pinterest as well as channel advertising and campaigns, Create Instagram and Pinterest outlines for your project and include: types of posts and an example post for each platform, review a content calendar, Lay out your own content calendar.

References:

1. Vandana Ahuja, Digital Marketing, Oxford Press, ISBN: 9780199455447,
2. Wiley, Jeanniey Mullen, David Daniels, David Gilmour " Email Marketing: An Hour a Day", ISBN: 978-0-470-38673-6
3. David Scott, "The New Rules of Marketing and PR", Wiley India, ISBN: 978-1-119-07048-1

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310259: Audit Course 4
AC4 – II: Green Computing

Green computing is the study and practice of using computing resources efficiently. Green computing or green IT, refers to environmentally sustainable computing or IT. The goals of green computing are similar to green chemistry; reduce the use of hazardous materials, Maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of defunct products and factory waste.

Course Objectives:

- To acquire knowledge to adopt green computing practices to minimize negative impacts on the environment.
- To examine technology tools that can reduce paper waste and carbon footprint by user.
- To understand how to minimize equipment disposal requirements.
- To gain skill in energy saving practices in their use of hardware

Course Outcome:

On completion of the course, learner will be able to–

- Understand the concept of green IT and relate it to sustainable development.
- Apply the green computing practices to save energy.
- Discuss how the choice of hardware and software can facilitate a more sustainable operation,
- Use methods and tools to measure energy consumption

Course Contents:

1. **Fundamentals of Green IT:** Green IT Fundamentals: Business, IT, and the Environment – Green computing: carbon foot Print - Measuring, Details, reasons to bother,Plan for the Future, Cost Savings: Hardware, Power.
2. **Green Assets and Power Problems:** Green Assets: Buildings, Data Centers, Networks, and Devices, Green Information Systems : Design andDevelopment Models, Monitoring Power Usage, Servers, Low-Cost Options, Reducing Power Use, Data De-Duplication, Low-Power Computers and peripheral devices
3. **Greening Information Systems:** Initial Improvement Calculations, Selecting Metrics, Tracking Progress, Change Business Processes, Customer Interaction, Paper Reduction, Green Supply Chain, Improve Technology Infrastructure, Reduce PCs and Servers, Shared Services, Hardware Costs, Cooling
4. **Green Grid Framework:** Virtualizing of IT systems – Role of electric utilities, Telecommuting, teleconferencing and teleporting – Materials recycling – Best ways for Green PC – Green Data center Case Studies – Applying Green IT Strategies and Applications to a Home Hospital, Packaging Industry and Telecom Sector

References:

1. Woody Leonhard, Katherrine Murray, “Green Home computing for dummies”, August2009, ISBN: 978-0-470-46745-9
2. Alvin Galea, Michael Schaefer, Mike Ebbers, “Green Data Center: steps for theJourney”,Shoff/IBM rebook, 2011. ISBN: 10: 1-933742-05-4; 13: 978-1-933742-05-2
3. John Lamb, “The Greening of IT”, Pearson Education, 2009, ISBN 10: 0137150830
4. Jason Harris, “Green Computing and Green IT- Best Practices on regulations & industry”,Lulu.com, 2008, ISBN: 1558604898
5. Bud E. Smith, “Green Computing Tools and Techniques for Saving Energy, Money and Resources”, CRC Press, 2014, 9781466503403

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310259: Audit Course 4
AC4 – III: Sustainable Energy Systems

Course Objectives:

- To understand the impact of engineering solutions on a global, economic, environmental, and societal context.
- To design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

Course Outcome:

On completion of the course, learner will be able to–

- Demonstrate an overview of the main sources of renewable energy.
- Understand benefits of renewable and sustainable energy systems.

Course Contents:

1. Introduction and Energy Fundamentals, Sustainable Energy Systems: Issues for the 21st century, the critical challenges for a sustainable energy future, Sustainable energy systems: definitions, indicators, Physics of Energy: Laws of Thermodynamics Energy Forms and Conversion, First and Second Laws and Efficiencies Devices: Heat Engines, Refrigerators and Heat Pumps Instantaneous and Average Power.
2. Introduction to Renewable Energy, Wind Energy Wind Turbine Technologies Wind Resources and Modeling Energy Performance and Environmental Impacts Economics and Economic Development Impacts, Photovoltaic: PV and BIPV Technologies Solar Resources and Modeling Energy Performance and Environmental Impacts, Economics and Net Metering
3. Biomass: Electricity Biomass Technologies Introduction Biomass Productivity and Modeling Biopower: MSW, willows/switch grass/ poplar, wood waste, Biomass: Transport Fuels Biofuels, Bioethanol, Biodiesel, Algal, Jatropha Biofuels and Water Land Use Impacts, Food vs Fuel, Renewable Fuels Standards
4. Building Energy Technologies and Policy, Smart buildings, Lighting and LEDs, Heating/cooling, technologies.

References:

1. İbrahim Dinçer, Calin Zamfirescu, “Sustainable Energy Systems and Applications”, Springer; 2012 edition, ISBN-10: 0387958606
2. D. Mukherjee, “Fundamentals of Renewable Energy Systems”, Atlantic, ISBN: 10: 8122415407
3. John R. Barker and Marc H. Ross Am. J. Phys ,“An introduction to global warming”, ISBN: 0-632-03779-2

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310259: Audit Course 4
AC4 – IV: Leadership and Personality Development

Personality is considered as one of the integral part of an individual's existence. Where a student is concerned, paying close attention to **Personality** which is extremely important to enhance holistic development of students and improve their employability skills

Course Objectives:

- To develop inter personal skills and be an effective goal oriented team player.
- To develop professionals with idealistic, practical and moral values.
- To develop communication and problem solving skills.
- To re-engineer attitude and understand its influence on behavior

Course Outcome:

On completion of the course, learner will be able to–

- Enhance holistic development of students and improve employability skills

Course Contents:

1. **Introduction to Personality and working towards developing it:** Definition & Basics of personality, Analyzing strengths & weaknesses, Corporate theories on personality Development, Increasing Vocabulary, Body Language, gestures, Preparation of Self Introduction
2. **Communication skill and handling attitude:** Communication Skills, Listening, Communication Barriers, Overcoming these Barriers, Building Self Esteem and Self Confidence, Working on attitudes: aggressive, assertive, and submissive
3. **Leadership Techniques in Personality development:** Introduction to Leadership, Leadership Styles, Group Dynamics, Team Building
4. **Stress and time management skills:** Interpersonal Relationships, Analysis of Ego States, transactions & Life positions, Stress Management: Causes, Impact & Managing Stress, Introduction to conflict management, Time Management: Concept of time management, Steps towards better time management

References:

1. SOFT SKILLS, " Career Development Centre", Green Pearl Publications
2. Covey Sean," Seven Habits of Highly Effective Teens", New York, Fireside Publishers, 1998, ISBN: 978-1476764665
3. Carnegie Dale, " How to win Friends and Influence People", New York: Simon & Schuster, 1998, ISBN: 1-4391-6734-6
4. Thomas A Harris, I am ok, You are ok , New YorkHarper and Row, 1972, ISBN 13: 978-0060724276ISBN:
5. Daniel Coleman, Emotional Intelligence, Bantam Book, 2006, ISBN: 055380491X, 9780553804911
6. Shiv Khera, "You Can Win", A&C Black, ISBN: 9780230331198.

Savitribai Phule Pune University, Pune
Third Year of Computer Engineering (2015 Course)
310259: Audit Course 4
AC4 – V: Foreign Language(Japanese Module 4)

Prerequisite Courses: **Audit Course AC1-V(210250), AC2-V(210258), AC3-V(310249)**

About Course:

With changing times, the competitiveness has gotten into the nerves and Being the Best‘ at all times is only the proof of it. Nonetheless, being the best differs significantly from Communicating the best. The best can merely be communicated whilst using the best suitable Language!

Foreign languages like Japanese is the new trend of 21st century. Not only youngsters but even the professionals seek value in it. It is the engineer‘s companion in current times with an assertion of a thriving future. Metro cities like Pune has indisputably grown to become a major center of Japanese Education in India while increasing the precedence for Japanese connoisseurs.

Japanese certainly serves a great platform to unlock a notoriously tough market & find a booming career. While the companies prefer candidates having the knowledge of the language, it can additionally help connect better with the native people thus prospering in their professional journey. Learning Japanese gives an extra edge to the resume since the recruiters consciously make note of the fact it requires real perseverance and self-discipline to tackle one of the most complex languages.

It would be easy for all time to quit the impossible; however it takes immense courage to reiterate the desired outcomes, recognize that improvement is an ongoing process and ultimately soldier on it. The need of an hour is to introduce Japanese language with utmost professionalism to create awareness about the bright prospects and to enhance the proficiency and commitment. It will then prove to be the ultimate path to the quest for professional excellence!

Course Objectives:

- To meet the needs of ever growing industry with respect to language support.
- To get introduced to Japanese society and culture through language.

Course Outcome:

On completion of the course, learner will be able to–

- Possess ability of basic communication.
- Possess the knowledge of Japanese script.
- Get introduced to reading, writing and listening skills for language Japanese.
- Develop interest to pursue professional Japanese Language course

Course Contents:

1. Stating existence or a presence of thing (s), person (s), Relative positions, Counters
2. Expressing one’s Desire & wants, Verb groups, Asking, Instructing a person to do something
3. Indicating an action or motion is in progress, Describing habitual action, describing a certain continuing state which resulted from a certain action in the past. Express permission & prohibition

References:

1. Minna No Nihongo, “Japanese for Everyone”, Elementary Main Text book 1-1 (Indian Edition), Goyal Publishers & Distributors Pvt. Ltd.
2. http://www.tcs.com (http://www.tcs.com/news_events/press_releases/Pages/TCS-Inaugurates-Japan-centric-Delivery-Center-Pune.aspx