1.3 Curriculum Enrichment

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Modified Curriculum for B.Tech Degree Semesters I and II 2016

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SEMESTER I

Slot	Course No.	Subject	L-T-P	Hours	Credits
A	MA101	Calculus	3-1-0	4	4
B **(1/2)**	PH100	Engineering Physics	3-1-0	4	4
	CY100	Engineering Chemistry	3-1-0	4	4
C **(1/2)**	BE100	Engineering Mechanics	3-1-0	4	4
	BE110	Engineering Graphics	1-1-3	5	3
D	BE101-0X	Introduction to _____ Engineering	2-1-0	3	3
E	BE103	Introduction to Sustainable Engineering	2-0-1	3	3
F **(1/4)**	CE100	Basics of Civil Engineering	2-1-0	3	3
	ME100	Basics of Mechanical Engineering	2-1-0	3	3
	EE100	Basics of Electrical Engineering	2-1-0	3	3
	EC100	Basics of Electronics Engineering	2-1-0	3	3
S **(1/2)**	PH110	Engineering Physics Lab	0-0-2	2	1
	CY110	Engineering Chemistry Lab	0-0-2	2	1
T **(2/4)**	CE110/ME110/ EE110/EC110/ CS110/CH110	Basic Engineering Workshops (CS110 for CS and related branches and CH110 for CH and related branches only)	0-0-2 + 0-0-2	2 2	1 1
U		U100 Language lab/CAD Practice/Bridge courses/Micro Projects etc	0-0-(2/3)	(2/3)	
				30	**24/23**
V		V100 Entrepreneurship/TBI/NCC/NSS/ Physical Edn. etc	0-0-2	2	Activity points

Course No.	Course Name	L-T-P-Credits	Year of Introduction
BE103	INTRODUCTION TO SUSTAINABLE ENGINEERING	2-0-1-3	2016

Course Objectives

- To have an increased awareness among students on issues in areas of sustainability
- To understand the role of engineering and technology within sustainable development;
- To know the methods, tools, and incentives for sustainable product-service system development
- To establish a clear understanding of the role and impact of various aspects of engineering and engineering decisions on environmental, societal, and economic problems.

Syllabus

Sustainability- need and concept, challenges, Environment acts and protocols, Global, Regional and Local environmental issues, Natural resources and their pollution, Carbon credits, Zero waste concept ISO 14000, Life Cycle Analysis, Environmental Impact Assessment studies, Sustainable habitat, Green buildings, green materials, Energy, Conventional and renewable sources, Technology and sustainable development, Sustainable urbanization, Industrial Ecology.

Expected outcome

The student will be

- Able to understand the different types of environmental pollution problems and their sustainable solutions
- Able to work in the area of sustainability for research and education
- Having a broader perspective in thinking for sustainable practices by utilizing the engineering knowledge and principles gained from this course

Reference Books:

- Allen, D. T. and Shonnard, D. R., Sustainability Engineering: Concepts, Design and Case Studies, Prentice Hall.
- Bradley. A.S; Adebayo,A.O., Maria, P. Engineering applications in sustainable design and development, Cengage learning
- Environment Impact Assessment Guidelines, Notification of Government of India, 2006
- Mackenthun, K.M., Basic Concepts in Environmental Management, Lewis Publication, London, 1998
- ECBC Code 2007, Bureau of Energy Efficiency, New Delhi Bureau of Energy Efficiency Publications-Rating System, TERI Publications - GRIHA Rating System
- Ni bin Chang, Systems Analysis for Sustainable Engineering: Theory and Applications, McGraw-Hill Professional.
- Twidell, J. W. and Weir, A. D., Renewable Energy Resources, English Language Book Society (ELBS).

- Purohit, S. S., Green Technology - An approach for sustainable environment, Agrobios publication

Course Plan

Module	Contents	Hours	Sem. Exam Marks
I	Sustainability - Introduction, Need and concept of sustainability, Social-environmental and economic sustainability concepts. Sustainable development, Nexus between Technology and Sustainable development, Challenges for Sustainable Development. Multilateral environmental agreements and Protocols - Clean Development Mechanism (CDM), Environmental legislations in India - Water Act, Air Act.	L4	15%
	Students may be assigned to do at least one project eg: a) Identifying/assessment of sustainability in your neighbourhood in education, housing, water resources, energy resources, food supplies, land use, environmental protection etc. b) Identify the threats for sustainability in any selected area and explore solutions for the same	P1	
II	Air Pollution, Effects of Air Pollution; Water pollution- sources, Sustainable wastewater treatment, Solid waste - sources, impacts of solid waste, Zero waste concept, 3 R concept. Global environmental issues- Resource degradation, Climate change, Global warming, Ozone layer depletion, Regional and Local Environmental Issues. Carbon credits and carbon trading, carbon foot print.	L6	15%
	Students may be assigned to do at least one project for eg: a) Assessing the pollution status of a small area b) Programmes for enhancing public environmental awareness c) Observe a pond nearby and think about the different measures that can be adopted for its conservation	P3	
	FIRST INTERNAL EXAM		
III	Environmental management standards, ISO 14000 series, Life Cycle Analysis (LCA) - Scope and Goal, Bio-mimicking, Environment Impact Assessment (EIA) - Procedures of EIA in India.	L4	15%
	Students may be assigned to do at least one project eg: a) Conducting LCA of products (eg. Aluminium cans, PVC bottles, cars etc. or activities (Comparison of land filling and open burning) b) Conducting an EIA study of a small project (eg. Construction of a building)	P2	

IV	Basic concepts of sustainable habitat, Green buildings, green materials for building construction, material selection for sustainable design, green building certification, Methods for increasing energy efficiency of buildings. Sustainable cities, Sustainable transport.	L5	15%
	Students may be assigned to do at least one project eg: a) Consider the design aspects of a sustainable building for your campus b) Explore the different methods that can be adopted for maintaining a sustainable transport system in your city.	P2	
	SECOND INTERNAL EXAM		
V	Energy sources: Basic concepts-Conventional and non-conventional, solar energy, Fuel cells, Wind energy, Small hydro plants, bio-fuels, Energy derived from oceans, Geothermal energy.	L5	20%
	Students may be assigned to do at least one project eg: a) Find out the energy savings that can be achieved by the installation of a solar water heater b) Conduct a feasibility study for the installation of wind mills in Kerala	P2	
VI	Green Engineering, Sustainable Urbanisation, industrialisation and poverty reduction; Social and technological change, Industrial Processes: Material selection, Pollution Prevention, Industrial Ecology, Industrial symbiosis.	L5	20%
	Students may be assigned to do a group project eg: a) Collect details for instances of climate change in your locality b) Find out the carbon credits you can gain by using a sustainable transport system (travelling in a cycle or car pooling from college to home) c) Have a debate on the topics like: Industrial Ecology is a Boon or Bane for Industries?/Are we scaring the people on Climate Change unnecessarily?/Technology enables Development sustainable or the root cause of unsustainability?	P3	
	END SEMESTER EXAM		

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Curriculum

for

B.Tech Degree

Semesters III to VIII

2016

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

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BRANCH: *Civil Engineering*

SEMESTER - 7

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
CE401	Design of Steel Structures	4-0-0	4	A
CE403	Structural Analysis III	3-0-0	3	B
CE405	Environmental Engineering I	3-0-0	3	C
CE407	Transportation Engineering II	3-0-0	3	D
CE409	Quantity Surveying and Valuation	3-0-0	3	E
	Elective 3	3-0-0	3	F
CE451	Seminar & Project Preliminary	0-1-4	2	S
CE431	Environmental Engineering Lab	0-0-3	1	T

Total Credits = 22 Hours: 27

Cumulative Credits= 162

Elective 3:-

1. CE461 Water Hydrodynamics and Coastal Engineering
2. CE463 Bridge Engineering
3. CE465 Geo-Environmental Engineering
4. CE467 Highway Pavement Design
5. CE469 Environmental Impact Assessment
6. CE471 Advanced Structural Design
4. CE473 Advanced Computational Techniques and Optimization

BRANCH: *Civil Engineering*

SEMESTER - 8

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
CE402	Environmental Engineering II	3-0-0	3	A
CE404	Civil Engineering Project Management	3-0-0	3	B
	Elective 4	3-0-0	3	C
	Elective 5 (Non Departmental)	3-0-0	3	D
CE492	Project		6	

Total Credits = 18 Hours: 30

Cumulative Credits= 180

Elective 4:-

1. CE462 Town and Country Planning
2. CE464 Reinforced Soil Structures and Geosynthetics
3. CE466 Finite Element Methods
4. CE468 Structural Dynamics and Earthquake Resistant Design
5. CE472 Transportation Planning
6. CE474 Municipal Solid Waste Management

Course Code	Course Name	L-T-P-Credits	Year of Introduction
CE402	ENVIRONMENTAL ENGINEERING – II	3-0-0-3	2016

Prerequisites: CE405 Environmental Engineering- I

Course objectives:

- To understand the various sources and characteristics of wastewater
- To know the various treatment methods available for wastewater treatment

Syllabus : Wastewater, sources, characteristics, oxygen demand Design of sewers, Circular sewers, Partial flow and full flow conditions. Sewer appurtenances, Disposal of wastewater, Streeter Phelps equation, Oxygen sag curve, Treatment methods, Aerobic and anaerobic methods, Design of various treatment units-Screening, Grit chamber, Sedimentation tank, Activated Sludge process, Trickling filter, Rotating biological contactor, Septic tanks, Imhoff tanks, Oxidation ditches, Oxidation ponds, Upflow anaerobic sludge blanket reactors, Sludge digestion, Sludge drying bed.

Course Outcomes:

The students will

i. have an understanding of the various types of treatment methods for wastewater
ii. know the design aspects of various treatment units in a wastewater treatment plant.

Text Books

1. B.C Punmia , "Waste Water Engineering", Laxmi Publications Pvt. Ltd, 2012
2. Howard S Peavy, Donald R Rowe, George Tchobanoglous, Environmental Engineering, Mc Graw Hill Education, 1984
3. P N Modi, "Sewage Treatment & Disposal and Waste water Engineering", Standard Book House, NewDelhi, 2e, 2008.
4. S.K. Garg , "Sewage disposal and Air pollution Engineering", Khanna Publishers, 2008
5. G S Birdie, Water Supply and Engineering, Dhanpat Rai Publishing Company, 2014

References

1. G. L. Karia, R.A. Christian, Wastewater treatment: Concepts And Design Approach, PHI learning Pvt Ltd, 2013
2. J. Arceivala, Shyam R. Asolekar, Wastewater Treatment for Pollution Control and Reuse, McGrawhill Education, 2007
3. K N Duggal, Elements of Environmental Engineering, S Chand Publications, 2007
4. Mackenzie L Davis, Introduction to Environmental Engineering, McGraw Hill Education (India), 5e, 2012
5. Metcalf and Eddy, "Waste Water Engineering", Tata McGraw Hill publishing Co Ltd, 2003

COURSE PLAN

Module	Contents	Hours	Sem. Exam Marks %
I	Wastewater- Sources and flow rates, Domestic wastewater, Estimation of quantity of wastewater, Dry weather flow, storm water flow, Time of concentration Sewers, Design of circular sewers under full and partial flow	6	15

	conditions		
II	Sewer appurtenances-Man holes, Catch basin, flushing devices, Inverted siphon. Ventilation of sewers. Sewage, Sewerage, Systems of sewerage Sewage characteristics- Physical, chemical and biological parameters, Biological oxygen demand, first stage BOD, Chemical oxygen demand, Relative stability, Population equivalent.	7	15
FIRST INTERNAL EXAMINATION			
III	Waste water disposal systems- Self purification of streams, Dilution -Oxygen sag curve, Streeter Phelp's Equation, land treatment Treatment of sewage-Preliminary and Primary treatment -Theory and design of Screen, Grit chamber, Detritus chamber, Flow equalization tank and Sedimentation tank.	6	15
IV	Secondary treatment methods-Contact bed, Intermittent sand filter, Theory and design of Trickling filter, Activated sludge process, Trickling filter-High rate, standard. Rotating biological contactor	7	15
SECOND INTERNAL EXAMINATION			
V	Design of Septic tank and Imhoff tank, Principle and working of Oxidation ditch and oxidation ponds. Aerated lagoons, Design of upflow anaerobic sludge blanket reactors	8	20
VI	Sludge treatment and disposal-Methods of thickening, Sludge digestion- Anaerobic digestion, Design of sludge digestion tanks and Sludge drying beds, methods of sludge disposal	8	20
END SEMESTER EXAMINATION			

- **EXTERNAL EVALUATION:**

Maximum Marks :100 **Exam Duration: 3 Hrs**

QUESTION PAPER PATTERN (External Evaluation) :

Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each

Part B - Module III & IV: 2 questions out of 3 questions carrying 15 marks each

Part C - Module V & VI : 2 questions out of 3 questions carrying 20 marks each

Note : 1.Each part should have at least one question from each module

2.Each question can have a maximum of 4 subdivisions (a,b,c,d)

Course Code	Course Name	L-T-P-Credits	Year of Introduction
CE405	ENVIRONMENTAL ENGINEERING- I	3-0-0-3	2016

Pre-requisites: CE203 Fluid Mechanics -I

Course objectives:`

- To study the significance of water resources and the factors affecting the quality and quantity of water
- To study the various types of treatment techniques adopted for a public water supply system

Syllabus :

Water sources, demand, factors, Quantity estimation, Population forecasting, Quality of water. Water treatment- Physical methods, Chemical methods. Design of sedimentation tank, flocculator, clariflocculator, filters, Membrane treatment techniques. Disinfection- methods. Distribution of water, Pumps, Hardy Cross method of analysis

Expected Outcomes:

The students will

i. become aware of the various pollutants affecting water quality

ii. know about the different treatment units available in a water treatment plant and their design procedures

Text Books:

1. B.C Punmia, "Water Supply Engineering", Laxmi Publications Pvt. Ltd., 2016
2. G S Birdie, Water Supply and Engineering, Dhanapat Rai Publishing Company, 2014
3. P.N. Modi, "Water Supply Engineering", Standard Book House, NewDelhi
4. Peavy H S, Rowe, D.R. Tchobanaglous "Environmental Engineering" Mc GrawHill Education, 1984
5. S.K.Garg, "Water Supply Engineering", Khanna Publishers. 2010

References

1. K N Dugal, Elements of Environmental Engineering, S Chand and Company Pvt Ltd, 2007
2. Mackenzie L Davis, Introduction to Environmental Engineering, McGrawhill Education (India), 2012
3. Metcalf & Eddy , "Waste Water Engineering", Tata Mc Grawhill Publishing Co Ltd, 2003
4. P Venugopala Rao, Environmental Engineering, PHI Learning Pvt Ltd, 2002
5. Subhash Verma, Varinder Kanwar, Siby John, Water supply Engineering, Vikash Publishing, 2015

COURSE PLAN

Module	Contents	Hours	Sem. Exam Marks %
I	Introduction of environment- sources of water supply-Water demand, quantification of water demand through population forecasting – Factors affecting consumption-Fluctuations in demand	7	15

II	Types of intakes-Conveyors, pumps and location of pumping station-Quality of water - Drinking water standards - Physical, chemical and biological analysis.	6	15
FIRST INTERNAL EXAMINATION			
III	Treatment of water-Theory and principles of Sedimentation tanks-Stoke's law-Types of settling (Type I & Type II only)-Coagulation-Mixing-Flocculation, Design of Sedimentation tanks (circular and rectangular)-Clariflocculators	7	15
IV	Filtration-Types of filters- Working and Design of Rapid and Slow sand filters. Loss of head in filters, Pressure filters	7	15
SECOND INTERNAL EXAMINATION			
V	Disinfection of water - Methods, Chlorination-Types, Factors affecting - Chlorine demands. Miscellaneous treatment-Ion exchange, Lime-soda process, Electro dialysis - Colour, Taste and Odour removal-Adsorption-Aeration-Fluoridation-Defluoridation	7	20
VI	Lay out of water distribution network-Methods of distribution-Hardy cross method-Equivalent pipe method-Pipe appurtenances.	8	20
END SEMESTER EXAMINATION			

QUESTION PAPER PATTERN (End semester examination)

Maximum Marks :100 **Exam Duration: 3 Hrs**

Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each

Part B - Module III & IV: 2 questions out of 3 questions carrying 15 marks each

Part C - Module V & VI : 2 questions out of 3 questions carrying 20 marks each

Note :

1. Each part should have at least one question from each module
2. Each question can have a maximum of 4 subdivisions (a, b, c, d)

ELECTIVE 5 (NON DEPARTMENTAL ELECTIVE COURSES)

1. AO482 AUTOMOTIVE AERODYNAMICS
2. AE482 INDUSTRIAL INSTRUMENTATION
3. AE484 INSTRUMENTATION SYSTEM DESIGN
4. AU484 MICROPROCESSOR AND EMBEDDED SYSTEMS
5. AU486 NOISE, VIBRATION AND HARSHNESS
6. BM482 BIOMEDICAL INSTRUMENTATION
7. BM484 MEDICAL IMAGING & IMAGE PROCESSING TECHNIQUES
8. BT482 DESIGN OF BIOLOGICAL WASTEWATER SYSTEMS
9. BT484 SUSTAINABLE ENERGY PROCESSES
10. CH482 PROCESS UTILITIES AND PIPE LINE DESIGN
11. CH484 FUEL CELL TECHNOLOGY
12. CE482 ENVIRONMENTAL IMPACT ASSESSMENT
13. CE484 APPLIED EARTH SYSTEMS
14. CE486 GEO INFORMATICS FOR INFRASTRUCTURE MANAGEMENT
15. CE488 DISASTER MANAGEMENT
16. CE492 ENVIRONMENT HEALTH AND SAFETY
17. CS482 DATA STRUCTURES
18. CS484 COMPUTER GRAPHICS
19. CS486 OBJECT ORIENTED PROGRAMMING
20. CS488 C # AND .NET PROGRAMMING
21. EE482 ENERGY MANAGEMENT AND AUDITING
22. EE484 CONTROL SYSTEMS
23. EE486 INDUSTRIAL AUTOMATION
24. EE488 INSTRUMENTATION SYSTEMS

25. EE492 SOFT COMPUTING

26. EC482 BIOMEDICAL ENGINEERING

27. FT482 FOOD PROCESS ENGINEERING

28. FT484 FOOD STORAGE ENGINEERING

29. FT486 FOOD ADDITIVES AND FLAVOURING

30. IE482 FINANCIAL MANAGEMENT

31. IE484 INTRODUCTION TO BUSINESS ANALYTICS

32. IE486 DESIGN AND ANALYSIS OF EXPERIMENTS

33. IE488 TOTAL QUALITY MANAGEMENT

34. IC482 BIOMEDICAL SIGNAL PROCESSING

35. IT482 INFORMATION SYSTEM MANAGEMENT

36. MA482 APPLIED LINEAR ALGEBRA

37. MA484 OPERATIONS RESEARCH

38. MA486 ADVANCED NUMERICAL COMPUTATIONS

39. MA488 CRYPTOGRAPHY (Not for IT branch)

40. ME469 FINITE ELEMENT ANALYSIS

41. ME482 ENERGY CONSERVATION AND MANAGEMENT

42. ME471 OPTIMIZATION TECHNIQUES

43. MP482 PRODUCT DEVELOPMENT AND DESIGN

44. MP469 INDUSTRIAL PSYCHOLOGY & ORGANIZATIONAL BEHAVIOUR

45. MP484 PROJECT MANAGEMENT

46. MT482 INDUSTRIAL SAFETY

47. MR482 MECHATRONICS

48. FS482 RESPONSIBLE ENGINEERING

49. SB482 DREDGERS AND HARBOUR CRAFTS

50. HS482 PROFESSIONAL ETHICS

Course Code	Course Name	L-T-P-Credits	Year of Introduction
CE488	DISASTER MANAGEMENT	3-0-0-3	2016

Course Objectives

- To provide an overview of the common hazards and their dynamics
- To inculcate the basic concepts of disaster management

Syllabus

Fundamental concepts of hazards and disasters - Basic concept of Earth as a system and its component sub systems - . Climate Change - Introduction to key concepts and terminology of hazard, vulnerability, exposure, risk, crisis, emergencies, Disasters, Resilience - Natural Disasters - Earth quakes, Landslides. Floods, Coastal disasters, Tidal waves, Tsunamis. Nature of Impacts - Anthropogenic Disasters – Soil degradation and desertification -water and atmospheric pollution -Hazard and disaster management plans for floods, tidal waves.

Expected Outcome

The students will

i. get general ideas about the processes involved in natural and anthropogenic disasters
ii. understand the concepts of disaster management and measures to mitigate and contain common episodes of disasters

References:

1. Andrew, S., "Environmental Modeling with GIS and Remote Sensing", John Willey and sons, 2002
2. Ariyabandu, M. and Sahni P. (Eds), "Disaster Risk Reduction in South Asia", Prentice-Hall (India), 2003.
3. Bell, F.G., "Geological Hazards: Their assessment, avoidance and mitigation", E & FN SPON Routledge, London. 1999
4. Bossler, J.D., "Manual of Geospatial Science and Technology", Taylor and Francis, London, 2001
5. David Alexander, "Natural Disasters", Research Press, New Delhi, 1993
6. Matthews, J.A., "Natural hazards and Environmental Change", Bill McGuire, Ian Mason, 2002
7. Nick Carter. W., "Disaster Management - A Disaster Manager's Handbook". Asian Development Bank, Philippines. 1991
8. United Nations , Mitigating Natural Disasters, Phenomena, Effects and options, A Manual for policy makers and planners, New York, 1991

COURSE PLAN

Module	Contents	Hours	End Sem. Exam Marks
I	Fundamental concepts of hazards and disasters: Introduction to key concepts and terminology of hazard, vulnerability, exposure, risk, crisis, emergencies, Disasters, Resilience. Basic concept of Earth as a system and its component sub systems. Climate Change vis-a-vis the interrelationships of the subsystems- Green House Effect and Global warming, basic	7	15%

	ideas about their causes and effects.		
II	Types of Natural Disasters I- Earth quakes, Landslides. Nature of impacts.	7	15%
FIRST INTERNAL EXAMINATION			
III	Types of Natural Disasters II- Floods, Coastal disasters- Cyclones, Tsunamis. Nature of impacts.	7	15%
IV	Types of Anthropogenic Disasters I– soil and soil degradation, desertification.	7	15%
SECOND INTERNAL EXAMINATION			
V	Types of Anthropogenic Disasters II-Fundamental concepts of water and atmospheric pollution.	7	20%
VI	Hazard and disaster management plans for floods, tidal waves.	7	20%
END SEMESTER EXAMINATION			

QUESTION PAPER PATTERN (End Semester Examination)

Maximum Marks :100 **Exam Duration: 3 Hrs**

Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each

Part B - Module III & IV: 2 questions out of 3 questions carrying 15 marks each

Part C - Module V &VI : 2 questions out of 3 questions carrying 20 marks each

Note : 1.Each part should have at least one question from each module

2.Each question can have a maximum of 4 subdivisions (a,b,c,d)

Course Code	Course Name	L-T-P-Credits	Year of Introduction
CE469	ENVIRONMENTAL IMPACT ASSESSMENT	3-0-0-3	2016

Prerequisites: Nil

Course objectives:

- To know the various types of environmental pollution
- To make aware the impact due to various types of pollutants and their assessment technique

Syllabus : Pollution, Types. Air pollution-sources, effects, types of pollutants. Water pollution, characteristics of water pollutants, Solid wastes, sources, types, soil pollution, pesticide pollution. Noise pollution, Impacts, positive and negative Environmental impact assessment, steps of doing EIA, methodology adopted, EIA procedure in India, Case studies.

Expected Outcomes:

- The students will gain basic knowledge of various pollution sources and their impacts

Text Books / References:

1. A K Srivastava, Environment impact Assessment, APH Publishing, 2014
2. John Glasson, Riki Therivel & S Andrew Chadwick "Introduction to EIA" University College London Press Limited, 2011
3. Larry W Canter, "Environmental Impact Assessment", McGraw Hill Inc. , New York, 1995.
4. Ministry of Environment & Forests, Govt. of India 2006 EIA Notification
5. Rau G J and Wooten C.D "EIA Analysis Hand Book" Mc Graw Hill
6. Robert A Corbett "Standard Handbook of Environmental Engineering" McGraw Hill, 1999.

COURSE PLAN

Module	Contents	Hours	Sem. Exam Marks %
I	INTRODUCTION: Classification of Pollution and Pollutants, – Evolution of EIA (Global and Indian Scenario)- Elements of EIA — Screening – Scoping - Public Consultation - Environmental Clearance process in India - Key Elements in 2006 EIA(Govt. of India) Notification	6	15
II	AIR POLLUTION: Primary and Secondary Types of Pollutants, sulfur dioxide- nitrogen dioxide, carbon monoxide, WATER POLLUTION: Point and Non-point Source of Pollution, Major Pollutants of Water, Impact of pollutants	6	15
	FIRST INTERNAL EXAMINATION		
III	SOLID WASTE: Classification and sources of Solid Waste, Characteristics, effects, e waste, : Effects of urbanization on land degradation, pesticide pollution NOISE POLLUTION: Sources of Noise, Effects of Noise,	7	15

	Control measures		
IV	Impacts of pollutants, types, scale of impact-Global, local pollutants. Climate change, Ozone layer depletion, Deforestation, land degradation , Impact of development on vegetation and wild life	7	15,
SECOND INTERNAL EXAMINATION			
V	Socio-economic impacts - Impact assessment Methodologies- Overlays, Checklist, Matrices, Fault Tree Analysis, Event Tree Analysis- Role of an Environmental Engineer- Public Participation	8	20
VI	Standards for Water, Air and Noise Quality - Environmental Management Plan- EIA- Case studies of EIA	8	20
END SEMESTER EXAMINATION			

QUESTION PAPER PATTERN (External Evaluation) :

Maximum Marks :100 **Exam Duration: 3 Hrs**

Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each

Part B - Module III & IV: 2 questions out of 3 questions carrying 15 marks each

Part C - Module V & VI : 2 questions out of 3 questions carrying 20 marks each

Note : 1.Each part should have at least one question from each module

2.Each question can have a maximum of 4 subdivisions (a, b, c, d)

Course Code	Course Name	L-T-P-Credits	Year of Introduction
CE492	ENVIRONMENTAL HEALTH AND SAFETY	3-0-0-3	2016

Pre-requisites: Nil

Courseobjectives:

- To introduce the different types of hazards in industries and the management of hazards.
- To learn the various types of pollution.

Syllabus:

Occupational health and toxicology- Lead-nickel, chromium and manganese toxicity-gas poisoning-Industrial hygiene, Physical, chemical and biological hazards, Safety and Health Management, noise-effects, source, Electrical Hazards and Hazards in Construction Industry, Air pollution, Water pollution, Hazardous Waste Management, pollution control in different industries

Expected Outcomes:

The students will

i. Be able to understand the various occupational hazards and the techniques that can be adopted for managing hazards and related problems

ii. Become aware regarding air pollution and water pollution problems and pollution control in industries

Text Books / References:

1. Gerard Kiely, Environmental Engineering, McGraw hill Education
2. Mackenzie L Davis, Introduction to Environmental Engineering, McGraw hill Education (India)
3. National Safety Council , Hand book of Occupational Safety and Health, Chicago, 1982
4. R.K.Jain and Sunil S.Rao , Industrial Safety , Health and Environment Management Systems, Khanna publishers , New Delhi (2006)
5. S.P.Mahajan, “Pollution control in process industries”, Tata McGraw Hill Publishing Company, New Delhi, 1993
6. Slote.L, Handbook of Occupational Safety and Health, John Willey and Sons, NewYork

COURSE PLAN

Module	Contents	Hours	End Sem. Exam Marks
I	Occupational Health And Toxicology : occupational related diseases, silicosis, asbestosis, pneumoconiosis, etc. lead, nickel, chromium and manganese toxicity, effects and prevention –Industrial toxicology, local, systemic and chronic effects, temporary and cumulative effects. Industrial Hygiene.	7	15%

II	Noise, noise exposure regulation. Ionizing radiation, types, effects. Chemical hazards-dust, fumes, mist, vapour, fog, gases, Methods of Control. Biological hazards-Classification of Biohazardous agents – bacterial agents, viral agents, fungal, parasitic agents, infectious diseases.	7	15%
FIRST INTERNAL EXAMINATION			
III	Radiation and Industrial Hazards, Types and effects of radiation on human body, disposal of radioactive waste Air Pollution - air pollutants from industries, effecton human health, animals, Plants and Materials - concept of clean coal combustion technology - depletion of ozone	6	15%
IV	Electrical Hazards, Protection against voltage fluctuations, Effects of shock on human body. Introduction of Construction industry, Scaffolding and Working platform, Welding and Cutting, Excavation Work, Concreting and Cementing work, Transportation of men and material,	6	15%
SECOND INTERNAL EXAMINATION			
V	Water Pollution -water pollutants-health hazards - effluent quality standards,tannery, textile effluents Hazardous Waste Management -waste identification, characterization and classification, health hazards-toxic and radioactive wastes-recycling and reuse.	8	20%
VI	Pollution Control In Process Industries - Pollution control in process industries like cement, paper, petroleum products-textile, tanneries-thermal power plants – dyeing and pigment industries - eco-friendly energy.	8	20%
END SEMESTER EXAMINATION			

QUESTION PAPER PATTERN (External Evaluation) :

Maximum Marks :100 **Exam Duration: 3 Hrs**

Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each

Part B - Module III & IV: 2 questions out of 3 questions carrying 15 marks each

Part C - Module V &VI : 2 questions out of 3 questions carrying 20 marks each

Note : 1.Each part should have at least one question from each module

2.Each question can have a maximum of 4 subdivisions (a,b,c,d)

Course code	Course Name	L-T-P -Credits	Year of Introduction
FS482	RESPONSIBLE ENGINEERING	3-0-0-3	2016

Prerequisite : Nil

Course Objectives

- To enable the students to create an awareness on responsibilities and Human Values, to instill Moral and Social Values and Loyalty and to appreciate the rights of others.

Syllabus

Human Values - Engineering Ethics – Engineering as Social Experimentations – Engineer's responsibility for safety – Responsibilities and Rights – Global Issues.

Expected outcome.

- The students will be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society

Text Books:

1. Mike W. Martin and Roland Schinzinger, "Ethics in Engineering", Tata McGraw Hill, New Delhi, 2003.
2. Govindarajan M, Natarajan S, Senthil Kumar V. S, "Engineering Ethics", Prentice Hall of India, New Delhi, 2004.

Data Book (Approved for use in the examination): Nil

References:

1. Charles B. Fleddermann, "Engineering Ethics", Pearson Prentice Hall, New Jersey, 2004.
2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, "Engineering Ethics – Concepts and Cases", Cengage Learning, 2009
3. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, New Delhi, 2003
4. Edmund G Seebauer and Robert L Barry, "Fundametals of Ethics for Scientists and Engineers", Oxford University Press, Oxford, 2001
5. Laura P. Hartman and Joe Desjardins, "Business Ethics: Decision Making for Personal Integrity and Social Responsibility" Mc Graw Hill education, India Pvt. Ltd.,New Delhi 2013.

Course Plan

Module	Contents	Hours	End Sem. Exam Marks
I	**HUMAN VALUES** Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality – Introduction to Yoga and meditation for professional excellence and stress management.	8	15%
II	**ENGINEERING ETHICS** Senses of 'Engineering Ethics' – Variety of moral issues – Types of inquiry – Moral dilemmas – Moral Autonomy – Kohlberg's theory – Gilligan's theory – Consensus and Controversy – Models of professional roles - Theories about right action – Self-interest – Customs and Religion – Uses of Ethical Theories	6	15%
FIRST INTERNAL EXAMINATION			

III	**ENGINEERING AS SOCIAL EXPERIMENTATION** Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law.	7	15%
IV	**ENGINEER'S RESPONSIBILITY FOR SAFETY** Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis – Reducing Risk – The Government Regulator's Approach to Risk - Chernobyl Case Studies and Bhopal	7	15%
SECOND INTERNAL EXAMINATION			
V	**RESPONSIBILITIES AND RIGHTS** Collegiality and Loyalty – Respect for Authority - Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination.	6	20%
VI	**GLOBAL ISSUES** Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership –Code of Conduct – Corporate Social Responsibility.	6	20%
END SEMESTER EXAM			

QUESTION PAPER PATTERN

Maximum Marks: 100 Exam Duration: 3 hours

Part A – 8 questions (Module 1 to 4 one question each, Module 5 & 6 two questions each) of 2 marks each. All questions are compulsory (8x2 = 16)

Part B – 8 questions (Module 1 to 4 one question each, Module 5 & 6 two questions each) of 3 marks each. All questions are compulsory (8x3 = 24)

Part C – 12 questions (two questions from each module) of 10 marks each. Student has to answer one question from each module. (6x10=60**)**

Note: Each question can have a maximum of 4 sub parts, if needed.

Course code	Course Name	L-T-P - Credits	Year of Introduction
MP469	Industrial Psychology and Organisational Behaviour	3-0-0-3	2016

Course Objectives

- To create a knowledge about human psychology
- To learn about theories of motivation and group behavior.
- To understand the socio-cultural aspects in organizations

Syllabus

Introduction- psychology as a science- study of behaviour- stimulus- response behaviour- heredity and environment- human mind- cognition- character- thinking- attention- memory- emotion- traits- attitude- personality. Organizational behaviour- definition –development- fundamental concept- organizational behaviour system- models - understanding a social-system - managing communication- Motivation- motivation driver - goal setting- expectancy model- comparison models- interpreting motivational models- leadership- path goal model. Special topics in industrial psychology- managing group in organization- group and inter group dynamics- managing change and organizational development- nature planned change- resistance characteristics

Expected outcome.

The students will be able to

i. know the importance of psychology
ii. have insight into individual and group behavior
iii. deal with people in better way
iv. motivate groups and build teams.

Text Book:

Davis K. & Newstrom J.W., *Human Behaviour at work*, Mcgraw Hill International, 1985

References:

1. Blum M.L. Naylor J.C., Horper & Row, *Industrial Psychology*, CBS Publisher, 1968
2. Luthans, *Organizational Behaviour*, McGraw Hill, International, 1997
3. Morgan C.t.,King R.A.,John Rweisz &John Schoples, *Introduction to Psychology*, McHraw Hill, 1966
4. Schermerhorn J.R.Jr., Hunt J.G &Osborn R.N., Managing, *Organizational Behaviour*, John Willy

Course Plan

Module	Contents	Hours	End Sem. Exam Marks
I	Introduction- psychology as a science- area of applications – study of individual- individual differences- study of behaviour- stimulus- response behaviour- heredity and environment- human mind- cognition- character- thinking- attention- memory- emotion- traits- attitude- personality	6	15%
II	Human mind- cognition- character- thinking- attention- memory- emotion- traits- attitude- personality	6	15%
FIRST INTERNAL EXAMINATION			
III	Organizational behaviour- definition –development- fundamental concept- nature of people nature of organization – an organizational behaviour system- models- autocratic model- hybrid model-	6	15%

IV	Understanding a social-system social culture- managing communication- downward, upward and other forms of communication	6	15%
SECOND INTERNAL EXAMINATION			
V	Motivation- motivation driver- human needs- behaviour modification- goal setting- expectancy model- comparison models- interpreting motivational models- leadership- path goal model- style – contingency approach	9	20%
VI	Special topics in industrial psychology- managing group in organization- group and inter group dynamics- managing change and organizational development- nature planned change- resistance characteristic of OD-OD process	9	20%
END SEMESTER EXAM			

Question Paper Pattern

Maximum marks: 100 Time: 3 hrs

The question paper should consist of three parts

Part A
There should be 2 questions each from module I and II
Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part B
There should be 2 questions each from module III and IV
Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part C
There should be 3 questions each from module V and VI
Each question carries 10 marks
Students will have to answer any four questions out of 6 (4X10 marks =40 marks)

Note: In all parts, each question can have a maximum of four sub questions

BRANCH: *Civil Engineering*

SEMESTER - 3

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
CE201	Mechanics of Solids	3-1-0	4	B
CE203	Fluid Mechanics I	3-1-0	4	C
CE205	Engineering Geology	3-0-1	4	D
CE207	Surveying	3-0-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	F
CE231	Civil Engineering Drafting Lab	0-0-3	1	S
CE233	Surveying Lab	0-0-3	1	T

Total Credits = 24 **Hours: 28/29**

Cumulative Credits= 71

SEMESTER - 4

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0	4	A
CE202	Structural Analysis I	3-1-0	4	B
CE204	Construction Technology	4-0-0	4	C
CE206	Fluid Mechanics II	3-0-0	3	D
CE208	Geotechnical Engineering I	3-0-0	3	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
CE232	Materials Testing Lab I	0-0-3	1	S
CE234	Fluid Mechanics Lab	0-0-3	1	T

Total Credits = 23 **Hours 28/27**

Cumulative Credits= 94

BRANCH: *Computer Science & Engineering*

SEMESTER - 3

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
CS201	Discrete Computational Structures	3-1-0	4	B
CS203	Switching Theory and Logic Design	3-1-0	4	C
CS205	Data Structures	3-1-0	4	D
CS207	Electronics Devices & Circuits	3-0-0	3	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
CS231	Data Structures Lab	0-0-3	1	S
CS233	Electronics Circuits Lab	0-0-3	1	T

Total Credits = 24 Hours: 28/29

Cumulative Credits= 71

SEMESTER - 4

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0	4	A
CS202	Computer Organization and Architecture	3-1-0	4	B
CS204	Operating Systems	3-1-0	4	C
CS206	Object Oriented Design and Programming	2-1-0	3	D
CS208	Principles of Database Design	2-1-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	**F**
CS232	Free and Open Source Software Lab	0-0-3	1	S
CS234	Digital Systems Lab	0-0-3	1	T

Total Credits = 23 Hours 28/27

Cumulative Credits= 94

BRANCH: *Electrical & Electronics Engineering*

SEMESTER - 3

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
EE201	Circuits and Networks	3-1-0	4	B
EE203	Analog Electronic Circuits	3-1-0	4	C
EE205	DC Machines and Transformers	3-1-0	4	D
EE207	Computer Programming	2-1-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	F
EE231	Electronic Circuits Lab	0-0-3	1	S
EE233	Programming Lab	0-0-3	1	T

Total Credits = 24 Hours: 28/29

Cumulative Credits= 71

SEMESTER - 4

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0	4	A
EE202	Synchronous and Induction Machines	3-1-0	4	B
EE204	Digital Electronics and Logic Design	2-1-0	3	C
EE206	Material Science	3-0-0	3	D
EE208	Measurements and Instrumentation	3-1-0	4	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
EE232	Electrical Machines Lab I	0-0-3	1	S
EE234	Circuits and Measurements Lab	0-0-3	1	T

Total Credits = 23 Hours 28/27

Cumulative Credits= 94

BRANCH: *Electronics & Communication Engineering*

SEMESTER - 3

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
EC201	Network Theory	3-1-0	4	B
EC203	Solid State Devices	3-1-0	4	C
EC205	Electronic Circuits	3-1-0	4	D
EC207	Logic Circuit Design	3-0-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	F
EC231	Electronic Devices & Circuits Lab	0-0-3	1	S
EC223	Electronic Design Automation Lab	0-0-3	1	T

Total Credits = 24 Hours: 28/29

Cumulative Credits= 71

SEMESTER - 4

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA204	Probability, Random Processes and Numerical Methods	3-1-0	4	A
EC202	Signals & Systems	3-1-0	4	B
EC204	Analog Integrated Circuits	4-0-0	4	C
EC206	Computer Organization	3-0-0	3	D
EC208	Analog Communication Engineering	3-0-0	3	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
EC232	Analog Integrated Circuits Lab	0-0-3	1	S
EC230	Logic Circuit Design Lab	0-0-3	1	T

Total Credits = 23 Hours 27/28

Cumulative Credits= 94

BRANCH: *Information Technology*

SEMESTER - 3

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
CS201	Discrete Computational Structures	3-1-0	4	B
IT201	Digital System Design	3-1-0	4	C
CS205	Data Structures	3-1-0	4	D
IT203	Data Communication	3-0-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	F
CS231	Data Structures Lab	0-0-3	1	S
IT231	Digital Circuits Lab	0-0-3	1	T

Total Credits = 24 Hours: 28/29

Cumulative Credits= 71

SEMESTER - 4

Course Code	***Course Name***	***L-T-P***	***Credits***	***Exam Slot***
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0	4	A
CS202	Computer Organization and Architecture	3-1-0	4	B
IT202	Algorithm Analysis & Design	4-0-0	4	C
IT204	Object Oriented Techniques	3-0-0	3	D
CS208	Principles of Data Base Design	3-0-0	3	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
IT232	Object Oriented Programming Lab	0-0-3	1	S
IT234	Algorithm Design Lab	0-0-3	1	T

Total Credits = 23 Hours 28/27

Cumulative Credits= 94

BRANCH: *Mechanical Engineering*

SEMESTER - 3

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
ME201	Mechanics of Solids	3-1-0	4	B
ME203	Mechanics of Fluids	3-1-0	4	C
ME205	Thermodynamics	3-1-0	4	D
ME210	Metallurgy and Materials Engineering	3-0-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	F
ME231	Computer Aided Machine Drawing Lab	0-0-3	1	S
CE230	Material Testing Lab	0-0-3	1	T

Total Credits = 24 Hours: 28/29

Cumulative Credits= 71

SEMESTER - 4

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0	4	A
ME202	Advanced Mechanics of Solids	3-1-0	4	B
ME204	Thermal Engineering	3-1-0	4	C
ME206	Fluid Machinery	2-1-0	3	D
ME220	Manufacturing Technology	3-0-0	3	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
ME232	Thermal Engineering Lab	0-0-3	1	S
ME230	Fluid Mechanics & Machines Lab	0-0-3	1	T

Total Credits = 23 Hours 28/27

Cumulative Credits= 94

Course code	Course Name	L-T-P - Credits	Year of Introduction
HS200	Business Economics	3-0-0-3	2016

Prerequisite: Nil

Course Objectives

- To familiarize the prospective engineers with elementary Principles of Economics and Business Economics.
- To acquaint the students with tools and techniques that are useful in their profession in Business Decision Making which will enhance their employability;
- To apply business analysis to the "firm" under different market conditions;
- To apply economic models to examine current economic scenario and evaluate policy options for addressing economic issues
- To gain understanding of some Macroeconomic concepts to improve their ability to understand the business climate;
- To prepare and analyse various business tools like balance sheet, cost benefit analysis and rate of returns at an elementary level

Syllabus

Business Economics - basic concepts, tools and analysis, scarcity and choices , resource allocation, marginal analysis, opportunity costs and production possibility curve. Fundamentals of microeconomics - Demand and Supply Analysis, equilibrium, elasticity, production and production function, cost analysis, break-even analysis and markets. Basics of macroeconomics - the circular flow models, national income analysis, inflation, trade cycles, money and credit, and monetary policy. Business decisions - investment analysis, Capital Budgeting decisions, forecasting techniques and elementary Balance Sheet and taxation, business financing, international investments

Expected outcome .

A student who has undergone this course would be able to

i. make investment decisions based on capital budgeting methods in alignment with microeconomic and macroeconomic theories.
ii. able to analyse the profitability of the firm, economy of operation, determination of price under various market situations with good grasp on the effect of trade cycles in business.
iii. gain knowledge on Monetary theory, measures by RBI in controlling interest rate and emerging concepts like Bit Coin.
iv. gain knowledge of elementary accounting concepts used for preparing balance sheet and interpretation of balance sheet

Text Books

1. Geetika, Piyali Ghosh and Chodhury, *Managerial Economics*, Tata McGraw Hill, 2015
2. Gregory Mankiw, *Principles of Macroeconomics*, Cengage Learning, 2006.
3. M.Kasi Reddy and S.Saraswathi, *Economics and Financial Accounting*. Prentice Hall of India. New Delhi.

References:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
2. Khan M Y, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
3. Samuelson, *Managerial Economics*, 6th edition, Wiley
4. Snyder C and Nicholson W, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
5. Truett, Managerial Economics: Analysis, Problems, Cases, 8th Edition, Wiley
6. Welch, *Economics: Theory and Practice* 7th Edition, Wiley
7. Uma Kapila, *Indian Economy Since Independence, 26th Edition: A Comprehensive and Critical Analysis of India's Economy*, 1947-2015
8. C Rangarajan, *Indian Economy, Essays on monetary and finance*, UBS Publishers'Distributors, 1998
9. A.Ramachandra Aryasri, *Managerial Economics and Financial Analysis*, Tata McGraw-Hill, New Delhi.
10. Dominick Salvatore, *Managerial Economics in Global Economy*, Thomas Western College Publishing, Singapore.
11. I.M .Pandey, *Financial Management*, Vikas Publishing House. New Delhi.
12. Dominick Salvatore, *Theory and Problems of Micro Economic Theory.* Tata Mac Graw-Hill, New Delhi.
13. T.N.Hajela.*Money, Banking and Public Finance.* Anne Books. New Delhi.
14. G.S.Gupta. *Macro Economics-Theory and Applications.* Tata Mac Graw- Hill, New Delhi.
15. Yogesh, Maheswari, *Management Economics* , PHI learning, NewDelhi, 2012
16. Timothy Taylor , *Principles of Economics*, 3rd edition, TEXTBOOK MEDIA.
17. Varshney and Maheshwari. *Managerial Economics*. Sultan Chand. New Delhi

Course Plan

Module	Contents	Hours	Sem. Exam Marks
I	**Business Economics** and its role in managerial decision making-meaning-scope-relevance-economic problems-scarcity Vs choice (2 Hrs)-Basic concepts in economics-scarcity, choice, resource allocation- Trade-off-opportunity cost-marginal analysis- marginal utility theory, Law of diminishing marginal utility -production possibility curve (2 Hrs)	4	15%
II	**Basics of Micro Economics I** Demand and Supply analysis-equillibrium-elasticity (demand and supply) (3 Hrs.) -Production concepts-average product-marginal product-law of variable proportions- Production function-Cobb Douglas function-problems (3 Hrs.)	6	15%
FIRST INTERNAL EXAMINATION			
III	**Basics of Micro Economics II** Concept of costs-marginal, average, fixed, variable costs-cost curves-shut down point-long run and short run (3 Hrs.)- Break Even Analysis-Problem-Markets-Perfect Competition, Monopoly and Monopolistic Competition, Oligopoly-Cartel and collusion (3 Hrs.).	6	15%
IV	**Basics of Macro Economics** - Circular flow of income-two sector and multi-sector models- National Income Concepts-Measurement methods-problems-Inflation, deflation (4 Hrs.)-Trade cycles-Money-stock and flow concept-Quantity theory of money-Fischer's Equation and Cambridge Equation -velocity of circulation of money-credit control methods-SLR, CRR, Open Market Operations-Repo and Reverse Repo rate-emerging concepts in money-bit coin (4 Hrs.).	8	15%

SECOND INTERNAL EXAMINATION			
V	**Business Decisions I**-Investment analysis-Capital Budgeting-NPV, IRR, Profitability Index, ARR, Payback Period (5 Hrs.)- Business decisions under certainty-uncertainty-selection of alternatives-risk and sensitivity- cost benefit analysis-resource management (4 Hrs.).	9	20%
VI	**Business Decisions II** Balance sheet preparation-principles and interpretation-forecasting techniques (7 Hrs.)-business financing-sources of capital- Capital and money markets-international financing-FDI, FPI, FII-Basic Principles of taxation-direct tax, indirect tax-GST (2 hrs.).	9	20%
END SEMESTER EXAM			

Question Paper Pattern

Max. marks: 100, Time: 3 hours

The question paper shall consist of three parts

Part A
4 questions uniformly covering modules I and II. Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part B
4 questions uniformly covering modules III and IV. Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part C
6 questions uniformly covering modules V and VI. Each question carries 10 marks
Students will have to answer any four questions out of 6 (4X10 marks =40 marks)

Note: In all parts, each question can have a maximum of four sub questions, if needed.

Course code	Course Name	L-T-P-Credits	Year of Introduction
HS210	LIFE SKILLS	2-0-2	2016

Prerequisite : Nil

Course Objectives

- To develop communication competence in prospective engineers.
- To enable them to convey thoughts and ideas with clarity and focus.
- To develop report writing skills.
- To equip them to face interview & Group Discussion.
- To inculcate critical thinking process.
- To prepare them on problem solving skills.
- To provide symbolic, verbal, and graphical interpretations of statements in a problem description.
- To understand team dynamics & effectiveness.
- To create an awareness on Engineering Ethics and Human Values.
- To instill Moral and Social Values, Loyalty and also to learn to appreciate the rights of others.
- To learn leadership qualities and practice them.

Syllabus

Communication Skill: Introduction to Communication, The Process of Communication, Barriers to Communication, Listening Skills, Writing Skills, Technical Writing, Letter Writing, Job Application, Report Writing, Non-verbal Communication and Body Language, Interview Skills, Group Discussion, Presentation Skills, Technology-based Communication.

Critical Thinking & Problem Solving: Creativity, Lateral thinking, Critical thinking, Multiple Intelligence, Problem Solving, Six thinking hats, Mind Mapping & Analytical Thinking.

Teamwork: Groups, Teams, Group Vs Teams, Team formation process, Stages of Group, Group Dynamics, Managing Team Performance & Team Conflicts.

Ethics, Moral & Professional Values: Human Values, Civic Rights, Engineering Ethics, Engineering as Social Experimentation, Environmental Ethics, Global Issues, Code of Ethics like ASME, ASCE, IEEE.

Leadership Skills: Leadership, Levels of Leadership, Making of a leader, Types of leadership, Transactions Vs Transformational Leadership, VUCA Leaders, DART Leadership, Leadership Grid & leadership Formulation.

Expected outcome

The students will be able to

- Communicate effectively.
- Make effective presentations.
- Write different types of reports.
- Face interview & group discussion.
- Critically think on a particular problem.
- Solve problems.
- Work in Group & Teams
- Handle Engineering Ethics and Human Values.
- Become an effective leader.

Resource Book:

Life Skills for Engineers, Complied by ICT Academy of Kerala, McGraw Hill Education (India) Private Ltd., 2016

References:

- Barun K. Mitra; (2011), *"Personality Development & Soft Skills*", First Edition; Oxford Publishers.
- Kalyana; (2015) "*Soft Skill for Managers*"; First Edition; Wiley Publishing Ltd.
- Larry James (2016); "*The First Book of Life Skills*"; First Edition; Embassy Books.
- Shalini Verma (2014); *"Development of Life Skills and Professional Practice"*; First Edition; Sultan Chand (G/L) & Company
- John C. Maxwell (2014); "The 5 Levels of Leadership", Centre Street, A division of Hachette Book Group Inc.

Course Plan

Module	Contents	Hours L-T-P L	P	Sem. Exam Marks
I	Need for Effective Communication, Levels of communication; Flow of communication; Use of language in communication; Communication networks; Significance of technical communication, Types of barriers; Miscommunication; Noise; Overcoming measures, Listening as an active skill; Types of Listeners; Listening for general content; Listening to fill up information; Intensive Listening; Listening for specific information; Developing effective listening skills; Barriers to effective listening skills. **Technical Writing:** Differences between technical and literary style, Elements of style; Common Errors, **Letter Writing:** Formal, informal and demi-official letters; business letters, **Job Application**: Cover letter, Differences between bio-data, CV and Resume, **Report Writing:** Basics of Report Writing; Structure of a report; Types of reports. **Non-verbal Communication and Body Language:** Forms of non-verbal communication; Interpreting body-language cues; Kinesics; Proxemics; Chronemics; Effective use of body language **Interview Skills**: Types of Interviews; Ensuring success in job interviews; Appropriate use of non-verbal communication, **Group Discussion**: Differences between group discussion and debate; Ensuring success in group discussions, **Presentation Skills**: Oral presentation and public speaking skills; business presentations, **Technology-based Communication:** Netiquettes: effective e-mail messages; power-point presentation; enhancing editing skills using computer software.	2 3	2 4 4	See evaluation scheme

II	Need for Creativity in the 21st century, Imagination, Intuition, Experience, Sources of Creativity, Lateral Thinking, Myths of creativity Critical thinking Vs Creative thinking, Functions of Left Brain & Right brain, Convergent & Divergent Thinking, Critical reading & Multiple Intelligence. Steps in problem solving, Problem Solving Techniques, Problem Solving through Six Thinking Hats, Mind Mapping, Forced Connections. Problem Solving strategies, Analytical Thinking and quantitative reasoning expressed in written form, Numeric, symbolic, and graphic reasoning, Solving application problems.	2 2	2 2	
III	Introduction to Groups and Teams, Team Composition, Managing Team Performance, Importance of Group, Stages of Group, Group Cycle, Group thinking, getting acquainted, Clarifying expectations. Group Problem Solving, Achieving Group Consensus. Group Dynamics techniques, Group vs Team, Team Dynamics, Teams for enhancing productivity, Building & Managing Successful Virtual Teams. Managing Team Performance & Managing Conflict in Teams. Working Together in Teams, Team Decision-Making, Team Culture & Power, Team Leader Development.	3 3	2 2	
IV	Morals, Values and Ethics, Integrity, Work Ethic, Service Learning, Civic Virtue, Respect for Others, Living Peacefully. Caring, Sharing, Honesty, Courage, Valuing Time, Cooperation, Commitment, Empathy, Self-Confidence, Character Spirituality, Senses of 'Engineering Ethics', variety of moral issued, Types of inquiry, moral dilemmas, moral autonomy, Kohlberg's theory, Gilligan's theory, Consensus and controversy, Models of Professional Roles, Theories about right action, Self-interest, customs and religion, application of ethical theories. Engineering as experimentation, engineers as responsible experimenters, Codes of ethics, Balanced outlook on. The challenger case study, Multinational corporations, Environmental ethics, computer ethics,	3 3 3	2 2	

	Weapons development, engineers as managers, consulting engineers, engineers as expert witnesses and advisors, moral leadership, sample code of Ethics like ASME, ASCE, IEEE, Institution of Engineers(India), Indian Institute of Materials Management, Institution of electronics and telecommunication engineers(IETE), India, etc.	3		
V	Introduction, a framework for considering leadership, entrepreneurial and moral leadership, vision, people selection and development, cultural dimensions of leadership, style, followers, crises. Growing as a leader, turnaround leadership, gaining control, trust, managing diverse stakeholders, crisis management Implications of national culture and multicultural leadership Types of Leadership, Leadership Traits. Leadership Styles, VUCA Leadership, DART Leadership, Transactional vs Transformational Leaders, Leadership Grid, Effective Leaders, making of a Leader, Formulate Leadership	4 2 2	 2 2	
END SEMESTER EXAM				

EVALUATION SCHEME

Internal Evaluation

(Conducted by the College)

Total Marks: 100

Part – A

(To be started after completion of Module 1 and to be completed by 30th working day of the semester)

1. Group Discussion – Create groups of about 10 students each and engage them on a GD on a suitable topic for about 20 minutes. Parameters to be used for evaluation is as follows;

(i) Communication Skills – 10 marks
(ii) Subject Clarity – 10 marks
(iii) Group Dynamics - 10 marks
(iv) Behaviors & Mannerisms - 10 marks

(Marks: 40)

Part – B

(To be started from 31st working day and to be completed before 60th working day of the semester)

2. Presentation Skills – Identify a suitable topic and ask the students to prepare a presentation (preferably a power point presentation) for about 10 minutes. Parameters to be used for evaluation is as follows;

(i)	Communication Skills*	-	10 marks
(ii)	Platform Skills**	-	10 marks
(iii)	Subject Clarity/Knowledge	-	10 marks

(Marks: 30)

* Language fluency, auditability, voice modulation, rate of speech, listening, summarizes key learnings etc.

** Postures/Gestures, Smiles/Expressions, Movements, usage of floor area etc.

Part – C

(To be conducted before the termination of semester)

3. Sample Letter writing or report writing following the guidelines and procedures. Parameters to be used for evaluation is as follows;

(i)	Usage of English & Grammar	-	10 marks
(ii)	Following the format	-	10 marks
(iii)	Content clarity	-	10 marks

(Marks: 30)

External Evaluation

(Conducted by the University)

Total Marks: 50 Time: 2 hrs.

Part – A

Short Answer questions

There will be one question from each area (five questions in total). Each question should be written in about maximum of 400 words. Parameters to be used for evaluation are as follows;

(i) Content Clarity/Subject Knowledge
(ii) Presentation style
(iii) Organization of content

(Marks: 5 x 6 = 30)

Part – B

Case Study

The students will be given a case study with questions at the end the students have to analyze the case and answer the question at the end. Parameters to be used for evaluation are as follows;

(i) Analyze the case situation
(ii) Key players/characters of the case
(iii) Identification of the problem (both major & minor if exists)
(iv) Bring out alternatives
(v) Analyze each alternative against the problem
(vi) Choose the best alternative
(vii) Implement as solution
(viii) Conclusion
(ix) Answer the question at the end of the case

(Marks: 1 x 20 = 20)

MASTER OF BUSINESS ADMINISTRATION

Programme
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SYLLABUS & COURSE PLAN

Trimester 1

April 2016

TRIMESTER I

Exam Slot	Course No.	Course Name	L-T-P	Internal Marks	End Trimester Marks	Exam Duration (hours)	Credits
	11	Quantitative Techniques	3-0-0	40	60	3	3
	12	Organizational Behaviour I	3-0-0	40	60	3	3
	13	Managerial Economics	3-0-0	40	60	3	3
	14	Business Communication	3-0-0	40	60	3	3
	15	Accounting for Managers	3-0-0	40	60	3	3
	16	Business and Society	3-0-0	40	60	3	3
	17	Soft Skills I*	0-2-0	20	-	-	-
	18	Project**	0-0-9	-	-	-	-
		TOTAL	18-2-9	260	360		18

* - Soft Skills University Exam will be conducted only in the Third Trimester

* * - 9 Hours of Project is distributed among all courses for Seminars/Presentations

Course No.	Course Name	L-T-P	Credits	Year of Introduction
12	Organizational Behaviour I	3-0-0	3	2016

Course Objectives

The course focuses on managing individuals at work. The objective is to equip the students with an essential knowledge base on behavioural dynamics of individuals with necessary models,, tools, and techniques, for diagnosing, predicting and controlling human behaviour and to develop the basic human relations skills as a prospective manager.

Syllabus

Fundamentals of Organizational Behaviour, Understanding Organizational Behaviour, Effectiveness in organizations, Social systems and organizational culture, Understanding and Managing Individual Behaviour, Job Design, Work and Motivation, Evaluation, Feedback and Rewards, Stress and Counselling.

Expected Outcome

On completion of the course, the students are expected to enable the students to learn what actions are appropriate for different situations and apply the theory in order to be effective leaders in the context of organisational behaviour theories, models and concepts.

References

1. Robbins, Judge & Sanghi, *Organizational Behaviour,* 12th Ed. Prentice Hall India
2. McShane, Glinow, *Organizational Behaviour*, Tata McGraw Hill
3. Don Hellriegel; John W. Slocum; Richard W. Woodman, *Organizational Behavior*, 8th Ed., Thomson South-Western

COURSE PLAN

Unit	Topics	% of marks in final Exam.
I	Disciplines contributing to OB - Psychology, Sociology, Anthropology, Social Psychology, Economics & Political Science Approaches to the study of OB - Human Resource Approach, Contingency Approach, Productivity Approach, and System Approach - Fundamental principles, theories and concepts in organization design and development	20
II	Understanding Organizational Behaviour - Fundamental Concepts, Organizational processes, Organizational structure, Organizational Change and Innovation processes - Effectiveness in organizations - Models of Organizational Behaviour, Systems theory and time dimension of effectiveness, Developing competencies, Limitations of Organizational Behaviour, Continuing challenges	15
First Internal Examination		
III	Individual differences and work behaviour - Why individual differences are	30

	important, The basis for understanding Work Behaviour, Individual differences influencing Work Behaviour. Personality - Sources of personality differences, Personality structure, Personality and Behaviour, Measuring Personality Attitudes - The nature of Employee Attitudes, Effects of Employee Attitudes, Studying Job satisfaction, Changing Employee Attitudes. Perceptions, Attributions and Emotions - The perceptual process, Perceptual grouping, Impression management, Emotions, Emotional Intelligence - Motivation - Concept of Motivation, Content approaches, Process approaches, Motivation and psychological contract	
IV	Managing Individuals at Work: Measuring personality attitudes; managing employee attitudes Managing Teams at Work: Definition of Group - group development- group structure - teams -Formal Organization and Informal Groups and their interaction	10
	Second Internal Examination	
V	Developing high performance teams - turning individuals into team players developing interpersonal awareness - Johari Window- Transactional Analysis - leadership - theories – developing leadership skills	10
VI	Managing Power, Politics and Conflict: Power - basis of power - power tactics - Politics – consequences of political behavior - Conflict Management: Different views of conflict - conflict process - levels of conflict - Constructive and Destructive conflict - Conflict process - strategies for encouraging constructive conflict - Conflict resolution strategies	15
	Final Examination	

Course No.	Course Name	L-T-P	Credits	Year of Introduction
16	Business and Society	3-0-0	3	2016

Course Objectives

The objectives of this course are the following:

1. To develop a broad understanding of the business and society relationship.
2. To help the student perceive and understand the importance of sound business ethical practices in the effective functioning of organizations.
3. To understand major corporate social responsibilities of business.
4. To understand the impact of the human activities on the environment and measures to combat them.

Syllabus

Business, society and government; socio-economic development and business; socio-cultural environment of business; economic growth and the environment; sustainable development.

Expected Outcomes

The successful completion of this course will impart an understanding of the relationship between business and society. This will enable students to perceive sound business ethics and social responsibilities of business and consider the social dimensions in business decision making.

References

1. John Steiner, George Steiner, *Business, Government and Society: A Managerial Perspective,* McGraw-Hill Higher Education, 2011.
2. Keith Davis and David L Blomstorm, *Business, Society and Environment,* McGraw-Hill, 1971.
3. Francis Cherunilam, *Business Environment: Text and Cases*, Himalaya Publishing House, 2016.
4. Barbara Parker, *Globalisation and Business*, Response Books, 2005.
5. Bala Krishnamurthy, *Environmental Management: Text and Cases*, PHI, New Delhi.
6. ArinditaBasak, *Environmental Studies, Pearson Education,* New Delhi.
7. Justin Paul*, Business Environment -Text and Cases,* Tata McGraw Hill Education, New Delhi, 2010.
8. C. K. Prahalad, *The Fortune at the Bottom of the Pyramid*, Wharton School Publishing/Pearson Education, 2006.
9. Govt. of India, annual *Economic Survey*.
10. Govt. of Kerala, annual *Economic Review*.
11. UNCTAD, *Human Development Report* (Annual)

Course Plan

Unit	Topics	% of marks in final exam
I	**Business, Society and Government** Ecological view of business; business, society and government - interdependence, conflict, roles and synthesis; stakeholders of business and their roles. Business ethics; triple bottom line /corporate social responsibility- meaning and scope of CSR/TBL, principles of CSR, Sections of the Indian Companies Act pertaining to CSR. Socio-economic implications of Indian Constitution; functions of state, economic roles of government; regulation of business. NGOs – types and roles	20

II	**Socio-economic Development and Business** Economic growth, poverty and inequality – socio-political dimensions, causes and consequences of poverty and inequality; measurement of poverty and inequality, impact on and implications for business; fortune at the bottom of the pyramid strategy; rural-urban dynamics and business; importance of urbanization to economic and business growth.	20
	First Internal Examination	
III	**Socio-Cultural Environment of Business** Relevance of customs, traditions, religion, language and other demographic factors to business; demographic trends (global and India) and its implications for business. Gobalisation – meaning and dimensions – socio-economic impact and implications for business; social transformation of India and implications for Business	20
IV	**Economic Growth and Environment** The ecosystem; renewable and non-renewable resources; a bird's eye view (global and Indian) of some important resource- forest, water, mineral, land & food, and energy (including energy conservation) resources. Impact of economic growth and population on environment; pollution – types, causes and consequences, control of pollution; climate change and global endeavours to control climate change.	20
	Second Internal Examination	
V	**Sustainable Development** Sustainable development – meaning, social, economic and environmental dimensions, principles of sustainable development. Environment management systems – meaning, scope, objectives, planning and implementation; ISO 14000; environmental audit; 4Rs; environmental labelling. World Business Council for Sustainable Development. Millennium Development Goals (a very brief review) and Sustainable Development Goals – role of and implications for business	20
	Final Examination	

Course No.	Course Name	L-T-P	Credits	Year of Introduction
17	Soft Skills I	0-2-0	-*	2016

- Internal Evaluation Mark to count towards credit in the Third trimester

Course Objectives

The objective of this course is to enable students to acquire soft skills which complement the hard skills which are occupational requirement for a job. The course also emphasize on personal grooming and development, relationship, communication and presenting oneself. This course enables the student an effective manager with adequate soft skills required for any organization. In addition, he/she would acquire skills to enhance his/her career as well.

Syllabus

Managerial skill, Self assessment, Goal setting, Time Management, Stress management, Leadership

Expected Outcome

1. Enhancement of the holistic development of students and improvement of their employability skills.
2. To understand self and so decide his/ her goal
3. To understand how to manage time and stress
4. To develop leadership skills

References

1. Soft Skills for Everyone, Butterfield Jeff, Cengage Learning India Pvt Ltd; 1 edition (2011)
2. The Emotionally Intelligent Manager: How to Develop and Use the Four Key Emotional Skills of Leadership, Caruso, D. R. and Salovey P, John Wiley & Sons (20 April 2004)
3. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success, Pearson Education; 1 edition (2013)

Course plan

Sl No	Topics	% of marks for T3 Final Evaluation
1	What are Managerial skills? Why it is important? Need for personality Development, Misconceptions and clarifications. Developing positive attitude-Improving perceptions-Forming values Emotional Intelligence (EI) – Benefits of EI, 5 Dimensions of Trait EI Model, Self Awareness (SA), Managing Emotions (ME), Motivation (M), Empathy (E), Social Skills (SS), Determine your EQ.	12%

	Self Assessment : SWOT analysis of the individual, exercises	
2	Goal Setting- SMART Goals, Fixing own goals, importance of attainment of goals. exercises Time Management : Importance of time management, techniques for managing time effectively, priority setting, completion tasks on time Stress Management : Factors leading to stress, Management of stress. keeping both body and mind healthy.	12%
3	Leadership Skills –How to influence others in a positive manner using verbal and non-verbal techniques? Coaching, Delegating, Empowerment and Use and misuse of power. Awareness of one's own leadership style, Procrastination	6%
	Internal Evaluation only*	

* These marks will be reflected in the Third Trimester University Exam

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SYLLABUS & COURSE PLAN

Trimester 2

April 2016

Trimester 2

Course No.	Course Name	L-T-P	Internal Marks	End Trimester Marks	Exam duration (Hrs.)	Credits
21	Organizational Behaviour II	3-0-0	40	60	3	3
22	Macroeconomics	3-0-0	40	60	3	3
23	Marketing Management I	3-0-0	40	60	3	3
24	Operations Management	3-0-0	40	60	3	3
25	Financial Management I	3-0-0	40	60	3	3
26	Business Law	3-0-0	40	60	3	3
27	Soft Skills II*	0-2-0	20	-	-	-
28	Project**	0-0-9	-	-	-	-
	Total	18-2-9	260	360	-	18

- Soft Skills University Exam will be conducted only in the Third Trimester

* * - 9 Hours of Project is distributed among all courses for Seminars/Presentations

SECOND TRIMESTER SYLLABUS

Course No.	Course Name	L-T-P	Credits	Year of Introduction
21	Organizational Behaviour II	3-0-0	3	2016

Course Objectives

The course focuses on managing teams at work and the organization system as a whole. The objective is to understand how individuals, groups and whole organizations work together more effectively within the increasing pace of corporate change, dramatic restructuring and downsizing and advanced global competition.

Syllabus

Group Behaviour and Interpersonal Influence, Organizational Processes, Organizational Design, Change and Innovation, Emerging Aspects of Organizational Behaviour.

Expected Outcome

Apply problem solving and critical thinking abilities to analyse the kinds of choices available for developing alternative organisational behaviour approaches in the workplace

Form an appreciation of the complexities and uncertainties of organisational behaviour by examining your own role in the light of experience of real-time problem settings

Demonstrate a developmental approach to personal and key skills of planning, review and feedback and verbal communication

References

1. Aswathappa, K. Organizational Behavior. Himalaya Publishing House, 2007.
2. Berg, Green. Behavior in Organizations. New Delhi: Pearson, 2013.
3. Chandran, Jit S. *Organizational Behavior.* New Delhi: Vikas Publishing House, Third Edition.
4. David, Johnson J. *Organizational Communication Structure.* Ablex Publishing, 1993.
5. Dwivedi, R. S. *Human Relations & Organizational Behavior: A Global Perspective.* Delhi: Macmillan India, 2001.
6. Luthans, Fred. *Organisation Behaviour.* New Delhi: McGraw Hill Education, 2011.
7. McShane, Steven Lattimore, Mara Olekalns and Tony Travaglioni. *Organizational Behavior: Emerging Knowledge, Global Insights.* McGraw Hill, 2012.
8. Newstorm, John W and Keith Davis. *Organizational Behavior: Human Behavior at Work.* New York: McGraw-Hill, 2014.
9. Poertner, Shirley and Karen Massetti Miller. *The art of giving and receiving feedback.* Coastal Training Technologies, 1996.
10. Robins, Stephen P. *Organization Behaviour.* New Delhi: Pearson Education, 2012.
11. Sanghi, Seema. *Essentials of Organisational Behaviour.* New Delhi: Pearson, 2010.
12. Sekaran, Uma. *Organizational Behavior.* New Delhi: McGraw-hill, 2004.
13. Werner, David. *Managing Company-wide Communication.* Chapman & Hall, 1995.

Course Plan

Unit	Topics	% of marks in Trimester Exam
I	Social systems and organizational culture - Understanding a Social System, Social Culture, Role, Status, Organizational culture, Influencing culture change, Sustaining the culture, Characteristics of effective socialization	20

II	Managing the Organization System: Effects of organization culture on employee performance - creating and sustaining organization culture - Management of Change: forces responsible for change - resistance to change overcoming resistance to change - planned change – approaches to manage organization change -OD inventions- creating a culture for change - Learning Organizations	20
	First Internal Examination	
III	Empowerment and Participation- The nature of empowerment and Participation- How participation works- Programs for participation-Important considerations in participation- Assertive Behaviour: Interpersonal Orientations- Facilitating smooth relations- Stroking	15
IV	Managing misbehaviour - The emergence in Management of the study of misbehaviour, Selected misbehaviours; work stress and its management - Stress and Counselling - What is stress?, Stress model, Work stressors, Stress outcomes, Stress moderators, Stress prevention and management,	20
	Second Internal Examination	
IV	Employee counselling, Types of counselling-Ethical decision making in organisations: Factors that inhibit or facilitate ethical decision making in organizations, Steps to ensure ethical decisions	10
V	Global implications of organizational behavior: International setting for the management criteria - planning, organizing, staffing, controlling and leading; managing multi-cultural teams; Organisational structure that connects organizational departments, functions and geography to achieve organizational goals; Impacts of globalization on organizational culture	15
	Final Examination	

Course No.	Course Name	L-T-P	Credits	Year of Introduction
27	Soft Skills II	0-2-0	-*	2016

*- Internal Evaluation Marks to count towards credit in the Third trimester

Course Objectives

The objective of this course is to enable students to acquire soft skills which complement the hard skills which are occupational requirement for a job. The course also emphasize on personal grooming and development, relationship, communication and presenting oneself. This course enables the student an effective manager with adequate soft skills required for any organization. In addition, he/she would acquire skills to enhance his/her career as well.

Syllabus

Communication skills, Business Etiquettes, persuasive and interpersonal skills

Expected Outcome

1. Enhancement of the holistic development of students and improvement of their employability skills.
2. To develop communication skill
3. To understand business etiquettes
4. To learn persuasive and interpersonal skills

References

1. Soft Skills for Everyone, Butterfield Jeff, Cengage Learning India Pvt Ltd; 1 edition (2011)
2. Training in Interpersonal Skills: Tips for Managing People at Work, Pearson Education India; 6 edition (2015)
3. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success, Pearson Education; 1 edition (2013)

Course Plan

Sl No	Topics	% of marks for Final (T3) Evaluation
1	Communication Skills / Communication with others- Art of listening- Art of reading-Art of speaking-Art of writing- Extempore, JAM, Role Plays, Debate, Its Review, Book and article Reviews & writing Summaries , Presentation (PPT) on given topics The art of Public speaking, Prepared Speech by students	12%
2	Ethics & Etiquettes Business Etiquettes - Get the first impression well, Greet others & introduce yourself, Body language- speak well, Dressing sense- appeals to others Social Media Etiquettes, Use & Abuse . E Mail & Telephone etiquettes, Office Manners Role of Value systems in life , Role Models in Society & Business	8%
3	Persuasive Skills- ability to analyze and persuade others to see the problem from multiple perspectives without hurting the other group members. Negotiation skill : Game on negotiation Interpersonal Skills/ Understanding Others - Developing interpersonal relationship-Team building-group dynamics-Team building exercises	5%
	T 2: Internal Evaluation only*	

* These marks will be carried over for Trimester 3 University Exam evaluation

MASTER OF BUSINESS ADMINISTRATION

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SYLLABUS & COURSE PLAN

Trimester 3

April 2016

Subjects and Credits in Trimester 3

Course No.	Course Name	L-T-P	Internal Marks	End Trimester Marks	Exam duration (Hrs.)	Credits
31	Marketing Management II	3-0-0	40	60	3	3
32	Financial Management II	3-0-0	40	60	3	3
33	Human Resource Management	3-0-0	40	60	3	3
34	Business Research Methods	1.5-0-0	20	30	1.5	1.5
35	Management Information Systems	1.5-0-0	20	30	1.5	1.5
36	Operations Research	3-0-0	40	60	3	3
37	Strategic Management	3-0-0	40	60	3	3
38	Soft Skills III*	0-3-0	-	60	-	3
	Total	18-3-0	240	420	-	21

* - Soft Skills Exam will be conducted only in the Third Trimester with internals carried over from earlier First and Second Trimesters

Course No.	Course Name	L-T-P	Credits	Year of Introduction
33	Human Resource Management	3-0-0	3	2016

Course Objectives

This subject provides the key aspects of managing human resources in domestic and multi-national organizations, including a consideration of labour relations and diversity management issues. Topics include job analysis, planning, recruiting, selection, orientation, training and development, performance appraisal, compensation and benefits, dispute resolution, and legal frameworks for both the non-union and union environments.

Syllabus

Evolution of HR, Definition- Meaning- objectives-differences between personnel management and HRM, Human Resource Acquisition, Analysis and Designing of Jobs, HR planning, Human Resource Development, Compensation, Employee Relations

Expected Outcome

The students are expected to have critical skills required to manage human resources in a multitude of workplace environments. Students are expected to get basic knowledge about management of Human Resources and Industrial Relations.

References

1. Decenzo, David A and Stephen P Robbins. *Human Resource Management (11/e).* Wiley, 2013.
2. Dwivedi, R S. *A Text Book of Human Resource Management.* Vikas Publishing House, 2009.
3. Fisher, Cynthia D and Lyle F Schoenfeldt. *Human Resource Management (6/e).* Cengage Learning, 2006.
4. Gomex-Mejia, Luis R, David B Balkin and Robert L Cardy. *Managing Human Resources.* Person/Prentice Hall, 2009.
5. Kandula, Srinivas R. *Human Resource Management in Practice with 300 Models, Techniques and Tools.* PHI Learning, 2009.
6. Kleiman, Lawrence S. *Human Resource Management: A Managerial Tool for Competitive Advantage.* Cengage Learning, 2009.
7. Ivancevich, John M. *Human Resource Management.* McGraw Hill, 2007.
8. Mamoria, C B and S V Gankar. *Personnel Management.* Himalaya Publishing House, 2009.
9. Pattanayak, Biswajeet. *Human Resource Management.* PHI Learning, 2005.
10. Rao, P Subha. *Essentials of Human Resource Management and Industrial Relations: (Text, Cases and Games).* Himalayan Books, 2011.
11. Rao, V S P. *Human Resource Management.* Excel Books, 2010.
12. Sanghi, Seema. *Human Resource Management.* Vikas Publishing, 2014.
13. Snell, Scott, George Bohlander and Veena Vohra. *Human Resource Management: A South Asian Perspective.* Cengage Learning India, 2010.

Unit	Topics	% of marks in Trimester Exam
I	Introduction: Evolution of HRM - Meaning and significance - differences between personnel management and HRM - Major functions of HRM - Line functions and staff functions - human capital management – Characteristics and qualities of HR Manager - Recent trends in HRM	15
IIa	Job Design, Work and Motivation - Job design and quality of work life, A conceptual model of job design, Job performance outcomes, Job analysis, Job designs: the result of job analysis. The way people perceive their jobs, Designing Job range: Job rotation and job Enlargement, Designing Job depth: Job enrichment and job design.	15
	First Internal Examination	
IIb	Pre-recruitment functions: Organizational structure - Analysis and Designing of Jobs - HR planning - Factors affecting HR Planning - HRP process - Requisites of a good HRP - Barriers to HRP Recruitment, selection and appointment: Meaning and significance of recruitment - Process of recruitment -Sources of recruitment - Cost-benefit analysis of recruitment - Process of selection - Difference between recruitment and selection - Selection techniques: tests, interviews and salary negotiation - Meaning and significance of appointment - Process of appointment - Induction and Placement.	25
III	Training and development: Meaning and significance of training and development - Process of training development - Training Need Analysis - Training Design – Training Implementation - Training evaluation - Methods of training: on-the-job and off-the-job methods	15
	Second Internal Examination	
IV	Performance Management: Meaning and significance of Performance Management - Types of performance appraisal system - Performance goal setting – Performance coaching and monitoring - Performance evaluation and performance feedback - Aligning performance outcome to career and succession planning Compensation and benefits: Meaning and significance - Components of Compensation - Factors affecting wages and salaries	10
V	Employee relations: Meaning and significance of employee relations - Employee relations in unionised and non-unionised organizations, participative management - Handling grievances, managing discipline, conducting domestic enquiry -	20
	Trimester Examination	

Course No.	Course Name	L-T-P	Credits	Year of Introduction
38	Soft Skills III	0-0-3	3	2016

Course Objectives

The objective of this course is to enable students to acquire soft skills which complement the hard skills which are occupational requirement for a job. The course also emphasize on personal grooming and development, relationship, communication and presenting oneself. This course enables the student an effective manager with adequate soft skills required for any organization. In addition, he/she would acquire skills to enhance his/her career as well.

Syllabus

Problem solving and decision making, Group discussion , resume preparation, interview techniques, career planning

Expected Outcome

1. Enhancement of the holistic development of students and improvement of their employability skills.
2. To learn the technique of problem solving and decision making
3. To understand the group discussion techniques
4. To learn the preparation of resumes
5. To understand the interview techniques
6. To plan the career successfully

.

References

1. Soft Skills for Everyone, Butterfield Jeff, Cengage Learning India Pvt Ltd; 1 edition (2011)
2. Training in Interpersonal Skills: Tips for Managing People at Work, Pearson Education India; 6 edition (2015)
3. The Emotionally Intelligent Manager: How to Develop and Use the Four Key Emotional Skills of Leadership, Caruso, D. R. and Salovey P, John Wiley & Sons (20 April 2004)
4. The Ace of Soft Skills: Attitude, Communication and Etiquette for Success, Pearson Education; 1 edition (2013)
5. The CV Book: Your definitive guide to writing the perfect CV, James Innes, Pearson Education India; first edition (30 July 2009)
6. Success in Interview, Anand Ganguly, RPH (5th Edition), 2016

Course Plan

Sl No	Topics	% of marks for Final (T3) Evaluation
1	Problem Solving and Decision Making - Understanding Problem solving, Developing effective problem statements, ability to come out with divergent and offbeat solutions and use one's own creativity. Critical thinking - Convergent and Divergent thinking	15%
	Group Discussion - Do's and Don'ts, Practical sessions. Resume vs CV vs Biodata writing - Cover letter writing Interview Skills - attending Interviews, what to do and what not to do, Hands on Experience of giving and taking interviews	20%
2	Career counseling and career planning- choosing the right career, mapping Personality Type and indentify careers that match each personality.	10%
	Final Trimester Examination with External Evaluation*	

*Final Exam will comprise of syllabi content from Soft Skills I and Soft Skills II to make up other 55% Marks for final Evaluation

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SYLLABUS & COURSE PLAN

Trimester 5

June 2016

TRIMESTER V

Exam Slot	Course No.	Course Name	L-T-P	Internal Marks	End Trimester Marks	Exam Duration (hours)	Credits
	51	Entrepreneurship	3-0-0	40	60	3	3
	52	Business Ethics and Corporate Governance	3-0-0	40	60	3	3
	53	Elective V	3-0-0	40	60	3	3
	54	Elective VI	3-0-0	40	60	3	3
	55	Elective VII	3-0-0	40	60	3	3
	56	Elective VIII	3-0-0	40	60	3	3
	57	Project	0-0-4	100	-		4
		TOTAL	18-0-4	340	360		22

Course No.	Course Name	L-T-P	Credits	Year of Introduction
52	**Business Ethics and Corporate Governance**	**3– 0 – 0**	**3**	**2016**

Course Objectives

The basic objective of the course is to sensitise the student on the various ethical aspects concerning the functioning of business enterprises, and to provide awareness about, how the society and business are interdependent for the survival of both. The course aims to equip the students to be honest and be responsible to the society. The knowledge of the subject will improve ethical reasoning by correlating moral concepts to business practices. The course aims to create awareness among students on the importance of Corporate Governance.

Syllabus

Values and its transformation to Ethics – Business Ethics, Stakeholder approach — Law & Ethics — Ethical Philosophies – Ethical Dilemma – Whistle blowing – Corporate Ethics, Ethics Programme – Ethics in functional areas of business – Corporate Governance

Expected Outcome

On successful completion of the course, the student will be well aware that ethical decision making in business management is a must for any organisation for its long term survival and consistent growth. Knowledge on business ethics will motivate the Managers to be more transparent in their business dealings resulting in a business world with no scams and with most effective corporate governance.

References

1. Kumar Senthil, Rajan Senthil, *Business Ethics and Values*, Himalaya Publishing, Mumbai
2. William H Shaw, *Business Ethics:Text Book with Cases*, Cengage Learning 2014
3. Sekhar R.C, *Ethical Choice in Business*, Sage Publication
4. Biswanath Ghosh, *Ethics in Management and Indian Ethos*, 2009, Vikas Publishing.
5. Jennings M.Marianne, *Cases in Business Ethics*, 2008, Cengage Learning India Pvt Ltd, New Delhi.
6. Murthy.C.S.V, *Business Ethics – Text and Cases*, 2010, Himalaya Publishing, Mumbai.
7. Balachandran, and Chandrasekharan, *Corporate Governance, Ethics and Social Responsibility*, PHI, 2/e, 2011.

COURSE PLAN		
Unit	Topics	% marks in Final Exam.
I	Values – intention – action – consequences, Ethics, Inventory of values, Business Ethics – Stakeholder Model of Business Ethics, Ethics and Religion – Sources of Morality – influences to ethical responses – Indian Work Ethics - Law and Ethics – relationship and comparison, Interdependence of Business & Society – Corporate Social Responsibility	20
2	Ethical Philosophies – Normative Ethics – Descriptive Ethics – Applied Ethics – Meta Ethics, Deontological ethics – Teleological Ethics – Virtue Ethics, Utilitarianism – Egoism – Divine Command – Immanuel Kant's Theory, Social Contract Theory, Moral Relativism	15
First Internal Examination		
3	Ethics in functional areas of business – Financial Management (Window dressing, misleading financial analysis, insider trading, churning etc.) – Human Resource Management – (Discrimination – age, gender, race) sexual harassment, ethics at work place, issues affecting privacy of employees, fairness of employment contracts, occupational safety– Marketing Management – Pricing issues like Price discrimination, Price fixing, Price skimming, Ethics in advertising (surrogate, deceptive advertising), Distribution issues like tying arrangement, black market– Production Management – Process issues like effluents, optimisation of resources like power & water, Product issues like additive & intrinsically hazardous products, genetically modified products, flawed products– Ethics in Information Technology – Ethics in customer and vendor relationship	20
Second Internal Examination		
4	Ethics Programme – code of ethics – ethics training – ethics committee – ethics officer, Ethics Audit, Transparency International - Whistle Blowing – classification – legal support to Whistle-Blower – Tips to successful Whistle Blowing - Corporate Governance - Definition - need for corporate governance - evidence of corporate governance from Arthashasthra - elements of good corporate governance - corporate governance theories - Agency Theory - Shareholder Theory - Stake Holder Theory - Stewardship Theory	20
5	Developments in corporate governance - evolution in US, UK and India – board effectiveness - issues and challenges - role and types of directors - corporate board committees - corporate disclosure - emerging trends in corporate governance - corporate board duties - responsibilities and liabilities. Legal framework for corporate governance Companies Act, Basel III	25
Final Exam		