

B.Tech in Food Engineering & Technology
 Department of Food Engineering & Technology
 Tezpur University

Publishers (India) Pvt. Ltd.

Open Elective Courses

FE451	Operation Research	L-T-P-CR-CH 3-0-0-3-3
<p>Introduction to operations research: Operations research techniques, simulation models. Linear programming formulation and graphic solution: Models of mathematical operations research, art of modeling, construction of the LP model, graphical LP solution.</p> <p>The Simplex method: Standard LP form, basic solution, The Simplex method, the M-method, the two-phase method, degeneracy, alternative optimal solution, unbounded solution, infeasible solution Sensitivity analysis and dual problem: Definition of the dual problem, the relationship between the optimal primal and dual solution, economic interpretation of duality, the dual Simplex method, primal-dual computations, sensitivity analysis.</p> <p>Transportation, assignment, and transshipment models: Definition of the transportation model, determination of a starting solution, the transportation algorithm, definition of the assignment problem, the Hungarian method, the transshipment model.</p> <p>Network models: Network definition, minimal spanning tree algorithm, shortest route problem, shortest route algorithm, maximal flow model, enumeration of cuts, maximal flow algorithm, CPM, PERT.</p> <p>Queuing systems: Elements of a queuing model, role of exponential distribution, birth and death models, steady state measures of performance, single server models, multiple-server models, machine servicing model, Pollaczek-Khintchine formula, queuing decision models</p> <p>Text Books:</p> <ol style="list-style-type: none"> Gupta, P. K. and Hira, D. S. <i>Operation Research</i>, (S. Chand publishing, 2008) Sharma, S. C. <i>Operation Research: Inventory Control and Queuing Theory</i>, (Discovery Publishing House, 2006) <p>Reference Books:</p> <ol style="list-style-type: none"> Hillier, F. S. and Lieberman, G. J. <i>Introduction to Operations Research</i>, (McGraw-Hill, 2005) Winston, W. L. <i>Operations Research: Applications and Algorithms</i>, (Duxbury Press, 2003) 		
FE452	Food Enterprise Development	L-T-P-CR-CH 3-0-0-3-3
<p>Innovation and product development concept. Generation of ideas. Desk Research. Screening/ appraisal of initial ideas. Detailed study of product, process and market, Planning and developmental activities and evaluating them. Development of prototype product and its testing for acceptance. Development of process and planning for production trials. Planning the test market. Actual production trials and test marketing. Evaluation of test results. Launching of the product. Advertising and marketing plans. Suggestions for improving success.</p> <p>Legal Issues in Product Development, Marketing and Market Segments, Outsourcing, Consultants, Stability Testing of Foods, Open Innovation Stage Gates Processes.</p> <p>Case studies: Innovations in Dairy industry, Bakery industry, brewing industry.</p> <p>Textbooks:</p> <ol style="list-style-type: none"> Hu, R. <i>Food Product Design A Computer-Aided Statistical Approach</i>, (Technomic Publishers, 2005) Moskowitz, H. R., Saguy, S. and Straus, T. <i>An Integrated Approach to New Food Product Development</i>, (CRC Press, 2006) 		



Building Materials & Technology

CE551 : OPEN ELECTIVE

3 - 0 - 0 : 3 Credits : 3 Hours Prerequisites: None

Introduction: Introduction to structures of solids, ductility, brittleness, strength, stiffness, durability, hardness, toughness; Weakness of materials, Introduction to building materials.

Cement & aggregate: Chemical composition, manufacturing, physical characteristics, hydration, properties of cement compounds, different types of cements, tests on cement. Coarse and fine aggregates, Influence of aggregate on the properties of concrete, aggregate selection.

Concrete: Fresh Concrete: Batching, Mixing, workability, effect of admixture, Hardened Concrete: mechanical properties of hardened concrete, Water-cement ratio, Porosity, Curing of concrete, Design of concrete mix: IS code recommendation.

High performance concrete: introduction to special concrete, acid resistant concrete, roller compacted concrete etc.

Brick: Raw materials, drying and burning, Strength and durability, mortar for masonry and strength of masonry. Hollow concrete bricks, fly ash bricks.

Glass: Various types of glasses, strengthening of glasses, uses

Tiles and flooring materials: ceramic and other types of tiles

Metals: Steel for reinforced concrete and prestressed concrete construction, structural steel sections,

Deterioration of building materials: Corrosion, chloride and sulphate attack on concrete, alkali-aggregate reaction, acid aggregate reactions.

COURSE OUTCOME :

1. Identify the materials required for constructions and their purposes
2. Identify the building materials based on their sources
3. Identify the physical, chemical and engineering properties of different building materials e.g. strength, stiffness, ductility, brittleness, durability, hardness, toughness, etc.
4. Identify and explain the methods involved in using some of the most commonly used construction materials e.g. concrete and steel.
5. Explain the time-dependent changes in the properties of concrete, and effects of certain additives on concrete.

Books:

1. A. M. Neville and J. J. Brooks, Concrete Technology, updated, Addison Wesley Longman, International student edition 1999.
2. Neil Jackson and R. K. Dhir, Civil Engineering materials, Macmillan Fourth edition 1988.
3. S. C. Rangwala, Engineering Materials, Chaortar Publishing House, Anand, 1985

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Department of Electronics & Communication Engineering Tezpur University

Syllabus for IDC course

BE-522 : Basic Neuro-engineering L:3 T:0 P:0 CH:3 CR:3

Introduction : Biology of the neuron, Biophysical description of the action potential, Synapses, Membrane transport, Membrane capacitance, H-H model of membrane, Membrane currents, Cable equation. Myelinated Nerve: Electric circuit model of myelinated nerve. Neural modeling: Linear dendritic model, Varicosities & impulse conduction, Information processing in dendrites, Silicon model of neuron: H-H model, synapse model, simple neuron logic gates. Neuronal networks, Neural coding.

Introduction to brain computer interface, EEG, Magneto encephalography and Magnetic resonance imaging.

Artificial visual/auditory devices for augmented sensory perception.

Text Book:

1. Nicholls, J. C. Martin, A. R. Wallace, B. G. *From Neuron to Brain* (Sinauer Associates, 2001).
2. Mead, C. *Analog VLSI and Neural Systems*; (Addison Wesley, 1989)

Reference Book:

1. Grattarola, M. Massobrio, G. *Bioelectronics Handbook, MOSFETs, Biosensors & Neurons*; (McGraw Hill, 2000)
2. Metin, A. *Hand book of Neural Engineering Vol 1-6* (Wiley/IEEE Press, 2006)

Registrar (Academic)
(Dr Boral)

Submitted as requested.

31/03/2012
Professor & Head
Department of Electronics & Comm. Engg
Tezpur University

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Velocity Analysis and Statics of Manipulators: Linear and angular velocities of a rigid body; Linear and angular velocities of links in serial manipulators; Jacobian; Singularities of serial manipulators; Statics of serial manipulators; Redundancy resolution.

Elements of Kinematics of Parallel Manipulators: Degrees of freedom; Direct kinematics problem; Inverse kinematic problem; Mobility of parallel manipulators; Jacobian, Statics & Singularity.

Dynamics of Manipulators: Forward and inverse dynamics of manipulators; Newton-Euler and Lagrangian formulations.

Trajectory Planning and Generation: General considerations in path description and generation; Joint space schemes; Cartesian space schemes.

Position and Force Control of Manipulators: Feedback control of a single-link manipulator; PID control of a multi-link manipulator; Non-linear control of manipulators; Partitioning a task for force and position control; Hybrid position/force controller; Stability analysis.

Elements of a Robot: Actuators, Transmission & Sensors.

Textbooks

1. Ghosal A. Robotics - Fundamental concepts & Analysis (Oxford university press, 2006)
2. Craig J. J. Introduction to Robotics - Mechanics & Control (Addison - Wesley Publishing Company, New York, 1986)

References

1. Asada H. and Slotine J. E. Robot Analysis & Control (John Wiley & Sons, New York, 1986)
2. Nakamura Y. Advanced robotics - Redundancy & Optimization (Addison - Wesley Publishing Company, New York, 1991)
3. Merlet J.P. Parallel Robots (Kluwer Academic Publishers, Netherlands, 2000)

ME522: Quality Engineering

L-T-P-CH-CR: 3-0-0-3-3

Basic definition of quality, new and old culture, dimensions of quality, Deming's philosophy. Quality of leadership: Leadership concept and characteristics, vision and mission statement, strategic planning. Customer satisfaction: Introduction, customer supplier chain, feedback, translating needs into requirements, customer retention. Involvement of employee: Continuous process improvement: Introduction, Input/ out process model, Juran Trilogy, Plan-Do-Study-Act (PDSA) cycle, Problem solving method. Supplier Partnership: Introduction, Supplier selection, principle of customer/supplier relations, supplier selection, rating and certification, Relationship development. Performance evaluation: Basic concepts, Quality cost, Cost categories, Optimum cost, Quality cost analysis, Reporting,

Statistical process control (SPC): Histogram, Pareto Analysis, Process flow diagram, Cause and effect diagram, check sheet, statistical fundamental, X and R chart, Chart for attributes, scatter diagram. ISO9000& 14000: Introduction, ISO 9000 series standards, elements of ISO/QS 9000, steps to implement quality systems, ISO 14000 series standards, concepts and requirements of ISO 14001, EMS benefits. Benchmarking, Quality function deployment: Introduction, benefits of QFD, the voice of the customer, affinity diagram, Building of a house of quality, QFD process. Taguchi's quality engineering: Taguchi's loss function, step and quadratic function, signal- to- noise (S/N) ratio, Orthogonal Array. Reliability and its requirement, failure rate, reliability function derivation, Weibull distribution, Conditional probability distribution, system reliability, reliability of system with standby components, reliability improvement.

ME523: Non-Conventional Energy

L-T-P-CH-CR: 3-0-0-3-3

Introduction: Importance of non-conventional energy, sources of non-conventional energy and their application. Advantages of non-conventional energy over fossil fuel.

Biomass energy: types of biomasses- plant waste and animal waste, conversion techniques of biomass into energy, biogas plant, modern techniques of biomass conversion, advantages and disadvantages of biomass energy, gobar gas.

Hydroelectric energy: mechanism of hydroelectric power generation, hydroelectric dam, sizes and capacities of hydroelectric plant, present and future scenario of hydroelectric energy and its positive and negative aspect in society.



[5] Ravindranath N. H, Usha R. Natarajan K. B. and Monga P. (2000); Renewable Energy and Environment - A Policy Analysis for India, Tata-McGraw Hill

CBCT course						
Course code	Course Name	L	T	P	CH	Credit
EN 552	Renewable Energy Systems	3	0	0	3	3

Abstract

This course is designed for a detail discussion on various renewable energy base systems. The course contains basic working principles and technology for power generation of all these renewable energy base systems. The course also includes the discussion on resource assessment and potential sites for deployment of these systems for power generation.

Objectives

- To understand the principles of conversion to useful form of energy from renewable energy sources.
- To provide knowledge on different types of renewable energy base systems for electricity generation

Prerequisite

Students having basic knowledge of physics or engineering along with interest in the area of energy conversion techniques and power generation are preferred. This course is an interdisciplinary course and students from Departments apart from Department of Energy can register for this course.

Course contents

Global and National energy scenarios; Forms and characteristics of renewable energy sources, solar radiation measurements, solar thermal collectors: flat plate and concentrating collectors. Principle of flat plate collector, solar still, solar water heaters, solar cookers and solar driers

Principle of photovoltaic conversion of solar energy, types of solar cells, photovoltaic systems and applications, PV system design and economics

Biomass resources and classification, characteristics of biomass, Biomass conversion: combustion, gasification, pyrolysis, anaerobic digestion, alcohol production, Biodiesel

Principles of wind energy conversion, Wind characteristics, Resource assessment, Wind energy conversion systems, Betz limit, application and economics, Wind energy in India

Principles of hydropower, classification of hydropower plants, elements of a hydroelectric power plant, environmental issues related to large hydro projects, Status of Hydropower Worldwide, Potential of hydro power in North East India

Principles of ocean thermal energy conversion systems, ocean thermal power plants; Principles of wave energy conversion and tidal energy conversion

Origin of geothermal resources, types of geothermal energy deposits, site selection, geothermal power plants

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Syllabus for PH-600 Introduction to the Cosmos

PH-600 Introduction to the Cosmos L2,T-1,P-0,CH-3,CR-3

~~Basic~~ idea about celestial co-ordinate system, luminosity and magnitude of astrophysical objects.

Telescopes and its working (brief idea of ground and space based telescopes), CCD detectors. Role of Earth's atmosphere in observations (atmospheric extinction). Electromagnetic spectrum from the cosmos and the information gained from this.

Stars and Constellations. Qualitative idea about formation of a star, equation of hydrostatic equilibrium, nuclear reaction (p-p and CNO cycles), chemical abundances in a star. Measurements of mass, luminosity and temperature of a star. Saha equation.

H-R diagram and location of different stages of star. Sun as a star. Planets, satellites, asteroids and interplanetary dust. Stellar Evolution. Astrophysical dust and molecules - Dust and molecules in space.

Astrophysical plasma. Red shift. Hubble's law. Hubble's classification of galaxies. The local group of galaxies. Radio galaxies, Quasars and Active Galactic Nuclei (AGN). Formation of the Universe. Fundamental forces in nature. Big bang and formation of the first particles, formation of the first elements. Abundances of various elements in the Universe.

Text Books:-

1. Shu, F. H., *The Physical Universe* (McGraw-Hill, 2010)
2. Abhyankar, K. D., *Astrophysics: stars and galaxies* (Universities Press, 2002)

Reference Books:-

1. Weinberg, S. *The First Three Minutes: A Modern View Of The Origin Of The Universe* (Basic Books, 1993)
2. Tayler, R. J., *The Stars: Their Structure and Evolution* (Cambridge University Press; 2 edition, 1994)
3. Narlikar, J. V., *An Introduction to Cosmology* (Cambridge University Press; 3 edition, 2002)
4. Hawking, S., *On The Shoulders Of Giants*, (Running Press, 2002)

CP 528	Gender in Visual Art and Culture	L=2	T=1	P=0	CH=3	CR=3
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This course is an attempt to trace the genealogy of the term gender and its various ramifications in the history of artistic production through the analysis of various feminist interventions in the field of cultural production. It also engages with the history of feminist movements and the way in which their interventions operate in the realm of the politics of representation. The course will enable the students to understand the dialogic relation between art and gender and examine how ideas about art shape and are shaped by gender and vice-versa. It will also encourage them to develop ways to think about the form and content of art and visual culture in the context of the complex representational politics.

	Contents
UNIT I	Conceptual Understanding: What is 'Gender'? What is the history of gender? How it became an important analytical category in theoretical and political formulations? How the questions about the construction of gender came under intense critical scrutiny in the light of various theoretical positions?
UNIT II	Historical Mapping: What are the ways in which dominant/ normative/ canonical discourses expressed gender in art? When was that 'Gender' became a major critical/ theoretical engagement in the realm of art as a fervent socio-political discourse? How the questions about the construction of gender came under intense critical scrutiny within the art historical paradigm? What are the formulations of 'Femininity' and 'Masculinity'?
UNIT III	Gender in the Contemporary: What are multiple manifestations of gender in the domain of contemporary visual culture? Discussion of various thematic concerns built around the representational politics in art. Questions of voyeurism, nudity and the gaze. Discussion with focus on various interventional strategies/ movements/events such as the exhibitions of the MOMA and other important galleries, significant women artist groups such as, WAR, Guerrilla Girls etc.
UNIT IV	Gender in India: Discussion about Feminism in India to understand the social and political issues associated in the realm of cultural practices as well as constitutional and legal provisions prevalent in India. Deliberation on Indian Feminism will include issues of gender in relation to caste and class along with the related issues of the 'tribal'/ indigenous identity and cultural politics. Special focus on Modern Indian Art as well as contemporary visual art of North East India.

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Text Books:

- Berger, John (2008) *Ways of Seeing* . Penguin, UK.
- Griselda Pollock , *Vision and Difference: [Femininity, Feminism, and Histories of Art]*, London Routledge and New York Methuen, 1987.
- Kapur, Geeta , (2000) *When was Modernism, Essays on Contemporary Cultural Practice in India*. Tulika, Delhi.
- Geetha, V . (2007) *Theorizing Feminism in India*, Stree, Delhi.

Reference Books:

- Glover, David and Cora Kaplan . (2000) *Genders: The New Critical Idiom*. Routledge, London.
- Perry, Gill. (1999) *Gender and Art* . Yale University Press, Yale.
- Pollock , Griselda with Rozsika Parker. (1987) . *Framing Feminism: Art & the Women 's Movement* , Pandora Press, New York & London.
- Griselda Pollock , (1999) *Differencing the Canon: Feminist Desire and the Writing of Art's Histories*. Routledge, New York.
- Nochlin, Linda. (1989) "Why Have There Been No Great Women Artists?" *Women, Art, and Power: And Other Essays*. Avalon Publishing, New York.
- Betterton, Rosemary . (1987). *Looking On: Images of Femininity in the Visual Arts and Media*. Routledge, London.
- Perchuk, Andrew, Helaine Posner. (1995). *The Masculine Masquerade: Masculinity and Representation* , Mit Press, Cambridge.
- Dehejia, Vidya. (1997). *Gender issues in Indian art*. Kali, Delhi.
- Rege, Sharmila . (2013) *Against the Madness of Manu :B.R Ambedkar's Writings on Brahmanical Patriarchy*. Navayana Publishers. New Delhi.

(1)

Readings

Bhattacharya, P. C. (2002). "Urbanisation in Developing Countries". *Economic and Political Weekly*, 37(41), pp.4219-4228.

Chambers R. (2002). *Participatory Workshops: a sourcebook of 21 sets of ideas and activities*. London: Earthscan.

Chambers. R. (2005). *Ideas for Development*. Earth Scan, London.

Blattman, C. Jensen, R. & Paul Romans, P. (2003). *Assessing the need and potential for community networking for Development in Rural India Special Issue: ICTS and Community Networking*. The Information Society. Taylor & Francis: Volume 19 (5)

Burns, D. et al. (2004). *Making Community Participation Meaningful: A Handbook for development and assessment*. University of West England: Policy Press.

Desai, A.R. (1969). *Rural Sociology in India*. Mumbai : Popular Prakashan.

Freire, P. (1997). *Pedagogy of the oppressed*. New Delhi: Penguin Books.

Freire, P. & Shor, I. (1987). *Pedagogy for Liberation: Dialogues on Transforming Education*. London: Macmillan and Company.

Gangrade, K. D. (1971). *Community Organisation in India*. Bombay: Popular Prakashan.

Guru, G. (2016) "Shifting Categories in the Discourse on Caste and Class". *Economic Political Weekly*, 51(47), pp.21-25.

Hardcastle, David et al. (2011) *Theories and Skills for Social Worker*, New York : Oxford University Press.

Howley, K. (2008). *Community Media: People, Places and Communication Technologies*. United Kingdom: Cambridge Press.

UT

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Elements of Modern Biology

BT 100

3 – 0 – 0 : 3 Credits : 3 Hours

Prerequisites: None

Biological Structures and Organization :

- Biological macromolecules, Cellular Organization, Cell types, Membrane structures and functions.
- Cellular energetics: Structure of Mitochondria, Energy transduction; Structure of Plastids (chloroplast). Photosynthetic light and dark reactions.

Biological systems:

- Muscular skeletal system, Nervous system (Overview of the major human sensory organs and their functioning), Cardiovascular system.

Biological Information:

- DNA : Structure, Genetic code, Central dogma in Molecular biology.
- Protein synthesis.
- Biological data and Bioinformatics.
- Signal transduction in plants and animals – Basic concepts.

Text / Reference :

1. N. Hopkins, J. W. Roberts, J. A. Steitz and A. M. Weiner : Molecular Biology of the Gene, J. Watson, Fourth Ed, Benjamin Cummings, Singapore, 1987.
2. J. L. Tymoczko, L. Stryer, Biochemistry, J.M. Berg, Fifth Ed, W.H. Freeman & Co, New York, 2002.
3. Dr. C. C. Chatterjee, Human Physiology, 11th Ed. Vol. I and II, Medical Allied Agency, Kolkata, 1987.
4. Guyton, Human Physiology.

Environmental Science

ES 101

3 - 0 - 0 : 3 Credits : 3 Hours

Prerequisites: None

General :

Basic ideas of environment, basic concepts related to environmental perspective, man, society and environment, their inter relationship. 1L

Mathematics of population growth and associated problems, definition of resource, types of resource, renewable, nonrenewable, potentially renewable, effect of excessive use vis-a-vis population growth, definition of pollutant and contaminant. Environmental impact assessment. 2L

Environmental degradation:

Acid rain, toxic element, particulates, noise pollution, air pollution and its effect on man. 1L

Overall methods for pollution prevention, environmental problems and sustainable development , components of environment. 1L

Ecology:

Elements of Ecology: System, open system, closed system, definition of ecology, species, population, community, definition of ecosystem, biotic and abiotic components. Ecological balance and consequence of change: Effect of abiotic factor on population, flow chart of different cycles with only elementary reaction [oxygen, nitrogen, phosphate, sulphur], food chain [definition and one example of each food chain] 3L

Air Pollution and Control :

Atmospheric Composition: Troposphere, stratosphere, mesosphere, thermosphere, tropopause, stratopause and mesopause. 1L

Energy Balance: Conductive and convective heat transfer, radiation heat transfer, simple global temperature modal (Earth as a black body, earth albedo), problems. 3L

Green-house effects: Definition, impact of greenhouse gases on the global climate and consequently on sea water level, agriculture and marine food. 1L

Climate, weather: Difference between climate and weather, Global warming and its consequence: Adiabatic lapse rate, atmospheric stability, temperature inversion, radiation inversion, Atmospheric dispersion: Maximum mixing depth, ventilation coefficient, smokestack plumes and atmospheric lapse rate. 3L

The point-source Gaussian plume model excluded.

Source and effect of pollutants: Toxic chemicals in the environment, toxic chemicals in air, suspended particulate matter, carbon dioxide, sulphur dioxide, nitric oxide, lead, carbon monoxide. 2L

Primary and secondary pollutants: Emission standard, criteria pollutant, oxides of carbon, oxide of nitrogen, oxide of sulphur, particulate, PAN. 1L

Depletion Ozone layer: CFC, destruction of ozone layer by CFC, impact of other greenhouse gases, effect of ozone modification. 1L

Standards and control measures: Industrial, commercial and residential air quality air quality standard, Control measure (ESP, Cyclone separator, bag house, catalytic converter, scrubber (ventury). Statement with brief reference) 1L

Water Pollution and Control :

Hydrosphere: Hydrological cycle. 1L

Natural water, Pollutants : their origin and effects: Oxygen demanding wastes, pathogens, nutrients, salts, thermal application, heavy metals, pesticides, volatile organic compounds. 1L

River / lake / ground water pollution :

River : DO, 5day BOD test, BOD reaction rate constants, temperature dependents of BOD, effect of oxygen demanding wastes on river [Deoxygenation, reaeration], COD, Oil, Grease, pH. 2L

Lake : Eutrophication [Definition, source and effect] 1L

Ground Water: Aquifers, hydraulic gradient, ground water flow. (Definition only) 1L

Standard and control: Waste water standard [BOD,COD,Oil, Grease], Water treatment system [coagulation and flocculation, sedimentation and filtration, disinfection, hardness and alkalinity, softening], wastewater treatment, primary treatment, secondary treatments [Trickling filters, rotating biological contractor, activated sludge, sludge treatment, oxidation ponds], tertiary treatment definition. 3L

Arsenic pollution: Biochemical effect, contamination, speciation 2L

Land Pollution:

Lithosphere Composition, Pollutants: Municipal, industrial, commercial, agricultural, hazardous solid wastes. 1L

Recovery and conversion method Waste and waste management Land filling, incineration, composting. 2L

Noise Pollution, Sources, effects: Definition of noise, effect of noise pollution, noise classification, transport noise, occupational noise, neighbourhood noise, definition of noise intensity, noise threshold limit value. 2L

Books:

I. Masters, G.M., "Introduction to Environmental Engineering and Science", Prentice Hall of India Pvt. Ltd., 1991



हिंदी विभाग
IDC पाठ्यक्रम (Spring semester)
कोर्स कोड : HN 502
विषय : हिंदी भाषा एवं साहित्य
न्यूनतम क्रेडिट : 3
समयावधि : 6 महीने (एक सेमेस्टर)

पाठ्यक्रम का उद्देश्य : प्रस्तुत पाठ्यक्रम में हिंदी भाषा के ज्ञान के साथ - साथ साहित्य के अध्ययन को भी प्रमुखता दी गयी है । इस पाठ्यक्रम के माध्यम से विद्यार्थियों को भाषा के साथ साहित्य की भी रूचि पैदा करने का प्रयास किया जाएगा ।

कोर्स कोड	पाठ्यक्रम का नाम	L	P	T	CR
HN 502:	हिंदी भाषा एवं साहित्य	3	-	-	3
इकाई 1:	हिंदी भाषा का संक्षिप्त इतिहास	1	-	-	1
इकाई 2:	हिंदी साहित्य (कहानी)	1	-	-	1
इकाई 3:	हिंदी साहित्य (कविता)	1	-	-	1



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इकाई 1 : हिंदी भाषा का संक्षिप्त इतिहास
(हिंदी भाषा का उद्भव और विकास, हिंदी भाषा की बोलियाँ
हिंदी भाषा के विविध रूप)

पाठ्य पुस्तक : तिवारी, भोलानाथ , हिंदी भाषा, (किताब महल ,इलाहाबाद, 2005)

इकाई 2 : हिंदी साहित्य (कहानी)

उसने कहा था (चंद्रधर शर्मा गुलेरी)

भोलाराम का जीव (हरिशंकर परसाई)

पाठ्य पुस्तक: सं. ओझा, दशरथ, हिंदी कहानी , (शिक्षा भारती, कर्म
गेट, दिल्ली, 2007)

इकाई 3 : हिंदी साहित्य (कविता)

कबीर की साखी (1 से 10 तक)

बिहारी के दोहे (दोहा सं. 1,15,20, 29,33,35,40.43)

मातृभूमि :मैथिलीशरण गुप्त

नदी के द्वीप : अज्ञेय

पाठ्य पुस्तक : सं. गुप्त जगदीश , काव्य सेतु , (साहित्य भवन(प्रा.) लिमिटेड
इलाहाबाद, 2005)

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Syllabus for the Introductory IPR course (Postgraduate level)

Course Name: "IP 401 Intellectual Property Right" (2-1-0, CR 3)

Total number of lectures plus tutorials	42 in one semester each of one hour
Effective number of lectures	30 in one semester
Duration of each lecture	one hour
Number of tutorials	12 (one hour each)

Course work and lectures

Introduction to IPR: Concept of property and ownership, concept of intellectual property and industrial property and its relationship with law, different forms of IPR, national importance IPR, international character of IPR and its importance in international trade, role of IPR in corporate decision making, patents, copyrights, trademarks, industrial designs, geographical indications, protection of IC lay-out design, protection of undisclosed information and protection of new plant variety. (Lectures will use data, examples and case studies) 4 hour

2. History of IPR, international treaties such as Paris Convention, World Trade Organization, Trade Related Aspects of Intellectual Property Rights (TRIPS), Berne Convention, World Intellectual Property Organization 2 hour

Patents: Concept of patents, rights available through patents, concept of novelty, inventiveness and utility, patent searches, Indian Patents Act (important features), non-patentable inventions, provisional patent, complete specification, meaning of patent claim, procedure for obtaining and maintaining patents in India, infringement of patents, conditions of filing a patent application, filing patents in foreign countries through Patent Cooperation Treaty, some idea about compulsory licensing (case studies on inventions related to software, drugs, engineering, biotechnology etc will be part of the lecture) 6 hour

Copyrights: Meaning of copyrights and its importance to business, culture and literature, copyrightable works, meaning of copyright, ownership of copyrights and rights of the owner, fair use, licensing of copyrights, copyright societies, registration of copyrights, infringement of copyrights, rights of broadcasters and performers, civil remedies 3 hour

Trademarks: Definition of trademarks, importance of trademarks in business and trade, Indian Trademarks Act, different types of marks, selection and protection of trademarks, concept of passing off, trademark infringement, classification of trademarks, procedure for obtaining trademarks, management of trademarks. 2.5hour

Industrial design: Indian Designs Act, protectable designs, procedure for protecting designs, classification of designs, importance of designs 1 hour

Protection of undisclosed information: trade secrets, possible trade secrets, necessity of trade secrets, law to maintain trade secrets, importance in trade and business 2 hour

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(16)

1. Geographical indications: concept, appellation of origin, Indian laws, importance for artisans, handicraft
2. GI registration in India, documentation, eligibility to be applicant, filing a GI applications, trade
benefits of GI

2 hour

3. Plant variety protection: Indian Act, concept of novelty, distinctness, uniformity and stability, term of
protection, how to protect new variety, farmer's variety, farmers' rights, benefit sharing

2 hour

4. Folk and traditional knowledge

2 hour

5. Registration and licensing of IPR

6. Management of IPR

2.5hour

Tutorials:

12 hour

1. Quizzes

2. Group Presentation

3. Term paper

4. Case study (one case study as an assignment)

Topics for group seminar/Assignment

1. Compulsory licensing
2. Fair use in copyrights
3. Relevance of IPR in safeguarding traditional knowledge
4. International patent classification systems
5. Agreement on TRIPS
6. Patent filing system in India
7. IPR as corporate function
8. Case studies in geographical indications- scotch, champaign, Darjeeling tea, Chanderi sari
9. Importance of IPR to biotechnology industry
10. Software patents
11. Copyright societies
12. Selecting a trademark and its management
13. IPR and standards
14. Patent pooling
15. IP valuation systems

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3#
Reading material and reference books

Lecture notes.

Acts on IPR (The Patents Act, The Copyright Act, Trademarks Act, The Design Act, The Protection of Plant Varieties and Farmers' Right Act, The Geographical Indications of Goods Act, The Semiconductor Integrated Circuits layout Design Act.)

FAQ on IPR prepared by Technology Information Forecasting and Assessment Council, Department of Science and Technology, New Delhi (Available on TIFAC website)

Management of IPR In India, R Saha (available on the TIFAC website)

Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities, Darrell A. Posey and Graham Dutfield, IDRC Books; annotated edition (June 1996).

Global Biopiracy: Patents, Plants, and Indigenous Knowledge, Ikechi Mgbeoji, Cornell University Press; 1 edition (August 1, 2006).

Intellectual Property Rights: Innovation, Governance and the Institutional Environment, Birgitte Andersen (Editor), Edward Elgar Publishing (September 30, 2006).

Copyright's Paradox, Neil Weinstock Netanel, Oxford University Press, USA (April 23, 2010)

Intellectual Property Management: A Guide for Scientists, Engineers, Financiers, and Managers by Claas Junghans, Adam Levy, Rolf Sander and Tobias Boeckh (Mar 7, 2006) Author), Jan Dirk Heerma (Contributor), Christoph Regierer (Contributor), Wiley-VCH; 1 edition (March 7, 2006).

Agriculture and Intellectual Property Rights, Vittorio Santaniello, Robert F. Evenson, David Zilberman, Gerald A Carlson, CABI; First edition (July 13, 2000).

Syllabus for the Introductory IPR course (^{Under}~~Post~~graduate level)

Course Name: "IP 201 Introductory Intellectual Property Right" (2-1-0, CR 3)

Total number of lectures plus tutorials	42 in one semester each of one hour
Effective number of lectures	30 in one semester
Duration of each lecture	one hour
Number of tutorials	12 (one hour each)

Course work and lectures

Introduction to IPR: Concept of property and ownership, concept of intellectual property and industrial property and its relationship with law, different forms of IPR, national importance IPR, international character of IPR and its importance in international trade, role of IPR in corporate decision making, patents, copyrights, trademarks, industrial designs, geographical indications, protection of IC lay-out design, protection of undisclosed information and protection of new plant variety. (Lectures will use data, examples and case studies) 4 hour

Brief history of IPR, international treaties such as Paris Convention, World Trade Organization, Trade Related Aspects of Intellectual Property Rights (TRIPS), Berne Convention, World Intellectual Property Organization 2 hour

Patents: Concept of patents, rights available through patents, concept of novelty, inventiveness and utility, patent searches, Indian Patents Act (important features), non- patentable inventions, provisional and complete specification, meaning of patent claim, procedure for obtaining and maintaining patents in India, infringement of patents, conditions of filing a patent application, filing patents in foreign countries through Patent Cooperation Treaty, some idea about compulsory licensing (case studies on inventions related to software, drugs, engineering, biotechnology etc will be part of the lecture) 6 hour

Copyrights: Meaning of copyrights and its importance to business, culture and literature, copyrightable works, meaning of copyright, ownership of copyrights and rights of the owner, fair use, licensing of copyrights, copyright societies, registration of copyrights, infringement of copyrights, rights of broadcasters and performers, civil remedies 3 hour

Trademarks: Definition of trademarks, importance of trademarks in business and trade, Indian Trademarks Act, different types of marks, selection and protection of trademarks, concept of passing off, trademark infringement, classification of trademarks, procedure for obtaining trademarks, management of trademarks. 2.5hour

Industrial design: Indian Designs Act, protectable designs, procedure for protecting designs, classification of designs, importance of designs 1 hour

Protection of undisclosed information: trade secrets, possible trade secrets, necessity of trade secrets, how to maintain trade secrets, importance in trade and business 2 hour

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Geographical indications: concept, appellation of origin, Indian laws, importance for artisans, handicraft registration in India, documentation, eligibility to be applicant, filing a GI applications, trade	2 hour
Plant variety protection: Indian Act, concept of novelty, distinctness, uniformity and stability, term of protection, how to protect new variety, farmer's variety, farmers' rights, benefit sharing	2 hour
Traditional knowledge	2 hour
Management and licensing of IPR	2 hour
Enforcement of IPR	2.5hour
Quizzes	12 hour

2. Case study (one case study as an assignment)

Reading material and reference books

1. Lecture notes.
2. Acts on IPR (The Patents Act, The Copyright Act, Trademarks Act, The Design Act, The Protection of Plant Varieties and Farmers' Right Act, The Geographical Indications of Goods Act, The Semiconductor Integrated Circuits layout Design Act.)
3. FAQ on IPR prepared by Technology Information Forecasting and Assessment Council, Department of Science and Technology, New Delhi (Available on TIFAC website)
4. Management of IPR In India, R Saha (available on the TIFAC website)
5. Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities, Darrell A. Posey and Graham Dutfield , IDRC Books; annotated edition (June 1996).
6. Global Biopiracy: Patents, Plants, and Indigenous Knowledge, Ikechi Mgbeoji, Cornell University Press; 1 edition (August 1, 2006).
7. Intellectual Property Rights: Innovation, Governance and the Institutional Environment .Birgitte Andersen (Editor), Edward Elgar Publishing (September 30, 2006).
8. Copyright's Paradox, Neil Weinstock Netanel, Oxford University Press, USA (April 23, 2010)
9. Intellectual Property Management: A Guide for Scientists, Engineers, Financiers, and Managers .by Claas Junghans, Adam Levy, Rolf Sander and Tobias Böeckh (Mar 7, 2006) Author), Jan Dirk Heerma (Contributor), Christoph Regierer (Contributor), Wiley-VCH; 1 edition (March 7, 2006).
10. Agriculture and Intellectual Property Rights, Vittorio Santaniello ,Robert E. Evenson ,David Zilberman ,Gerard A Carlson ,CABI; First edition (July 14, 2000).

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CBCT (Choice Based Credit Transfer) course

ED110 Educational Management (3 Credits) L 3 T 0 P 0 CH 3 CR 3

NOBEL
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Course Objective: Quality management is a major issue and concern in education. One of the key tasks for education managers is to provide a learning environment supported by a motivating campus culture, ensuring quality and effectiveness. This course is to introduce students to certain theoretical constructs of management, practices and its application in educational setting.

Unit I: Fundamentals of Management

Concept of Management; Modern concepts of Management; Characteristics of Management; Functions of Management; Theoretical constructs and models; Quality frame works; Organizational Dynamics

Unit II: Fundamentals of Education Management

Leadership and Management Issues; Educational Leadership: A Bridge to improved practice; Educational Leadership: Changing Schools, Changing Roles; The Daily disciplines of Leadership; Student Achievement; Staff motivation and Personal organization.

Unit III: Education Management & its application

Educational Administration; Supervision; Campus climate and culture; Assessment; Curriculum development; Evaluating and monitoring change; Knowledge management; Process charting; Bench marking and Strategy

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Books

- Bush, Tony. (2013). Educational Management. Administration and leadership. New Delhi: Sage Publications.
- Bush, Tony. (2013). Theories of Educational management and leadership. New Delhi: Sage Publications
- Drucker, Peter F. (2012). Management: Task, Responsibilities, Practices. Wiley Publication
- Kochhar, T.S. (2011). School Administration and Management. New Delhi. sterling publishers private limited

References

- Anne Gold and Jennifer Evans (1998). Reflecting on School Management. London: Falmer Press
- Sallis, Edward. (2002). Total Quality Management in Education London: Kogan Page Ltd.

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Department of Education
Tezpur University
CBCT Course

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CELL

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Course Code	Course Title	L	T	P	Credit	Course Type
ED:111	Right to Education: An Introduction	3	0	0	3	CBCT

ED: 111-Right to Education: An Introduction

L-3, T-0, P-0, CR-3

Objectives

- To apprise the students with historical background of Elementary Education in India
- To orient them with the various provisions of Right to Education Act, 2009.
- To make them understand the various issues and Challenges involved in implementing the RTE Act, 2009 with special reference to North East India
- To make them familiar with the Major International Declarations. e.g. Universal Declaration of Human Rights 1948; Conventions on Child Rights 1989 and
- To orient them with Major Programmes/interventions taken by Government of India towards universalization of elementary education

Unit 1- Elementary Education in India: Retrospect and Prospect

- Historical background;
- Major Programmes/interventions;
- Challenges and Way forward.

Unit 2- Right to Education: International Perspectives

- Education as Human Rights;
- Major intervention of International Declarations. e.g. Universal Declaration of Human Rights 1948; Conventions on Child Rights 1989;
- Current status and Challenges

Unit 3- Right to Education: Indian Perspectives

- Historical background of RTE Act 2009;
- Major provisions of RTE Act 2009;
- Challenges in implementation and current status with special reference to North East India;
- Critical Analysis of Strength, Weakness, Opportunities and Challenges of RTE Act 2009

Text Books:

Ministry of Human Resources Development: The Right of Children to Free and Compulsory Education Act 2009 (New Delhi: MHRD) (2009)
Sharma, S. (Ed.): What is RTE? : Some ways of making education accessible: A handbook for teachers. New Delhi: National Council of Educational Research and Training, 2014.

Reference Books:

Sadgopal, A.: PPP in Education. Bhopal: Kishor Bharti, 2013
Kumar, K. V.: Right to Education Act 2009: Its Implementation as to Social Development in India, 2012
Kainth, Gursharan Singh: Right to education. Delhi: Bharti Publications, 2014.

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DEPARTMENT OF EDUCATION, TEZPUR UNIVERSITY
CBCT COURSE
VALUE EDUCATION - ED 113

Course Objectives

(L-3- T 0- P 0 CH 3 Credit 3)

The students will be able to:

- Understand the need of values and its classification in contemporary society.
- Appreciate the values needed for peaceful society like democratic, secular, and socialist etc.
- Become aware of role of education in building value as dynamic social reality.
- Know the importance of value education towards personal, national and global development.

Unit-1: Education and Values

- Definition, Concept, Classification, Theory, Criteria and Sources of values
- Aims and objectives of value education
- Role and Need for value education in the contemporary society
- Role of education in transformation of values in society
- Role of parents, teachers, society, peer group and mass media in fostering values
- Teaching approaches and strategies to inculcate values through curricular and co-curricular activities

Unit 2: Value Education and Personal Development

- Human Values: Truthfulness, Constructivity, Sacrifice, Sincerity, Self-Control, Altruism, Scientific Vision, relevancy of human values to good life.
- Character Formation towards Positive Personality
- Modern challenges of adolescent: emotions and behavior
- Self-analysis and introspection: sensitization towards gender equality, physically challenged, Intellectually challenged, Respect to - age, experience, maturity, family members, neighbors, co-workers.

Unit-3: Value Education towards National and Global Development

- Constitutional values: Sovereign, Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity.
- Social Values: Pity and probity, self-control, universal brotherhood.
- Professional Values: Knowledge thirst, sincerity in profession, regularity, punctuality and faith.
- Religious and Moral Values: Tolerance, wisdom, character.
- Aesthetic values - Love and appreciation of literature, fine arts and respect for the same.
- Environmental ethical values
- National Integration and international understanding.
- Need of Humanistic value for espouse peace in the society: Conflict of cross-cultural influences, cross-border education

Text Books

1. Sharma, S.P. *Moral and value education: principles and practices*. Kanishka publishers, 2013.
2. Kiruba Charles & V. Arul Selvi. *Value education*: Neelkamal Publications, New Delhi, 2012.
3. Passi, B.K. and Singh, P. *Value Education*. National Psychological Corporation, Agra, 2004.
4. Chitakra, M.G.: *Education and Human Values*, A.P.H. Publishing Corporation, New Delhi, 2003.

Reference books

1. Monica J. Taylor. *Values in Education and Education in Value*. Routledge, 1996.
2. Neil Postman. *The End of Education: Redefining the Value of School*. Vintage publisher, 1996.
3. <http://cbseportal.com/exam/e-books/download-free-ncert-e-book-education-for-values-in-school-a-framework>
4. http://cbseacademic.in/web_material/ValueEdu/Value%20Education%20Kits.pdf

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ED113: Professionalism in Teacher Education

L	T	P	CH	CR
3	0	0	3	3

Course Objectives:

On completion of this course the students will be able to:

- Understand concept of Profession and Professionalism
- Analyse and apply professional attitude, skills and values
- Apply professional ethics in their teaching process
- Know and understand policy perspectives in teacher education for being professional
- Understand role of ICT towards professional development
- Understand various teacher education programmes and challenges involved

UNIT-I: Understanding Teaching as a Profession

- Concept of Profession and Professionalism
- Professional attitude, professional knowledge, skill and values
- Role of Code of Conduct in maintaining Professionalism
- Professional development through interpersonal relations

UNIT-II: Continuing Professional Development in Teaching

- Policy perspectives and recommendations regarding teacher education made by various commissions and committees
- Maintaining standards in teacher education – Curriculum Framework: NCFTE 2009, NCF2005
- Role of ICT towards professional development

Unit-III: Teacher Education Programmes and Agencies

- Components of professionalism in Pre-service and In-service teacher education programme
- Agencies of Teacher Education- NCERT, SCERT, IASEs, CTEs, DIETs in creating Professionalism
- Role of NCTE in imparting quality of teacher education with an emphasis on Professionalism
- Quality assurance in teacher education: challenges and interventions

Text Books:

1. Beth Hurst and Ginny Reading. What Every Teacher Should Know About: Professionalism in Teaching (3rd Edition), Pearson; 3 edition (May 18, 2008).
2. Essential teaching skills by Kyriacou, C. Blackwell, Oxford, 1991
3. Nick Packard & Phil Race, 2000 tips for teachers. 2007
4. Aggarwal, J. C. Teacher and Education in a Developing Society-5th Edition.

References Books:

1. National Curriculum Framework (2005). New Delhi: NCERT.
2. National curriculum framework for teacher education towards preparing professional and human teacher (2009). New Delhi, NCTE
3. Position paper national focus group on Teacher education for curriculum renewal. NCERT, New Delhi.
4. MHRD (1986): National Policy on Education, New Delhi. Govt. of India.

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TEZPUR UNIVERSITY
SYLLABUS FOR CBCT COURSE

PA-10

PUBLIC ADMINISTRATION-I

		L	T	P	Credit
UNIT-1	Basic concept of Public Administration	3	0	0	= 3

- Meaning, Nature and Scope of Public Administration
- Importance and Significance of Public Administration
- Growth and Evolution of Public Administration
- Inter-relation between Public and Private Administration
- Bureaucratic Theory

UNIT-2 Principles of Organisation and Management

- Hierarchy-Span of Control-Unity of Command
- Centralisation and Decentralisation
- Supervision, Co-ordination and Delegation
- Management and Leadership

UNIT-3 Administrative Law

- Principles of Natural Justice
- Doctrine of Ultra-vires
- Vigilance
- Right to Information
- Administrative Tribunals

UNIT-4 Personnel Administration

- Bureaucracy and Civil Service
- Recruitment and Selection
- Conduct and Discipline
- Employer – Employee Relationship

Text Books:

1. Awasthi and Maheswari, *Public Administration*, Laxmi Narayan Agarwal, Educational Publishers, Sanjay Place, Agra, 2013-14
2. Leonard D. White, *Introduction to the Study of Public Administration*, Surjeet Publications, Kamla Nagar, Delhi, 2007
3. Tyagi A.R. *Public Administration*. Atma Ram and Sons, Delhi, 2013

Reference Books:

1. K.K.Ghai, *Public Administration*, Kalyani Publishers, New Delhi, 2007
2. Lily Goswami, Nabanita Bhuyan. Sonatan Paul, *Public Administration*, Ashok Book Stall, Guwahati, 2012

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Course: CBCT
Code: PA 102
Public Administration-II
Credit: 3

UNIT-1: Development Administration

- Concept of Development Administration
- Features of Development Administration
- Bureaucracy and Development
- Liberalisation and Globalisation

UNIT-2: Citizen and Administration

- Concept of Accountability
- Control over Administration: Legislative, Executive
- Redressal of Public grievances
- Lokpal and Lokoyuktas in States

UNIT-3: Problem of Corruption

- Causes
- Kinds of Corruption
- Solution to the Problem

UNIT-4: Important in Public Administration

- Good Governance
- Work Study
- Efficiency Testing
- Necessity for High Morale in Public Services
- Others Measures



Text Books: i) Avasthi and Maheswari: Public administration, Laxmi Narayan, 2013
ii) Maheswari, S.R.: Administration Theory, Macmillan Indian Ltd., 2013
iii) Tyagi, A.R.: Public Administration, Atma Ram and Sons, Delhi, 2013

Reference Books: i) Fadia B.L., and Kuldeep,: Public Administration, Sahitya Bhawan Publications, Agra, 2013
ii) Bhattacharyya Mohit: Public Administration, World Press, 2012
iii) Chakraborty, Bidyut Bhattacharya Mohit: Public Administration: A Reader, Oxford University Press, 2013
iv) Basu, Rumki: Public Administration: Concepts and Theories, Sterling Publishers Pvt. Ltd., 2011
v) Hazarika, n., Snatak Lok-Prasan (Assamese), Students' stores, Guwahati, 2012
vi) Sapru R.K.: Administrative Theories and Management Thought, Prentice Hall of India Pvt. Ltd., 2012
vii) Leonard D. White: Introduction to the study of Public Administration, Surjeet Publication, 2011

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IDC (Inter Disciplinary Credit) course offered by the Department of Business Administration for the students of other departments

Course Code	Course Name	L	P	T	CH	Credit
BAI 541	Ethics and Social Responsibility	3	0	0	3	3
BAI 542	Knowledge Management System	2	0	2	4	3
BA 513	Bioentrepreneurship	2	1	0	3	3

Detailed Syllabi

BA 541: Ethics and Social Responsibility

(L 3- T 0- P 0 – CH 3– Credit 3)

Unit 1: Introduction to the theory of moral philosophy:

Nature, objectives and scope of ethics; Hedonism and the paradox of hedonism. Characteristics of human desire, Ethical value, ethical standard, and emotional well-being of individuals and society. Need of ethical disciplines in modern life. Ethical plurality. Ethical dilemma.

Unit 2: Attitudes, beliefs, and life positions:

Concept of attitude; Attitudes governing ethical behaviour; Understanding human beliefs and role of beliefs in moral life; Life positions and ethical behaviour.

Unit 3: The ethical value system:

- Normative Ethics: Divine command; natural law; ethical egoism, consequentialism, universalism and utilitarianism, social contract theory and distributive justice.
- Metaethics: Cultural relativism; moral subjectivism; nihilism.

Unit 4: Social responsibility:

- Personal versus social responsibility; stakeholder theory; determinants of social responsibility of individuals and social groups; social inbuilt for responsiveness.
- Effective leadership in societal contexts; the leader's role in developing an ethical culture. Role of governance system.

Unit 5: Conceptualization of ethics and social responsibility in Indian Philosophy:

Vedic and Vedanta tracts. Spirituality versus religion - Indian ethical standard; Trusteeship Principle, The philosophy of karma-yoga and raj-yoga.

Text Books.

- Francis, Ronald D. and Mishra, M. Business Ethics An Indian Perspective. Tata McGraw-Hill Companies: New Delhi, 2011
- Bilimoria, P., Prabhu, J. and Sharma, R. Indian Ethics: Classical Traditions and Contemporary Challenges. Aldershot: Ashgate, 2007

References:

- Knapp, S. Proof of Vedic Culture's Global Existence. World Relief Network: Detroit, 1998
- Murthy, C.S.V. Business Ethics Texts and Cases. FPH: Mumbai, 2008
- Linda K. Trevino, Katherine A. Nelson. Managing Business Ethics: Straight Talk about How to Do It Right. Wiley: New Delhi, 2010

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Unit 1: The Origins of Knowledge

From Data to Information to Knowledge, Attributes and Expressions of Knowledge, Knowledge Classification, Knowledge Conversion, Levels of Professional Knowledge, Ontology

Unit 2: Knowledge Management and its Necessity

Knowledge Management concepts, Need for Knowledge Management, Issues and Challenges of Knowledge Management, Knowledge Management Process and Architecture, Learning Organization

Unit 3: Knowledge Management: Tools and Technology

Information and Communication Technology (ICT), Datawarehouse and Data Mining, Business Intelligence, OLAP, Search Engines, Intelligent Agents, Groupware Technology for Knowledge Transfer, Knowledge Portal

Unit 4: Implementing Knowledge Management System

Basics of Knowledge Management System, Knowledge Management System Life Cycle, Implementing Knowledge Management System, Knowledge Management in practice

Practical:

The practical component will include designing and developing a Knowledge Management System (KMS) portal for the department, under the supervision of the course instructor. For developing the KMS, web languages like HTML, PHP and JavaScript can be used to design the web pages and Oracle, MS Access or SQL Server can be used to design the database.

Textbooks:

1. Jawadekar, W. S. (2011). Knowledge Management, New Delhi: Tata McGraw Hill Education.
2. Mohapatra, S. (2012). Knowledge Management, New Delhi: Macmillan.
3. Kołchinsky (2004). The Entrepreneur's Guide to Biotech start up , 4th edition, Oxford Bio science Partners.

References:

1. Tiwana, A. (2006). The Knowledge Management Toolkit (2nd edition), New Delhi: Pearson Education.
2. Molhotra, Y. (1964). Knowledge Management and Virtual Organization, London: Idea Group Publishing.
3. Myers, P. S. (2001). Knowledge Management and Organizational Design, New Delhi: Butterworth Heinemann.
4. Skyrme, D. J. (2001). Knowledge Networking, New Delhi: Butterworth Heinemann.
5. Zack, M. H. (2001). Knowledge and Strategy (Ed.), New Delhi: Butterworth Heinemann.
6. Prusak, L. (2001). Knowledge in Organization, New Delhi: Butterworth Heinemann.
7. Smith, D. E. (2001). Knowledge Groupware and the Internet, New Delhi: Butterworth Heinemann.

Unit 1: Fundamentals of Entrepreneurship

Entrepreneurship & Development, Socio-Economic context of Entrepreneurship, Business & Social Entrepreneurship, Qualities of an Entrepreneur
Entrepreneurship & Wealth Creation, Opportunity Identification & Innovation
Value Creation & Sustainability', Scaling up, Mobilisation of Resources, Support mechanism for entrepreneurship in India

Unit 2: Accounting and Finance

Taking decision on starting a venture; Assessment of feasibility of a given venture/new venture
Approach a bank for a loan; Sources of financial assistance; Making a business proposal/Plan for seeking loans from financial institution and Banks; Funds from bank for capital expenditure and for working
Statutory and legal requirements for starting a company/venture; Budget planning and cash flow management; Basics in accounting practices: concepts of balance sheet, P&L account, and double entry bookkeeping; Estimation of income, expenditure, profit, income tax etc.

Unit 3: Marketing

Assessment of market demand for potential product(s) of interest; Market conditions, segments; Prediction of market changes; Identifying needs of customers including gaps in the market, packaging the product; Market linkages, branding issues; Developing distribution channels; Pricing/Policies/Competition; Promotion/ Advertising; Services Marketing

Unit 4: Negotiations/Strategy

With financiers, bankers etc.: With government/law enforcement authorities; With companies/Institutions for technology transfer; Dispute resolution skills; External environment/changes; Crisis/ Avoiding/Managing; Broader vision–Global thinking

Unit 5: Information Technology

How to use IT for business administration; Use of IT in improving business performance; Available software for better financial management; E-business setup, management.

Unit 6: Human Resource Development (HRD)

Leadership skills; Managerial skills; Organization structure, pros & cons of different structures; Team building, teamwork; Appraisal; Rewards in small scale set up.

Unit 7: Role of knowledge centre and R&D

Knowledge centres like universities and research institutions; Role of technology and up gradation; Assessment of scale of development of Technology; Managing Technology Transfer; Regulations for transfer of foreign technologies; Technology transfer agencies.

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Outline of the course being offered to "OTHER" departments under IDC
MC 486: COMMUNICATION PRINCIPLES AND PRACTICES

Credits: 3

L -03 T-0 P-0

Course Objectives:

This course will introduce students to the basics of communication and media studies. It will provide the learners with an insight into the various theoretical and practical domains of the discipline. The course would also attempt to introduce the students with current discourses in media criticism and develop them as responsible media consumers.

On completion of course the students will be able to –

1. *Understand the various communication models and theories*
2. *Watch media with a critical perspective*
3. *Know the various aspects of communication studies*
4. *Participate in various debates and discussions related to media functioning*

Course Outline:

Unit –I

Meaning, nature, scope and function of communication:

Communication process – Intra, inter group & Mass Communication. Allied Communications: Ritual Communication, Gandhian Communication, Mao-Tse-Dung Line Communication.

Communication models: Lasswell Magic Bullet, Paul Lazarsfeld. Two-step (limited effects theory) & Multi-step model (participating model) Wilbur Schramm & Osgood model (feedback and response), McCombs & Shaw Model (Agenda setting), David Manning White (Gate keeping Model).

Textbook

1. Emery E. et al., *Introduction to Mass Communication*, Harper Collins College (1994).
(Select portions)

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Unit-II:

Different types of media for communications - Traditional Media, Print, Radio & Electronic Media, Ownership Convergence, Advantages & uses of Media, Social relevance of Media, Limitations of Media, Media audience relationship.

Advertising – Meaning of Advertising, Advertising – Marketing - Public Relations (Interlink ages), Advertising and Communication Models, Consumer Behaviour, Market Segmentation, Current trends and Ethical issues in Ad Internet Ad.

Public Relations - Understanding public relations, Corporate Public Relations, PR Agencies: Structure and Functions of a PR Agency, Client- Agency-Media interface.

Textbook

1. Wells, William. *Advertising principles and practice* Prentice Hall (2010),

(Select portions)

2. Allen Centre al, *PR Practices; Managerial case studies & problems*, Prentice Hall (2008)

(Select portions)

Unit-III:

Critical issues in Communication, Globalization: North & South digital divide, NWICO Murdochization of News, Environment & Media, Conflict & Media, Development & Media, Basics of New Media: New Media Vs Old Media, Computer mediated communication: Blogging, Social Networking Site

Text books :

Ali. Mohammadi (1997), *International Communication & Globalization*, Sage Publications.

(Select portions)

Reference books :

1. Price, Stuart. *Communication Studies*, Longman (1998).

2. Hartley, Peter. *Interpersonal Communication*. Routledge (1999).

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H.S.D. N.E.S.

IDC offered by MCJ Deptt. for the Spring 2012 Semester 2012

MC 487 Advertising and Public Relations

Credits 03

L 03 T 0 P 0

Unit 1 Introduction to advertising

- 1.1 Nature and Scope of Advertising
- 1.2 Evolution of Advertising in India
- 1.3 Classification of Advertising
- 1.4 Elements of an advertising copy
- 1.5 Advertising Layout
- 1.6 Ideation – the creative process
- 1.7 Copywriting

Unit 2 Theoretical Foundations of Advertising

- 2.1 Advertising and Communication Models
- 2.2 Theories of Advertising
 - 2.2.1 AIDA
 - 2.2.3 DAGMAR
 - 2.2.4 Hierarchy of Effects Model
- 2.3 Consumer Behaviour

Unit 3 Current trends and Ethical issues

- 3.1 Cultural diversity of Ad in a Global environment
- 3.2 Apex bodies in Ad
 - 3.2.1 AAAI
 - 3.2.2 ASCI
- 3.3 Ethics in Advertising
- 3.4 Laws and Acts concerning Advertising
- 3.5 Ad Agencies

Public Relations

Unit 4 Introduction to Public Relations

- 4.1 Concept of Public Relations
- 4.2 Functions of Public Relations
- 4.3 Structure of PR department
- 4.4 PR Agencies
- 4.5 Apex bodies
 - 4.5.1 IPRA
 - 4.5.2 PRSI



Offered for : PG students (any semester)
Credit : 3 (L – 2, T – 0, P – 1, CH 4)
Slot to be offered : Afternoon (2.30-3.30 p. m.)

MC 488 Introduction to Film Studies

(L2+T0+P1= CH4) 3 credits

This course will introduce the students' key concepts in film studies and basic film theories. As film is one of the most popular cultural practices in the contemporary society across the world, the course would explore the meaning of film, deal with the methods of reading the film language, and offer an overview of the Indian and World cinema, besides major theoretical approaches in understanding and analysing films. Students will be required to view and analyse films from different theoretical approaches and genres.

History of film: National and International perspective with emphasis on Indian Cinema, Movements and various Film Schools, Indian New Wave, Indian New Wave Directors, French New Wave

Cinematic Storytelling : Narrative – Fictional and Non-Fictional, Significance and Structural elements of Narrative, Story and Plot, Principles of Plot Construction – Selection and Omission of details, Sub-Plots, Deviant Plot Structure

Film Theories: Realist Film Theory, The Question of Realism, Auteurist Film Theory, Psychoanalytic Model of Film Criticism, Feminist Model of Film Criticism, Cognitive Model Ideological Model of Film Criticism, Cinematic Apparatus – Ideology and Psychoanalysis

Film Genres and National Film Cultures: Crossover Films, Documentary Filmmaking, Film Noir, Social Melodrama, Romantic, Horror, Comedy, Fiction, Animation, Study of Western and Indian Classics

Semiotics and Cinema: Signs, Symbols, Physiology of perception, Denotative and Connotative meaning, Film Language, Mise-en-scene, Montage and Soviet Filmmakers – Einstein, Pudovkin, Dovzhenko, Vertov, Materialistic and Realistic Narratives, Film Analysis: Textual and contextual analysis of films of different genres & Critique of the same.

Cinemas of Northeast: Beginning of Films in Northeast, Film Studios, Financial Institutions, Problems of Filmmaking in Northeast, Prominent Filmmakers, The Problems of Regional Cinema, The State Initiatives

Screening and Discussion

Textbooks :

1. Roberts, Graham & Wallis, Heather. (2003). *Introducing Film*. Arnold Publishers
2. Hood, John W. (2000). *The Essential Mystery- the major film makers of Indian art cinema*. Orient Longman
3. Ray, Satyajit. (1993). *Our Films Their Films*. Orient Publishers

Reference:

1. Monaco, James. (1981). *How to Read a Film (3rd Ed.)* Oxford Univ. Press
2. Hill, John & Gibson, Pamela Church. (2000). *Film Studies*. Oxford Univ. Press
3. Stam, Robert. (2000) *Film Theory: An Introduction*. BlackWell Publishers.

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Open Elective
Department of Mass Communication & Journalism

MC 571 Science Communication
(L3+T0+P0=CH3) 3credits

Objectives:

There is a growing significance of the need for communicating scientific aspects of everyday life and the major scientific innovations to the world. Thus, this course is designed to provide the students with an exposure to the broad world of science communication covering its various aspects. The course includes historical development, evolution, contemporary status and the importance of science and its popularization across the world with special emphasis on India along with relevant examples and discussions. The core idea is to inculcate a sense of scientific attitude in the minds of the future professional communicators at a young age so that they can take up the cudgels in the future. A basic knowledge in this field is necessary for influencing peoples' understanding of newer developments in the field of science and technology and also to discard misconceptions as and when they arise at different points of time. If the vast resources of research findings of our laboratories, whether basic sciences or social sciences can't be taken to the grassroots level people, what is the utility of possessing such a huge knowledge base within the four walls of the laboratories and institutions. Thus this course is expected to apprise as well as prepare students to be able to communicate scientific developments for the benefit of the people across the world.

Unit I

Communication Principles: What is communication, importance, how to maximize reach of your voice, mass communication and media, feedback, target audience, writing for media.

Unit II

Science Communication: Concept, importance, evolution of science communication, general communication versus science communication, goals for science communication, science reporting and writing, coverage of science & technology events, creating a scientific attitude, barriers in science popularization, developing a scientific temper. Concepts and issues in Environmental Communication and Health Communication, Technical communication.

Unit III

Institutional efforts in science communication: ISRO, DRDO, SITE and Kheda experiment, NCSTC, Vigyan Prasar, National Science Communication Congress, Science communication – a bridge between research institutions and masses, Science Communication on Wheels experiment of Government of India.

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BT 477: Intellectual Property Rights, Biosafety and Bioethics

Unit I Introduction to IPR

Introduction to intellectual property; types of IP: patents, trademarks, copyright & related rights, industrial design, traditional knowledge, geographical indications, protection of new GMOs; International framework for the protection of IP; IP as a factor in R&D; IPs of relevance to biotechnology and few case studies; introduction to history of GATT, WTO, WIPO and TRIPS; plant variety protection and farmers rights act; concept of 'prior art': invention in context of "prior art"; patent databases - country-wise patent searches (USPTO, EPO, India); analysis and report formation.

Unit II Patenting

Basics of patents: types of patents; Indian Patent Act 1970; recent amendments; WIPO Treaties; Budapest Treaty; Patent Cooperation Treaty (PCT) and implications; procedure for filing a PCT application; role of a Country Patent Office; filing of a patent application; precautions before patenting-disclosure/non-disclosure - patent application- forms and guidelines including those of National Bio-diversity Authority (NBA) and other regulatory bodies, fee structure, time frames; types of patent applications: provisional and complete specifications; PCT and conventional patent applications; international patenting-requirement, procedures and costs; financial assistance for patenting-introduction to existing schemes; publication of patents-gazette of India, status in Europe and US; patent infringement- meaning, scope, litigation, case studies and examples; commercialization of patented innovations; licensing – outright sale, licensing, royalty; patenting by research students and scientists-university/organizational rules in India and abroad, collaborative research - backward and forward IP; benefit/credit sharing among parties/community, commercial (financial) and non-commercial incentives.

Unit III Biosafety

Biosafety and Biosecurity - introduction; historical background; introduction to biological safety cabinets; primary containment for biohazards; biosafety levels; GRAS organisms, biosafety levels of specific microorganisms; recommended biosafety levels for infectious agents and infected animals; definition of GMOs & LMOs; principles of safety assessment of transgenic plants – sequential steps in risk assessment; concepts of familiarity and substantial equivalence; risk – environmental risk assessment and food and feed safety assessment; problem formulation – protection goals, compilation of relevant information, risk characterization and development of analysis plan; risk assessment of transgenic crops vs cisgenic plants or products derived from RNAi, genome editing tools.

Unit IV National and International regulations

International regulations – Cartagena protocol, OECD consensus documents and Codex Alimentarius; Indian regulations – EPA act and rules, guidance documents, regulatory framework – RCGM, GEAC, IBSC and other regulatory bodies; Draft bill of Biotechnology Regulatory authority of India - containments – biosafety levels and category of rDNA experiments; field trails – biosafety research trials – standard operating procedures - guidelines of state governments; GM labeling – Food Safety and Standards Authority of India (FSSAI).

Unit V Bioethics

Introduction, ethical conflicts in biological sciences - interference with nature, bioethics in health care - patient confidentiality, informed consent, euthanasia, artificial reproductive technologies, prenatal diagnosis, genetic screening, gene therapy, transplantation. Bioethics in research – cloning and stem cell research, Human and animal experimentation, animal rights/welfare, Agricultural

A *Signature*
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Open electives for UG

L-3 T-0 P-0 CH 3 Cr 3

BI 109: Basics in Bioinformatics

Unit I: Biology in Computer Age:

Intersection of classical biology, mathematics and computer science. Scope of bioinformatics and the role of internet.

Unit II: Computational approaches to complex biological questions:

The Nucleic acid world: (DNA and RNA), Central dogma of life, gene structure and regulation, mathematical modelling of biochemical systems.

Unit III: Fundamentals of computational biology:

Basics of computers, Operating systems and programming in C & C++ working on a Unix system, setting up a linux workstation, different flavors of Unix, File system basics, commands for working with directories and files, Sharing software among multiple users, commercial software packages for biological applications, working in a multiuser environment, Unix shell scripts, communicating with other computers.

Unit IV: Biological research on web:

Use of different search engines, finding scientific articles, types of public biological databases, searching biological databases, depositing data into the public databases, finding software, judging the quality of information.

Unit V: Protein structures and properties: Visualization of protein structure data, the chemistry of proteins, web-based protein structure tools, structure analysis and optimization, Ramachandran plot

Recommended Textbooks and References:

1. Lesk, A. M. (2002). Introduction to Bioinformatics. Oxford: Oxford University Press.
2. Mount, D. W. (2001). Bioinformatics: Sequence and Genome Analysis. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory Press.
3. Baxevanis, A. D., & Ouellette, B. F. (2001). Bioinformatics: a Practical Guide to the Analysis of Genes and Proteins. New York: Wiley-Interscience.
4. Pevsner, J. (2015). Bioinformatics and Functional Genomics. Hoboken, NJ.: Wiley-Blackwell.
5. Bourne, P. E., & Gu, J. (2009). Structural Bioinformatics. Hoboken, NJ: Wiley-Liss.
6. Lesk, A. M. (2004). Introduction to Protein Science: Architecture, Function, and Genomics. Oxford: Oxford University Press.

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Unit I

Preparation of solutions (pH, normality, molarity etc), basic techniques of filtration, dialysis, ultrafiltration and other membrane techniques.

Unit II

Basics of spectroscopy, Beer's Lambert's law, UV, Visible and Raman Spectroscopy; photoluminescence, Circular Dichroism; Fluorescence; FTIR, MS, NMR, PMR, ESR and Plasma Emission spectroscopy

Unit III

Basics principles of chromatography, TLC and Paper chromatography; Gel permeation, Ion exchange, Hydrophobic, Reverse-phase and Affinity chromatography; HPLC and FPLC.

Unit IV

Theory and application of electrophoresis. SDS-PAGE, agarose gel electrophoresis; Capillary electrophoresis; 2D Electrophoresis; Disc gel electrophoresis; Gradient electrophoresis; Pulsed field gel electrophoresis

Unit V

Basic principles of centrifugation; Mathematics & theory (RCF, Sedimentation coefficient etc); Types of centrifuge - Microcentrifuge, High speed & Ultracentrifuges; Preparative centrifugation; Differential & density gradient centrifugation; Applications (Isolation of cell components); Analytical centrifugation; Determination of molecular weight by sedimentation velocity & sedimentation equilibrium methods

Unit VI

Radioactive & stable isotopes; Pattern and rate of radioactive decay; Units of radioactivity; Measurement of radioactivity; Geiger-Muller counter; Solid & Liquid scintillation counters (Basic principle, instrumentation & technique); Autoradiography; Measurement of stable isotopes. Use of radioactivity in biochemistry.

Unit VII

Protein crystallization; Theory and methods; API-electrospray and MALDI-TOF; Mass spectrometry; Enzyme and cell immobilization techniques; DNA & Peptide Synthesis, FACS, Electron microscopy, Confocal Microscopy, fluorescence microscopy.

Text books

1. PHYSICAL BIOCHEMISTRY APPLICATION TO BIOCHEMISTRY AND MOLECULAR BIOLOGY by Freifelder D. (1982) 2nd edition, W.H. Freeman & Company.
2. PRINCIPLES AND TECHNIQUES OF PRACTICAL BIOCHEMISTRY by Wilson K., Walker J. 5th edition, Cambridge University Press.

Reference books

1. ANALYTICAL BIOCHEMISTRY by Holme D., Peck H. (1998) 3rd edition, Longman.
2. PROTEIN PURIFICATION - PRINCIPLES & PRACTICES R. Scopes (1994) 3rd edition, Springer Verlag.

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- v. Making Dictionary
Different types of dictionaries; monolingual and bilingual dictionaries; methods and approaches for-dictionary-making; problems in dictionaries-making.

The relevant materials will be provided to class.

LE 204: Different Approaches to Grammatical Theories

- i. Halliday's Functional Grammar
- ii. Cognitive Linguistics
- iii. Government and Binding Theory
- iv. Typological Grammar

Essential Readings

- Halliday, M.A.K. 2013. *Introduction to Functional Grammar* (4th Edition). New York: Routledge
- Dixon, RMW. 2009/2012. *Basic Linguistic Theory, Vol. 1-3*. Oxford: Oxford University Press.
- Lakoff, George and Mark Johnson. 1999. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic Books.
- Langacker, Ronald. 1987. *Foundations of Cognitive Grammar, Vols 1 & 2*. Stanford: CA: Stanford University Press.
- Newmeyer, Fedrerick. 1999. *Language Form and Language Function*. NY: MIT Pres.
- Webelhuth, G. (Ed). 1995. *Government and Binding Theory and the Minimalist Program*. Oxford: Blackwell.

Further relevant materials will be provided to the class.

Electives

LE 212: Advance Field Linguistics and Language Documentation – II

LE 214: Advance Language Technology and Archiving – II

LE 216: Dissertation

(iii) CBCT Courses

The Centre will also offer CBCT courses for students of other Departments of Tezpur University.

LE223: Language, Society and Endangerment

- i. Language
- ii. Characteristic features of Language
- iii. Society
- iv. Language and Society

- v. Endangerment
- vi. Relationship between Language Endangerment and Society

Course materials will be provided to the class.

LE 224: Language Policy, Education and Language Revitalization

- i. Language Policy
- ii. Language Policy in India
- iii. Official Language vs National Language
- iv. Majority Language vs Minority Language
- v. Scheduled Language vs Unscheduled Language
- vi. Education and Language Revitalization
- vii. Mother tongue Education

Course materials will be provided to the class.



Unit 5 Media Relations

- 5.1 Understanding media relations
- 5.2 Benefits of media relations
- 5.3 Public Relations and Media
- 5.4 Media Relations tools and techniques
- 5.5 Essentials of Media Relations

Unit 6 Internal and External Relations

- 6.1 Employee relations
- 6.2 Community relations
- 6.3 Government relations and Public Affairs
- 6.4 Customer relations

Textbooks :

1. Wells, William. (2002). *Advertising Principles and Practice*, Prentice Hall India.
2. Jethwaney, J.N. & Sarkar, Narendra Nath. (2002). *Public Relations*. Sterling Publishers.

Reference books :

1. Valladares, June A. (2000). *The Craft of Copywriting*. Sage Publications.
2. Mehta, D.S. (1980). *Handbook of Public Relations in India*. Allied Publishers.

