



NRI INSTITUTE OF TECHNOLOGY

(AUTONOMOUS)

Approved by AICTE, New Delhi: Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC with "A" GRADE, Accredited by NBA (CSE, ECE&EEE)
An ISO 9001:2015 Certified Institution
Pothavarappadu (V), Agiripalli (M), Eluru District, A.P., India, Pin: 521 212
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7.1.9 Sensitization of students and employees of the Institution to the constitutional obligations: values, rights, duties and responsibilities of citizens

S.No	Description (Academics)			
	Regulation	Subject Name	Subject Code	Semester
1	NRIA18	Professional Ethics & Human Values	18A2100801	2-1
2			18A2200801	2-2
3		Engineering Psychology	18A2100604	2-1
4		Indian Constitution	18A3100802	3-1
5			18A3100801	
6		Biology for Engineers/ Enterprising and Startup/ NSS / YOGA / Social service/ sports /games	18A3200791	3-2
7		Environmental Studies	18A1100801	1-1
8	NRIA20	Essence of Indian knowledge and traditions	18A3200801	3-2
9			18E2198403	2-1
10		Business Ethics & Corporate Governance	20A1100801	1-1
11			20A1200801	1-2
12	Constitution of India	20A2100801	2-1	
13		20A2100802	2-1	
14	Professional Ethics & Human Values	20A3200803	3-2	
15		20A2200801	2-2	
16	Essence of Indian knowledge and traditions	20A3100801	3-1	
17				

IQAC

I.Q.A.C. Coordinator

NRI INSTITUTE OF TECHNOLOGY
POTHAVARAPPADU (V), Agiripalli (M)
Eluru Dist., Vijayawada Rural - 521 212

PRINCIPAL
PRINCIPAL

NRI Institute of Technology
Pothavarappadu (V), Agiripalli (M)

18A2100802- PROFESSIONAL ETHICS AND HUMAN VALUES

Lecture - Tutorial- Practical:	0-2-0	Internal Marks:	40
Credits:	0	External Marks:	60*

Prerequisites:

Basic understanding about Engineering profession

Course Objectives:

- To create awareness on engineering ethics and human values:
- To understand social responsibility of an engineer.

To instill moral and social values and loyalty.

Course Outcomes:

Upon successful completion of the course, the student will be able to:

- C01 Grooms themselves as ethical, responsible and societal beings.
- C02 Discuss ethics in society and apply the ethical issues related to engineering.
- C03 Exhibit the understanding of ethical theories in professional environment.
- C04 Recognize their role as social experimenters (engineers) and comprehend codes of ethics.
- C05 Identify the risks likely to come across in the professional world, analyzing them and find solutions.
- C06 Realize the responsibilities and rights of engineers in the society.

Contribution of Course Outcomes towards achievement of Program Outcomes (1 = Low, 2 - Medium, 3 - High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
C01	-	-	-	-	-	1	1	2	-	-	-	1
C02	-	-	-	-	-	1	1	2	-	-	-	1
C03	-	-	-	-	-	1	1	2	-	-	-	1
C04	-	-	-	-	-	1	1	2	-	-	-	1
C05	-	-	-	-	-	1	1	2	-	-	-	1
C06	-	-	-	-	-	1	1	2	-	-	-	1

UNIT I

Human Values: Objectives, Morals, Values, Ethics, Integrity, Work ethics, Service learning , Virtues, Respect for others, Living peacefully, Caring, Sharing, Honesty, Courage, Valuing time, Cooperation, Commitment, Empathy, Self-confidence, Challenges in the work place.

UNIT 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.

UNIT III

Engineering as Social Experimentation: Engineering as experimentation, Engineers as responsible experimenters, Codes of ethics, Industrial standards, A balanced outlook on law, Case study: The challenger.

UNIT IV

Safety, Responsibilities and Rights: Safety and risk, types of risks, Assessment of safety and risk, Safe exit, Risk-benefit analysis, safety lessons from 'the challenger' , Case study: Power plants, Collegiality and loyalty, Collective bargaining, Confidentiality, Conflict of interests, Occupational crime, whistle blowing, Intellectual property rights, professional rights.

TEXT BOOKS:

- A Text book on Professional Ethics and Human Values by R.S Naagarazan- New Age International Publishers.
- " Engineering Ethics includes Human Values" by M. Govindarajan, S. Natarajan and V. S. Senthil Kumar- PHI Learning Pvt. Ltd-2009

REFERENCE BOOKS:

"Professional Ethics and Human Values" by A. Alavudeen, R. Kalil Rahman and M. Jayakumaran- Laxmi Publications.

E-RESOURCES:

- www.onlineethics.org
- www.nspe.org
- www.globalethics.org
- www.ethics.org

PRINCIPAL
NRI Institute of Technology
Pothavarappadu (V), Agiripalli (M)

18A2100604- Psychology

Lecture - Tutorial- Practical:	2-0-0	Internal Marks:	40
Credits:	1	External Marks:	60

Prerequisites:

Basic understanding about communication components

Course Objectives:

1. Aware of different applications of psychology to everyday life.
2. Aware of different work place issues, behavioral issues
3. Understand how the knowledge gained from this course can be used in their personal and professional lives.

Course Outcomes:

Upon successful completion of the course, the student will be able to:

CO1	The student will be able to understand the inter relationship of knowledge and our fund of knowledge
CO2	The students develops the discrimination between true and false knowledge
CO3	The students develops moral sense of Indian society
CO4	The students extends his mental horizons in understanding different stands of moral order
CO5	The students intuitively grasps the ways of understanding the world and our environment
CO6	The students gains an insight into the very nature of Science and Technology

Contribution of Course Outcomes towards achievement of Program Outcomes (1 - Low, 2- Medium, 3 - High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	1	2	-	-	-	2	-	3	-	-	-	2
CO2	1	2	-	2	-	2	-	2	-	-	-	2
CO3	1	-	-	-	-	3	-	3	-	-	-	-
CO4	1	-	-	-	-	3	-	3	-	-	-	-
CO5	1	-	-	-	-	2	-	-	-	-	-	2
CO6	3	3	3	3	3	3	3	-	-	3	3	3

UNIT- 1: Introduction

Psychology as a study of human behavior

Scope and fields of psychology

- Goal setting
- Time management

UNIT- 2 - Communication skills

- Non verbal communication
- Interpersonal skills
- Intrapersonal skills

UNIT- 3 - Life skills

- Emotional Intelligence
- Building resilience
- Stress management
- Mind management

UNIT 4 - Career skills

- Employability skills
- Presentation skills
- Leadership skills
- Team building
- Career planning

TEXT BOOKS:

1. Introduction to Psychology – N.L. Munn
2. Emotional Intelligence – Daniel Goleman

INDIAN CONSTITUTION
Type of Course : Audit Course

Lecture – Tutorial- Practical::	0-1-2*	Internal Marks:	40									
Credits:	0	External Marks:	60*									
Prerequisites:												
Course Objectives:												
Course Outcomes:												
Upon successful completion of the course, the student will be able to:												
CO1	Understand the meaning, history, features and characteristics of Indian Constitution											
CO2	Gain knowledge on fundamental rights duties and Principles and importance of State Policy											
CO3	Understand the powers of Union, the States and Indian President.											
CO4	Know about amendments of the constitution and Emergency Provisions											
Contribution of Course Outcomes towards achievement of Program Outcomes (1 – Low, 2- Medium, 3 – High)												
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	-	-	-	-	-	-	-	-	-	2
CO2	3	3	2	-	-	-	-	2	-	-	-	-
CO3	3	-	2	-	-	-	-	-	-	-	-	2
CO4	-	-	3	-	-	-	-	2	-	-	-	2

UNIT I

- Meaning of the constitution law and constitutionalism
- Historical perspective of the Constitution of India
- Salient features and characteristics of the Constitution of India

UNIT II

- Scheme of the fundamental rights
- The scheme of the Fundamental Duties and its legal status
- The Directive Principles of State Policy – Its importance and implementation

UNIT III

- Federal structure and distribution of legislative and financial powers between the Union and the States
- Parliamentary Form of Government in India – The constitution powers and status of the President of India

UNIT IV

- Amendment of the Constitutional Powers and Procedure
- The historical perspectives of the constitutional amendments in India
- Emergency Provisions : National Emergency, President Rule, Financial Emergency

Reference Books

1. Durgadas Basu – Introduction to the Constitution of India
2. Sharma, Sharma B. K. – Introduction to the Constitution of India
3. Randhir Sarma Srkar – The Constitution of India
4. Govt. of India – The Constitution of India

Course Code-BIOLOGY FOR ENGINEERS

Type of Course : Audit course

Lecture – Tutorial- Practical:: Credits:	0-2-0 (Audit Course) 0	Internal Marks: External Marks:	40 60*									
Prerequisites: --												
Course Objectives: The objective of this course is to provide basic knowledge in biology for the engineers and to analyze biological process in computational tools.												
Course Outcomes: Upon successful completion of the course, the student will be able to:												
CO1	Describe the fundamental Principles and methods of engineering											
CO2	Identify the functions of different types in bio-molecules											
CO3	Describe mechanisms underlying the working of molecular biological processes including enzyme catalysis, metabolic pathways, gene expression.											
CO4	Use Excel, MATLAB and other computational tools to quantitatively analyze biological processes.											
CO5												
CO6												
Contribution of Course Outcomes towards achievement of Program Outcomes (1 – Low, 2-Medium, 3 – High)												
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	-	3	-	2	-	-	-	-	-	-	-	-
CO2	-	3	-	-	-	-	-	-	-	-	-	-
CO3	-	2	-	3	-	-	-	-	-	-	-	-
CO4	-	1	-	2	3	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-
UNIT I :												
UNIT I:Introduction and Classification of Living organisms. Introduction: Fundamental differences between science and engineering by drawing a comparison between eye and camera, Bird flying and aircraft. Biology as an independent scientific discipline. Discuss how biological observations of 18th Century that lead to major discoveries. Examples from Brownian motion and the origin of thermodynamics by referring to the original observation of Robert Brown and Julius Mayor. Classification: Classification of living organisms based on (a) Cellularity-Unicellular or multicellular (b) Ultrastructure-prokaryotes or eukaryotes. (c) Energy and Carbon utilization - Autotrophs, heterotrophs, lithotrophs (d) Ammonia excretion –aminotelic, uricotelic, ureotelic (e) Habitat-aquatic, terrestrial (e) Molecular taxonomy-three major kingdoms of life.												
UNIT II:												
Biomolecules and EnzymesBiomolecules: Biomolecules: Structures of sugars(Glucose and Fructose), starch and cellulose. Nucleotides and DNA/RNA. Amino acids and lipids. Proteins-structure and functions-as enzymes, transporters, receptors and structural elements Enzymes: Enzyme classification, Mechanism of enzyme action.Enzymekinetics and kinetic parameters.												

UNIT III:

“Genetics is to biology what Newton’s laws are to Physical Sciences” Mendel’s laws, Concept of segregation and independent assortment. Concept of allele. Concepts of recessiveness and dominance. Gene interaction, Epistasis. Meiosis and Mitosis be taught as a part of genetics. Emphasis to be given not to the mechanics of cell division nor the phases but how genetic material passes from parent to offspring. Information Transfer: DNA as a genetic material. Hierarchy of DNA structure—from single stranded to double helix to nucleosomes. Concept of genetic code. Universality and degeneracy of genetic code. Define gene in terms of complementation and recombination.

UNIT IV:

Metabolism :Exothermic and endothermic versus endergonic and exergonic reactions. Concept of K_{eq} and its relation to standard free energy. ATP as an energy currency. Breakdown of glucose to $CO_2 + H_2O$ (Glycolysis and Krebs cycle) and synthesis of glucose from CO_2 and H_2O (Photosynthesis). Energy yielding and energy consuming reactions. Microbiology: Concept of single celled organisms. Concept of species and strains. Identification and classification of microorganisms. Growth kinetics. Ecological aspects of single celled organisms. Microscopy.

TEXT BOOKS:

Reference Books:

[1] Biology: A global approach: Campbell, N. A.; Reece, J. B.; Urry, Lisa; Cain, M, L.; Wasserman, S. A.; Minorsky, P. V.; Jackson, R. B. Pearson Education Ltd
[2] Outlines of Biochemistry, Conn, E.E; Stumpf, P.K; Bruening, G; Doi, R.H., John Wiley and Sons

REFERENCE BOOKS:

[1] Principles of Biochemistry (V Edition), By Nelson, D. L.; and Cox, M. M.W.H. Freeman and Company
[2] Molecular Genetics (Second edition), Stent, G. S.; and Calender, R.W.H. Freeman and company, Distributed by Satish Kumar Jain for CBS Publisher Microbiology, Prescott, L.M J.P. Harley and C.A. Klein 1995. 2nd edition Wm, C. Brown Publishers

E-RESOURCES:

[1]. https://bee.cals.cornell.edu/sites/bee.cals.cornell.edu/files/shared/documents/Career_BEE_Final-for-eb.pdf
[2]. <https://www.teachengineering.org/subjectareas>

Course Code- Enterprising and Startup skills**Type of Course :Audit Course**

Lecture – Tutorial-	0-2-0	Internal Marks:	40
Practical::		External Marks:	60*
Credits:	0		

Prerequisites: Creativity, Logical reasoning**Enterprising and Startup skills****Course Objective:**

The enable the students develop and systematically apply an entrepreneurial way of thinking that will allow them to identify and create business opportunities that may be commercialized successfully

Course Outcomes:**Upon successful completion of the course, the student will be able to:**

CO1	To evaluate the role and importance of entrepreneurship for economic development
CO2	To acquire necessary knowledge and skills required for organising and carrying out entrepreneur activities through training.
CO3	To analyse and apply contemporary project management tools and methodologies
CO4	To learn policies and their support to small and micro enterprises.
CO5	To consider the legal and financial conditions for starting a business venture, evaluate the effectiveness of different entrepreneurial strategies and challenges
CO6	To understand about supportive role of government, financial institutions and educational institutions offering ED Programmes

Contribution of Course Outcomes towards achievement of Program Outcomes (1 – Low, 2- Medium, 3 – High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2	-	2	-	-	2	2	-	2	-	-	-
CO2	3	-	2	-	2	-	-	-	2	-	-	-
CO3	2	2			2	-	-	-	-	-	3	-
CO4	2	-	-	-	-	2	2		-	-	-	2
CO5	2	-	-	-	-	2	2	2	-	-	-	2
CO6	2	-	-	-	-	2	2	2	-	-	-	2

UNIT I :

Entrepreneurship and Training : Importance and growth of **Entrepreneurship** , Characteristics and Qualities of Entrepreneur, Designing Appropriate Training Programmes to inculcate Entrepreneurial Spirit, Feedback and Performance of Trainees. Creativity and Entrepreneurship: Sources and Methods of Ideas Planning.

UNIT II:

Planning and Evaluation of Projects: Growth of the Firm, Project identification and selection, Factors inducing growth , Project Feasibility Study , Post Planning of Project, Project Planning and Control.

UNIT III:

Small and Micro Enterprises: Importance, definitions – policies and their support to MSMEs - growth and growth strategies – sickness in small business and remedies.

UNIT IV:

Institutional Support to Entrepreneur and MSMEs: Role of Government - Role of IDBI, NIESBUD, SISI, DIC, Commercial Banks, Entrepreneurial Development Institutes, Universities and other Educational Institutions offering Entrepreneurial Development Programmes

TEXT BOOKS:


1. Arya Kumar: "Entrepreneurship", Pearson, Publishing House, New Delhi, 2012.
2. VSP Rao, Kuratko: "Entrepreneurship", Cengage Learning, New Delhi,
3. K.Ramachandran: "Entrepreneurship Development", TMH, New Delhi, 2012
4. B.Janakiram, M Rizwana: "Entrepreneurship Development" Excel Books, New Delhi, 2011

REFERENCE BOOKS:

1. Rajeev Roy: "Entrepreneurship", Oxford University Press, New Delhi, 2012
2. P.C.Shejwalkar: "Entrepreneurship Development", Everest Publishing House, New Delhi, 2011

E-RESOURCES:

1. <http://ediindia.ac.in/e-policy/> [Entrepreneurial Policy India]
2. http://en.wikipedia.org/wiki/List_of_venture_capital_companies_in_India [Venture Capital]
3. indiavca.org/venture-capital-in-india.html [Venture Capital]


PRINCIPAL
NRI Institute of Technology
Pothavarappadu (V), Agripalli (k)

ENVIRONMENTAL STUDIES
(Common to CE,EEE,ME,CSE and IT)

Lecture – Tutorial: 2-1

Internal Marks: 40

Credits: --

External Marks: 60

Prerequisites:

Course Objectives:

- Basic understanding of ecosystem and to know the importance of biodiversity.
- Understanding of natural resources.
- To understand different types of pollutants effecting the environment.
- To know global environmental problems, problems associated with over population and burden on environment.

COURSE OUTCOMES:

Upon successful completion of the course, the student will be able to:

- CO1 Realize the importance of ecosystem and biodiversity for maintaining ecological balance.
- CO2 Understand the role of natural resources for the sustenance of life on earth and recognize the need to conserve them.
- CO3 Identify the environmental pollutants and abatement devices.
- CO4 Gain the importance of sustainability.

Contribution of Course Outcomes towards achievement of Program Outcomes

(1 - Low, 2- Medium, 3 - High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	2		3			2	3	2			2	1
CO2	2		3			2	3	2			2	1
CO3	2		3			2	3	2			2	1
CO4	2		3			2	3	2			2	1

UNIT I

Ecosystems: Concept of an ecosystem. - Structure and function of an ecosystem. - Producers, consumers and decomposers. - Ecological succession. - Food chains, food webs and ecological pyramids, flow of energy, biogeochemical cycles.

Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity- classification - Value of biodiversity, India as a mega-diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts - Endangered and endemic species of India - Conservation of biodiversity.

UNIT II

Natural Resources: Natural resources and associated problems

Forest resources - Use and over - exploitation, deforestation - Timber extraction - Mining, dams and other effects on forest and tribal people.

Water resources - Use and over utilization of surface and ground water -

Floods, drought, conflicts over water, dams – benefits and problems.
Mineral resources: use and exploitation, environmental effects of extracting and using mineral resources. Case studies.
Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources Vs Oil and Natural Gas Extraction.
Land resources: land as a resource, land degradation, wasteland reclamation, man induced landslides, soil erosion and desertification.
Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT III

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards, Technological solutions for pollution control, Role of an individual in prevention of pollution with case studies.

Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Biomedical, Hazardous and E-waste management, carbon credits.

Disaster management: floods, droughts, earthquakes, cyclones.

UNIT IV

Social issues and the environment: Global environmental challenges- global warming and climate change, acid rains, ozone layer depletion.

Towards sustainable future: From unsustainable to sustainable development, population and its explosion, urban problems related to energy, rain water harvesting, consumerism and waste products, role of IT in environment and human health, HIV/ AIDS, environmental ethics.

Environmental management and acts: Impact assessment and significance, various stages of EIA, environmental management plan (EMP), green belt development. Environmental Law (Air, Water, Wildlife, Forest, Environment protection act).

The student should visit an industry/ Ecosystem and submit a report individually on any issues related to environmental studies course and make a power point presentation.

TEXT BOOKS:

1. Environment Studies, Anubha Kaushik, C P Kaushik, New Age International Publishers, 2018
2. Environmental Studies, R. Rajagopalan, 2nd Edition, 2011, Oxford University Press.
3. Environmental Studies, P. N. Palanisamy, P. Manikandan, A. Geetha, and K. Manjula Rani; Pearson Education, Chennai

REFERENCE BOOKS:

1. Text Book of Environmental Studies, Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
2. Environmental Studies, K. V. S. G. Murali Krishna, VGS Publishers, Vijayawada.
3. Erach Bharucha, 2010 “ Text Book of Environmental Studies” , University Grants Commission, University Press (India) Pvt. Ltd., Hyderabad.
4. Text book of Environmental Science and Engineering by G. Tyler Miller Jr, 2006 Cengage learning.

E-RESOURCES:

1. <http://nptel.ac.in/courses.php>.
2. <http://jntuk-coeerd.in/>


PRINCIPAL

NRI Institute of Technology
Pothavaram (V), Agiripalli (M)

18A3200801-ESSENCE OF INDIAN KNOWLEDGE AND TRADITIONS

Lecture – Tutorial:	2-0 Hours	Internal Marks:	40									
Credits:	0	External Marks:	60									
Prerequisites: -----												
Course Objectives:												
<ol style="list-style-type: none"> 6. To develop knowledge of fundamental management concepts, skills and tools, to aid in problem solving and decision making. 7. To develop and understanding about the organizational structure and relationship between authority and responsibility in various structures. 8. To discuss the evolution of principles that make it possible to design facilities, processes, and control systems with a degree of predictability as to their performance. 9. To develop comprehensive skills in planning, selecting, motivating, and developing the human resources for organisational effectiveness. 10. To understand the broad scope of marketing, societal, ethical and other diverse aspects of marketing. 												
Course Outcomes:												
Upon successful completion of the course, the student will be able to:												
C01	Understand the concept of Traditional knowledge and its importance											
C02	Know the need and importance of protecting traditional knowledge											
C03	Know the various enactments related to the protection of traditional knowledge											
C04	Understand the concepts of Intellectual property to protect the traditional knowledge											
C05	Develop comprehensive skills in planning, selecting, motivating, and developing the human resources for organisational effectiveness.											
C06	Understand the broad scope of marketing, societal, ethical and other diverse aspects of marketing											
Contribution of Course Outcomes towards achievement of Program Outcomes (1 - Low, 2- Medium, 3 - High)												
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
C01	2	-	-	-	-	-	-	2		-	-	-
C02	2	-	-	-	-	-	-	2		-	-	-
C03	2	-	-	-	-	-	-	2		-	-	-
C04	2	-	-	-	-	-	-	2		-	-	-
C05	2	-	-	-	-	-	-	2		-	-	-
C06	2	-	-	-	-	-	-	2		-	-	-
UNIT I												
Introduction to traditional knowledge: Define traditional knowledge, nature and characteristics, scope and importance, kinds of traditional knowledge, the physical and social contexts in which traditional knowledge develop, the historical impact of social change on traditional knowledge systems. Indigenous Knowledge (IK), characteristics, traditional knowledge vis-à-vis indigenous knowledge, traditional knowledge Vs western knowledge traditional knowledge vis-à-vis formal knowledge												
UNIT II												

Protection of traditional knowledge: the need for protecting traditional knowledge
Significance of TK Protection, value of TK in global economy, Role of Government to harness TK.

Legal framework and TK: A: The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, Plant Varieties Protection and Farmers Rights Act, 2001 (PPVFR Act);**B:** The Biological Diversity Act 2002 and Rules 2004, the protection of traditional knowledge bill, 2016. Geographical indications act 2003.

UNIT III

Traditional knowledge and intellectual property: Systems of traditional knowledge protection, Legal concepts for the protection of traditional knowledge, Certain non IPR mechanisms of traditional knowledge protection, Patents and traditional knowledge, Strategies to increase protection of traditional knowledge, global legal FORA for increasing protection of Indian Traditional Knowledge.

UNIT IV

Traditional knowledge in different sectors: Traditional knowledge and engineering, Traditional medicine system, TK and biotechnology, TK in agriculture, Traditional societies depend on it for their food and healthcare needs, Importance of conservation and sustainable development of environment, Management of biodiversity, Food security of the country and protection of TK.

TEXT BOOKS:

1. Traditional Knowledge System in India, by Amit Jha, 2009.
2. Traditional Knowledge System and Technology in India by Basanta Kumar Mohanta and Vipin Kumar Singh, PratibhaPrakashan 2012.

REFERENCE BOOKS:

1. Traditional Knowledge System in India by Amit Jha Atlantic publishers, 2002
2. "Knowledge Traditions and Practices of India" Kapil Kapoor, Michel Danino


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Sub Code: 18E2198403 Name of the Course: BUSINESS ETHICS AND CORPORATE GOVERNANCE

Lecture – Tutorial - Practical:	4-0-0	Internal Marks:	40
Credits:	3	External Marks:	60

Course Objectives:

1. To understand the basic concepts of Business Ethics and Corporate Governance.
2. To enlighten the student with regard to globalization and its impact on Business Ethics and Indian Capital Markets.
3. Learn about ethics in core areas like Marketing, HRM, and Financial Management.
4. Acquaintance in respect of transparency maintained by the companies through Corporate Governance.
5. Provide knowledge regarding applicability of Corporate Governance with Indian scenario.

Course Outcomes :

1. Have an idea about Business Ethics and Law and Ethical Decision Making.
2. Know the Impact of Globalization on Indian Business Ethics and Major Indian Scams.
3. Aware of ethical issues and how it could be impacts on Marketing, HRM and Financial Issues.
4. Know the Corporate Governance and its principles and practices around the globe.
5. Aware of Corporate Governance and its implications in Indian Scenario and role of various interested parties towards company.

Course Outcomes vs. POs Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1												1	1
CO2	1	2						3				2	1	1
CO3	1	2				2		3				2	2	2
CO4	1	2		2		2	2	3		2		2	2	2
CO5	1	2				2		3		2		2	2	2
Tot	5	8		2		6	2	12		4		8	8	8
Avg.	1	2		2		2	2	3		2		2	1.6	1.6



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Pothavarappadu (V), (Via) Nunna, Agiripalli (M), Vijayawada Rural, Krishna (Dt.), Pin : 521 212 - A.P.



Syllabus:

UNIT 1

Importance of Business Ethics: Values and Ethics- Business Ethics and Law – Ethics in Work Place – Ethical Decision Making- Theories of Business Ethics – Management and Ethics- Indian Ethical Traditions

UNIT 2

Impact of Globalization on Indian Business Ethics: Reasons for Unethical Practices among Indian companies – Development of Indian Capital Markets – Various studies on Ethical Attitudes of Managers Major Indian Scams

UNIT 3

Ethics in Marketing, HRM and Finance: Product safety and Pricing-Ethical responsibility in Product- Advertising and Target Marketing Ethics of sales, advertising and product placement and Consumer Autonomy. Ethics in HRM & Finance – HR related ethical issues - Institutional Culture – Frauds in Banks - Measures against Bank Frauds – Frauds in Insurance sector

UNIT 4

Corporate Governance: An overview – Theory and Practice of Governance- Indian model of Governance- Good Corporate Governance – Land marks in emergence of Governance OECB Principles – Sarbanes-Oxley Act 2002- SEBI Initiatives

UNIT 5

Corporate Governance Indian Scenario: Role of Government in Ensuring Corporate Governance – Governance issues relating to Board of Directors – Duties and responsibilities of Auditors – Governance under limited competition – Role of Media – Corporate Governance in Developing and Transiting Economies.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. S.K.Mandal: “Ethics in Business and Corporate Governance”, TMH, New Delhi, 2012.
2. Marianne M Jennings: “Cases in Business Ethics”, Cengage Learning, New Delhi, 2012.
3. S.Prabhakaran: “Business Ethics and Corporate Governance”, Excel Books, New Delhi, 2011.
4. N.Balasubramanyam: “A Case Book on Corporate Governance and Stewardship”, TMH., New Delhi, 2011.
5. A.C.Fernando: “Business Ethics and Corporate Governance”, Pearson Publishers, New Delhi, 2013.


PRINCIPAL

NRI Institute of Technology
Pothavarappadu (V), Agiripalli (M)

20A1100801: ENVIRONMENTAL SCIENCES
(Common to CSE,IT,AIIML and Ds)

Lecture – Tutorial:	2-0	Internal Marks:	30
Credits:	0	External Marks:	70*

Prerequisites:**Course Objectives:**

The objectives of the course are to impart:

- ❖ Overall understanding of the natural resources.
- ❖ Basic understanding of the ecosystem and its diversity.
- ❖ Acquaintance on various environmental challenges induced due to unplanned anthropogenic activities.
- ❖ An understanding of the environmental impact of developmental activities.
- ❖ Awareness on the social issues, environmental legislation and global treaties.

Course Outcomes:

CO1	➤ Illustrate the importance of sustainability in the progress of a nation. (L2)
CO2	➤ Infer the existence of ecosystems in maintaining ecological balance. (L2)
CO3	➤ Recall the importance of biodiversity and its conservation. (L1)
CO4	➤ Summarize the role of natural resources for the sustenance of life on earth and recognize the need to conserve them. (L2)
CO5	➤ Identify the environmental pollutants and the abatement devices to be used. (L3)
CO6	➤ Interpret environmental related acts and social issues. (L2)

Contribution of Course Outcomes towards achievement of Program Outcomes (1 – Low, 2- Medium, 3 – High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	2	-	-	2	3	2	-	-	2	2
CO2	3	2	2	-	-	2	3	2	-	-	2	2
CO3	3	2	2	-	-	2	3	2	-	-	2	2
CO4	3	2	2	-	-	2	3	2	-	-	2	2
CO5	3	2	2	-	-	2	3	2	-	-	2	2
CO6	3	2	2	-	-	2	3	2	-	-	2	2

UNIT I**(6hrs)**

Sustainability: Stockholm and Rio Summit–Global Environmental Challenges: Global warming and climate change, acid rains, ozone layer depletion, population growth and explosion, effects. Role of information technology in environment and human health.

Ecosystems: Concept of an ecosystem. - Structure and function of an ecosystem; Producers, consumers and decomposers. - Energy flow in the ecosystem - Food chains, food webs and ecological pyramids- Ecological succession.

UNIT II**(4hrs)**

Biodiversity and its conservation: Definition: genetic, species and ecosystem diversity- classification - Value of biodiversity: consumptive use, productive use, social value. India as a mega diversity nation - Hot-spots of biodiversity - Threats to biodiversity: habitat loss, man-wildlife conflicts. Endangered and endemic species of India – Conservation of biodiversity.

UNIT III

(7hrs)

Natural Resources: Natural resources and associated problems.

Forest resources: Use and over – exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribal people.

Water resources: Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems.

Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources.

Role of an individual in conservation of natural resources; Equitable use of resources for sustainable lifestyles.

UNIT IV

(5hrs)

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution, Nuclear hazards. Role of an individual in prevention of pollution. - Pollution case studies, Sustainable Life Studies. Impact of Fire Crackers on Men and his well being.

Solid Waste Management: Sources, Classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products, Biomedical, Hazardous and e – waste management.

UNIT V

(6hrs)

Social Issues and the Environment: Urban problems related to energy, rain water harvesting. Environmental ethics: Issues and possible solutions. Environmental Protection Act -Air (Prevention and Control of Pollution) Act. –Water (Prevention and control of Pollution) Act - Wildlife Protection Act -Forest Conservation Act. Environmental Management: Impact Assessment and its significance various stages of EIA, preparation of EMP and EIS. Ecotourism, Green Campus – Green business and Green politics.

TEXT BOOKS:

- 1) Perspectives in Environment Studies, Anubha Kaushik, C P Kaushik, New Age International Publishers, 2014
- 2) Environmental Studies, K. V. S. G. Murali Krishna, VGS Publishers, Vijayawada
- 3) Environmental Studies, R. Rajagopalan, 2nd Edition, 2011, Oxford University Press.
- 4) Environmental Studies, P. N. Palanisamy, P. Manikandan, A. Geetha, and K. Manjula Rani; Pearson Education, Chennai

REFERENCE BOOKS:

- 1) Text Book of Environmental Studies, Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
- 2) A Textbook of Environmental Studies, Shaashi Chawla, TMH, New Delhi
- 3) Environmental Studies, Benny Joseph, Tata McGraw Hill Co, New Delhi

E-RESOURCES: 1. <http://nptel.ac.in/courses.php>.
2. <http://jntuk-coeerd.in/>

20A2100801-CONSTITUTION OF INDIA

Lecture – Tutorial: 2-0 Hours **Internal Marks:** 30
Credits: 2 **External Marks:** 70

Prerequisites: Engineering Physics, Engineering Mechanics

Course Objectives:

5. To Enable the student to understand the importance of constitution
6. To understand the structure of executive, legislature and judiciary
7. To understand philosophy of fundamental rights and duties
8. To understand the autonomous nature of constitutional bodies like Supreme Court and high court controller and auditor general of India and election commission of India.
9. To understand the central and state relation inancial and administrative.

Course Outcomes:

Upon successful completion of the course, the student will be able to:

- CO1 Apply the knowledge on directive principle of state policy & analyze the History, features of Indian constitution
- CO2 Explain the structure of Indian government & Differentiate between the state
- CO3 Analyze the role Governor and Chief Minister & explain the role of state Secretariat
- CO4 Compare and contrast district administration role and importance
- CO5 Analyze the role of Myer and elected representatives of Municipalities
- CO6 Know the role of Election Commission apply knowledge & Analyze role of state election commission

Contribution of Course Outcomes towards achievement of Program Outcomes (1 – Low, 2- Medium, 3 – High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	2	-	-	-	-	-	-	-	-	-	2
CO2	3	3	2	-	-	-	-	2	-	-	-	-
CO3	3	-	2	-	-	-	-	-	-	-	-	2
CO4	-	-	3	-	-	-	-	2	-	-	-	2
CO5	3	3	2	-	-	-	-	2	-	-	-	-
CO6	3	-	2	-	-	-	-	-	-	-	-	2

UNIT I

Indian Constitution: Constitution meaning of the term, Indian Constitution - Sources and constitutional history, Features - Citizenship, Preamble, Fundamental Rights and Duties, Directive Principles of State Policy

UNIT II

Union Government and its Administration Structure of the Indian Union: Federalism, Centre- State relationship, President: Role, power and position, PM and Council of ministers, Cabinet and Central Secretariat, Lok Sabha, Rajya Sabha, The Supreme Court and High Court: Powers and Functions;

UNIT III

State Government and its Administration Governor - Role and Position - CM and

Council of ministers, State Secretariat: Organisation, Structure and Function

UNIT IV

Local Administration - District's Administration Head - Role and Importance, Municipalities - Mayor and role of Elected Representative - CEO of Municipal Corporation Pachayati Raj: Functions PRI: Zila Panchayat, Elected officials and their roles, CEO Zila Panchayat: Block level Organizational Hierarchy - (Different departments), Village level - Role of Elected and Appointed officials -Importance of grass root democracy

UNIT V

Election Commission: Election Commission- Role of Chief Election Commissioner and Election Commissionerate State Election Commission:, Functions of Commissions for the welfare of SC/ST/OBC and women

TEXT BOOKS:

1. Durga Das Basu, Introduction to the Constitution of India, Prentice – Hall of India Pvt Ltd... New Delhi
2. SubashKashyap, Indian Constitution, National Book Trust

REFERENCE BOOKS:

1. J. Raj Indian Government and Politics
2. M.V. Pylee, Indian Constitution Durga Das Basu, Human Rights in Constitutional Law, Prentice – Hall of India Pvt Ltd.. New Delhi
3. Noorani, A.G., (South Asia Human Rights Documentation Centre), Challenges to Civil Right)

E-RESOURCES:

- nptel.ac.in/courses/109104074/8
- nptel.ac.in/courses/109104045/
- nptel.ac.in/courses/101104065/
- www.hss.iitb.ac.in/en/lecture-details
- www.iitb.ac.in/en/event/2nd-lecture-institute-lecture-series-indian-constitution



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NRI Institute of Technology
Pothavarappadu (V), Agiripalli (M)

PROFESSIONAL ETHICS & HUMAN VALUES

Lecture - Tutorial:	2-0 Hours	Internal Marks:	30
Credits:	0	External Marks:	70

Course Objectives:

- ▶ To create an awareness on Engineering Ethics and Human Values.
- ▶ To instill Moral and Social Values and Loyalty.
- ▶ To appreciate the rights of others.
- ▶ To create awareness on assessment of safety and risk.

UNIT I

Human Values:

Morals, Values and Ethics-integrity, Work Ethic, Service Learning - Civic Virtue - Respect for others - Living Peacefully - Caring - Sharing - Honesty - Courage-Cooperation - Commitment - Empathy - Self Confidence Character - Spirituality. Learning outcomes:

1. Learn about morals, values & work ethics.
2. Learn to respect others and develop civic virtue.
3. Develop commitment.
4. Learn how to live peacefully.

UNIT 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 -Valuing Ethics -Cooperation -Commitment. Learning outcomes:

1. Learn about the ethical responsibilities of the engineers.
2. Create awareness about the customs and religions.

3. Learn time management.
4. Learn about the different professional roles.

UNIT III

Engineering as Social Experimentation:

Engineering as Social Experimentation: -Framing the problem -Determining the facts -Codes of Ethics -Obeying Concepts -Application Issues -Common Ground -General Principles -Utilitarian thinking respect for persons. Learning outcomes: 1. Demonstrate knowledge to become a social experimenter. 2. Provide depth knowledge on framing of the problem and determining the facts. 3. Provide depth knowledge on codes of ethics. 4. Develop utilitarian thinking.

UNIT IV

Engineers Responsibility for Safety and Risk:

Safety and risk -Assessment of safety and risk -risk benefit analysis and reducing risk-Safety and the Engineer-Designing for the safety-Intellectual Property rights (IPR). Learning outcomes:

1. Create awareness about safety, risk & risk benefit analysis.
2. Engineer's design practices for providing safety.
3. Provide knowledge on intellectual property rights.

UNIT V

Global Issues:

Globalization -Cross-culture issues-Environmental Ethics -Computer Ethics -Computers as the instrument of unethical behavior -Computers as the object of Unethical acts -Autonomous Computers-Computer codes of Ethics -Weapons Development -Ethics and Research -Analyzing Ethical Problems in research. Learning outcomes:

1. Develop knowledge about global issues.
2. Create awareness on computer and environmental ethics.
3. Analyze ethical problems in research.
4. Give a picture on weapons development.

TEXT BOOKS:

- 1) "Engineering Ethics includes: Human Values" by M.Govindarajan, S.Natarajan and V.S.Senthil Kumar-PHI Learning Pvt. Ltd-2009
- 2) "Engineering Ethics" by Harris, Prochard and Rabins, CENGAGE Learning, India Edition, 2009.
- 3) "Ethics in Engineering" by Mike W. Martin and Roland Schinzinger -Tata McGraw-Hill-2009.
- 4) "Professional Ethics and Morals" by Prof.A.R.Ayres, DharankotaSuyodhana-Maruthi Publications.
- 5) "Professional Ethics and Human Values" by A.Alarudran, R.Kalirahman and M. Jayakumaran, Laxmi Publications.
- 6) "Professional Ethics and Human Values" by Prof.D.R.Kiran-Indian Culture, Values and Professional Ethics" by P&P Murthy&S Publication.

NRI
PRINCIPAL

**NRI Institute of Technology
Pothavarappadu (V), Agiripalli (M)**

Chellu
Head, MBA Department
**NRI Institute of Technology
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..... Krishna Dist

II B. Tech II Semester

20A2200801: ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE

Lecture – Tutorial:	2	Internal Marks:	30
Credits:	0	External Marks:	70

Prerequisites:

- Students are expected to have knowledge on
1. Reasoning and inference sustainability is at the course of Indian traditional knowledge system
 2. legal framework and traditional knowledge and biological diversity and geographical indication act
 3. Mechanism of traditional knowledge and protection
 4. Traditional knowledge in different sector

Course Objectives:

1. The course aim of the importing basic principle of third process reasoning and inference sustainability is at the course of Indian traditional knowledge system
2. To understand the legal framework and traditional knowledge and biological diversity act 2002 and geographical indication act2003
3. The courses focus on traditional knowledge and intellectual property mechanism of traditional knowledge and protection
4. To know the student traditional knowledge in different sector

Course Outcomes:

Upon successful completion of the course, the student will be able to:

- CO1 Understand the concept of Traditional knowledge and its importance
- CO2 Know the need and importance of protecting traditional knowledge
- CO3 Know the various enactments related to the protection of traditional knowledge
- CO4 Understand the concepts of Intellectual property to protect the traditional knowledge
- CO5 Understand the Traditional knowledge and engineering, Traditional medicine system, TK and biotechnology, TK in agriculture
- CO6 Know the importance of TK and biotechnology, TK in agriculture

Contribution of Course Outcomes towards achievement of Program Outcomes (1 - Low, 2- Medium, 3 - High)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	-	-	-	-	-	1	2	1	1	2	-	1
CO2	-	-	-	-	-	1	1	1	2	1	-	1
CO3	-	-	-	-	-	1	2	1	1	1	-	1
CO4	-	-	-	-	-	2	1	1	1	1	-	1
CO5	-	-	-	-	-	2	2	2	1	2	-	1
CO6	-	-	-	-	-	1	2	2	2	2	-	-

UNIT I

Introduction to traditional knowledge: Define traditional knowledge, nature and characteristics, scope and importance, kinds of traditional knowledge, the physical and.

social contexts in which traditional knowledge develop, the historical impact of social change on traditional knowledge systems. Indigenous Knowledge (IK), characteristics, traditional knowledge vis-à-vis indigenous knowledge, traditional knowledge Vs western knowledge traditional knowledge vis-à-vis formal knowledge

UNIT II

Protection of traditional knowledge: the need for protecting traditional knowledge Significance of TK Protection, value of TK in global economy, Role of Government to harness TK.

UNIT III

Legal framework and TK: A: The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, Plant Varieties Protection and Farmers Rights Act, 2001 (PPVFR Act); B: The Biological Diversity Act 2002 and Rules 2004, the protection of traditional knowledge bill, 2016. Geographical indications act 2003.

UNIT IV

Traditional knowledge and intellectual property: Systems of traditional knowledge protection, Legal concepts for the protection of traditional knowledge, Certain non IPR mechanisms of traditional knowledge protection, Patents and traditional knowledge, Strategies to increase protection of traditional knowledge, global legal FORA for increasing protection of Indian Traditional Knowledge.

UNIT V


Traditional knowledge in different sectors: Traditional knowledge and engineering, Traditional medicine system, TK and biotechnology, TK in agriculture, Traditional societies depend on it for their food and healthcare needs, Importance of conservation and sustainable development of environment, Management of biodiversity, Food security of the country and protection of TK.

REFERENCE BOOKS:

1. Traditional Knowledge System in India, by Amit Jha, 2009.
2. Traditional Knowledge System and Technology in India by Basanta Kumar Mohanta and Vipin Kumar Singh, Pratibha Prakashan 2012.
3. Traditional Knowledge System in India by Amit Jha Atlantic publishers, 2002
4. "Knowledge Traditions and Practices of India" Kapil Kapoor, Michel Danino

e-Resources:

- 1) <https://www.youtube.com/watch?v=LZP1StpYEPM>
- 2) <http://nptel.ac.in/courses/121106003/>


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