VIGNAN's INSTITUTE OF INFORMATION TECHNOLOGY
(AUTONOMOUS)
(Approved by AICTE - New Delhi & Affiliated to JNTUK, Kakinada)
Beside VSEZ, Duvvada, Vadlapudi Post, Gajuwaka, Visakhapatnam - 530 049.

List of programmes offering courses on Professional Ethics, Gender Equality, Human Values, Environment and Sustainability in the Curriculum for the Academic Year 2020 – 21.

Sl. No.	Programme Name	Human Values	Professional Ethics	Gender Equality	Environment and Sustainability
1	B.Tech - Civil Engineering	√	√	√	√
2	B.Tech - Electrical and Electronics Engineering	√	√	√	√
3	B.Tech - Mechanical Engineering	√	√	√	√
4	B.Tech - Electronics and Communication Engineering	√	√	√	√
5	B.Tech - Computer Science and Engineering	√	√	√	√
6	B.Tech - Information Technology	√	√	√	√
7	B.Tech - Electronics and Computer Engineering	√	√	√	√
8	B.Tech - Artificial Intelligence and Data Science	√	√	√	√
9	M.Tech - Transportation Engineering		√		
10	M.Tech - Power & Industrial Drives		√		
11	M.Tech - Machine Design		√		
12	M.Tech - Electronics and Communication Engineering		√		
13	M.Tech - Digital Electronics and Communication Systems		√		
14	M.Tech - Computer Science and Engineering		√		
15	M.Tech - Artificial Intelligence and Machine Learning		√		
16	M.Tech - Information Technology		√		
17	Master of Computer Applications		√		
18	Master of Business Administration		√		

Principal

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VIGNAN'S INSTITUTE OF
Information Technology (A)
Beside: VSEZ, Duvvada, Visakhapatnam-49

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A Course on Gender Sensitization for Women

Course Objective:

- The student will be able to get awareness on various challenges faced by women in the society.
- The student will be able to learn the strategies useful for them to empower themselves.

UNIT I: Gender-Biological, Sociological, Psychological Conditioning-Emerging Issues and Challenges- Indian Culture and Values.

UNIT II: Women development and empowerment – Programmes by Central and State Government for the welfare of Women

UNIT III: Self Defenceprogramme – Motivation lectures by eminent women entrepreneurs.

UNIT IV: Women Safety-Nirbhaya–Disha App -Dos and Don'ts in a work environment.

UNIT V: One NPTEL/Coursera Programme on Women Empowerment

Course Outcomes:

The students get empowered on various skills required to lead a happy and prosperous life in this world.

Course Code		L	T	P	Credits
1099172103	PROFESSIONAL ETHICS & HUMAN VALUES	0	3	0	0

Course Objectives:

- To give basic insights and inputs to the student to inculcate Human values to grow as a responsible human beings with proper personality.
- Professional Ethics instills the student to maintain ethical conduct and discharge their professional duties.

Course Outcomes:

	Course Outcome	Cognitive level as per Bloom's Taxonomy	PO
CO1	Recognize importance of human values, harmony and ethical behavior in real life situations	Understanding	PO-8
CO2	Describe the core values that shape the ethical behaviour of an engineer	Understanding	PO-8
CO3	Recall basics of professional ethics and human values.	Remembering	PO-8
CO4	Listing sustained happiness through identifying the essentials of human values and skills.	Remembering	PO-8
CO5	Describe the practical importance of trust, mutually satisfying human behaviour and enriching interaction with nature	Understanding	PO-8

Unit-I: Human Values

Morals, Values and Ethics – Integrity – Work Ethics – Service Learning – Civic Virtue – Respect for others – Living Peacefully -Caring – Sharing – Honesty –Courage – Value time – Co-operation – Commitment – Empathy – Self-confidence – Spirituality-Character.

Unit-II: Engineering Ethics:

The History of Ethics-Purposes for Engineering Ethics-Engineering Ethics-Consensus and Controversy – Professional and Professionalism –Professional Roles to be played by an Engineer –Self Interest, Customs and Religion-Uses of Ethical Theories-Professional Ethics-

Types of Inquiry – Engineering and Ethics- Kohlberg's Theory – Gilligan's Argument –Heinz's Dilemma.

Unit-III: Engineering as Social Experimentation:

Comparison with Standard Experiments – Knowledge gained –Conscientiousness – Relevant Information – Learning from the Past – Engineers as Managers, Consultants, and Leaders – Accountability – Role of Codes – Codes and Experimental Nature of Engineering

Unit-IV: Engineers' Responsibility for Safety and Risk:

Safety and Risk, Concept of Safety – Types of Risks – Voluntary v/s Involuntary Risk- Short term v/s Long term Consequences- Expected Probability- Reversible Effects- Threshold Levels for Risk- Delayed v/s Immediate Risk- Safety and the Engineer – Designing for Safety – Risk-Benefit Analysis-Accidents.

Unit-V: Engineers' Responsibilities and Rights:

Collegiality-Loyalty-Professionalism and Loyalty- Professional Rights –Professional Responsibilities – confidential and proprietary information-Conflict of Interest-Ethical egoism-Collective bargaining-Confidentiality-Acceptance of Bribes/Gifts- when is a Gift and a Bribe-examples of Gifts v/s Bribes-problem solving-interests in other companies- Occupational Crimes-industrial espionage-price fixing-endangering lives- Whistle Blowing-types of whistle blowing-when should it be attempted-preventing whistle blowing. Cross-culture Issues.

Text Books:

Professional Ethics by R. Subramaniam – Oxford Publications, New Delhi

Reference Books:

1. Ethics in Engineering by Mike W. Martin and Roland Schinzinger - Tata McGraw-Hill – 2003.
2. Professional Ethics and Morals by Prof.A.R.Aryasri, DharanikotaSuyodhana - Maruthi Publications.
3. Engineering Ethics by Harris, Pritchard and Rabins, Cengage Learning, New Delhi.
4. Human Values & Professional Ethics by S. B. Gogate, Vikas Publishing House Pvt. Ltd., Noida.
5. Engineering Ethics & Human Values by M.Govindarajan, S.Natarajan and V.S.SenthilKumar-PHI Learning Pvt. Ltd – 2009.
6. Professional Ethics and Human Values by A. Alavudeen, R.Kalil Rahman and M. Jayakumaran – University Science Press.
7. Professional Ethics and Human Values by Prof.D.R.Kiran-Tata McGraw-Hill - 2013
8. Human Values And Professional Ethics by Jayshree Suresh and B. S. Raghavan, S.Chand Publications

CourseCode		L T PCredits
1000171212	**ENVIRONMENTALSTUDIES**	3 1 03

Course Overview:

The course gives a broad view on the importance of environment and its conservation. It deals with distribution of biotic and abiotic components on the Earth, their over exploitation and its associated problems. It provides knowledge on different types of environmental pollutions and their control aspects. It develops practical orientation towards environmentalconcerns.

Course Objectives: The objectives of the courseare:

- Classify, describe and explains the concept of Ecosystems and Environmental Engineering.
- Overall understanding of different types of natural resources andits conservation.
- Acquaintance on various environmental challenges induced due to unplanned anthropogenicactivities.
- An understanding of the environmental impacts of developmental activities and the importance of EnvironmentalManagement
- Awareness on the social issues, environmental legislations and globaltreaties

Course Outcomes

- Give an outline of the natural resources and their importance for the sustenance of life and recognize the need to conserve the naturalresources.
- Explain the concepts of the ecosystem and its function in the environment; explains the need for protecting the producers and consumers invarious ecosystems and their role in the foodweb
- Elucidate the biodiversity of India and threats to biodiversity and conservation practices to protect thebiodiversity
- Give a broad view on various attributes of pollution and their impacts and measures to reduce or control the pollution along with waste management practices.

	Course outcome	**Cognitive Level as per Bloom's Taxonomy**	**PO**
CO1	Elucidate the natural resource & their importance for the sustenance of life and recognises the need to conserve natural resource	Understanding	PO2,PO5, PO6, PO7, PO12
CO2	Gives the broad view on the various attributes of pollution & and their impact & measure to reduce he pollution along	Applying	PO2,PO3, PO5, PO6, PO7, PO12

	with waste management		
CO3	Debates on social issues both rural and urban environment possible means to combat the challenges and trace the legislation of India towards sustainability	Applying	PO1, PO2,PO5, PO6, PO7, PO12
CO4	Educates about Environmental Impact Assessment, Environmental Impact Statement & Environmental Audit	Analyzing	PO1, PO2, PO4, PO5, PO6, PO7, PO12

UNIT – I: Multidisciplinary nature of Environmental Studies & Natural Resource

Definition, Scope and Importance of Environmental Engineering – Sustainability: Stockholm and Rio Summit–Global
Forest resources– Use and over– exploitation, deforestation – Timber extraction – Mining, dams and other effects on forest and tribalpeople
Water resources– Use and over utilization of surface and ground water– Floods, drought, conflict over water, dams– benefits andproblems
Mineral resources: Use and exploitation, environmental effects of extracting and using mineralresources
Food resources: World food problems, changes caused by non-agriculture activities-effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity
Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources.
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 – II: 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.
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.
Solid Waste Management: Sources, classification, effects and control measures of urban and industrial solid wastes. Consumerism and waste products.

UNIT – III: Social Issues and the Environment
Urban problems related to energy -Water conservation, rain water harvesting- Resettlement and rehabilitation of people; its problems and concerns.
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-Issues involved in enforcement of environmental legislation. -Public awareness.

UNIT – IV: Ecosystems, Biodiversity & Conservation

Ecosystems: Concept of an ecosystem. - Structure and function of an ecosystem. - Producers, consumers and decomposers. -Energy flow in the ecosystem -Ecological succession. - Food chains, food webs and ecological pyramids. - Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems.

Biodiversity and its conservation

Definition: Levels of Biodiversity, Value of biodiversity: consumptive use, productive use, social-Biodiversity at national and local levels. 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 – V: Environmental Management and Field Studies

Impact Assessment and its significance various stages of EIA, Preparation of EMP and EIS, Environmental audit. Eco-tourism, Environmental Economics & Study of a Ecotourism spot in a local area, Visit to some Polluted site. Environmental diary.

Text Books:

01. Environmental Studies by R. Rajagopalan, 2nd Edition, 2011, Oxford University Press.

02. A Textbook of Environmental Studies by Shaashi Chawla, TMH, New Delhi.

03. Environmental Studies by P.N. Palanisamy, P. Manikandan, A. Geetha, and K. Manjula Rani; Pearson Education, Chennai.

Reference Books:

01. Text Book of Environmental Studies by Deeshita Dave & P. Udaya Bhaskar, Cengage Learning.
02. Environmental Studies by K.V.S.G. Murali Krishna, VGS Publishers, Vijayawada
03. Environmental Studies by Benny Joseph, Tata McGraw Hill Co, NewDelhi
04. Environmental Studies by PiyushMalaviya, Pratibha Singh, Anoopsingh: Acme Learning, New Delhi.

Course Code		L	T	P	Credits
1099173101	IPR AND PATENTS	0	2	0	0

Course Objectives:

- To know the importance of Intellectual property rights, which plays a vital role in advanced Technical and Scientific disciplines.
- Imparting IPR protections and regulations for further advancement, so that the students can familiarize with the latest developments.

Course Outcomes:

IPR Laws and patents pave the way for innovative ideas which are instrumental for inventions to seek Patents.
Studentget an insight on Copyrights, Patents and Software patents which are instrumental for further advancements

Unit-I: Introduction to Intellectual Property Rights (IPR):
Concept of Property - Introduction to IPR – International Instruments and IPR - WIPO - TRIPS – WTO -Laws Relating to IPR - IPR Tool Kit - Protection and Regulation - Copyrights and Neighboring Rights – Industrial Property – Patents - Agencies for IPR Registration – Traditional Knowledge –Emerging Areas of IPR - Layout Designs and Integrated Circuits – Use and Misuse of Intellectual Property Rights.

Unit-II: Copyrights and Neighboring Rights
Introduction to Copyrights – Principles of Copyright Protection – Law Relating to Copyrights - Subject Matters of Copyright – Copyright Ownership – Transfer and Duration – Right to Prepare Derivative Works –Rights of Distribution – Rights of Performers **–** Copyright Registration – Limitations – Infringement of Copyright – Relief and Remedy – Case Law - Semiconductor Chip Protection Act

Unit-IV: Trade Secrets
Introduction to Trade Secrets – General Principles - Laws Relating to Trade Secrets - Maintaining Trade Secret – Physical Security – Employee Access Limitation – Employee Confidentiality Agreements – Breach of Contract –Law of Unfair Competition – Trade Secret Litigation – Applying State La

Unit-V:Cyber Law and Cyber Crime
Introduction to Cyber Law – Information Technology Act 2000 - Protection of Online and Computer Transactions - E-commerce - Data Security – Authentication and Confidentiality - Privacy - Digital Signatures – Certifying Authorities - Cyber Crimes - Prevention and Punishment – Liability of Network Providers.
Relevant Cases Shall be dealt where ever necessary.

Reference Books:

1. Intellectual Property Rights (Patents & Cyber Law), Dr. A. Srinivas. Oxford University Press, New Delhi.
2. Deborah E.Bouchoux: Intellectual Property, Cengage Learning, New Delhi.
3. PrabhuddhaGanguli: Intellectual Property Rights, Tata Mc-Graw –Hill, New Delhi
4. Richard Stim: Intellectual Property, Cengage Learning, New Delhi.
5. Kompal Bansal &Parishit Bansal Fundamentals of IPR for Engineers, B. S. Publications (Press).
6. Cyber Law - Texts & Cases, South-Western's Special Topics Collections.
7. R.Radha Krishnan, S.Balasubramanian: Intellectual Property Rights, Excel Books. New Delhi.
8. M.Ashok Kumar and MohdIqbal Ali: Intellectual Property Rights, Serials Pub.

Course Code	CONSTITUTION OF INDIA (Audit Course)	L	T	P	C
		2	0	0	0

COURSE OBJECTIVES:

To provide basic information about Indian constitution. To identify individual role and ethical responsibility towards society. Introduction to the Constitution of India, The Making of the Constitution and Salient features of the Constitution. Preamble to the Indian Constitution Fundamental Rights & its limitations.

COURSE OUTCOMES:

CO's	At the end of the course, the student will have the ability to:	POs Mapped	Strength of mapping
CO1	Understand the importance of constitution, fundamental rights and duties	8	1
CO2	Understand the structure of executive, legislature and judiciary	8	1
CO3	Understand the autonomous nature of constitutional bodies like Supreme Court and high court controller and auditor general of India and election commission of India.	8	1
CO4	Understand the central and state relation financial and administrative.	8	1

UNIT- I

Introduction to Indian Constitution: Constitution' meaning of the term, Indian Constitution - constitutional history, Features - Citizenship, Preamble, Fundamental Rights and Duties

LEARNINGOUTCOMES: After completion of this unit student will

- Understand the concept of Indian constitution
- Apply the knowledge on directive principle of state policy
- Analyze the History, features of Indian constitution
- Evaluate Preamble Fundamental Rights and Duties

UNIT- II: .Union Government and its Administration Structure of the Indian Union. President: Role, power and position, PM and Council of ministers, ,LokSabha, RajyaSabha, The Supreme Court and High Court: Powers and Functions;

LEARNING OUTCOMES:-After completion of this unit student will

- Understand the structure of Indian government
- Differentiate between the state and central government
- Explain the role of President and Prime Minister
- Know the Structure of supreme court and High course

UNIT- III: State Government and its Administration Governor - Role and Position - CM and Council of ministers, State Secretariat: Organisation, Structure and Functions

LEARNING OUTCOMES:-After completion of this unit student will

- Understand the structure of state government
- Analyze the role Governor and Chief Minister
- Explain the role of state Secretariat
- Differentiate between structure and functions of state secrateriate

UNIT- IV: A.Local Administration - District's Administration Head - Role and Importance, Municipalities - Mayor and role - CEO of Municipal Corporation PachayatiRaj: Functions ZilaPanchayat, CEO ZilaPanchayat

LEARNING OUTCOMES:-After completion of this unit student will

- Understand the local Administration
- Compare and contrast district administration role and importance
- Analyze the role of Myer and elected representatives of Municipalities
- Evaluate Zillapanchayat block level organisation

UNIT- IV: Election Commission: Election Commission- Role of Chief Election Commissioner and Election Commissionerate State Election Commission:,

LEARNING OUTCOMES:-After completion of this unit student will

- Know the role of Election Commission apply knowledge
- Contrast and compare the role of Chief Election commissioner and Commissiononerate
- Analyze role of state election commission Evaluate various commissions of viz 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
3. J.A. Siwach, Dynamics of Indian Government & Politics
4. D.C. Gupta, Indian Government and Politics
5. H.M.Sreevai, Constitutional Law of India, 4th edition in 3 volumes (Universal Law Publication)
6. J.C. Johari, Indian Government andPolitics Hans
7. J. Raj IndianGovernment and Politics
8. M.V. Pylee, Indian Constitution Durga Das Basu, Human Rights in Constitutional Law, Prentice – Hall of India Pvt. Ltd.. New Delhi
9. Noorani, A.G., (South Asia Human Rights Documentation Centre), Challenges to Civil Right), Challenges to Civil Rights Guarantees in India, Oxford University Press 2012

Subject Code	RESEARCH METHODOLOGY AND IPR	L	T	P	C
2000191100		2	0	0	2

UNIT 1:

Meaning of research problem, Sources of research problem, Criteria Characteristics of a good research problem, Errors in selecting a research problem, Scope and objectives of research problem. Approaches of investigation of solutions for research problem, data collection, analysis, interpretation, Necessary instrumentations.

UNIT 2:

Effective literature studies approaches, analysis Plagiarism, Research ethics, Effective technical writing, how to write report, Paper Developing a Research Proposal, Format of research proposal, a presentation and assessment by a review committee.

UNIT 3:

Nature of Intellectual Property: Patents, Designs, Trade and Copyright. Process of Patenting and Development: technological research, innovation, patenting, development. International Scenario: International cooperation on Intellectual Property. Procedure for grants of patents, Patenting under PCT.

UNIT 4:

Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications.

UNIT 5:

New Developments in IPR: Administration of Patent System. New developments in IPR; IPR of Biological Systems, Computer Software etc. Traditional knowledge Case Studies, IPR and IITs.

References:

(1) Stuart Melville and Wayne Goddard, “Research methodology: an introduction for science & engineering students’”
(2) Wayne Goddard and Stuart Melville, “Research Methodology: An Introduction”
(3) Ranjit Kumar, 2nd Edition, “Research Methodology: A Step by Step Guide for beginners”
(4) Halbert, “Resisting Intellectual Property”, Taylor & Francis Ltd ,2007.
(5) Mayall, “Industrial Design”, McGraw Hill, 1992.
(6) Niebel, “Product Design”, McGraw Hill, 1974.
(7) Asimov, “Introduction to Design”, Prentice Hall, 1962.
(8) Robert P. Merges, Peter S. Menell, Mark A. Lemley, “ Intellectual Property in New Technological Age”, 2016.
(9) T. Ramappa, “Intellectual Property Rights Under WTO”, S. Chand, 2008