



ADHIYAMAAN COLLEGE OF ENGINEERING

(Autonomous)

Affiliated to Anna University – Chennai & Approved by AICTE – New Delhi.
Accredited by NAAC & NBA - UGC, New Delhi

COURSES OFFERED ON HUMAN VALUES AND PROFESSIONAL ETHICS

The programs offered in the various departments of the institute have incorporated courses on Human Values and Professional Ethics in the curriculum. The courses offered on Human Values and Professional Ethics includes the following Sociology, Ethics & Human Values Engineering Ethics.

S.N O	OFFERED DEPARTMENT	COURSE CODE	COURSE NAME	AY	SEM Offered	TYPE
1.	ARCHITECTURE	818ART02	PROFESSIONAL PRACTICE AND ETHICS	2021-2022	8	PROFESSIONAL ETHICS
2.	BIOMEDICAL ENGINEERING	718BME14	PROFESSIONAL ETHICS AND HUMAN VALUES	2021-2022	7	PROFESSIONAL ETHICS AND HUMAN VALUES
3.	BIOTECHNOLOGY	818BTT01	BIOETHICS, IPR AND ENTREPRENEURS HIP	2021-2022	8	PROFESSIONAL ETHICS
4.	BIOTECHNOLOGY	818BTE06	TOTAL QUALITY MANAGEMENT	2021-2022	8	HUMAN VALUES
5.	CHEMICAL	818CHT01	TOTAL QUALITY MANAGEMENT	2021-2022	8	PROFESSIONAL ETHICS AND HUMAN VALUES
6.	CHEMICAL	818CHE12	PROFESSIONAL ETHICS AND HUMAN VALUES	2021-2022	8	PROFESSIONAL ETHICS AND HUMAN VALUES
7.	CIVIL	318CET06	VALUE EDUCATION PROGRAM	2021-2022	3	HUMAN VALUES
8.	EEE	818EEE07	PROFESSIONAL ETHICS AND HUMAN VALUES	2021-2022	8	PROFESSIONAL ETHICS AND HUMAN VALUES
9.	ECE	618BAO03	PROFESSIONAL ETHICS AND HUMAN VALUES	2021-2022	6	PROFESSIONAL ETHICS AND HUMAN VALUES



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10	INFORMATION TECHNOLOGY	518BAO03	ENGINEERING ETHICS AND HUMAN VALUES	2021-2022	5	PROFESSIONAL ETHICS AND HUMAN VALUES
11	MECHANICAL	618MEE02	PROFESSIONAL ETHICS AND HUMAN VALUES	2021-2022	6	PROFESSIONAL ETHICS AND HUMAN VALUES



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DEPARTMENT OF ARCHITECTURE

818ART02

PROFESSIONAL PRACTICE AND ETHICS

L T P C
3 0 0 3

AIM

To make students to understand about the architectural profession and the role of professional bodies and statutory bodies.

OBJECTIVES

- To make student understand the various types of services that an architect can offer to society and the associated professional structure.
- To teach the students about the importance of code of conduct and ethics in professional practice and the mandatory provisions as per Architects Act 1972.
- To expose the students some of the important legal aspects and legislations which have abearing on the practice of architectural profession.
- To enable the students to grasp the advanced issues concerning professional practice suchas tendering, contracting including alternative practices in project execution and projectmanagement.
- To sensitize students on how disputes between professional and clients could be resolved through various types and levels of arbitration.

UNIT I INTRODUCTION TO ARCHITECTURAL PROFESSION

9 HRS

Importance of Architectural Profession – Role of Architects in Society – Registration of Architects– Architect’s office and its management – Location, organizational structure – Infrastructurerequirement, skills required, elementary accounts – Tax liabilities. Role of Indian Institute of Architects – Architects Act 1972 (intent, objectives, provisions withregard to architectural practice) – Council of Architecture (role and functions) – Importance ofethics in professional practice – Code of conduct for architects, punitive action for professional isconduct of an architect.

UNIT II ARCHITECT’S SERVICES, SCALE OF FEES & COMPETITIONS

9 HRS

Mode of engaging an architect – Comprehensive services, partial services and specialized services – Scope of work of an architect – Schedule of services – Scale of fees (Council ofArchitecture norms) – Mode of payment – Terms and conditions of engagement – Letter ofappointment.Importance of Architectural competitions – Types of competitions (open, limited, ideascompetition) – Single and two stage competitions – Council of Architecture guidelines forconducting Architectural competitions – National and International Competitions – Casestudies.



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UNIT III TENDER & CONTRACT

12 HRS

Tender - Definition - Types of Tenders - Open and closed tenders - Conditions of tender– Tender Notice - Tender documents - Concept of EMD - Submission of tender -Tender scrutiny - Tender analysis – Recommendations – Work order - E-tendering(advantages, procedure, conditions).Contract – Definition - Contract agreement - its necessity – Contents (Articles of Agreement, Terms and Conditions, Bills of Quantities and specifications, Appendix) – Certification of Contractors Bills at various stages. New trends in project formulation and different types of execution (BOT, DBOT, BOLT, BOO, etc.)- Execution of projects – The process (Expression of interest, Request for Proposal, Mode of Evaluation of Bids, Award of work)

UNIT IV LEGAL ASPECTS

8 HRS

Arbitration (Definition, Advantages of arbitration, Sole and joint arbitrators, Role of umpires, Award, Conduct of arbitration proceedings) – Arbitration clause in contract agreement (role of architect, excepted matters) Easement – (meaning, types of easements, acquisition, extinction and protection) Copy rights and patenting – (provisions of copy right acts in India and abroad, copy right in architectural profession) Consumer Protection Act (Intent, Architects responsibility towards his clients)

UNIT V LIABILITY OF ARCHITECTS

7 HRS

Types of Liabilities, Professional Duties and Conduct of Architects, Professional Negligence, Deficient Service and Exceptions, Insurance, Examples of Cases.

TOTAL: 45 Hours

OUTCOME

- Awareness of the architect's role in society, managements and its acts.
- To understand the services to do the profession with scale off charges and ethics.
- Understanding the tender and document and types of competition.
- Understanding the bye laws and duties of architect in the society.
- Understanding the conducts and duties and its liabilities.

TEXT BOOKS

1. Architects Act 1972. bPublications of Handbook on Professional practice by IIA. Publications of Council of Architecture-Architects (Professional conduct) Regulations 1989, Architectural Competition guidelines
2. Roshan Namavati, "Professional practice", Lakhani Book Depot, Mumbai 1984. Ar. V.S. Apte, "Architectural Practice and Procedure", Mrs. Padmaja Bhide, 2008 Arbitration Act, 2005 .J.J.Scott, "Architect's Practice", Butterworth, London, 1985

REFERENCES

1. Development Regulations of Second Master Plan for Chennai Metropolitan Area -2026. T.N.D.M. Buildings rules, 1972. Consumer Protection Act, 201



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DEPARTMENT OF BIOMEDICAL ENGINEERING

Course Code	Course Title	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CA	EA	Total
718BME14	PROFESSIONAL ETHICS AND HUMAN VALUES	3	0	0	3	50	50	100

PROFESSIONAL ETHICS AND HUMAN VALUES:

Designation: Professional Elective

Pre-requisites: Nil

Course Objectives:

1. To generate an awareness on Human Values
2. To explore the Senses of 'Engineering Ethics
3. To instill Moral , Social Values and Loyalty
4. To realize Safety ,Responsibilities appreciate the rights of Others
5. To Analyze the various global issues

UNIT I HUMAN VALUES

9

Morals, Values and Ethics – Integrity – Work Ethic – Service Learning – Civic Virtue – Respect for Others – Living Peacefully – caring – Sharing – Honesty – Courage – Valuing Time – Co-operation – Commitment – Empathy – Self-Confidence – Character – Spirituality

UNIT II ENGINEERING ETHICS

9

Senses of 'Engineering Ethics' - variety of moral issued - types of inquiry - moral dilemmas - moral autonomy - Kohlberg's theory - Gilligan's theory - consensus and controversy – Models of Professional Roles - theories about right action - Self-interest - customs and religion - uses of ethical theories

UNIT III ENGINEERING AS SOCIAL EXPERIMENTATION

9

Engineering as experimentation - engineers as responsible experimenters - codes of ethics - a balanced outlook on law - the challenger case study

UNIT IV SAFETY, RESPONSIBILITIES AND RIGHTS

9

Safety and risk - assessment of safety and risk - risk benefit analysis and reducing risk - the



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three mile island and chernobyl case studies. Collegiality and loyalty - respect for authority - collective bargaining - confidentiality - conflicts of interest - occupational crime - professional rights - employee rights -Intellectual Property Rights (IPR) - discrimination.

UNIT V GLOBAL ISSUES

9

Multinational corporations - Environmental ethics - computer ethics - weapons development - engineers as managers-consulting engineers-engineers as expert witnesses and advisors -moral leadership-sample code of Ethics like ASME, ASCE, IEEE, Institution of Engineers(India), Indian Institute of Materials Management, Institution of electronics and telecommunication engineers(IETE),India, etc.

TOTAL: 45 PERIODS

Course Outcomes:

At the end of the course, the student should be able to:

1. Generate an awareness on Human Values and Ethics
2. Analyze the theories in Senses of 'Engineering Ethics
3. Inculcate Moral , Social Values and Loyalty
4. Identify the Safety ,Responsibilities and Appreciate the rights of Others
5. Reflect on the various global issues and sample code of Ethics.

TEXTBOOK

1. Mike Martin and Roland Schinzinger, “Ethics in Engineering”, McGraw-Hill, New York, 1996.
2. Govindarajan M, Natarajan S, Senthil Kumar V. S, “Professional Ethics and Human Values”, Prentice Hall of India, New Delhi, 2004.

REFERENCES

1. Charles D. Fleddermann, “Engineering Ethics”, Pearson Education/ Prentice Hall, New Jersey, 2004 (Indian Reprint)
2. Charles E Harris, Michael S. Protchard and Michael JRabins, “Engineering Ethics – Concepts and Cases”, Wadsworth Thompson Learning, United States, 2000 (Indian Reprint now available)
3. John R Boatright, “ Ethics and the Conduct of Business”, Pearson Education, New Delhi, 2003.
4. Edmund G Seebauer and Robert L Barry, “Fundamentals of Ethics for Scientists And Engineers”, Oxford University Press, Oxford, 2001.
5. **Dr. Naagarazan, RS** ,“Professional Ethics and Human Values”, New Age International (P) Ltd Publishers 2016



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DEPARTMENT OF BIOTECHNOLOGY

818BTT01	BIOETHICS, IPR AND ENTREPRENEURSHIP	L	T	P	C
		3	0	0	3

UNIT I **HISTORY OF BIOETHICS** **9**

Bioethics as a discipline – philosophical reflections on experimenting with human subjects - active and passive euthanasia; culture assumption in the history of Bioethics– medical ethics in India and America.

UNIT II **METHODS OF ETHICAL ANALYSIS** **9**

Ethical reasoning- philosophical, clinical and cultural dimensions; challenge of ethical relativism; methods of philosophical theories and principles- Equality and its implications; methods of casuistry and methods of narrative approaches

UNIT III **ETHICS IN BIOTECHNOLOGY** **9**

Ethics committee (hospital) – Inner working of an ethics committee; ethics consultation – skills, roles and training; Biosafety regulation-national and international guidelines; rDNA guidelines-guidelines for rDNA research activities, mechanism of implementation of biosafety guidelines

UNIT IV **PATENTING, IPR AND APPLICATIONS** **9**

Introduction to Intellectual property rights, types: patents, copy right, trade mark, trade secret, geographical indications, importance of IPR, Patenting and non-patenting life, TRIPS

UNIT V **ENTREPRENEURSHIP IN BIOTECHNOLOGY** **9**

The Significance of the Biotechnology Entrepreneur; The Integration of Two Distinctly Different Disciplines; Biotechnology Entrepreneurship Versus General Entrepreneurship; Entrepreneurship and Intrapreneurship; Essential Biotechnology Entrepreneurial Characteristics; Four Backgrounds of Biotechnology Entrepreneurs

TOTAL HOURS 45 PERIODS

COURSE OUTCOMES

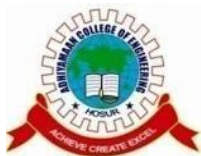
Upon Completion of this course, students will be able to:

CO: 1 Touches on fundamental values, such as human dignity and the genetic integrity of humanity.

CO:2 Serve basic human needs such as human health, food and a safe environment,

CO:3 Raise human rights issues such as access to health and benefits from scientific progress

CO: 4 Concerns over equitable access to the fruits of new technologies, the consent of those involved in research, and protection of the environment.



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CO:5 Obtaining a clear information on the entrepreneurship and understand their economic values

TEXT BOOKS

1. Bioethics , second edition , Nancy S.Jecker , Albert R.Jonsen,RobertA,Pearlman.Jones and BartlettPublishers,2003.
2. Singh K, “ Intellectual Property Rights on Biotechnology”, BCIL, New Delhi,2001.
3. M.K. Sateesh, “Bioethics and Biosafety”, I.K. International Publishing House pvt. Ltd, 2008.

REFERENCE BOOKS

1. Entrepreneurship Development – Poornima. M. Charantimath – Small Business Enterprises – PearsonEducation – 2006
2. Sasson A, “Biotechnologies and Development”, UNESCO Publications, 1998
3. Sasson A, “Biotechnologies in Developing countries present and future”, UNESCOPublishers, 1993

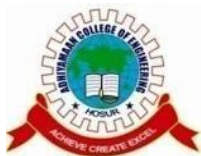
E BOOKS/ WEBLINKS

1. Biotechnology Entrepreneurship: Starting, Managing, and Leading Biotech by Craig Shimasaki

OBJECTIVES

At the end of the course, the students should be able to:

- To create awareness about IPR and Engineering ethics
- To follow professional ethics and practices in their careers
- To create awareness and responsibilities about the environment and society
- To enhance ethical knowledge
- To gain knowledge related to the ethical issue related to biotechnology



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DEPARTMENT OF CHEMICAL ENGINEERING

818CHT01

TOTAL QUALITY MANAGEMENT

L T P C

3 0 0 3

COURSE OBJECTIVES

- To understand the Total Quality Management concept and principles, various tools available to achieve Total Quality Management.
- To understand the statistical approach for quality control.
- To create an awareness about ISO and QS certification process and its need for the industries.

UNIT – I INTRODUCTION

09 Hours

Definition of Quality, Dimensions of Quality, Quality Planning, Quality costs - Analysis Techniques for Quality Costs, Basic concepts of Total Quality Management, Historical Review, Principles of TQM, Leadership – Concepts, Role of Senior Management, Quality Council, Quality Statements, Strategic Planning, Deming Philosophy, Barriers to TQM Implementation.

UNIT – II TQM PRINCIPLES

09 Hours

Customer satisfaction – Customer Perception of Quality, Customer Complaints, Service Quality, Customer Retention, Employee Involvement – Motivation, Empowerment, Teams, Recognition and Reward, Performance Appraisal, Benefits, Continuous Process Improvement – Juran Trilogy, PDSA Cycle, 5S, Kaizen, Supplier Partnership – Partnering, sourcing, Supplier Selection, Supplier Rating, Relationship Development, Performance Measures – Basic Concepts, Strategy, Performance Measure.

UNIT – III STATISTICAL PROCESS CONTROL (SPC)

09 Hours

The seven tools of quality, Statistical Fundamentals – Measures of central Tendency and Dispersion, Population and Sample, Normal Curve, Control Charts for variables and attributes, Process capability, Concept of six sigma, New seven Management tools.

UNIT – IV TQM TOOLS

09 Hours

Benchmarking – Reasons to Benchmark, Benchmarking Process, Quality Function Deployment (QFD) – House of Quality, QFD Process, Benefits, Taguchi Quality Loss Function, Total Productive Maintenance (TPM) – Concept, Improvement Needs, FMEA – Stages of FMEA

UNIT – V QUALITY SYSTEMS

09 Hours

Need for ISO 9000 and Other Quality Systems, ISO 9000:2000 Quality System – Elements, Implementation of Quality System, Documentation, Quality Auditing, QS 9000, ISO 14000 – Concept, Requirements and Benefits.

TOTAL: 45 PERIODS



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COURSE OUTCOMES

By the end of the course students will be able to

- CO1 Understand definition of quality, analysis techniques for quality costs, role of senior management and its functions.
- CO2 Understand the principles of TQM
- CO3 Understand the importance of seven tools of quality.
- CO4 Apply benchmarking tools.
- CO5 Explain importance of quality systems and need of quality systems.

TEXT BOOKS:

1. Dale H. Besterfield, Hemant Urdhwareshe, Mary Besterfield-Sacre, Carol Besterfield-Michna, Rashmi Urdhwareshe, Glen H. Besterfield, Total Quality Management, Pearson Education Asia, 3rd Edition, 2010.
2. James R.Evans& William M.Lidsay, The Management and Control of Quality, 6th Edition, South-Western (Thomson Learning), 2004.

REFERENCES:

1. Feigenbaum.A.V., Total Quality Management, McGraw Hill, 1991.
2. Oakland.J.S. Total Quality Management, Butterworth – Heinemann Ltd., Oxford,1989.
3. Narayana V and Sreenivasan, N.S., Quality Management – Concepts and Tasks, New Age International, 2007.
4. Zeiri. Total Quality Management for Engineers, Wood Head Publishers, 1991.



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818CHE04 **ENTREPRENEURSHIP DEVELOPMENT** **L T P C**
3 0 0 3

COURSE OBJECTIVES

- To give fundamentals of entrepreneurship and enhance the creativity to develop new chemical product and processes.
- To gain knowledge about Technological investment transfer of technology and characteristics of entrepreneur.
- To create an awareness about production efficiency and reduce sickness.

UNIT – I INTRODUCTION

09
Hour
s

Introduction – productivity in India – resources – availability and mobilization – land, labour and capital – industrial growth in five year plan period – Human resource development

UNIT – II TECHNOLOGY AND INVESTMENT

09
Hour
s

Technology and investment – industrial climate in India – Technological investment transfer of technology, factors influencing technical investment, NRI, capital market in India, technocrats, role of educational institutions – psychology of Indian technocrats as entrepreneur, characteristics of entrepreneur.

UNIT – III ENTREPRENEURSHIP DEVELOPMENT PROGRAMS

09
Hour
s

Leadership – attitudes and aptitudes – qualities and development – risk taking and decision making – personal involvement value engineering techniques – value added products – value adding techniques – cost reduction techniques – waste control – alternate product application, functional value of the product – improvement and expansion.

UNIT – IV FINANCING

09
Hour
s

Procedures for getting subsidies & licenses from both centre & state governments. - key elements of developing project report for getting financial assistance-Institutions involved in getting financial assistance.

UNIT – V MARKETING

09
Hour
s

Marketing – India and International markets – market surveys – strategies and development of markets – need based marketing techniques. Business laws and regulations – company laws of India – taxation laws – labor laws – factories act – ESI act – workman compensation act.

TOTAL: 45



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PERIODS

COURSE OUTCOMES

By the end of the course students will be able to

- CO1 Understand the principle of Entrepreneurship and enhance the creativity to develop new chemical product and processes.
- CO2 Analyze source of finance and financial management of new enterprises and prepare business plans.
- CO3 Apply the principles of operation management to improve production efficiency and reduce sickness
- CO4 Acquire sound knowledge about applications of various instruments in the required fields.
- CO5 Apply importance of Human resource development, Leadership, Procedures for getting subsidies & Marketing.

TEXT BOOKS:

1. Meredith G, Nelson R.E., and P.A. Nech. The Practice of Entrepreneurship, I.L.O Published Geneva, 1982
2. Dirk Larkran, R. Profit Improvement Technology, College Book Publishing Company, Canada, 1981.

REFERENCES:

1. Sukumar Bhattacharya, Indian Direct, Taxes Wadhwa and Co., 1983.
2. Charantimath, Entrepreneurship Development & Small Business Enterprise, 1stEdition, Pearson Publications, 2009
3. Srivasthava, K.D., Commentaries on Factories Act, 1948.
4. Khanka S.S, Entrepreneurial Development, 16th Edition, Sultan Chand & Co., 2010
5. Vasant Desai, Dynamics of Entrepreneurial Development and Management, 13th Edition, Himalaya Publishing House, 2009.



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DEPARTMENT OF CIVIL ENGINEERING

		L	T	P	C
318CET06	VALUE EDUCATION PROGRAM	3	0	0	3

OBJECTIVES

- Teach definition and classification of values.
- Explain Purusartha.
- Describe Sarvodaya idea.
- Summarize sustenance of life.
- Conclude views of hierarchy of values.

UNIT-1 DEFINITION AND CLASSIFICATION OF VALUES 12

DefInition-values-types of values – changing concepts of values values through various generous of literature

UNIT-2 INDIVIDUAL AND GROUP BEHAVIOUR 12

Personal values, self strength (self confidence), self assesments – self reliance, self discipline – self determination – self restraintment – humidity – sympathy- compassion- attitude and forgiveness

UNIT-3 SOCIETIES IN PROGRAM

Defenition – communities – ancient and model agents – sense of survival – security – desire for comfort – sense of belongings – social consequences and responsibility

UNIT-4 SUSTENANCE OF LIFE

The Problem of Sustenance of value in the process of Social, Political and Technological Changes

UNIT-5 ENGINEERING ETHICS

Society of Engineers – care of ethics – Ethical issues – ethical and inethical practice – case studies – situational decision

COURSE OUTCOMES:After undergoing the course, the students will have ability to

Co 1: Able to understand definition and classification of values.



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- Co 2: Able to understand purusartha
Co 3: Able to understand sarvodaya idea.

- Co 4: Able to understand sustenance of life.
Co 5: COAble to understand views of hierarchy of values.

TEXTBOOK:

1. AwadeshPradhan :MahamanakeVichara. (B.H.U., Vanarasi-2007)
2. Little, William, : An Introduction of Ethics (Allied Publisher, Indian Reprint 1955)

REFERENCES

1. William, K Frankena : Ethics (Prentice Hall of India, 1988)



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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Department	Electronics & Communication Engineering	Programme	B.E-ECE	Regulation	2018			
Semester VII								
Course Code	Course Name	Hours/Week			Credit	Maximum Marks		
		L	T	P	C	CA	EA	Total
618BA003	Professional Ethics And Human Values	3	0	0	3	50	50	100
Prerequisite	NIL							
Course Objectives	<p><i>At the end of the course, the students should be able to:</i></p> <ul style="list-style-type: none"> • Distinguish the morality, integrity, honesty and spirituality. • Explain the various theory which portray about the engineering ethics. • Illustrate the industrial standard and responsibility of engineers. • Discover the safety and rights of human in the working place. • Drive the professional to aware of the global issues in the technological society 							
UNIT I	HUMAN VALUES							9
Morals- Values and Ethics – Integrity – Work Ethic – Service Learning – Civic Virtue – Respect for Others – Living Peacefully – caring – Sharing – Honesty – Courage – Valuing Time – Co-operation – Commitment – Empathy – Self-Confidence – Character – Spirituality.								
UNIT II	ENGINEERING ETHICS							9
Senses of 'Engineering Ethics' - variety of moral issued - types of inquiry – moral dilemmas - moral autonomy - Kohlberg's theory - Gilligan's theory - consensus and controversy – Models of Professional Roles - theories about right action - Self-interest - customs and religion - uses of ethical theories.								
UNIT III	ENGINEERING AS SOCIAL EXPERIMENTATION							9
Engineering as experimentation - engineers as responsible experimenters - codes of ethics –industrial standards- a balanced outlook on law - the challenger case study								
UNIT IV	SAFETY- RESPONSIBILITIES AND RIGHTS							9
Safety and risk - assessment of safety and risk - risk benefit analysis and reducing risk - the three mile island and chernobyl case studies- Collegiality and loyalty - respect for authority - collective bargaining - confidentiality - conflicts of interest – occupational crime - professional rights - employee rights - Intellectual Property Rights (IPR) - discrimination.								
UNIT V	GLOBAL ISSUES							9
Multinational corporations -Corporate Social responsibility- Environmental ethics - computer ethics – weapons development - engineers as managers-consulting engineers-engineers as expert witnesses and advisors -moral leadership-sample code of Ethics like ASME- ASCE- IE- E-E- Institution of Engineers (IEI) India- Institution of Electronics and Telecommunication engineers(IETE) India-								
Total Hours								45
Course Outcomes	<p><i>Upon Completion of this course, students will be able to :</i></p> <ul style="list-style-type: none"> • Extrapolate and make awareness on the morality, integrity, honesty and spirituality. • Judgement and assistance based on the ethical theory to tackle the moral issues. • Professional reputation is witnessed due to the balanced outlook on law. • Develop safety and responsibilities for the development of the employee. • Drive to be a moral leader with the analysis of the global issues in the engineering society. 							
Text Books								
1	Mike Martin and Roland Schinzinger- “Ethics in Engineering”- Tata McGraw-Hill- - 1996-3 e							
2	Govindarajan M- Natarajan S- Senthil Kumar V- S- “Engineering Ethics”- Prentice Hall of India- New Delhi- 2004.							

Dr. M.G.R. Nagar, Hosur – 635 130, Krishnagiri (Dt), Tamil Nadu, India. Phone: Office: 04344 – 260570, 261001-3, 261034. Fax: 04344 – 260573 Website : www.adhiyamaan.ac.in E-mail : principal@adhiyamaan.ac.in.



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Reference Books

1	R-S Nagarajan -"A textbook on Professional Ethics and Human Values" New Age International Publishers- New Delhi 2006.
2	Charles D- Fleddermann- "Engineering Ethics"- Pearson Education / Prentice Hall- New Jersey- 2004 (Indian Reprint).
3	Charles E Harris- Michael S- Protchard and Michael J Rabins- "Engineering Ethics – Concepts and Cases"- Wadsworth Thompson Learning- United States- 2000 (Indian Reprint now available).
4	John R Boatright- "Ethics and the Conduct of Business"- Pearson Education- New Delhi- 2003.



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DEPARTMENT OF INFORMATION TECHNOLOGY

Course Code	Course Title	Hours / Weeks			Credits	Maximum Marks		
		L	T	P	C	CA	EA	Total
518BAO03	ENGINEERING ETHICS AND HUMAN VALUES	3	0	0	3	50	50	100

COURSE OBJECTIVE(S):

- Understand the moral values that ought to guide engineering profession or practice.
- Resolving moral issues in engineering.
- Justifying the moral judgements in engineering. It deals with set of moral problems and issues connected with engineering.

UNIT-I HUMAN VALUES

10

Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self confidence – Character – Spirituality

UNIT-II ENGINEERING ETHICS

9

Scope 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 - Self-interest – Ethical Egoism.

UNIT- III ENGINEERING AS SOCIAL EXPERIMENTATION

9

Engineering as Experimentation – Engineers as responsible Experimenters – Codes of Ethics – A Balanced Outlook on Law – The Challenger Case Study.

UNIT-IV SAFETY, RESPONSIBILITIES AND RIGHTS

9

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk – The Three Mile Island and Chernobyl Case Studies – Team Work and Loyalty - Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest –



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Occupational Crime – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination

UNIT-V GLOBAL ISSUES 8

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development – Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors – Moral Leadership – Sample Code of Conduct.

TOTAL: 45

COURSE OUTCOMES:

At the end of the course, the students are able to

CO1: It ensures students sustained happiness through identifying the essentials of human values and skills.

CO2: It facilitates a correct understanding between profession and happiness

CO3: It helps students understand practically the importance of trust, mutually satisfying human behavior

CO4: It helps students enriching interaction with nature.

CO5: Ability to develop appropriate technologies and management patterns to create harmony in professional and personal life.

TEXT BOOKS:

1. Mike W. Martin and Roland Schinzinger, “Ethics in Engineering”, Tata McGraw Hill, New Delhi, 4th Edition, 2010.

REFERENCES:

1. Charles B. Fleddermann, “Engineering Ethics”, Pearson Prentice Hall, New Jersey, 2004.
2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, “Engineering Ethics – Concepts and Cases”, Thompsonwadsworth, A Division of Thomson Learning Inc., United States, 2000.
3. John R Boatright, “Ethics and the Conduct of Business”, Pearson Education, New Delhi, 2003
4. Edmund G Seebauer and Robert L Barry, “Fundamentals of Ethics for Scientists and Engineers”, Oxford University Press, Oxford, 2001.



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DEPARTMENT OF ELECTRICAL ENGINEERING

818EEE07	PROFESSIONAL ETHICS AND HUMAN VALUES	L	T	P	C
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PREREQUISITE :Nil

COURSE OBJECTIVES

- To create an awareness on Human Values.
- To Analyze the Senses of 'Engineering Ethics'.
- To instill Moral and Social Values and Loyalty.
- To appreciate the rights of others.
- To Analyze the various global issues.

UNIT I HUMAN VALUES 9

Morals, Values and Ethics – Integrity – Work Ethic – Service Learning – Civic Virtue – Respect for Others – Living Peacefully – caring – Sharing – Honesty – Courage – Valuing Time – Co-operation – Commitment – Empathy – Self-Confidence – Character – Spirituality.

UNIT II ENGINEERING ETHICS 9

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 9

Engineering as experimentation - engineers as responsible experimenters - codes of ethics - balanced outlook on law - the challenger case study.

UNIT IV SAFETY, RESPONSIBILITIES AND RIGHTS 9

Safety and risk - assessment of safety and risk - risk benefit analysis and reducing risk - the threemile island and chernobyl case studies. Collegiality and loyalty - respect for authority - collective bargaining - confidentiality - conflicts of interest - occupational crime - professional rights - employee rights - Intellectual Property Rights (IPR) - discrimination.

UNIT V GLOBAL ISSUES 9

Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development

-Engineers as Managers – Consulting Engineers – Engineers as Expert Witnesses and Advisors Moral Leadership – Code of Conduct – Corporate Social Responsibility.

TOTAL:45 PERIODS



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COURSE OUTCOMES

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

CO1	Create an awareness on Human Values.
CO2	Analyze the Senses of 'Engineering Ethics'.
CO3	Instill Moral and Social Values and Loyalty.
CO4	Appreciate the rights of Others.
CO5	Analyze the various global issues.

TEXT BOOKS

1. Mike Martin and Roland Schinzinger, "Ethics in Engineering", McGraw-Hill, New York 1996.
2. Govindarajan M, Natarajan S, Senthil Kumar V. S, "Engineering Ethics", Prentice Hall of India, New Delhi, 2004.

REFERENCES:

1. Charles D. Fleddermann, "Engineering Ethics", Pearson Education / Prentice Hall, New Jersey, 2004 (Indian Reprint)
2. Charles E Harris, Michael S. Protchard and Michael J Rabins, "Engineering Ethics –Concepts and Cases", Wadsworth Thompson Learning, United States, 2000 (Indian Reprint)
3. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, New Delhi, 2003.
4. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, Oxford, 2001



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COURSE OUTCOMES

- CO1: The students will have awareness on engineering ethics and human values to instill moral and social values.
- CO2: Students will be able to know about the importance and outcomes of experimentation of ethics with a case study.
- CO3: Students will be able to know about assessment of safety and risk.
- CO4: The student will have an ability to develop the knowledge in the area of collegiality, loyalty, confidentiality and IPR.
- CO5: The students are aware of about the global issues related to engineering.

TEXT BOOKS

1. Charles E Harris, Michael S Pritchard and Michael J Rabins, “Engineering Ethics - Concepts and Cases”, Wardsworth Publishing, 6th Edition, 2018.
2. Mike Martin and Roland Schinzinger, “Ethics in Engineering”, McGraw Hill, New York, 4th Edition, 2017.

REFERENCE BOOKS

1. John R Boatright, “Ethics and the Conduct of Business”, Pearson Education, 8th Edition, 2016.
2. M. Govindarajan, S.Natarajan, V.S. Senthil Kumar, “Engineering Ethics”, Prentice Hall of India Pvt. Ltd., New Delhi, 2013.
3. Subramaniam R, “Professional Ethics”, Oxford University Press, New Delhi, 2013.
4. Laura P Hartman and Joe Desjardins, “Business Ethics: Decision making for personal integrity and social responsibility”, McGraw Hill Education India Pvt. Ltd., New Delhi, 2013.
5. Charles D Fleddermann, “Engineering Ethics”, Prentice Hall, New Mexico, 4th Edition, 2011.
6. Edmund G Seebauer and Robert L Barry, “Fundamentals of Ethics for Scientists and Engineers”, Oxford University Press, 2008.
7. Gail D Baura, “Engineering Ethics: An Industrial Perspective”, Elsevier Academic Press, 2006.
8. Prof. (Col) P S Bajaj and Dr. Raj Agrawal, “Business Ethics - An Indian Perspective”, Dreamtech Press, 2004.
9. David Ermann and Michele S Shauf, “Computers, Ethics and Society”, Oxford University Press, 2003.