



MOHAMED SATHAK ENGINEERING COLLEGE

KILAKARAI – 623 806



**COURSES ON HUMAN  
VALUES AND  
PROFESSIONAL ETHICS**

The Institution offers courses on value education for human values and profession ethics as prescribed by the Anna University. As an Affiliated Institution, We are following the curriculum and syllabi of Anna University. The University curriculum and syllabus contains the courses for human values and professional ethics.

Value Education infuses the values of individual, family, institution and society that make the students to face the society confidently. The students learn Value Education during their four year courses. Students learn about values such as Integrity, Honesty, work ethic, Respect for others, Living peacefully, Caring, Sharing, Courage, Time Management, Cooperation, Commitment, Empathy, Sympathy, Courteousness, Self-confidence, Self-discipline, respecting other religions, character-building, Spiritualism, are inculcated among the students.

The Syllabus of the same is as given below:

<b>Sr.No.</b>	<b>Name of the Subject</b>	<b>Course</b>
1	PROFESSIONAL ETHICS IN ENGINEERING	All B.E & B.Tech Courses
2	WASTE WATER ENGINEERING	B.E-Civil Engineering
3	WATER AND WASTE WATER ANALYSIS LABORATORY	B.E-Civil Engineering
4	PROFESSIONAL PRACTICE AND ETHICS	B.Arch-Architecture
5	HUMAN RESOURCE MANAGEMENT	M.B.A
6	INDUSTRIAL RELATIONS AND LABOUR WELFARE	M.B.A
7	LABOUR LEGISLATIONS	M.B.A

**GE6075**

**PROFESSIONAL ETHICS IN ENGINEERING**

**L T P C**

**3 0 0 3**

**OBJECTIVES:**

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

**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 – Introduction to Yoga and meditation for professional excellence and stress management.

**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 –A Balanced Outlook on Law.

**UNIT IV SAFETY, RESPONSIBILITIES AND RIGHTS 9**

Safety and Risk – Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk - Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – 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 –Code of Conduct – Corporate Social Responsibility

**TOTAL: 45 PERIODS**

**OUTCOMES :**

Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society

**TEXTBOOKS:**

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

**REFERENCES:**

1. Charles B. Fleddermann, "Engineering Ethics", Pearson Prentice Hall, New Jersey, 2004.
2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, "Engineering Ethics – Concepts and Cases", Cengage Learning, 2009
3. John R Boatright, "Ethics and the Conduct of Business", Pearson Education, New Delhi, 2003
4. Edmund G Seebauer and Robert L Barry, "Fundamentals of Ethics for Scientists and Engineers", Oxford University Press, Oxford, 2001
5. Laura P. Hartman and Joe Desjardins, "Business Ethics: Decision Making for Personal Integrity and Social Responsibility" Mc Graw Hill education, India Pvt. Ltd., New Delhi 2013.
6. World Community Service Centre, " Value Education", Vethathiri publications, Erode, 2011

**Web sources:**

1. [www.onlineethics.org](http://www.onlineethics.org)
2. [www.nspe.org](http://www.nspe.org)
3. [www.globalethics.org](http://www.globalethics.org)
4. [www.ethics.org](http://www.ethics.org)

**EN8592****WASTE WATER ENGINEERING****L T P C****3 0 0 3****OBJECTIVE:**

The objectives of this course is to help students develop the ability to apply basic understanding of physical, chemical, and biological phenomena for successful design, operation and maintenance of sewage treatment plants.

**UNIT I PLANNING AND DESIGN OF SEWERAGE SYSTEM****9**

Characteristics and composition of sewage - population equivalent -Sanitary sewage flow estimation – Sewer materials – Hydraulics of flow in sanitary sewers – Sewer design – Storm drainage-Storm runoff estimation – sewer appurtenances – corrosion in sewers – prevention and control – sewage pumping-drainage in buildings-plumbing systems for drainage - Rain Water ting.

**UNIT II PRIMARY TREATMENT OF SEWAGE****9**

Objectives – Unit Operations and Processes – Selection of treatment processes -- Onsite sanitation - Septic tank- Grey water harvesting – Primary treatment – Principles, functions and design of sewage treatment units - screens - grit chamber-primary sedimentation tanks – Construction, Operation and Maintenance aspects.

### **UNIT III SECONDARY TREATMENT OF SEWAGE**

**9**

Objectives – Selection of Treatment Methods – Principles, Functions, - Activated Sludge Process and Extended aeration systems -Trickling filters– Sequencing Batch Reactor(SBR) – Membrane Bioreactor - UASB – Waste Stabilization Ponds – - Other treatment methods -Reclamation and Reuse of sewage - Recent Advances in Sewage Treatment – Construction, Operation and Maintenance aspects.

### **UNIT IV DISPOSAL OF SEWAGE**

**9**

Standards for– Disposal - Methods – dilution – Mass balance principle - Self purification of river- Oxygen sag curve – deoxygenation and reaeration - Streeter–Phelps model - Land disposal – Sewage farming – sodium hazards - Soil dispersion system.

### **UNIT V SLUDGE TREATMENT AND DISPOSAL**

**9**

Objectives - Sludge characterization – Thickening - Design of gravity thickener- Sludge digestion – Standard rate and High rate digester design- Biogas recovery – Sludge Conditioning and Dewatering – Sludge drying beds- ultimate residue disposal – recent advances.

**TOTAL: 45 PERIODS**

#### **OUTCOMES:**

The students completing the course will have

- An ability to estimate sewage generation and design sewer system including sewage pumping stations ☐☐
- The required understanding on the characteristics and composition of sewage, self- purification of streams ☐☐
- An ability to perform basic design of the unit operations and processes that are used in sewage treatment ☐☐☐
- Understand the standard methods for disposal of sewage.
- Gain knowledge on sludge treatment and disposal.

#### **TEXTBOOKS:**

1. Garg, S.K., Environmental Engineering Vol. II, Khanna Publishers, New Delhi, 2015.
2. Duggal K.N., “Elements of Environmental Engineering” S.Chand and Co. Ltd., New Delhi, 2014.
- 3, Punmia, B.C., Jain, A.K., and Jain.A.K., Environmental Engineering, Vol.II, Laxmi Publications, 2010.

**REFERENCES:**

1. Manual on Sewerage and Sewage Treatment Systems Part A,B and C, CPHEEO, Ministry of Urban Development, Government of India, New Delhi, 2013.
2. Metcalf and Eddy- Wastewater Engineering–Treatment and Reuse, Tata Mc.Graw-Hill Company, New Delhi, 2010.
3. Syed R. Qasim “Wastewater Treatment Plants”, CRC Press, Washington D.C.,2010
4. Gray N.F, “Water Technology”, Elsevier India Pvt. Ltd., New Delhi, 2006.

**CE8512                      WATER AND WASTE WATER ANALYSIS LABORATORY                      L T P C**  
**0 0 4 2**

**COURSE OBJECTIVES:**

- To analyse the physical, chemical and biological characteristics of water and wastewater
- To quantify the dosage requirement for coagulation process
- To study the growth of micro-organism and its quantification
- To quantify the sludge

**Course Content:**

1. Physical, Chemical and biological characteristics of water and wastewater
2. Jar test
3. Chlorine demand and residual test
4. Growth of micro-organism

**COURSE OUTCOME:**

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

- Quantify the pollutant concentration in water and wastewater
- Suggest the type of treatment required and amount of dosage required for the treatment
- Examine the conditions for the growth of micro-organisms

**TOTAL: 60 PERIODS**

**List of Experiments:**

1. Determination of pH, Turbidity and conductivity
2. Determination of Hardness
3. Determination of Alkalinity and Acidity
4. Determination of Chlorides
5. Determination of Phosphates and Sulphates
6. Determination of iron and fluoride

7. Determination of Optimum Coagulant dosage
8. Determination of residual chlorine and available chlorine in bleaching powder
9. Determination of Oil, and Grease
10. Determination of suspended, settleable, volatile and fixed solids
11. Determination Dissolved Oxygen and BOD for the given sample
12. Determination of COD for given sample
13. Determination of SVI of Biological sludge and microscopic examination
14. Determination of MPN index of given water sample

**AR8802**

**PROFESSIONAL PRACTICE AND ETHICS**

**L T P/S C**

**3 0 0 3**

**OBJECTIVES**

- To give an introduction to the architectural profession and the role of professional bodies and statutory bodies as well as ethics of the profession.
- To give familiarity with basic aspects of running an architectural practice.
- To give exposure to the processes involved in taking up and completing an architectural project.
- To inform about legal aspects and legislations associated with the profession.
- To give exposure to the larger implications of professional practice in the globalised world today.

**UNIT I INTRODUCTION TO ARCHITECTURAL PROFESSION CODE OF CONDUCT AND ETHICS**

**9**

Architectural profession and role of architects in society. Registration of architects. Role of the Indian Institute of Architects. Architects Act 1972- intent, objectives, provisions with regard to architectural practice. Council of Architecture- role and functions. Importance of ethics in professional practice. Code of conduct for architects. Punitive action for professional misconduct of an architect. Architecture as a professional service towards clients. Architect's office and its management - organisational structure, infrastructure requirement, skills required, elementary accounts, tax liabilities. Setting up architectural practice.

**UNIT II ARCHITECT'S SERVICES, SCALE OF FEES & COMPETITIONS**

**9**

Mode of engaging an architect. Comprehensive services, partial services and specialised services. Scope of work of an architect. Schedule of services. Scale of fees - Council of Architecture norms. Mode of payment. Terms and conditions of engagement. Letter of appointment. Importance of Architectural competitions. Types of competitions - open, limited, ideas competition, single and two stage competitions. Council of Architecture guidelines for conducting architectural competitions. National and international Competitions. Case studies.

### **UNIT III PROJECT MANAGEMENT - TENDER & CONTRACT**

**12**

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 and its necessity. Contents - articles of agreement, terms and conditions, bills of quantities and specifications, appendix. Certification of contractors. Bills at different stages. New trends in project formulation and different types of execution - BOT, DBOT, BOLT, BOO, etc., Role of architect in project execution stage.

### **UNIT IV LEGAL ASPECTS**

**6**

Arbitration - definition and advantages. Sole and joint arbitrators. Role of umpires, award. Arbitration clause in contract agreement -role of architect, excepted matters. Easement – meaning, types of easements. Copy rights and patenting – provisions of copy right acts in India, copy right in architectural profession. Consumer Protection Act - intent, architects responsibility towards his clients.

### **UNIT V IMPORTANT LEGISLATIONS AND CURRENT TRENDS**

**9**

Planning parameters at various scales. DTCP rules. Second Master Plan CMDA as case study. Chennai Corporation Building Rules 1972. Panchayat Rules. Building rules in National Building Code. Factories Act. Persons with Disabilities Act. Barrier Free Environment. Coastal Regulation Zone. Heritage Act. Globalisation and its impact on architectural profession. Preparedness for international practice. Entry of foreign architects in India. Information technology and its impact on architectural practice. Emerging specialisations in the field of architecture -architect as construction/ project manager, architectural journalism, architectural photography.

### **OUTCOME**

- Knowledge of the role of professional and statutory bodies.
- An understanding of the provisions in Architects Act 1972.
- An understanding of code of conduct.
- Familiarity with the process and role of an architect in project execution.

**TOTAL: 45 PERIODS**

### **TEXTBOOKS**

1. Architects Act 1972.
2. Publications of Council of Architecture
3. Roshan Namavati, 'Professional Practice', Lakhani Book Depot, Mumbai, 2016.
4. Ar. V.S. Apte, 'Architectural Practice and Procedure', Mrs. Padmaja Bhide, 2008.
5. Madhav Deobhakta, 'Architectural Practice in India', COA, 2007.



## REFERENCES

1. J.J.Scott, 'Architect's Practice', Butterworth, London 1985.
2. Development Regulations of Second Master Plan for Chennai Metropolitan Area- 2026. (Second Master plan of CMA).
3. Chennai City Corporation Building Rules 1972.
4. T.N.D.M. Buildings rules, 1972.
5. Consumer Protection Act, 1986.
6. Arbitration Act, 1996.
7. Factories Act, 1948.
8. Persons with Disabilities Act, 1995.
9. Tamil Nadu Cinematography Act. DTCP Act

**BA5204**

**HUMAN RESOURCE MANAGEMENT**

**L T P C**

**3 0 0 3**

### OBJECTIVE:

To provide knowledge about management issues related to staffing, training, performance, compensation, human factors consideration and compliance with human resource requirements.

### **UNIT I                      PERSPECTIVES IN HUMAN RESOURCE MANAGEMENT                      5**

Evolution of human resource management – The importance of the human factor – Challenges – Inclusive growth and affirmative action -Role of human resource manager – Human resource policies – Computer applications in human resource management – Human resource accounting and audit.

### **UNIT II                      THE CONCEPT OF BEST FIT EMPLOYEE                      8**

Importance of Human Resource Planning – Forecasting human resource requirement – matching supply and demand - Internal and External sources. Recruitment - Selection – induction – Socialization benefits.

### **UNIT III                      TRAINING AND EXECUTIVE DEVELOPMENT                      10**

Types of training methods –purpose- benefits- resistance. Executive development programmes – Common practices - Benefits – Self development – Knowledge management.

### **UNIT IV                      SUSTAINING EMPLOYEE INTEREST                      12**

Compensation plan – Reward – Motivation – Application of theories of motivation – Career management – Development of mentor – Protégé relationships.

### **UNIT V                      PERFORMANCE EVALUATION AND CONTROL PROCESS                      10**

Method of performance evaluation – Feedback – Industry practices. Promotion, Demotion, Transfer and Separation – Implication of job change. The control process – Importance – Methods – Requirement of effective control systems grievances – Causes – Implications – redressal methods.

**TOTAL: 45 PERIODS**

**OUTCOME:**

Students will gain knowledge and skills needed for success as a human resources professional

**REFERENCES :**

1. Dessler Human Resource Management, Pearson Education Limited, 14th Edition, 2015.
2. Decenzo and Robbins, Fundamentals of Human Resource Management, Wiley, 11th Edition, 2013.
3. Luis R.Gomez-Mejia, David B.Balkin, Robert L Cardy. Managing Human Resource. PHI Learning. 2012
4. Bernadin , Human Resource Management ,Tata Mcgraw Hill ,8th edition 2012.
5. Wayne Cascio, Managing Human Resource, McGraw Hill, 2007.
6. Ivancevich, Human Resource Management, McGraw Hill 2012.
7. Uday Kumar Haldar, Juthika Sarkar. Human Resource management. Oxford. 2012

**BA5015      INDUSTRIAL RELATIONS AND LABOUR WELFARE      L T P C  
3 0 0 3**

**OBJECTIVE:**

To explore contemporary knowledge and gain a conceptual understanding of industrial relations.

**UNIT I                      INDUSTRIAL RELATIONS                      7**

Concepts – Importance – Industrial Relations problems in the Public Sector – Growth of Trade Unions – Codes of conduct.

**UNIT II                      INDUSTRIAL CONFLICTS                      12**

Disputes – Impact – Causes – Strikes – Prevention – Industrial Peace – Government Machinery – Conciliation – Arbitration – Adjudication.

**UNIT III      LABOUR WELFARE                      8**

Concept – Objectives – Scope – Need – Voluntary Welfare Measures – Statutory Welfare Measures – Labour – Welfare Funds – Education and Training Schemes.

**UNIT IV      INDUSTRIAL SAFETY                      9**

Causes of Accidents – Prevention – Safety Provisions – Industrial Health and Hygiene – Importance – Problems – Occupational Hazards – Diseases – Psychological problems – Counseling – Statutory Provisions.

**UNIT V WELFARE OF SPECIAL CATEGORIES OF LABOUR****9**

Child Labour – Female Labour – Contract Labour – Construction Labour – Agricultural Labour – Differently abled Labour –BPO & KPO Labour - Social Assistance – Social Security – Implications.

**TOTAL: 45 PERIODS****OUTCOME:**

Students will know how to resolve industrial relations and human relations problems and promote welfare of industrial labour.

**REFERENCES :**

1. Mamoria C.B., Sathish Mamoria, Gankar, Dynamics of Industrial Relations, Himalaya Publishing House, New Delhi, 2012.
2. Arun Monappa, Ranjeet Nambudiri, Patturaja Selvaraj. Industrial relations & Labour Laws. Tata McGraw Hill. 2012.
3. Ratna Sen, Industrial Relations in India, Shifting Paradigms, Macmillan India Ltd., New Delhi, 2007.
4. C.S.Venkata Ratnam, Globalisation and Labour Management Relations, Response Books, 2007.
5. Srivastava, Industrial Relations and Labour laws, Vikas, 2007.
6. P.N.Singh, Neeraj Kumar. Employee relations Management. Pearson. 2011.
7. P.R.N Sinha, Indu Bala Sinha, Seema Priyadarshini Shekhar. Industrial Relations, Trade Unions and Labour Legislation. Pearson. 2004

**BA5016****LABOUR LEGISLATIONS****L T P C****3 0 0 3****OBJECTIVE:**

- To have a broad understanding of the legal principles governing the employment relationship at individual and collective level.
- To familiarise the students to the practical problems inherent in the implementation of labour statutes.

Contained in the following acts are to be studied.

	<b>Periods</b>
1. The Factories Act, 1948	3
2. The Trade Unions Act, 1926	4
3. The Payment of Wages Act, 1936	3
4. The Minimum Wages Act, 1948	2
5. The Industrial Disputes Act, 1947	5
6. The Workmen's Compensation Act, 1923	2
7. The Payment of Gratuity Act, 1972	3

8. The Payment of Bonus Act, 1965

3

9. The Employee's Provident Fund & Misc. Act, 1952	3
10. The Employees State Insurance Act, 1948	4
11. The Industrial Employment (Standing Orders) Act, 1946	3
12. The Apprentices Act, 1961	2
13. The Equal Remuneration Act, 1976	2
14. The Maternity Benefit Act, 1961	2
15. Contract Labour Regulations and Abolition Act, 1970	2
16. The Child Labour Prevention and Regulation Act, 1986	2

**TOTAL: 45 PERIODS**

**OUTCOMES:**

- To appreciate the application of labour laws.
- Legal Provision relating to
  - a) Wages
  - b) Working Conditions and Labour Welfare
  - c) Industrial Relations
  - d) Social Security

**REFERENCES :**

1. P.K. Padhi, Industrial Laws, PHI, 2008.
2. Kapoor N. D , Elements of Mercantile Law, Sultan Chand, 2008
3. Tax Mann, Labour Laws, 2008.
4. D. R. N. Sinha, Indu Balasinha & Semma Priyadarshini Shekar, Industrial Relation, Trade unions and Labour Legislation, 2004.
5. Arun Monappa, Ranjeet Nambudiri, Patturaja Selvaraj. Industrial relations & Labour Laws. Tata McGraw Hill. 2012
6. Srivastava, Industrial Relations and Labour laws, Vikas, 2007.
7. Respective Bare Acts.