| TITLE OF THE SUBJECT | | | | | | |
|---|---|---|---|---|---|---|
| **Subject Code** | **HUMAN RESOURCE MANAGEMENT** | L | T | P | C | QP |
| **MECOE 3011** | | 3 | 0 | 0 | | |

Pre-Requisites : Managerial skill

| **Course Educational Objectives** | |
|---|---|
| CEO1 | To understand, implement, and evaluate organizational development strategies. |
| CEO2 | To understand the development and communication of the organization's total compensation plan. |
| CEO3 | To learn about labour relations in both non-union and union environments. |
| CEO4 | To understand about the development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes. |

**Course Outcomes:** ***Upon successful completion of this course, students should be able to:***

| | |
|---|---|
| CO1 | Understand the implementation and evaluation of employee recruitment & selection processes. |
| CO2 | Recognize and evaluate employee &labour relationship. |
| CO3 | Identify and analyze communication of the organization's total compensation plan. |
| CO4 | Implement, and examine organizational development strategies aimed at promoting organizational effectiveness. |

CO-PO & PSO Mapping

| COs | PROGRAMME OUTCOMES | | | | | | | | | | | | PSOs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| CO1 | 3 | - | | | | | | | | | | | | | |
| CO2 | 3 | 3 | | | | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | | | | |
| CO4 | 2 | 2 | | | | | | | | | | | | | |
| Avg. | 2.75 | 2.33 | | | | | | | | | | | | | |

SYLLABUS

**Unit:1** **(12 hrs)**

**Human Resource Development Strategies, Design And Experience**

Human Resource Development: HRD-An Overview, Line Managers and HRD, Task Analysis, Motivational Aspects of HRD, Developmental Supervision, Counseling and Mentoring , HRD for Health and Family Welfare in Select HRD Culture and Climate, HRD for Workers, HRD/OD Approach to IR Corporate Business.

**Unit:2** **(8 hrs)**

**Basics of Human Resource Planning**

Macro Level Scenario of Human Resource Planning, Concepts and Process of Human Resource Planning, Methods and Techniques-Demand Forecasting, Methods and Techniques-Supply Forecasting, Job Evaluation: Concepts, Scope and Limitations, Selection and Recruitment, Induction and Placement, Performance and Potential Appraisal, Transfer,

Promotion and Reward Policies, Training and Retraining.

**Unit:3** **(10hrs)**

**Wage and Salary Administration &LabourLegislation**

Wage Concepts and Definition of Wages Under Various Labour Legislation, Norms for Wage Determination, Law relating to Payment of Wages and Bonus, Pay Packet Composition, Design of Performance-linked Reward System,

Philosophy of Labour Laws, Labour Laws, Industrial Relations and Human Resource Management, Indian Constitution and Labour Legislations

**Unit:4** **(6 hrs)**

**Time Management:** Importance of Time factor, Time waster, Prioritizing Work Scheduling, Functions of the Time Office, Flexible Work arrangements.

Teaching Method(s): Chalk & Board/ PPT/Video Lectures/ MOOC/ Internship/Industry Guest Lecture/ Invited Guest lecture/ Demonstration. etc. (can be chosen one or many)

**Text Books**


1. Beardwell and Len Holder, Human Resource Management Macmillan India Ltd.,
2. Graham H.T., &R.Bennet, Human Resource Management – Pitman, London
3. Performance Appraisal, Theory and Practice – AIMA VIKAS Management Series,


**Reference Books**


1. C.B. Manmoria, Personnel Management – Himalayan Publishing Co., New Delhi.
2. Pattanayak: Human Resource Management, PHI,
3. Nair,N.G. &LathaNair:Personnel Management & Industrial Relations–S.Chand& Co.


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**TITLE OF THE SUBJECT**

| Subject Code | RESEARCH METHODOLOGY | L | T | P | C | QP |
|---|---|---|---|---|---|---|
| MECOE3012 | | 3 | 0 | 0 | | |

Pre-Requisites :Statistics and mathematics.

| **Course Educational Objectives** | |
|---|---|
| CEO1 | To learn about different appropriate research topics. |
| CEO2 | To understand some basic concepts of research and its methodologies. |
| CEO3 | To analyze the appropriate research problem and parameters. |
| CEO4 | To analyze &Organize and conduct research in a more appropriate manner. |

**Course Outcomes:** ***Upon successful completion of this course, students should be able to:***

| | |
|---|---|
| CO1 | Understand and analyze basic concepts of research and its methodologies. |
| CO2 | Identify appropriate research topics. |
| CO3 | Select and examine appropriate research problem and parameters. |
| CO4 | Recognize advanced project in sophisticated manner. |

CO-PO & PSO Mapping

| COs | PROGRAMME OUTCOMES | | | | | | | | | | | | PSOs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| CO1 | 3 | 3 | | | | | | | | | | | | | |
| CO2 | 1 | - | | | | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | | | | |
| CO4 | 2 | 2 | | | | | | | | | | | | | |
| Avg. | 2.25 | 2.33 | | | | | | | | | | | | | |

SYLLABUS

**Unit:1** **(12 hrs)**

Introduction to RM: Meaning and significance of research. Importance of scientific research in decision making. Types of research and research process. Identification of research problem and formulation of hypothesis. Research Designs. Measurement and Data Collection. Primary data, Secondary data, Design of questionnaire; Sampling fundamentals and sample designs. Measurement and Scaling Techniques, Data Processing.

**Unit:2(10 hrs)**Data Analysis – I: Hypothesis testing; Z-test, t-test, F-test, Chi-square test. Analysis of variance. Non-parametric Test – Sign Test, Run test, Krushall – Wallis test

**Unit:3** **(8 hrs)**

Data Analysis – II: Factor analysis, Multiple Regressions Analysis. Discriminant Analysis, Use of SPS Package.

**Unit:4** **(6 hrs)**Essentials of Report writing and Ethical issues: Significance of Report Writing, Different Steps in Writing Report, Layout of the Research Report, Precautions for Writing Research Reports.

Teaching Method(s): Chalk & Board/ PPT/Video Lectures/ MOOC/ Internship/Industry Guest Lecture/ Invited Guest lecture/ Demonstration. etc. (can be chosen one or many)

**Text Books**

1. Research Methodology, Chawla and Sondhi, Vikas
2. Research methodology by C.R. KOTHARI

**Reference Book**

1. Research Methodology, Paneersevam, PHI

**TITLE OF THE SUBJECT**

| Subject Code | EMBEDDED SYSTEM DESIGN | L | T | P | C | QP |
|---|---|---|---|---|---|---|
| MECOE3013 | | 3 | 0 | 0 | | |

Pre-Requisites :Digital Electronics,Analog Electronics ,C programming, Micro-processor or Microcontroller

| Course Educational Objectives | |
|---|---|
| CEO1 | To understand thedebugging techniques for an embedded system. |
| CEO2 | To understand different programming environment used to develop embedded systems. |
| CEO3 | To understand different components of a micro-controller and their interactions. |
| CEO4 | To learn about different microcontroller, micro computer , embedded system. |

**Course Outcomes:** ***Upon successful completion of this course, students should be able to:***

| | |
|---|---|
| CO1 | Understand and analyze microcontroller, microcomputer & embedded system. |
| CO2 | Identify different components of a micro-controller and their interactions |
| CO3 | Select and examine programming environment used to develop embedded systems |
| CO4 | Implement and examine debugging techniques for an embedded system. |

CO-PO & PSO Mapping

| COs | PROGRAMME OUTCOMES | | | | | | | | | | | | PSOs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| CO1 | 3 | 3 | | | | | | | | | | | | | |
| CO2 | 3 | - | | | | | | | | | | | | | |
| CO3 | 2 | 2 | | | | | | | | | | | | | |
| CO4 | 2 | 3 | | | | | | | | | | | | | |
| Avg. | 2.5 | 2.66 | | | | | | | | | | | | | |

SYLLABUS

**Unit:1** **(10 hrs)**

**Introduction to Embedded systems design:**

Introduction to Embedded system, Embedded System Project Management, ESD and Co-design issues in System development Process, Design cycle in the development phase for an embedded system, Use of target system or its emulator and In-circuit emulator, Use of software tools for development of an ES.

**Unit:2 (8 hrs)**

**Embedded C Programming:** Embedded C V/s C language, DDR, PORT and PIN commands, special data types, Infinite while loop, if conditions

**Unit:3** **(10hrs)**

**AVR Interfacing and Applications:**

Interfacing External Memory, Keyboard and Display Devices: LED, 7-segment LED display, LCD, Ultrasonic Sensor and IR Sensor.

Proteus Design Suite: Circuit building for all applications

**Unit:4** **(8 hrs)**

**Advanced Microcontrollers:**

Only brief general architecture of ARM microcontrollers, NodeMCU

Teaching Method(s): Chalk & Board/ PPT/Video Lectures/ MOOC/ Internship/Industry Guest Lecture/ Invited Guest lecture/ Demonstration. etc. (can be chosen one or many)

**Text Books**

1. AVR Microcontroller and Embedded Systems : Using Assembly and C 1 Edition (Author: Muhammad Ali
2. Mazidi, SarmadNaimi, SepehrNaimi)
3. Atmega8 Datasheet: An ATMEL Document https://www.mouser.com/ds/2/268/Atmel-2486-8-bit-AVR-microcontroller-ATmega8_L_dat-1065398.pdf

**Reference Books**

1. . Designing Embedded Hardware by Catsoulis (Author)
2. Embedded System Design with the Atmel AVR Microcontroller I (Synthesis Lectures on Digital Circuits and Systems) by Steven Barrett (Author).
3. Making Embedded Systems: Design Patterns for Great Software 1st Edition by Elecia White (Author)
4. ARM System-on-Chip Architecture (2nd Edition) by Steve Furber (Author)