DRONACHARYA
College of Engineering

Khentawas, Farrukh Nagar, Gurugram, Haryana
Approved by: All India Council for Technical Education (AICTE), New Delhi
Affiliated to: Gurugram University, Gurugram

## DEPARTMENT OF ROBOTICS AND AUTOMATION ENGINEERING

## ACADEMIC YEAR 2023-24

## SEMESTER VIII

### Flexible Manufacturing Systems (PCC-RA-402G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Ability to perform Planning, Scheduling and control of Flexible Manufacturing systems |
| (CO2) | Perform simulation on software's use of group technology to product classification |

### Sensor & Signal Processing (PCC-RA-404G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Appreciate various types of sensors |
| (CO2) | Describe the manufacturing process of sensors |
| (CO3) | Understand about the material properties required to make sensors |
| (CO4) | Use sensors specific to the end use application |
| (CO5) | Design systems integrated with sensors |

## Advanced Robotics (PEC-RA-406G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Design multi-jointed serially linked manipulators. |
| (CO2) | Identify intermediate arm matrices describing individual links. |
| (CO3) | Determine the joint angle equations to attain a global position and angle of the end effector |
| (CO4) | Determine how to identify velocity profiles of individual joints to achieve a desired global spatial trajectory. |
| (CO5) | Relate driving currents and torques needed to control this trajectory for electrically driven robots |

## Neural Networks and Fuzzy Logic (PCC-RA-408G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Comprehend the concepts of biological neurons and artificial neurons |
| (CO2) | Analyze the feed-forward and feedback neural networks and their learning algorithms. |
| (CO3) | Calculate Comprehend the neural network training and design concepts |
| (CO4) | Analyze the application of neural networks to nonlinear real world problem |
| (CO5) | Comprehend the concept of fuzziness involved in various systems, fuzzy set theory and fuzzy logic |
| (CO6) | Apply fuzzy logic to real world problems. |

## OPERATIONS RESEARCH (OEC–ME-402G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Discuss the role of operations research in decision-making, and its applications in industry and should be able to formulate and design real-world problems through models & experiments |
| (CO2) | Knowledge of various types of deterministic models like linear programming, transportation model etc. |
| (CO3) | Explore various types of stochastic models like waiting line model ,project line model, simulation etc. |
| (CO4) | Deduce the relationship between a linear program and its dual and perform sensitivity analysis. |
| (CO5) | Describe different decision-making environments and apply decision making process in the real world situations |

## QUALITY ENGINEERING (OEC-ME-410G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Attain the basic techniques of quality improvement ,fundamental knowledge of statistics and probability |
| (CO2) | Use control charts to analyze for improving the process quality. |
| (CO3) | Describe different sampling plans |
| (CO4) | Acquire basic knowledge of total quality management CO5- Understand the modern quality management techniques |

## ELECTRICAL POWER GENERATION (OEC–EE-412G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | The knowledge about power generation and its related issues. |

## COMPUTER COMMUNICATION (OEC-CSE-430G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Independently understand basic computer network technology |
| (CO2) | Understand and explain Data Communications System and its components. |
| (CO3) | Identify the different types of network topologies and protocols. |
| (CO4) | Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer. |
| (CO5) | Identify the different types of network devices and their functions within a network |

## Traffic Engineering and Road Safety (OEC-CE-448G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | To realize the significance of traffic engineering into day life. |
| (CO2) | To understand the processes involved in traffic studies. |
| (CO3) | To appreciate the role of Traffic regulations. |

## Disaster Management (OEC-CE-450G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | To know natural as well as manmade disaster and their extent and possible effects on the economy. |
| (CO2) | To Plan national importance structures based upon the previous history. |
| (CO3) | To acquaint with government policies, acts and various organizational structures associated with an emergency. |
| (CO4) | To know the simple dos and don’ts in such extreme events and act accordingly. |

## MICRO PROCESSOR APPLICATION IN AUTOMOBILES SECTOR (OEC–ECE-453G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Explain the architecture, pin configuration of various microprocessors and Interfacing devices. |

## MANAGEMENT INFORMATION SYSTEMS (HSMC-10G)

| Course Outcome (CO) | Details of Course Outcomes |
|---|---|
| (CO1) | Understand the leadership role of Management Information Systems in achieving business competitive advantage through informed decision making. |
| (CO2) | Analyze and synthesize business information and systems to facilitate evaluation of strategic alternatives |
| (CO3) | Effectively communicate strategic alter natives to facilitate decision making. |