



St. Francis Institute of Technology

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Information Technology and Electronics & Telecommunication Engineering are NBA Accredited

Department of Mechanical Engineering

COURSE OUTCOMES (COs)

A.Y. 2022-23

Term - EVEN

Semester – VIII

MEC801 – Operations Planning and Control

MEC801.1	The students will be able to understand Operations Planning & Control and its significance in manufacturing and service organizations
MEC801.2	The students will be able to learn and apply various strategies based on the Demand forecasting, Capacity Planning and Aggregate planning related to production processes
MEC801.3	The students will be able to apply algorithms production scheduling, sequencing and project management so as to optimize resources
MEC801.4	The students will be able to develop Material Requirements Plans (MRP) to estimate the planned order releases to minimize the total cost and to manage operations functions in a better way
MEC801.5	The students will be able to apply various techniques for facility layout planning and line balancing to optimize the resources
MEC801.6	The students will be able to demonstrate the importance of implementation of JIT, Lean, Agile and Synchronous manufacturing in manufacturing and service organizations.

MEDLO8051 – Composite Materials

MEDLO8051.1	The students will be able to select the type of material for the fibres and matrix in a composite material for the given application.
MEDLO8051.2	The students will be able to relate stresses and strains through the elastic constants for a given lamina.
MEDLO8051.3	The students will be able to evaluate elastic properties of a lamina based on the properties of its constituents.
MEDLO8051.4	The students will be able to Predict failure of a lamina under the given loading condition.
MEDLO8051.5	The students will be able to select the number of laminae and their stacking sequence in a composite material for the given loading condition.
MEDLO8051.6	The students will be able to Identify the type of damage occurring in a composite structure and select an appropriate method to repair it.

MEDLO8052 – Smart Materials

MEDLO8052.1	The students will be able to classify and select different types of smart materials.
MEDLO8052.2	The students will be able to comprehend Important Concepts and principles of Smart Materials.
MEDLO8052.3	The students will be able to synthesis, sensing and actuation of Piezoelectric Materials, Magnetostrictive materials, Shape Memory Alloys, Electroactive Polymers.
MEDLO8052.4	The students will be able to synthesis, sensing and actuation of Ferro-fluids and Magneto rheological Fluids, Soft Matter, Carbon Nanotubes and Carbon nanostructures, Thermoelectric Materials.
MEDLO8052.5	The students will be able to classify and select Smart Materials for Energy Applications: Materials used for energy storage.
MEDLO8052.6	The students will be able to classify and select Composite Materials, Nano Composite Materials.

MEDLO8053 – Micro Electro Mechanical Systems

MEDLO8053.1	The students will be able to apply laws of scaling for development of a MEMS device
MEDLO8053.2	The students will be able to understand the materials and their processing to make MEMS
MEDLO8053.3	The students will be able to select and use microfabrication techniques for microsystems
MEDLO8053.4	The students will be able to understand the development of micro sensors and actuators
MEDLO8053.5	The students will be able to analyze microsystems technology for technical feasibility as well as practicality
MEDLO8053.6	The students will be able to develop useful applications of MEMS.

MEDLO8061 – Product Design and Development

MEDLO8061.1	The students will be able to describe the process of product design & development.
MEDLO8061.2	The students will be able to employ engineering, scientific, and mathematical principles to develop and execute a design project from a concept to a finished product.
MEDLO8061.3	The students will be able to create 3D solid models of mechanical components using CAD software.
MEDLO8061.4	The students will be able to demonstrate individual skills using selected manufacturing techniques such as rapid prototyping.
MEDLO8061.5	The students will be able to fabricate an electromechanical assembly of a product from engineering drawings.
MEDLO8061.6	The students will be able to work collaboratively in a team to complete a design project.
MEDLO8061.7	The students will be able to effectively communicate the results of projects and other assignments both in a written and oral format.

MEDLO8063 – Total Quality Management

MEDLO8063.1	The students will be able to apply QM and principles of TQM in organizational development process.
MEDLO8063.2	The students will be able to apply the QC & QM tools in process improvement.
MEDLO8063.3	The students will be able to apply SQC techniques to improve process quality.
MEDLO8063.4	The students will be able to apply Six Sigma project in TQM Implementation
MEDLO8063.5	The students will be able to apply QMS and Certification for Quality Accreditation
MEDLO8063.6	The students will be able to apply the advanced tools for Quality Sustainability.

ILO8021 – Project Management

ILO8021.1	The students will be able to apply selection criteria and select an appropriate project from different options.
ILO8021.2	The students will be able to write work break down structure for a project and develop a schedule based on it.
ILO8021.3	The students will be able to identify opportunities and threats to the project and decide an approach to deal with them strategically.
ILO8021.4	The students will be able to use Earned value technique and determine & predict status of the project.
ILO8021.5	The students will be able to capture lessons learned during project phases and document them for future reference.

ILO8022 – Finance Management

ILO8022.1	The students will be able to understand Indian finance system and corporate finance
ILO8022.2	The students will be able to take investment, finance as well as dividend decisions

ILO8023 – Entrepreneurship Development and Management

ILO8023.1	The students will be able to understand the concept of business plan and ownerships
ILO8023.2	The students will be able to interpret key regulations and legal aspects of entrepreneurship in India
ILO8023.3	The students will be able to understand government policies for entrepreneurs

ILO8026 – Research Methodology

ILO8026.1	The students will be able to prepare a preliminary research design for projects in their subject matter areas
ILO8026.2	The students will be able to accurately collect, analyze and report data
ILO8026.3	The students will be able to present complex data or situations clearly
ILO8026.4	The students will be able to review and analyze research findings

ILO8029 – Environmental Management

ILO8029.1	The students will be able to discuss about environment, significance of Environment Management, career opportunities, sustainable development, energy scenario and environmental issues relevant to India
ILO8029.2	The students will be able to describe the various Global Environmental Concerns
ILO8029.3	The students will be able to define and interrelate the ecology, ecosystems, habitats, limiting factors, carrying capacity and food chain
ILO8029.4	The students will be able to compare the different roles and relations between, firms, governmental agencies, and other actors in relation to issues concerning environmental and natural resource management and sustainability.
ILO8029.5	The students will be able to describe the role of the ISO 14000 series of standards and EMS certification in industry
ILO8029.6	The students will be able to explain major environmental legislations like Environment Protection Act, Air (P& CP) Act, Water (P & CP) Act, Wildlife Protection Act, Forest Act, Factories Act., etc.