Program : Mechanical Engineering

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Course Code: MEC701	Course Name: Design of Mechanical System
MEC701.1	Apply the concept of system design.
MEC701.2	Select appropriate gears for power transmission on the basis of given load and speed.
MEC701.3	Design material handling systems such as hoisting mechanism of EOT crane.
MEC701.4	Design belt conveyor systems.
MEC701.5	Design engine components such as cylinder, piston, connecting rod and crankshaft.
MEC701.6	Design pumps for the given applications.

Course Code: MEC702	Course Name: Logistics and Supply Chain Management
MEC702.1	Demonstrate a sound understanding of Logistics and Supply Chain Management concepts and their role in today's business environment.
MEC702.2	Identify the drivers of supply chain performance and risks in supply chain management.
MEC702.3	Apply various techniques of inventory management and rank the items using inventory management technique.
MEC702.4	Apply various strategies and techniques to minimize overall logistics cost.
MEC702.5	Understand the role of digitization in supply chain management leading to sustainability.
MEC702.6	Apply various mathematical models/tools to design the supply chain network.

Course Code: MEDLO7033	Course Name: Vehicle Systems
MEDLO7033.1	Understand the working of different Vehicle Systems and Subsystems.
MEDLO7033.2	Understand the working of different Vehicle Electrical systems and subsystems.
MEDLO7033.3	Understand different Vehicle Body systems and layouts.
MEDLO7033.4	Illustrate working functions of different vehicle mechanical, electrical, and chassis systems.
MEDLO7033.5	Understand the effect of aerodynamics on the functioning of a vehicle.
MEDLO7033.6	Comprehend the different technological advances in vehicle systems.

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Course Code: MEDLO7041	Course Name: Machinery Diagnostics
MEDLO7041.1	Relate basic concepts of Machinery Diagnostic.
MEDLO7041.2	Describe the working of Vibration Measuring Instruments.
MEDLO7041.3	Apply different Signal Processing Techniques in Vibration Measurement.
MEDLO7041.4	Identify common faults in Machinery using Vibration Spectrum.
MEDLO7041.5	Interpret the Vibration Signals for Monitoring and Prognosis.

Course Code: ILO7017	Course Name: Disaster Management & Mitigation Measures
ILO7017.1	Get to know natural as well as manmade disaster and their extent and possible effects on the economy.
ILO7017.2	Plan of national importance structures based upon the previous history.
ILO7017.3	Get acquainted with government policies, acts and various organizational structure associated with an emergency.
ILO7017.4	Get to know the simple do's and don'ts in such extreme events and act accordingly.

Course Code: MEL701	Course Name: Design of Mechanical Systems
MEL701.1	Apply the concept of system design.
MEL701.2	Design of Gear box.
MEL701.3	Design of hoisting mechanism of EOT crane.
MEL701.4	Design belt conveyor systems.
MEL701.5	Design engine components such as cylinder, piston, connecting rod and crankshaft.
MEL701.6	Design pumps for the given applications.

Course Code: MEL702	Course Name: Maintenance Engineering Lab
MEL702.1	Identify different tools used for maintenance.
MEL702.2	Apply different maintenance strategies.
MEL702.3	Demonstrate the process of servicing a machine.
MEL702.4	Identify common faults in Machinery using Vibration Spectrum.
MEL702.5	Interpret the Vibration Signals for Monitoring and Prognosis.

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Course Code: MEL703	Course Name: Industrial Skills
MEL703.1	Skilfully prepare and edit documents and slides on MS Word and MS PowerPoint etc.
MEL703.2	Execute functions on MS Excel.
MEL703.3	Learn how to navigate tasks and execute functions in G-suite.
MEL703.4	Understand and practice metacognitive skills of creativity and problem solving.
MEL703.5	Hone team building and leadership skills.

Course Code: MEP701	Course Name: Major Project 1
MEP701.1	To develop the understanding of the problem domain through extensive review of literature.
MEP701.2	To identify and analyze the problem in detail to define its scope with problem specific data.
MEP701.3	To identify various techniques to be implemented for the selected problem and related technical skills through feasibility analysis.
MEP701.4	To design solutions for real-time problems that will positively impact society and environment.
MEP701.5	To develop clarity of presentation based on communication, teamwork and leadership skills.
MEP701.6	To inculcate professional and ethical behavior.

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Course Code: MEC801	Course Name: Operations Planning and Control
MEC801.1	Illustrate operations functions and manage operations in a better way.
MEC801.2	Apply various strategies to develop aggregate production plan based on the demand forecasting.
MEC801.3	Apply various algorithms in scheduling and sequencing of manufacturing and service operations.
MEC801.4	Develop Material Requirements Plans (MRP) to estimate the planned order releases.
MEC801.5	Apply various techniques for facility layout planning and line balancing to optimize the resources.
MEC801.6	Demonstrate the importance of implementation of JIT, Lean, Agile and Synchronous manufacturing in manufacturing and service organizations.

Course Code: MEDLO8051	Course Name: Composite Materials
MEDLO8051.1	Select the type of material for the fibres and matrix in a composite material for the given application.
MEDLO8051.2	Relate stresses and strains through the elastic constants for a given lamina.
MEDLO8051.3	Evaluate elastic properties of a lamina based on the properties of its constituents.
MEDLO8051.4	Predict failure of a lamina under the given loading condition.
MEDLO8051.5	Select the number of laminae and their stacking sequence in a composite material for the given loading condition.
MEDLO8051.6	Identify the type of damage occurring in a composite structure and select an appropriate method to repair it.

Course Code: MEDLO8061	Course Name: Product Design and Development
MEDLO8061.1	Describe the process of product design & development.
MEDLO8061.2	Employ engineering, scientific, and mathematical principles to develop and execute a design project from a concept to a finished product.
MEDLO8061.3	Create 3D solid models of mechanical components using CAD software.
MEDLO8061.4	Demonstrate individual skills using selected manufacturing techniques such as rapid prototyping.
MEDLO8061.5	Fabricate an electromechanical assembly of a product from engineering drawings.
MEDLO8061.6	Work collaboratively in a team to complete a design project.
MEDLO8061.7	Effectively communicate the results of projects and other assignments both in a written and oral format.

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Course Code: ILO8021	Course Name: Project Management
ILO8021.1	Apply selection criteria and select an appropriate project from different options.
ILO8021.2	Write work break down structure for a project and develop a schedule based on it.
ILO8021.3	Identify opportunities and threats to the project and decide an approach to deal with them strategically.
ILO8021.4	Use Earned value technique and determine & predict status of the project.
ILO8021.5	Capture lessons learned during project phases and document them for future reference.

Course Code: ILO8029	Course Name: Environmental Management
ILO8029.1	Understand the concept of environmental management.
ILO8029.2	Understand ecosystem and interdependence, food chain etc.
ILO8029.3	Understand and interpret environment related legislations.

Course Code: MEL801	Course Name: Product Design and Development
MEL801.1	Identify the need for developing products.
MEL801.2	Select suitable PD&D processes.
MEL801.3	Apply the creativity & industrial design methods to design & develop the chosen product.
MEL801.4	Work collaboratively in a team to complete a PD&D project.
MEL801.5	Effectively communicate the results of projects and other assignments both in a written and oral format.

Course Code: MEL802	Course Name: Laboratory based on IoT
MEL802.1	Develop simple applications using microcontrollers 8051 and Arduino.
MEL802.2	Interface simple peripheral devices to a Microcontroller.
MEL802.3	Use microcontroller based embedded platforms in IoT.
MEL802.4	Use wireless peripherals for exchange of data.
MEL802.5	Setup cloud platform and log sensor data.

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Course Code: MEP801	**Course Name: Major Project II**
MEP801.1	To implement solutions for the selected problem by applying technical and professional skills.
MEP801.2	To analyze impact of solutions in societal and environmental context for sustainable development.
MEP801.3	To collaborate best practices along with effective use of modern tools.
MEP801.4	To develop proficiency in oral and written communication with effective leadership and teamwork.
MEP801.5	To nurture professional and ethical behavior.
MEP801.6	To gain expertise that helps in building lifelong learning experience.