

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal, MP)

MECHANICAL ENGINEERING DEPARTMENT

The following are course outcomes of MTech in production engineering wef July 2021-

Master of Technology (Production Engineering)

Course	Course Outcomes	
560111: Computational Techniques	CO1	Determine the solution of Linear and Non Linear Programming Problems
	CO2	Evaluate the problems related to game theory.
	CO3	Acquire the knowledge of Probability theory and Random Variable.
	CO4	Analyze the test of hypothesis and Analysis of Variance.
	CO5	Identify the concept of transform.
560112: Production Engineering- I	CO1	Describe the causes of welding defects and how it can be prevented.
	CO2	Use the basic manufacturing methods, measurements, automation and quality control.
	CO3	Apply the principles of metallurgy during the welding process.
	CO4	Demonstrate safe work habits that reflect concern and care for self, others and the environment.
	CO5	Employ the principles of Moulding, casting and Gating design.
	CO6	Perform any of the metal joining techniques (welding, brazing and soldering) conveniently
560118: Maintenance Management	CO1	State Maintenance Key Performance Indicators
	CO2	Use a preventive maintenance plan and monitor its implementation and review of technical reports.
	CO3	Select highest quality of production and the continuation of the workflow.
	CO4	Implement team based continuous Improvement in Maintenance
	CO5	Apply knowledge about Managing Maintenance Spare Parts and Logistics
	CO6	Perform maintenance orders issued by the in charge, implemented and completed in the promised time for him and to make sure the machine is clean after the maintenance process
560119: Production and Operations Management	CO1	Apply core features of the operations and production management function at the operational and strategic levels, specifically the relationships between people, process, technology productivity and quality
	CO2	Discuss core features of the operations and production management function at the operational and strategic levels, specifically the relationships between people, process, technology productivity and quality
	CO3	Analyze Forecasting technique and layout planning

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	CO4	Use the Inventory models and job shop models in Industries
	CO5	Apply the 'transformation model' to identify the inputs, transformation processes and outputs of an organization
	CO6	Describe the boundaries of an operations system, and recognize its interfaces with other functional areas within the organization and with its external environment.
560115: Flexible Manufacturing System	CO1	Define various workstations, system support equipments
	CO2	Identify hardware and software components of FMS
	CO3	Familiarized with single stage planning & multi stage planning
	CO4	Implement planning and scheduling methods used in manufacturing system
	CO5	Summarize the concepts of modern manufacturing such as JIT, supply chain management and lean manufacturing
	CO6	Perform simulation on software's use of group technology to product classification
560116: Ergonomics and Work Study	CO1	Identify potential and current OH&S hazards in the workplace relating to ergonomics issue.
	CO2	Describe relation between human motion and industry.
	CO3	Calculate the production capacity of man power of an organization.
	CO4	Analyze the level of risk in a job causing stress, fatigue and musculoskeletal disorders and design appropriate work systems.
	CO5	Devise appropriate wage and incentive plan for the employees of an organization.
	CO6	Design physical and psychosocial work system and work places.
560117: Total Quality Management	CO1	Discuss about quality measures, Quality control techniques.
	CO2	Describe various theories of Total quality management.
	CO3	Determine the cost of poor quality and process effectiveness and efficiency to track performance quality.
	CO4	Apply appropriate techniques in identifying customer needs, as well as the quality impact that will be used as inputs in TQM methodologies.
	CO5	Evaluate the performance excellence of an organization, and determine the set of performance indicators
	CO6	Enhance management processes, such as benchmarking and business process reengineering
560118: Product Design and Development	CO1	Analyze the demands and needs of customers to conceptualize product.
	CO2	Describe the different steps involved in the product design.
	CO3	Analyze the shortcoming in the product development.
	CO4	Identify the opportunities to develop the product.
	CO5	Utilize the recourses available in efficient manner for maximum productivity.
	CO6	Forecast the impact of product on the surrounding environment.

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560119: Computer Integrated Manufacturing	CO1	Identify the main elements of computer numerical control manufacturing systems.
	CO2	Discuss knowledge about constructional features of CNC machine and Retrofitting of Conventional Machine Tools.
	CO3	Apply control system, feedback devices, sensors and tooling in manufacturing processes.
	CO4	Arrange the different machining operations in a program by using various codes and languages.
	CO5	Determine the cost of machining operation of CNC and monitoring the various features to enhance the life span of the machine.
	CO6	Create Process product models with CAM tools and CNC machines
560211: Automation & Robotics	CO1	State the concepts/components of computer integrated manufacturing and integrate them in a coordinated fashion
	CO2	Identify the main elements in computer integrated manufacturing systems.
	CO3	Apply computer aided process planning, feature and group technology, and data exchange in manufacturing processes.
	CO4	Analyze product models with CAM tools and CNC machines.
	CO5	Select the standard machining codes of programming for different materials
	CO6	Design Flexible manufacturing cell after carrying out Group technology study and finally creating FMS
560212: Production Engineering-II	CO1	Define the basic techniques of advance machining processes.
	CO2	Identify the process parameters and their effects.
	CO3	Demonstrate different unconventional machining processes and the influence of difference process parameters on the performance and their applications.
	CO4	Compare the machining response of different unconventional machining process.
	CO5	Recommend the best machining process for different materials of various applications.
	CO6	Improve the machining response using optimization techniques
560213: Logistics and supply chain management	CO1	Apply sales and operation planning, MRP and Lean manufacturing concepts
	CO2	Familiarized with managing the supplier interface
	CO3	Analyze the manufacturing operations of a firm
	CO4	Apply quality management tools or process improvement
	CO5	Apply logistics and purchasing concepts to improve supply chain operations