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## Maintenance Mechanics (MM)

- MM 051 Introduction to Manufacturing (0.5)**  
*Class Hours:* 9 Lecture  
P/NP  
Introduction to Manufacturing  
MM 051 provides an introduction to careers in manufacturing. Topics include local job market, pay scales, and an introduction to basic mechanical skills required throughout the industrial areas. Safety and safe work environment will be stressed.
- MM 051A Intro. to Industrial Mechanics (3)**  
*Class Hours:* 36 Lecture | 54 Laboratory  
*Corequisite(s):* MM 051B  
Introduction to Industrial Mechanics  
MM 051A provides students with the fundamental knowledge and skills necessary for mechanical systems including, hand and power tool use, precision measurement tools, power transmission systems, hydraulic systems, pneumatic systems, centrifugal pumps, and lubrications.
- MM 051B Mathematics for Machine Tech. (3)**  
*Class Hours:* 54 Lecture  
Mathematics for Machine Technology  
MM 051B is an interactive course that explores mathematics for machine technology. Students use hand tools, industrial components and mechanical drive systems to explore how the mathematical concepts and topics established in general arithmetic processes, fundamental algebra, fundamental plane geometry, geometry areas and volumes, and fundamental trigonometry apply to industrial machine technology.
- MM 051C Electrical for the Industrial (3)**  
*Class Hours:* 36 Lecture | 54 Laboratory  
Electrical for the Industrial Mechanic  
MM 051C is an interactive course that explores electrical systems in the manufacturing plant. Students use hand tools, industrial components and mechanical drive systems to explore how to install, test and inspect electrical components. Additionally the concepts and codes will be introduced showing how complex systems come together creating a safe environment for employees, operators and mechanics in the industrial plant.
- MM 051D Power Transmission Systems 1 (3)**  
*Class Hours:* 36 Lecture | 54 Laboratory  
*Advisory(s):* MM 051A (Recommended, Previous or concurrent).  
Power Transmission System 1  
MM 051D provides students with an in-depth look and hands on experience with new mechanical drives concepts and componenets V-belt driven systems, chain driven systems, spur gears as part of a system and multiple shaft driven systems and using hand and power tool use, precision measurement tools to align, measure and build documentation for preventive maintenance monitoring.
- MM 051E Hydraulic & Pneumatic Syst. (3)**  
*Class Hours:* 36 Lecture | 54 Laboratory  
*Advisory(s):* MM 051A and MM 051B  
Hydraulic and Pneumatic Systems 1  
MM 051E provides students with an in-depth look and hands on experience with hydraulic and pneumatic theory, components and systems using hand and power tools, precision measurement tools and schematics to explore the functionality and control of hydraulic and pneumatic systems.
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- MM 051F Pump Systems 1 (3)**  
*Class Hours:* 36 Lecture | 54 Laboratory  
*Advisory(s):* MM 051A and MM 051B  
Pump Systems 1  
MM 051F provides students with an in-depth look and hands on experience with centrifugal pump theory, components and systems including single and multiple pump systems. Additionally students using hand and power tools, precision measurement tools and schematics to explore the functionality and controls hydraulic and pneumatic systems.
- MM 052A Trade Mathematics (1)**  
*Class Hours:* 18 Lecture  
Trade Mathematics  
MM 052A presents trade-related math and calculations. The use of metric system of weights and measures, arithmetic application of integers and fractions, along with ruler and caliper readings commonly used in manufacturing trades.
- MM 052B Comp Fund for Maintenance Mech (0.5)**  
*Class Hours:* 27 Laboratory  
Comp Fund for Maintenance Mechanics  
MM 052B is an introduction to computers, their use, and basic use of popular software packages used in the agriculture maintenance mechanic industry.
- MM 052C Job Preparation (0.5)**  
*Class Hours:* 27 Laboratory  
Job Preparation  
MM 052C guides students in preparing resumes, portfolios, and improving employment-seeking skills for careers within the agricultural maintenance mechanic industry.
- MM 052D Technical Report Writing (0.5)**  
*Class Hours:* 27 Laboratory  
Technical Report Writing  
MM 052D covers the basics of technical report writing as applied to the agricultural industry. Students will identify and write various types of reports, analyze data, and record information that are associated with production work.
- MM 053A Fluid Power Fundamentals (0.5)**  
*Class Hours:* 9 Lecture  
Fluid Power Fundamentals  
MM 053A is designed to provide the learner with knowledge and working skills needed in the areas of Fundamentals of Fluid Power, physics principles pertaining to Fluid Power, various differences in hydraulics and pneumatics, and characteristics of liquids and gases. This course will particularly focus on the origins of the fluid power industry.
- MM 053B Pneumatic Fundamentals (0.5)**  
*Class Hours:* 27 Laboratory  
Pneumatic Fundamentals  
MM 053B covers theory and application in the operation, service, and function of pneumatic systems. The design and application of systems in agricultural environments will be covered.
- MM 053C Hydraulic Fundamentals (0.5)**  
*Class Hours:* 27 Laboratory  
Hydraulic Fundamentals  
MM 053C covers theory and application in the operation, service and function of hydraulic systems. The design and application of systems in agricultural environments will be covered.
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**MM 054                      Welding Fundamentals                      (3)***Class Hours: 36 Lecture | 54 Laboratory*

## Welding Fundamentals

MM 054 covers basic metallurgy and properties of metals, oxyacetylene welding and cutting processes arc welding, and safety within the work environment.

**MM 054A                      Power Transmission                      (0.5)***Class Hours: 9 Lecture*

P/NP

## Power Transmission

MM 054A is a course in the study and application of chains, belts, gear trains and augers.

**MM 054B                      Welding Fundamentals                      (0.5)***Class Hours: 27 Laboratory*

P/NP

## Welding Fundamentals

MM 054B covers basic metallurgy and properties of metals, oxyacetylene welding and cutting processes, arc welding, and safety within the work.

**MM 054C                      Electric Fundamentals                      (0.5)***Class Hours: 27 Laboratory*

P/NP

## Electric Fundamentals

MM 054C introduces the basics of electrical fundamentals, AC circuitry, as well as an introduction to motor control and programmable logic controller concepts.