Related Core Subjects

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| Provider | |
| **Name:** Modesto Junior College | |
| **Address:** 435 College Ave  Modesto, CA 95350 | |
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| **Suggested Related Instruction Hours:** 990 | |

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| **Course Number** | **Course Title** | **Learning Objectives** | **Contact Hours** |
| MAGM 289 | Principles of Power Mechanics and Small Engines | Identify the major parts of an internal combustion engine. Identify the operating principles of the two and four-stroke engine cycles. Identify the different components of the fuel, lubrication, cooling and ignitions systems found on common engines. Demonstrate the proper techniques of a basic engine overhaul. Laboratory Objectives Successfully identify, diagnose and repair common problems found in small gas engines. | 90 |
| MAGM 241 | Diesel Engine Principles | Describe engine, engine fuels and fuel systems used on compact diesels. Demonstrate trouble-shooting techniques. Disassemble, inspect, adjust, and reassemble a compact diesel/engine as part of a team. Laboratory Objectives Successfully identify the four basic engine systems and explain their operation and relation to each other. | 90 |
| MAGM 210 | Agriculture Welding | Apply safety procedures and operate shop equipment and tools according to accepted safety practices. Recall, identify and select welding equipment, consumables, and personal protective equipment used in the college shop. Demonstrate proper welding application for a given situation. Laboratory Objectives Select and setup welding equipment, select the proper welding rod and complete a satisfactory weld for the given material. | 90 |
| MAGM 280 | Mobile Hydraulics | Explain the basic operation of a typical open-center hydraulic system. Successfully identify common hydraulic components and describe their use and operation. Successfully diagnose a common open-center hydraulic system using industry appropriate tools and diagnostic equipment. Laboratory Objectives Successfully identify, diagnose and repair a common hydraulic system found on common heavy equipment systems. | 90 |
| MAGM 253 | Heavy Machinery Electrical Systems | Describe the basic principles and theories of electrical circuits as pertaining to heavy machinery. Identify the various parts and components of common electrical systems using electrical diagrams including the starting, charging, safety, ignition and lighting circuits. Diagnose and repair 6, 12, 18 and 24-volt electrical systems. Install, charge and diagnose 6, 12, 18 and 24-volt battery systems. Outline the correct steps in charging and jumping 6, 12, 18 and 24-volt battery systems. Analyze system components and circuits. Demonstrate correct diagnosis techniques and repair methods. Laboratory Objectives Successfully diagnose and repair common faults in modern electrical systems. | 90 |
| MAGM 216 | Agriculture Occupational Safety | Operate a forklift in an industry recognized safe and efficient manner. Identify, define and explain OSHA recognized hazards as defined in the OSHA General Industry Standards CFR-1910. Laboratory Objectives Operate a forklift in an industry recognized safe and efficient manner. | 90 |
| MAGM 221 | Equipment Diagnosis and Repair | Identify the role of machinery in agriculture and the construction equipment industry. Explain the value of a conscious, organized effort to obtain maximum service from machinery units at optimum efficiency. Identify the principles of safe machinery operation, preventive maintenance and proper servicing, machinery adjustments, minor repairs, and electrical trouble-shooting. Laboratory Objectives Successfully diagnose and repair the common systems found on modern machinery. | 90 |
| MAGM 215 | Machinery Management | Describe the basic principles of machinery management. Describe variables in machinery purchase, maintenance, and replacement. Perform basic equipment maintenance procedures. Accurately complete equipment maintenance logs and reports. Develop an equipment maintenance schedule. Perform an equipment safety inspection. Develop a machinery purchase/replacement program. Recommended Objectives Design a modern machinery repair facility following industry standards, OSHA recommendation, and input from industry professionals. Visit local machine maintenance shops to obtain practical knowledge. Laboratory Objectives Perform basic maintenance procedures and complete equipment maintenance logs and reports. Successfully perform an equipment safety inspection. | 90 |
| MAGM 242 | Diesel Engine Overhaul | Identify the four basic engine systems and explain their operation and relation to each other. Disassemble and reassemble a heavy duty diesel engine to running operation. Identify the common components of a heavy duty diesel engine. Laboratory Objectives Successfully disassemble and reassemble a modern heavy duty diesel engine used in common off-highway and on-highway machines. | 90 |
| MAAGM 240 | Truck/Tractor Power Trains | Describe the basic principles of operation of a standard truck and tractor transmission. Describe the basic principles of operation of a clutch. Describe the basic principles of operation of a torque converter. Identify the parts of power transfer systems of truck and tractor and their components. Laboratory Objectives Disassemble and reassemble a modern heavy machinery transmission. Disassemble and reassemble a modern heavy machinery axle. Disassemble and reassemble a modern heavy machinery brake system. | 90 |
| MAGM 245 | Diesel Engine Fuels Systems | Recall basic diesel engine principles used on compression ignition engines. Analyze turbocharger design and related system maintenance. Identify parts common to diesel fuel systems, turbochargers and governors. Disassemble, inspect, adjust, reassemble, and install fuel system parts. Laboratory Objectives Identify, diagnose and repair common diesel fuel systems. | 90 |
| **Total** |  |  | 990 |