Carpentry

Carp 20—Introduction to Carpentry (12)
This course is designed to introduce students to basic occupational information in carpentry; the care, use, operation and maintenance of hand and power tools; basic materials; and hardware and fastening materials. Safety and first aid will be stressed within each of the topics throughout the course. (24 lec/lab hrs.)

Carp 21—Basic Cabinetmaking and Millwork (3)
CoReq: Carp 20 (or prior completion)
This course is designed to emphasize and utilize the skills and knowledge learned in Carp 20, Basic Carpentry. Performance of hand and power tool operations, to layout cut shape, and assemble prepared parts for furniture, cabinets office equipment, and home furniture. (2 lec hrs., 3 lab hrs.)

Carp 22—Concrete Form Construction (12)
PreReq: Carp 20
This course is designed to familiarize students working with concrete. It covers the different types of concrete forms, laying out, materials and accessories, properties in concrete, leveling tools/instrument and special techniques in heavy concrete construction. (24 lec/lab hrs.)

Carp 41—Rough Framing and Exterior Finish (12)
PreReq: Carp 22
This course is designed for house construction. It involves footings and foundations, platform framing, wall and ceiling framing, roof framing and the different designs, roof coverings, and exterior sidings. Students will participate in actual construction. (24 lec/lab hrs.)

Carp 42—Finishing (12)
PreReq: Carp 20
This course covers application of wall and ceiling panels; hanging doors and windows; construction and installation of cabinets and closets; application of mouldings and trims; bathroom materials and finishing hardware, window and door frame construction, and installation and application of siding and trims. (24 lec/lab hrs.)

Chemistry

Chem 50—Introduction to Chemistry (3)
Common industrial and household applications of basic concepts of chemistry. This course, designed for fire science majors, is offered on a limited basis. (3 lec hrs.)

Chem 100—Chemistry for Non-Science Majors (3)
PreReq: Eng 21 or placement in Eng 102; and Math 22 or placement in Math 26
Basic concepts of chemistry utilizing mathematics only where necessary, designed for the non-science major. (3 lec hrs.)

Chem 100L—Chemistry for Non-Science Majors Lab (1)
CoReq: Chem 100 (or prior completion)
Laboratory to accompany Chem 100; Basic concepts of chemistry utilizing mathematics only where necessary, designed for the non-science major. (3 lab hrs.)

Chem 151— Elementary Survey of Chemistry (3)
PreReq: completion of Eng 21 or placement in Eng 102
CoReq: Chem 151L (when offered)
Provides the beginning student with a background in the fundamentals of chemistry. (3 lec hrs.)

Chem 151L—Elementary Survey of Chemistry Laboratory (1)
CoReq: Chem 151 (or prior completion)
Laboratory of Chem 151: Provides the beginning student with a background in the fundamentals of chemistry laboratory. (3 lab hrs.)

Dance

Dance 153—Introduction to Dance Forms (3)
Introduction to dance through history and culture. Students will learn basic movement and vocabulary of the major dance forms through theoretical perspectives and the performance of dance skills in the studio. (3 lec hrs.)

Dance 185—Modern/Jazz Dance I (3)
Introduces technical skill in modern and jazz vocabularies and explores the creative processes of dance. (2 lec hrs., 2 lec/lab hrs.)

Dance 285—Modern/Jazz Dance II (3)
PreReq: Dance 185
A continuation of Modern/Jazz Dance I in which the student will continue more in-depth work in technique, improvisation, and composition. Performance skills will be stressed. (2 lec hrs., 2 lec/lab hrs.)

Diesel Mechanics

DiMch 20—Introduction to Diesel Engines (2)
This course introduces the students to the fundamentals of diesel service, theory, repair procedures, shop facilities and equipment, and nomenclature. To aid students in career selection and to instill safe, proper work attitudes. Shop tools and equipment and fastening devices will be covered. (1 lec hr., 3 lab hrs.)

DiMch 21—Engine Operating Principles (2)
This course is designed to introduce students to design, construction, theory, and operating principles of the internal combustion diesel engine. Study basic parts and purpose and function relative to engine operation, operating principles, the cycle operation, servicing and repair of engines. Shop activities include the disassembly, cleaning, inspection, reassembly, pre-start adjustments, starting, tune-up, and troubleshooting. (1 lec hr., 3 lab hrs.)

DiMch 22—Cylinder Blocks and Heads (2)
This course is designed to introduce students to the cylinder block and cylinder head as to its function and purpose. Construction, inspection and rebuilding of the cylinder block and heads discussed. Shop activities include disassembly, cleaning, inspection, reassembly, pre-start adjustments, starting, tune-up, and troubleshooting. (1 lec hr., 3 lab hrs.)

DiMch 23—Crankshaft and Bearings (2)
This course is designed to give the students an understanding of the crankshaft, design, parts, lubrication, balance, thrust accommodation, seals, and general inspection. Bearing removal, inspection, replacement, and reassembly will be part of the shop activities. (1 lec hr., 3 lab hrs.)

DiMch 24—Camshaft, Gear Train and Timing (2)
This course is a study of camshaft, gear train, and timing of the diesel engine. The purpose, design, operating principles, and inspection procedures of components will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, pre-start adj, starting, tune-up, and troubleshooting. (1 lec hr., 3 lab hrs.)

DiMch 25—Piston and Connecting Rod Assemblies (2)
This course is a study of piston and connecting rods. Design, purpose, material, inspection, and servicing procedure. Component serviceability determination, lubrication, and problem areas will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, starting, and troubleshooting. (1 lec hr., 3 lab hrs.)

DiMch 30—Introduction to Electrical Systems (2)
This course is a study of electricity and magnetism, electron theory, Ohm's Law to measure voltage, amperes, and resistance in a basic circuit. It covers types of electrical circuits, types of electrical current, battery, and the instruments used in checking electrical circuits. Shop activities include testing and charging batteries and connecting batteries using a series-parallel switch. (1 lec hr., 3 lab hrs.)

DiMch 31—Starting Systems and Circuits (1)
This course is a study of the starting systems and electrical starting circuit, various methods used to start the diesel engine, low temperature starting aids and components will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, and testing starters. Demonstrate ability to troubleshoot starting circuits. (2 lec/lab hrs.)

DiMch 32—Charging Systems and Circuits (2)
This course is a study of the charging systems of a diesel engine. Various charging systems, voltage regulators, instrument gauges and circuits will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, and testing alternators and generators. Demonstrate ability to troubleshoot charging circuits. (1 lec hr., 3 lab hrs.)

DiMch 33—Introduction to Fuel Systems (2)
This course is a study of the basic functions of the diesel fuel system, diesel fuel classification and terminologies and fuel filters. Shop activities include servicing and basic checking of fuel flow circuits. (1 lec hr., 3 lab hrs.)

DiMch 34—Caterpillar Fuel Systems (1)
This course is a study of the caterpillar fuel injection systems. The design and operating principle of the five types of caterpillar fuel systems will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, pre-start adjustments, starting, and troubleshooting. (2 lec/lab hrs.)

DiMch 35—Detroit Fuel Systems (1)
This course is a study of the Detroit Diesel Fuel Injection Systems. The design operating principle of both two- and four-stroke cycle systems, servicing injectors, tune-up, control rack and throttle delay will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, testing, pre-start adjustments, starting, and troubleshooting. (2 lec/lab hrs.)

DiMch 36—Cummins Fuel Systems (1)
This course is a study of Cummins Fuel Injection Systems. The design, operating principles, injector and pump lubrication, injection timing control and governor types will be covered Shop activities include disassembly, cleaning, inspection, reassembly, testing, pre-start adjustments, starting, and troubleshooting. (2 lec/lab hrs.)

DiMch 37—Stanadyne Fuel Systems (1)
This course is a study of the Stanadyne and DPA distributor-type fuel injection pumps. The design, operating principle of the DM Series fuel pump will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, testing, pre-start adjustments, starting, and troubleshooting. (2 lec/lab hrs.)

DiMch 38—BOSCH-CAV (1)
This course is a study of United Technologies Diesel Fuel Systems formerly American Bosch, Robert Bosch, CAV and Diesel KIKI Port-and-Helix Fuel-Injection Pumps. The design, operation principles of in-line and distributor fuel pump will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, testing, pre-start adjustments, starting, and troubleshooting. (2 lec/lab hrs.)

DiMch 40—Introduction to Power Trains (3)
This course introduces the students to the fundamentals of power train, service, theory of operation, repair procedures, preventive maintenance, troubleshooting, and power flow from engine to final drive, methods of power transmission, types of gears and bearings, lubrication, and maintenance. (1 lec hr., 3 lab hrs., 2 lec/lab hrs.)

DiMch 41—Clutches and Flywheels (1)
This course is the study of the types of clutches. The purpose, design, operating principles, inspection, maintenance and repair procedures of these components will be covered. Shop activities include the disassembly, cleaning, inspection, reassembly, and testing of components. (2 lec/lab hrs.)

DiMch 42—Mechanical Transmissions (1)
This course is a study of the types of mechanical transmissions. The purpose, design, operating principles, inspection, maintenance and repair procedures of these components will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, and testing of components. (2 lec/lab hrs.)

DiMch 43—Drive Lines and Power Take-Offs (2)
This course is a study of the components of the drive line and power takeoffs. The purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection, and reassembly. (1 lec hr., 3 lab hrs.)

DiMch 44—Differentials and Final Drives (2)
This course is a study of the different types of differentials and final drives. The purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, and pre-installation adjustments. (1 lec hr., 3 lab hrs.)

DiMch 45—Torque Converters and Hydraulic Assist Transmissions (2)
This course is a study of the different types of torque converters and hydraulic assist transmissions. The purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection and reassembly of components. (1 lec hr., 3 lab hrs.)

DiMch 46—Hydrostatics (1)
This course is a study of the different types of hydrostatic drives. The purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection, and reassembly of components. (2 lec/lab hrs.)

DiMch 50—Brakes (2)
This course is a study of the different types of brakes. The purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, and testing of the brakes and its components. (1 lec hr., 3 lab hrs.)

DiMch 51—Suspension and Steering (2)
This course is a study of the different types of suspension and steering systems. Purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection, reassembly and testing of suspension and steering system components. (1 lec hr., 3 lab hrs.)

DiMch 52—Engine Lubricant and Lubrication Systems (2)
This course is a study of engine lubricants and lubrication systems of the diesel engine. Purpose of oil, oil recommendations, type of oil filters, oil coolers, lubrication pumps, and oil leakage test will be covered. Shop activities include disassembly, cleaning inspection, troubleshooting, and reassembly. (1 lec hr., 3 lab hrs.)

DiMch 53—Engine Coolants and Cooling Systems (2)
This course is a study of engine coolants and cooling systems of the diesel engine. The purpose of the coolants, coolant recommendations, circuits and components will be covered. Shop activities include cleaning, inspection, starting, and troubleshooting. (1 lec hr., 3 lab hrs.)

DiMch 54—Air Intake and Exhaust Systems (2)
This course is a study of air intake and exhaust systems of the diesel engine. The purpose, design, types of aftercoolers, air cleaners, blowers of the intake system and the purpose, design, and turbochargers of the exhaust system and maintenance of these systems will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, starting, and troubleshooting. (1 lec hr., 3 lab hrs.)

DiMch 55—Hydraulics/Pneumatics (3)
This course is a study of the hydraulic/pneumatic systems. The purpose, design, operating principles, inspection, maintenance and repair procedures will be covered. Shop activities include disassembly, cleaning, inspection, reassembly, and testing of various hydraulic/pneumatic components. (2 lec hrs., 3 lab hrs.)

Drafting and Engineering Aide

See Architectural/Engineering/CAD Technologies

Economics

Econ 20—Consumer Economics (3)
A consumer emphasis on money management for everyday living, income loans and savings, home investment, personal expenditures, deductions, and withholding taxes and interests. (3 lec hrs.)

Econ 50—Business Economics (3)
A one-semester course that provides general understanding of the functioning of economic systems, including monetary institutions and policies, unemployment, inflation, and other public issues. (3 lec hrs.)

Econ 120—Principles of Economics (3)
Formerly Econ 150
PreReq: Eng 21 or placement in Eng 102; and Eng 22 or ESL 15 or placement in Eng 100
General understanding of the functioning of economic systems, including various approaches to the organization of production and allocation of resources, and of policies to achieve national economic goals. These include determination of national income, inflation, recession, unemployment, taxation, labor unions, environmental pollution, energy, and economic growth. (3 lec hrs.)

Econ 130—Principles of Microeconomics (3)
PreReq: Eng 21 or placement in Eng 102; and Eng 22 or ESL 15 or placement in Eng 100; and Math 25X or 26 or placement in Math 100
This course analyzes the market mechanism, prices, competition, and the effecient allocation of scarce resources. Formulates possible solutions to comtemporary economic and social issues such as world food problems, poverty and distribution of income, market power of business including mulitnationals, role of labor unions, energy crisis, environmental pollution, consumerism, and welfare. (3 lec hrs.)

Econ 131—Principles of Macroeconomics (3)
PreReq: Eng 21 or placement in Eng 102; and Eng 22 or ESL 15 or placement in Eng 100; and Math 25X or 26 or placement in Math 100
This course analyzes the forces determining national and international economic performance in employment, inflation, production, money supply, and trade. Presents in historical context the modern economic situation. Describes relative roles of major economic institutions such as businesses, labor unions, government agencies, international organizations, and the banks. (3 lec hrs.)

Education

Ed 105—Introduction to Early Childhood (3)
PreReq: Eng 22 or ESL 15 or placement in Eng 100
Consists of the common core of knowledge that makes the field of early childhood a profession. Discusses the history of the field and early childhood models. Explores the teacher's style and roles. Introduces current issues and advocacy in early childhood. Gives students the opportunity to develop understanding about play and observation skills as they learn of the opportunities available to them in the field today. (3 lec hrs.)

Ed 110—Developmentally Appropriate Practices (3)
PreReq: Eng 22 or ESL 15 or placement in Eng 100
Offers a practical guide and overview of basic awareness, knowledge and skills necessary for working with children birth through age eight. Introduction to appropriate curriculum and planning in the early childhood program to meet the needs of the child: socially, physically, emotional, and intellectually. Discusses designing learning environments for young children, adult-child relationships, and an introduction to working with children with special needs. (3 lec hrs.)

Ed 115—Health, Safety, and Nutrition for the Young Child (3)
PreReq: Eng 22 or ESL 15 or placement in Eng 100
Includes methods for establishing a healthy and safe environment for the young child. Also includes basic understanding of the child's nutritional needs and its relationship to growth and development. Discusses current topics related to health and safety. (3 lec hrs.)

Ed 131—Early Childhood Development: Theory into Practice (3)
PreReq: Eng 22 or ESL 15 or placement in Eng 100
Covers principles of development from conception through early childhood. Focuses on the interrelation of physical, cognitive, emotional and social aspects of the individual during this period and how this information of development affects one's expectations and relationship to the individual child. (3 lec hrs.)

Ed 134—Introduction to Observation of Children (1)
PreReq: Eng 22 or ESL 15 or placement in Eng 100
Provides guided experiences in observing young children in selected community sites. Develops skills in observing and recording children's behaviors accurately, descriptively, and objectively. Explores and observes models of early childhood programs. (2 lec/lab hr.)