

Astronomy

ASTRO 101 (IAI: PI 906)

Guide to the Universe

Prerequisite: Placement into ENG 099 or higher

3 lectures per week: 3 hrs credit

This non-lab course is a one semester conceptual study of the major topics and concepts of astronomy. Topics include basic cycles and motions of the sky, major stars and constellations, properties of electromagnetic radiation and astronomical telescopes, history of astronomy, characteristics of the solar system, comparative planetology, stellar and galactic evolution and formation, structure of the Milky Way galaxy, types of galaxies, Dark Matter, and cosmology.

ASTRO 104 (IAI: PI 906L)

The Solar System and Beyond

Prerequisite: Placement into ENG 099 or higher and MATH 090 or higher

3 lectures, 2 lab hrs per week: 4 hrs credit

This lab course is a one-semester conceptual study and investigation of astronomical phenomena. Topics include cycles of the sun and moon, the origin of modern astronomy, electromagnetic radiation and astronomical telescopes, characteristics of the solar system, comparative planetology, evolution and death of stars, structure of the Milky Way galaxy, types of galaxies, modern cosmology, and astrobiology.

Automotive Technology

AUTO 101

Basic Automobile Service and Systems

Prerequisite: Placement into RDG 098 or higher

2 lectures, 2 lab hrs per week: 3 hrs credit

This course introduces automotive systems and service. It includes safety systems, drive lines, engines, transmissions, transaxles, heating and cooling systems, fuel systems, steering and brake systems, ignition systems, construction, and operating systems.

AUTO 102

Automotive Engines

Prerequisite: AUTO 101

2 lectures, 4 lab hrs per week: 4 hrs credit

This course focuses on automotive engine repair, disassembly, adjustments, assembly, and operation. Service units include block, cylinder heads, valve assembly, lubrication system, and cooling system.

AUTO 107

Automotive Electricity/Electronics I

Prerequisite: Placement into RDG 098 or higher

2 lectures, 4 lab hrs per week: 4 hrs credit

Specialized training is provided in the basic automotive electrical system, including the electrical circuits, storage batteries, cranking systems, charging systems, ignition systems, electrical system-circuit-component tests, and the testing equipment that pertains to the automotive diagnostic-service field.

AUTO 108

Suspension and Steering Systems

Prerequisite: AUTO 101

2 lectures, 4 lab hrs per week: 4 hrs credit

This course covers component repair operations, adjustments, and performance testing of front and rear suspension systems. Service units include control arm pivot shaft bushings, ball joints, springs, shocks, MacPherson struts, bearings, wheels, tires, steering linkages, and gears.

AUTO 202

Automatic Brake Systems

Prerequisite: AUTO 101

2 lectures, 4 lab hrs per week: 4 hrs credit

This course covers component repair operations, adjustments, and performance testing of drum and disk brake systems. Service units include wheel cylinders, master cylinders, power boosters, parking brakes, control devices, shoe drums, rotors, and fluid transfer lines. Students also are introduced to the computer systems that control the brake system.

AUTO 205

Manual Transmissions and Transaxles

Prerequisite: AUTO 101

2 lectures, 4 lab hrs per week: 4 hrs credit

This course covers operation and maintenance service of clutches, standard transmissions, overdrives, drive lines, differentials, and major manual transaxles.

AUTO 206

Automotive Engine Performance

Prerequisite: AUTO 102, 107

2 lectures, 4 lab hrs per week: 4 hrs credit

This course covers diagnosing and repairing complex engine and computer problems and drivability problems of the modern automobile.

AUTO 207

Automotive Heating/Air Conditioning

Prerequisite: AUTO 101

2 lectures, 4 lab hrs per week: 4 hrs credit

This course focuses on component repair operations and adjustments. Performance testing on heating, defrosting, and air conditioning systems is included. Retro fitting and alternative refrigerants also are studied.

AUTO 208

Automatic Transmissions and Transaxles

Prerequisite: AUTO 101

2 lectures, 4 lab hrs per week: 4 hrs credit

This course covers component repair operations, adjustments, and performance testing on automatic transmissions, transmission controls, auto transaxle transmissions, overdrives, and drive lines.

AUTO 210

Automotive Electricity/Electronics II

Prerequisite: AUTO 101 and 107

2 lectures, 4 lab hrs per week: 4 hrs credit

This course covers electrical circuit identification, isolation, testing repair, and component operation. Service units include batteries, starting system, ignition system, charging system, light circuits, gauges, and electrical accessories, and diagnosis on chassis electronics and all electrical components of the vehicle.

AUTO 211

Automotive Engine Performance II

Prerequisite: AUTO 206, 210

2 lectures, 4 lab hrs per week: 4 hrs credit

Student technicians cover the operational aspects of automotive computer output/input control systems, performance diagnosis procedures, repair, service, and OBD I, OBD II, readiness monitors, and IM-240.

AUTO 215

Advanced Automotive Service and Systems

Prerequisite: AUTO 206, 210

2 lectures, 4 lab hrs per week: 4 hrs credit

This course focuses on advanced automotive engine, engine performance, brake, electric/electronic, computer, and transmission system operation and diagnosis.

AUTO 223

Automotive Parts Management

Prerequisite: Placement into ENG 099 or higher

2 lectures per week: 2 hrs credit

Parts training includes the use of parts, equipment and supply catalogs, descriptive nomenclature, stock familiarization, pricing procedures, and inventory control.

AUTO 224

Automotive Service Management

Prerequisite: Placement into ENG 099 or higher

2 lectures per week: 2 hrs credit

This course covers automotive repair shop operations including the use of flat rate manuals, repair and order writing, familiarization with manufacturer and company policies and procedures, and existing labor agreements.

AUTO 298

Internship Seminar

Prerequisite: 12 hrs in AUTO courses

1 lecture per week: 1 hr credit

This course is structured to enable interns to participate in group discussions on current automotive repair practices and experiences related to their internship studies. A written report of work related activities is required.

AUTO 299

Internship: Automotive

Prerequisite: 12 hrs in AUTO and consent of program coordinator

20 lab hrs per week: 2 hrs credit (variable hrs of credit)

This course provides on-the-job experience combined with supervision. It is designed to present service technicians with a performance view of the automotive service professions.

Biological Science

BIOL 100 (IAI: LI 900L)

General Education Biology

Prerequisite: Placement into ENG 099 or higher

3 lectures, 2 lab hrs per week: 4 hrs credit

This one-semester introductory course for non-science majors is designed to fill the general education requirement for life science with a laboratory. The course covers cell biology, genetics, evolution and diversity, plant and animal structure and functions, animal behavior, and ecology. Students cannot receive credit for both BIOL 100 and 112.

BIOL 103 (IAI: LI 901)

Plants and Society

Prerequisite: Placement into ENG 099 or higher

3 lectures per week: 3 hrs credit

This course emphasizes scientific inquiry through selected concepts in biology such as organization, function, heredity, evolution, and ecology. Topics include plant structure, growth, genetics, evolution, physiology, reproduction, and the economic importance and inter-relationships between plants and humans. This course is for non-majors.

BIOL 105 (IAI: LI 905)

Environmental Biology

Prerequisite: Placement into ENG 099 or higher

3 lectures per week: 3 hrs credit

A consideration of the timely and urgent problems of mankind of a biological nature: pollution of air and water, adverse effects of radiation and insecticides on the environment, overpopulation, food production, thermal pollution, noise pollution, and other related topics.