CRT 2430

Division: Career and Technical Education
Department: Collision Repair and Refinishing Technology
Course: CRT 2430
Title: Mechanical and Electrical Repair
Catalog Description:

This course teaches basic mechanical systems theory, removal, and replacement. Students study air conditioning systems, cooling, braking, emission, restraint, and electrical systems. The course includes lecture, demonstrations, and lab, and uses Inter-Industry Conference on Auto Collision Repair (I-CAR) curriculum. Students that successfully complete the course will be prepared for Automotive Service Excellence (ASE) certification.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 4; Lecture: 1; Lab: 7
Clock/Hour Requirements: 128
Offered for Non-Credit: No
Prerequisites: CRT 1110

Corequisites: None

Justification:

The I-CAR curriculum is recognized as the leader in collision repair training. It also provides the necessary information to pass the ASE task lists and tests required for certification. This course was approved by the advisory committee and similar courses are taught at Utah Valley State College (CRT 2430) and Salt Lake Community College (ACR 1111).

Student Learning Outcomes:

Upon successful completion of this course, students will be able to:

- demonstrate knowledge of brake system
- demonstrate knowledge of passive restraint system
- demonstrate knowledge of air bag system
- demonstrate knowledge of air conditioning system
- demonstrate knowledge of cooling and heating system
- demonstrate knowledge of drive system.
- demonstrate knowledge of electrical system.

Content:

Course objectives will be achieved by providing students with instructional and hands-on experiences in the following areas:

- hazard management
- brake and anti-lock brake systems (ABS)
- passive restraints and air bags
- air conditioning system
- cooling system
- drive system
- front and rear wheels
- emission system
- electrical system
- battery
- electrical
- charging system
- troubleshooting mechanical and electrical problems.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.

Students will be required to measure body components before and after repair work is completed to ensure that proper tolerances and allowances are achieved. These measurements are taken often and repeatedly throughout the repair process to ensure progress toward the repair. These measurements are provided by laser, tram, and steel tape in metric and U.S. standard measurements.

Key Performance Indicators:

In class:

- Student progress will be evaluated on skill levels demonstrated in lab (70%), quiz scores (10%), and a final comprehensive exam (20%).

Following class:

- Safety and competency will be demonstrated in subsequent courses and on custom projects.
- Students will apply the techniques acquired on the job and pass national ASE certification tests.

Representative Text and/or Supplies:

- James E. Duffy, *I-CAR student textbooks and modules,* current editions, Delmar Publishers.

Optimum Class Size: 10
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

Andy Morgan, ,

I hereby find this course consistent with the goals and resources of the Collision Repair and Refinishing Technology Department:

Andy Morgan, , , Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)