

**GREAT PLAINS TECHNOLOGY CENTER
COURSE OF STUDY**

<u>Career Cluster:</u>	Transportation, Distribution and Logistics (TR)
<u>Career Pathway:</u>	Automotive Collision Repair (TR009)
<u>Career Major:</u>	Combination Collision Repair Technician (TR0090008)
<u>Career Major Hours:</u>	Secondary Students: 1,050 Hours Adult Students: 1,050 Hours
<u>Instructor:</u>	Name: Anthony Josey Office Number: (580) 250-5627 E-Mail Address: ajosey@greatplains.edu
<u>Academic Credit:</u>	Secondary Students: 3 high school credits per year Adult Students: Transcript
<u>Prerequisites:</u>	None

Career Major Description:

Students in this major will learn how to complete non-structural collision repair and automotive refinishing. The courses that will be covered include non-structural damage analysis and minor dent repair, plastics repair, all aspects painting and refinishing. Students will also learn how to use various tools in repairing damage and to remove and install handles, moldings, trim, and bolted body parts. In addition, the student will learn to MIG weld industry standard joints following I-CAR standards. This career major also includes painting preparation, sanding processes, color matching and adjusting color, removing and installing glass, and the process of written estimates. Students will learn about handling, storage and disposal of hazardous materials and selecting proper personal protective equipment and maintenance. The hours completed in this major are aligned with ASE/NATEF standards, and ASE certification is recommended and industry recognized.

Career Major Goals:

Students enrolled in this career major will be given the opportunity to develop the skills and attitudes needed to successfully enter the Auto Body Services field according to their personal choice, ability, and resourcefulness.

Upon achieving the goals of this career major, students will:

- Become competent in the fundamental skills of the occupation.
- Become qualified for further related education and/or entry into the job market.
- Work as a team member.
- Pass at least one Occupational State of Oklahoma certification test.
- Become qualified for further related education and/or enter the job market.
- Demonstrate independence in using problem solving and critical thinking techniques in completing all work assignments.
- Develop the ability to work with limited or no supervision.
- Accept and abide by the rules and regulations established by the school and/or place of employment.

Related Career Opportunities:

- Refinishing Technician
- Non Structural Repair Technician
- Glass Replacement Specialist
- Detailing Specialist

Career Major Objectives:

After successful completion of this career major, the student will be able to:

- Use basic measurement and mathematic techniques.
- Repair conventional and unibody frames.
- Perform body panel and structural alignments.
- Repair sheet metal and fiberglass body panels
- Utilize thermoplastic and thermosetting plastic techniques.
- Perform a variety of welding processes.
- Complete a variety of refinishing techniques.
- Replace glass.
- Prepare estimates.
- Complete a job application.

Career Major Course Sequence:

- HS Student and Part-time Adult (Year One): Course Sequence I
- HS Student and Part-time Adult (Year Two): Course Sequence II
- Full-time Adult (Year One): Course Sequence I and II

**DESCRIPTION OF COURSES
SEQUENCE I**

<u>Course #</u>	<u>Course Name</u>	<u>HST</u>	<u>HSL</u>	<u>ADT</u>	<u>ADL</u>
TI00751	Introduction to Collision Repair Technology	45	0	45	0
In this course, the student will cover tools and equipment, safety, hazardous material handling and storage. The student will be taught to identify safety and hazardous warning information for products used in the collision repair industry and the Right-To-Know Act. Students will also study the collision repair industry and the preparation of the vehicle for entering the repair facility.					
TI00397	Auto Collision Damage Analysis	20	55	20	55
Within this course, the students will learn to inspect a damaged vehicle and correctly identify all damage. This damage analysis will cover the entire vehicle from minor to major damage with structural misalignment. This course will cover the different types of vehicle construction found on the road today, such as uni-body, full body-over-frame frame and the hybrid frame/semi-unibody. Students will learn to look for indicators of damage and how collision energy is managed and travels through a vehicle during a collision. Some of the measuring equipment that will be covered is the centerline gauge, tram bar, universal measuring system and computer measuring systems. Measuring of the vehicle structure will be covered with the students learning to set-up and analyze the measurements to determine damage. The students will learn to look at damage in 3-Dimension, which are length, width and height.					
TI00281	Auto Collision Written Estimating	10	20	10	20
This course will cover the how an estimate becomes the communication tool between the repair facility and the insurance company or customer. In this course, the student will learn to write an accurate damage report by collecting the pertinent information from the customer and the vehicle and using					

procedure pages in manual estimating guides. Students will learn to look up parts prices and labor hours as well as how to make repair judgment calls when straightening panels. The student will assemble all of the information into a complete damage estimate.

TI00341 Auto Collision Computerized Damage Estimating 20 10 20 10

In this course, the student will learn to prepare a damage report using computer estimating systems. The students will learn about the advantages of computer database estimating over the manual hand written version. Students will learn to collect all of the pertinent information from the customer and the vehicle and how to input this information into the document. Students will learn to import digital pictures used for documentation. This course will cover the how a damage estimate becomes the communication tool between the repair facility and the insurance company or customer.

TI00343 Auto Collision Non-Structural Metal Straightening/Repair 20 70 20 70

In this course, the student will learn the basics of using metal straightening tools, such as dollies and hammers to repair minor dents and dings in sheet metal. Students will cover techniques to repair contours and bodylines in sheet metal. Metal shrinking and stretching will be taught to help students bring the metal back to original contour. Students will learn about the different body fillers. Students will learn techniques to mix and apply body filler. Students will learn to select the proper sandpaper and sanding equipment and learn techniques to sand the cured body filler to original contour then prepare the repair for primer.

TI00275 Automotive Body Panel Adjustment and Alignment 15 30 15 30

In this course, the students will learn to remove, install and align bolted body parts. Some of the parts covered in this course will be fenders, hoods, doors, decklids, bumpers and bumper covers. This course will also cover wind noise and water leak detection related to panel alignment.

TI00342 Auto Collision Mig (GMAW) Welding 25 80 25 80

In this course, the student will learn about the specific personal safety equipment used when MIG welding, and how to protect the vehicle when welding. The student will cover the MIG welding equipment and how to tune and trouble shoot the welder. Students will learn to join two pieces of metal using the appropriate process and joint selection. The welding joints covered will be: lap/fillet, butt, butt w/backing and plug. Students will learn techniques for welding in the vertical and overhead position using I-Car specific specifications.

TI00279 Auto Collision Steering & Suspension 15 30 15 30

Within this course, the students will learn to identify steering and suspension components and the various designs used in vehicle construction today. Then the students will learn to identify worn and damaged parts and the proper techniques to remove and replace the components. This course will cover alignment angles and how collision damage can affect them. Within this course the students will learn the importance of proper structural alignment to ensure accurate mounting locations for engine cradles and steering & suspension components. This course will also cover how to identify tire markings and analyze damage to tire and wheel assemblies.

TI00344 Auto Collision Plastic Component Repair and Replacement 20 40 20 40

In this course, the student will learn to identify different types of plastic used in the construction of vehicles. Students will learn to make repair/replace decisions on plastic parts. Students will learn to prepare for both single and two-sided repairs on plastic parts. The course includes both adhesive type repairs and plastic welding. Sheet Molded Compound (SMC) identification along with one-sided and two-sided repairs will be covered.

Sequence I Subtotal Hours:	Theory	Lab	Total
High School Student:	190	335	525
Adult Student:	190	335	525

**DESCRIPTION OF COURSES
SEQUENCE II**

<u>Course #</u>	<u>Course Name</u>	<u>HST</u>	<u>HSL</u>	<u>ADT</u>	<u>ADL</u>
TI00347	Auto Collision Trim and Hardware	10	20	10	20
	Within this course, the student will learn about the different fasteners used in vehicle construction. Students will cover removing and installing trim, locks and trim panels while experiencing different types of hardware or attachment methods.				
TI00348	Automotive Glass Replacement	15	45	15	45
	In this course, the student will learn to identify types of automotive glass. Common glass specialty tools used to remove and install glass will be covered. Students will learn techniques to remove and install stationary glass and be able to identify the properties and characteristics of primers, adhesives and sealants. Students will also cover movable glass and learn some techniques of trouble shooting the mechanisms and methods to remove and install movable glass components.				
TI00284	Refinish Preparation	35	70	35	70
	In this course, the student will learn how to prepare the surface for the refinishing process. The student will cover topics about sandpaper and learn techniques to choose the proper grit and how to operate sanding equipment. This course will provide instruction in masking techniques and products used to mask and protect areas not in the refinish operation. The students will learn proper techniques for block and finish sanding prior to topcoat application. Students will learn to apply proper substrate cleaning before the application of refinish products.				
TI00831	Refinish Application	20	100	20	100
	In this course, spray gun operation will be covered in great detail and applied to different products used in refinishing. Students will learn about corrosion protection products and how to mix and apply them, which will include etching primers, primer surfacer and sealing materials. Seam sealers and chip resistant coatings will be covered to demonstrate their role and application process. Students will learn about topcoats, like basecoat/clear coat products and their application techniques. Included in this course is instruction to determine the cause and corrective action for finish failures.				
TI00285	Refinish Color Adjustment	15	60	15	60
	In this course, the students will learn to make a spray-out panel and how to evaluate the color match. Techniques and strategies for adjusting the color for an acceptable color match will be taught. Students will learn techniques to help adjust high metallic/mica colors as well as tri-coat colors.				
TI00830	Refinish Blending and Painting Defects	10	35	10	35
	In this course, the student will learn masking techniques specific to the blending. Students will learn how to apply the refinish material to perform an undetectable repair. Included in this course will be instruction on how to determine the cause and corrective action for refinishing defects and failures.				

TI00283 Automotive Detailing 10 50 10 50

In the detailing course, the student will learn to complete the refinishing repair. The student will learn to sand and polish the refinish material after curing, prepare for delivery by washing and cleaning interior and exterior of the vehicle.

TI00802 Workforce Staging 0 30 0 30

This course is designed to be delivered as an integrated component within the courses taken by the individual student. The course is designed for the development of leadership, personal development and employability skills.

Sequence II Subtotal Hours:	Theory	Lab	Total
High School Student:	115	410	525
Adult Student:	115	410	525

Career Major Total:	Theory	Lab	Total
High School Student:*	305	745	1050
Adult Student:	305	745	1050

* High school students may complete this career major in an adult enrollment status if necessary. Please see your instructor or counselor for details.

Evaluation Policy:

Employability Grades (100 points per week; 30% of final grade)

The employability skills grade is based on 20 points per day (which may include: attitude, attendance, safety, punctuality, cooperation, participation, clean-up, class preparation, school/classroom rules, and time management). Points will be deducted if these responsibilities are not met at the instructor's discretion. Students will be allowed to make up unearned employability points for **excused** absences only. Full credit will be given for assignments/tests that have been made up due to excused absences only (see Student Handbook).

Performance Grades (40% of final grade)

- Live projects
- Performance or skill tests
- Homework
- Written Assignments

Test Grades (30% of final grade)

- Test grades will be based on a 100-point scale.
- Test grades include written and/or skills tests.
- A test will be given for each unit of instruction.
- Tests are to be taken as a unit is completed.
- Tests must be completed within allotted time.

Final Grade (9 Weeks Period)

9-weeks grade will be calculated by averaging grades in each category and summing each category according to their assigned weight. Progress reports will be sent to home schools at

six and twelve-week intervals each semester as required or requested. Grades are accessible on-line at <http://sonisweb.greatplains.edu/studsect.cfm>

Grading Scale:

The grading scale as adopted by the Board of Education is as follows:

- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 60 – 69
- F = Below 60
- W = Withdrawn
- I = Incomplete
- N = No Grade (Refer to Student Handbook)

Make-Up Work Policy:

All Make-Up Work Is The Responsibility Of The Student. Make-up work will be handled as specified in the Student Handbook. Please be sure to read and understand all student policies, especially make-up of assignments, tests and employability due to absences. Students should always arrange for any make-up work with the instructor as per the Student Handbook. Students should keep track of his or her progress and grades.

Attendance Policy:

For specific information related to attendance and tardiness refer to the Student Handbook. Students should keep a written record of their absences and tardiness.

Course Requirements and Expectations:

The general course requirements and expectations include:

- Teaching methods consist of lecture and “hands on” projects.
- The student must demonstrate the ability to apply safety to all aspects of the auto collision field.

Student Behavior Includes:

- Safety glasses **must** be worn at all times when in the shop area
- Coveralls must be worn at all times in the shop area.
- Name badges must be worn at all times.
- Follow all rules and regulations of Great Plains Technology Center.

NOTE: For additional information or questions regarding the GPTC School policies and procedures, please refer to the Student Handbook and/or the Instructor.

Industry Alignments:

- Automotive Service Excellence (ASE) - two years of training in collision repair will substitute for one year of work experience
- Inter-Industry Conference on Auto Collision Repair (ICAR)
- National Institute for Automotive Service Excellence (NATEF)

Certification Outcomes:

Tier 1 – Certifications Recognized, Administered and/or Endorsed by Industry

- ASE: CRR: STUDENT: Mechanical and Electrical Components (2060)
- ASE: CRR: STUDENT: Non-Structural Analysis and Damage Repair (2059)
- ASE: CRR: STUDENT: Painting and Refinishing (2057)

- ASE: CRR: STUDENT: Structural Analysis and Damage Repair (2058)

Tier 2 – Certifications Endorsed by Industry Organizations

- ODCTE: Damage Appraiser/Estimator (2011)
- ODCTE: Non-Structural Analysis & Damage Repair Technician (2002)
- ODCTE: Painting & Refinishing Technician (2005)

Tier 7 – National Career Readiness Certificate in Applied Mathematics, Locating Information and Reading for Information:

- Platinum Level – 6 or above in all three areas
- Gold Level – 5 or above in all three areas
- Silver Level – 4 or above in all three areas
- Bronze Level – 3 or above in all three areas

CIP Code and SOC Code Crosswalk:

- CIP Code – 47.0603
- SOC Code – 49-3021.00

Instructional Materials:

Students are not required to purchase textbooks or supplemental materials.

Textbooks:

Crandell, Michael. Auto Collision Repair and Refinishing. 1st ed. 978-1-61960-387-5. The Goodheart-Willcox Company, Inc., 2014.

Crandell, Michael. Workbook Auto Collision Repair and Refinishing. 1st ed. 978-1-61960-392-9. The Goodheart-Willcox Company, Inc., 2014.

I-CAR Enhanced Curriculum (CD)