



Outcome-based 18/SP Course Syllabus

Course Rubric Number Section: ABDR 1203 1002
Lecture-Lab-Credit: 1-2-2
CIP Code: 47.0603
Course Title: Vehicle Design and Structural Analysis
Course Description: An introduction to the collision repair industry with emphasis on safety, professionalism, and vehicle structural design.
Prerequisites:
Co-requisites:
Course Meets: 1FC1 107 LEC T 08:00AM 08:55AM 1TTC 120 LAB T 09:00AM 10:55AM

Instructor: David Reed
Office Phone Number: (254) 765-2011
Email Address: ddreed@tstc.edu
Office Fax Number: (254) 867-2315
Building & Office Room Number:
Office Hours:

Approved by: _____	Date: _____
---------------------------	--------------------

Course Outcomes

- CO1:** Identify the safe use of tools
- CO2:** Identify the safe use of equipment
- CO3:** Demonstrate metric measuring competencies
- CO4:** Demonstrate Society of Automotive Engineers (SAE) measuring competencies
- CO5:** Demonstrate shop safety practices

TSTC Grading Policy

(Grades for courses must be C or better)

Grade	Percent	Description	Grade Points
A	90-100	Excellent/Superior Performance Level	4
B	80-89	Above Required Performance Level	3
C	70-79	Minimum Required Performance Level	2
D	60-69	Below Required Performance Level	1
F	Below 60	Failure to meet Performance Requirements	0
IP	--	In Progress	
W	--	Withdrawal	0
CR	--	Credit	0
AUD	--	Audit of Course	0

See College Catalog for complete descriptions.

Competencies Rating Scale

Rating Scale Key			
6	90+	Proficient	Student consistently performs the task accurately to industry standards without supervision.
5	80-89	Proficient	Student performs the task to industry standards with no supervision.
4	70-79	Proficient	Student performs the task to industry standards with little supervision. This is the minimum performance rating for STAR skill completion.
3	60-69	Exposed/Not Proficient	Student has been introduced to the task and can perform some of the tasks to industry standards.
2	50-59	Exposed/Not Proficient	Student has been introduced to the task, but cannot perform the task to industry standards.
1	0-49		Student was absent or did not complete assignment.

Campus Standard Policies

The [Student Handbook](#) contains valuable information on campus policies and procedures.

- Student Code of Conduct
- Student Drug and Alcohol Testing Policy
- Plagiarism

Disability Services

Any student who, because of a disability, may require special accommodations in order to meet the course requirements, should contact the Disability Services office, as soon as possible, to make necessary arrangements. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Disability Services office has been provided.

Abilene Campus

Susan Hash
Testing and Support Services
Abilene Main Campus Bldg. Rm. 112
325-734-3641

Breckenridge Campus

Lisa Langford
Testing and Advisement located in
The Main Building Rm. 106
254-559-7731

Brownwood Campus

Nicole Whitley
Testing and Advisement
Building 2 Rm. 120
325-641-5955

Fort Bend Campus

Georgeann Calzada
Industrial Technology Center Rm. 108
346-239-3422

Harlingen Campus

Corina De La Rosa
Disabilities Services
Student Support Services
Student Services Bldg. Rm. 216
956-364-4521

Marshall Campus

Annette Ellis
Administration and Admissions Rm. 150
909-923-3313

Sweetwater Campus

Misty Walden
Disability Services
Student Support Services
Lance Sears Building Rm. 140
325-236-8292

North Texas Campus

Amanda Warren
Student Services, Room 227
972-617-4724

Waco Campus

Marilyn Harren
Disabilities Services Office
Student Services Center Rm. 198
254-867-3600

Williamson County

Chemese Armstrong
Enrollment Services Rm. B113C
512-759-5907

Tutoring Statement

The Supplemental Instruction & Tutoring Program at TSTC offers free tutoring and academic support services to help you achieve your academic and career goals. You can access the Tutoring Schedule, as well as *MyTSTC Video Tutor Library*, by visiting: https://portal.tstc.edu/student/Student_Learning/Pages/Tutoring.aspx (shortened link: goo.gl/Z9vJvY). For more information, please contact Norma A. Salazar@ 956-364-4557.

Learning Resource Center

The purpose of the TSTC Learning Resource Center is to serve the TSTC Community and support academic, advanced, specialized and emerging programs, contributing to the educational and economic development of the State of Texas. You can access the Learning Resource Center page at <https://portal.tstc.edu/employee/Departments/operations/Pages/Learning%20Resource%20Center.aspx>

Resources

Tools, Materials:

Item	Resource	Quantity
1	NIOSH approved Safety Glasses (Clear)	1 pair
2	Scantrons	10
3	Pens (Blue or Black)	1 pkg
4	Pencils	1 pkg
5	Tablet or Notebook	1

Grade Scheme		
Category Description		Category Value
Lecture		33.33%
Assessment Label:	Assessment Description	Assessment Value
Quiz 1::	Safety Test	2.22%
(SP2) Safety and Pollution Prevention:	Complete Personal Safety, Environment and Interview Modules in the online SP2 program.	2.22%
1. ICAR Intro Series IPS00e:	Intro to Personal Safety	2.22%
2. ICAR Intro Series HWD01e:	Hazardous material Storage and Disposal	2.22%
3. ICAR Intro Series IRT00e :	Intro to Industry Repair Terms	2.22%
4. ICAR Intro Series IVT01e :	Intro to Vehicle Parts Terminology, Part 1	2.22%
5 ICAR Intro Series IVT02e :	Intro to Vehicle Parts Terminology, Part 2	2.22%
6. ICAR Intro Series ITM01 :	Intro to Tools, Equipment and Attachment Methods Part 1	2.22%
7. ICAR Intro Series ITM02 :	Intro to Tools, Equipment and Attachment Methods Part 2	2.22%
8. ICAR Intro Series ICM00e :	Intro to Vehicle Construction Materials	2.22%
9. ICAR Intro Series IRP00e:	Intro to Collision Repair Process Overview	2.22%
10. ICAR Intro Series IMT01e:	Intro to Mechanical Systems Terminology, Part 1	2.22%
11. ICAR Intro Series IMT02e:	Intro to Mechanical Systems Terminology, Part 2	2.22%
12. ICAR Intro Series IMV00e:	Intro to Mechanical Repair Terms and Vehicle Protection	2.22%
13. ICAR Intro Series ISS00e:	Intro to Safety Systems	2.22%
Category Description		Category Value
Lab		33.33%
Assessment Label:	Assessment Description	Assessment Value
Safety Inspection:	Shop Safety Inspection	1.75%
Lift:	Lift Inspection and Lifting Points Worksheet	1.75%
Label:	Label Worksheet	1.75%
Tool Identification :	Tool Identification	1.75%
Lab Performance #1:	Labels Performance	3.51%
Lab Performance #2:	Shop Safety Inspection Performance	3.51%
Lab Performance #3:	Lift Inspection/ Lifting Points Performance	3.51%
Lab Performance #4:	Measuring	3.51%
Lab Performance #5:	Liquid Measurement	3.51%
Liquid Measurements:	Liquid Measurement Worksheet	1.75%
Measuring:	Measuring Worksheet	1.75%
Vehicle Components:	Identify body and frame components Worksheet	1.75%
Lab Performance #6:	Identify body and frame components	3.51%
Category Description		Category Value
Final		33.34%
Assessment Label:	Assessment Description	Assessment Value
Mid-Term Exam:	Comprehensive exam covering previously assigned chapters.	8.00%
Final Exam:	Comprehensive exam covering entire semester class lessons	25.34%
Total Assessment Percent		100.00%
Total Category Percent		100.00%
A = 100-90	B = 89-80	C = 79-70
		D = 69-60
		F = 59-0

Description of Graded Elements of the Course			
Assessment Label	Assessment Description/Course outcomes met	Assessment Value in Percent	% of Final Grade
Liquid Measurements	Liquid Measurement Worksheet Course outcomes met: CO1, CO2, CO3, CO4, CO5	1.75	1.75%
Lab Performance #4	Measuring Course outcomes met: CO5, CO4, CO3, CO2, CO1	3.51	3.51%
Lab Performance #5	Liquid Measurement Course outcomes met: CO1, CO2, CO3, CO4, CO5	3.51	3.51%
Mid-Term Exam	Comprehensive exam covering previously assigned chapters. Course outcomes met: CO5, CO4, CO3, CO2, CO1	8.00	8.00%
8. ICAR Intro Series ICM00e	Intro to Vehicle Construction Materials Course outcomes met: CO1, CO2, CO3, CO4, CO5	2.22	2.22%
9. ICAR Intro Series IRP00e	Intro to Collision Repair Process Overview Course outcomes met: CO5, CO4, CO3, CO2, CO1	2.22	2.22%
10. ICAR Intro Series IMT01e	Intro to Mechanical Systems Terminology, Part 1 Course outcomes met: CO1, CO2, CO3, CO4, CO5	2.22	2.22%
13. ICAR Intro Series ISS00e	Intro to Safety Systems Course outcomes met: CO5, CO4, CO3, CO2, CO1	2.22	2.22%
Vehicle Components	Identify body and frame components Worksheet Course outcomes met: CO1, CO2, CO3, CO4, CO5	1.75	1.75%
Lab Performance #6	Identify body and frame components Course outcomes met: CO5, CO4, CO2, CO3, CO1	3.51	3.51%
Final Exam	Comprehensive exam covering entire semester class lessons Course outcomes met: CO1, CO3, CO2, CO4, CO5	25.34	25.34%
11. ICAR Intro Series IMT02e	Intro to Mechanical Systems Terminology, Part 2 Course outcomes met: CO5, CO4, CO3, CO1, CO2	2.22	2.22%
12. ICAR Intro Series IMV00e	Intro to Mechanical Repair Terms and Vehicle Protection Course outcomes met: CO2, CO1, CO3, CO4, CO5	2.22	2.22%
Quiz 1:	Safety Test Course outcomes met: CO5, CO3, CO4, CO2, CO1	2.22	2.22%
(SP2) Safety and Pollution Prevention	Complete Personal Safety, Environment and Interview Modules in the online SP2 program. Course outcomes met: CO2, CO1, CO3, CO5, CO4	2.22	2.22%
1. ICAR Intro Series IPS00e	Intro to Personal Safety Course outcomes met: CO4, CO5, CO3, CO1, CO2	2.22	2.22%
2. ICAR Intro Series HWD01e	Hazardous material Storage and Disposal Course outcomes met: CO2, CO1, CO3, CO4, CO5	2.22	2.22%
3. ICAR Intro Series IRT00e	Intro to Industry Repair Terms Course outcomes met: CO5, CO4, CO3, CO1, CO2	2.22	2.22%
4. ICAR Intro Series IVT01e	Intro to Vehicle Parts Terminology, Part 1 Course outcomes met: CO2, CO1, CO3, CO4, CO5	2.22	2.22%
5 ICAR Intro Series IVT02e	Intro to Vehicle Parts Terminology, Part 2 Course outcomes met: CO5, CO4, CO3, CO1, CO2	2.22	2.22%
6. ICAR Intro Series ITM01	Intro to Tools, Equipment and Attachment Methods Part 1 Course outcomes met: CO2, CO1, CO3, CO4, CO5	2.22	2.22%
7. ICAR Intro Series ITM02	Intro to Tools, Equipment and Attachment Methods Part 2 Course outcomes met: CO5, CO4, CO3, CO1, CO2	2.22	2.22%
Safety Inspection	Shop Safety Inspection Course outcomes met: CO1, CO2, CO3, CO4, CO5	1.75	1.75%
Label	Label Worksheet Course outcomes met: CO5, CO4, CO2, CO3, CO1	1.75	1.75%
Lift	Lift Inspection and Lifting Points Worksheet Course outcomes met: CO1, CO3, CO2, CO4, CO5	1.75	1.75%
Tool Identification	Tool Identification Course outcomes met: CO5, CO4, CO3, CO2, CO1	1.75	1.75%
Lab Performance #1	Labels Performance Course outcomes met: CO1, CO2, CO3, CO4, CO5	3.51	3.51%

#	Course Outcomes met: CO1, CO2, CO3, CO4, CO5		
Lab Performance #2	Shop Safety Inspection Performance Course outcomes met: CO5, CO4, CO3, CO2, CO1	3.51	3.51%
Measuring	Measuring Worksheet Course outcomes met: CO1, CO2, CO3, CO4, CO5	1.75	1.75%
Lab Performance #3	Lift Inspection/ Lifting Points Performance Course outcomes met: CO5, CO4, CO3, CO2, CO1	3.51	3.51%
		100.00	100.00%

Description of Graded Elements of the Course:

Student test assessments will be graded on the ability to choose the correct answer in regard to multiple choice questions, test questions that require a missing word and brief statements.

Performance assessments are designed to enhance the student's level of competency based on the course outcomes and expectations of the industry.

Students cannot advance to the Lab Performance Exams until the required practice labs are completed and ALL Practice Labs and Performance Labs must be complete before Course Comprehensive Final Exam will be administered.

Safety Procedures

Students are required to participate in a safety lecture prior to performing in the laboratory portion of the course. A written test will be given to each participating student covering the presented safety materials. Students must complete the safety test with 100% accuracy prior to receiving lab assignments.

All lecture and laboratory safety rules and regulations will be followed in every detail. Failure to comply with this policy will result in dismissal from class until further notice.

Acceptance Attire

§NIOSH approved with clear safety glasses will be worn at all times

§Full-toed shoes (no slippers, sandals, flip-flops, or bare feet)

§Full length pants (must extend past ankles)

§Pants must fit around waist within 3 inches of belly button

§Shirts (no sleeveless or tank tops)

§Shirts with and without buttons can be worn with instructor approval on neck opening exposure

§Clothing must be reasonably snug fitting (not excessively loose, baggy, torn)

§An inappropriate slogan on clothing is not acceptable.

§Jogging clothes, sweats, or warm-ups are not acceptable.

§Appropriate headgear

§The Instructor has the final authority concerning matters of dress

Classroom and Lab Behaviors

§Smoking in classrooms, laboratories and shops are prohibited

§Smoking is permitted only in designated areas

§Smoking is prohibited within 20 feet of a building, when permitted

§Smoking is prohibited within the fenced area surrounding the ACM Labs.

§The consumption of drinks, candy and other food items is restricted to lounge areas

§Eating or drinking in laboratories are hazardous because of the toxic nature of lab materials being handled

§No horseplay at any time

§Be responsible – Be a professional

Auto Collision and Management Participation Policy:

A student is expected to attend and participate during the scheduled period of instruction (lecture and lab). This begins with the first scheduled class day of the term and continues to the last scheduled class day of the term. The student who chooses to consistently participate in class discussions and activities sets themselves to be highly successful. The class and lab activities are designed to develop skills necessary to thrive in the collision repair industry. Skills can only be developed by discovery, observed demonstration, time to try and time to increase neurological and muscle growth. Each student has purchased and set aside time to develop knowledge and skills to be successful in this industry. Make every effort to get everything possible from this time.

If a student happens to complete assigned objectives ahead of schedule the instructor and the lead instructor/department chair will discuss and plan activities to continue the growth of these skills. Take advantage of every opportunity to grow as a technician. The Auto Collision Department is dedicated to developing highly trained entry level technicians with the skills and knowledge to advance at a rapid pace.

But, life happens. In these situations handle it properly. Students should call in and leave word with the instructor or someone in the office. If possible let the instructor know beforehand, so he can work with you and be better prepared to help keep you caught up. Schedule appointments outside of class time when possible. Provide documentation of the events when possible so that accurate records are kept and integrity is never questioned. Make sure to take responsibility of any make up work and adjust lab work to meet project deadlines

and integrity is never questioned. Make sure to take responsibility or if you make up work and adjust lab work to meet project deadlines. Always be honest and straight forward. When life happens, work through it.

Daily, Weekly, Assignments and Participation Grades:

A class participation grade will be taken each and every class day. The quiz or assignment will be the participation grade if given. Otherwise, 25 will be given for attending and being on time. A 12.5 will be given if you are tardy. An unexcused absence will earn a grade of "ZERO". The Midterm and Final Exams will include the participation grade for those days. 25% of the exam grade will be deducted if you are tardy. A grade of "ZERO" will be earned if you have an unexcused absence.

Tardiness:

When a student arrives or leaves after participation record (role) has been taken it becomes the student's responsibility to alert the instructor of his/her arrival or departure and confirm that the proper update has been made in the student participation record. If the instructor fails to document the arrival or departure it is the student's fault. This has to be this way especially in the lab environment because the instructor does not keep his participation record on his person at all times.

Leaving the lecture or lab early without proper notice could become a safety issue and needs to be taken very seriously. In an emergency situation each student must be accounted for.

Please, out of respect for first responders, instructors and classmates who may go back into a dangerous situation to get you out, let the instructor know when you leave.

Any earned non-participation time will be recorded, tallied and included in the 10% non-participation policy.

Each Tardy will be 1% addition of non-participation to the non-participation policy.

Late Work/Test Policies

All students are required to be present for class. However, unexpected circumstances will occur. If a student has an excused absence, death or illness in the immediate family, the student must notify the instructor of record immediately. If a test is missed, the instructor has to give permission for makeup. The missed test must be made up before the next scheduled period of instruction.

An excused absence only allows for makeup of missed assignments or test. The absence is recorded. Excused absences are determined by the instructor.

Assignments are due at the beginning of class of the set due date. Late assignments will not be accepted and a grade of "zero" will be earned for said assignment. Students who prior contacted the instructor may be considered excused.

Pop Tests

Can be given at any time by the instructor and are not make up items.

Exemptions

Students can be exempted from a final exam if:

- A. Lecture average is 90 or above
- B. Attendance is perfect
- C. Assignments are completed and turned in

Cell phone Policy

Cell phones may be brought into the classroom or lab. However, they must be in the off or vibrate position.

Anyone failing to adhere to this policy will be dismissed from class and issued a non-participation grade (absence) for that period of instruction.

Departmental Awards Ceremony/Cleanup Policy

Each student is expected to participate in the awards ceremony and cleanup activities once the date has been identified.

Students' final exam grade is dependent upon their participation at these functions. One half (1/2) of the final exam grade for the course is participation. One half (1/2) of the final exam grade is completing the final exam for the course.

Students with unexpected circumstances can be excused by the department chair only.

TSTC school calendar identifies the end of the semester. Student break begins the day after.

Course Schedule			
Unit/ Week	Unit Description/Objectives	Assessment Label:Description	Due Date
1	Week 1: Introduction of Course Syllabus and Requirements		
	<ul style="list-style-type: none"> 1. Summarize the contents of the course syllabus as discussed in student orientation. 	Visit www.i-car.com Register for a myI-CAR account Return ID number to instructor Quiz 1:: Safety Test (SP2) Safety and Pollution Prevention: Complete Personal Safety, Environment and Interview Modules in the online SP2 program. 1. ICAR Intro Series IPS00e: Intro to Personal Safety 2. ICAR Intro Series HWD01e: Hazardous material Storage and Disposal 3. ICAR Intro Series IRT00e : Intro to Industry Repair Terms 4. ICAR Intro Series IVT01e : Intro to Vehicle Parts Terminology, Part 1 5 ICAR Intro Series IVT02e : Intro to Vehicle Parts Terminology, Part 2 6. ICAR Intro Series ITM01 : Intro to Tools, Equipment and Attachment Methods Part 1 7. ICAR Intro Series ITM02 : Intro to Tools, Equipment and Attachment Methods Part 2	End of class Week 8 Week 8 Week 8 Week 8 Week 8 Week 8 Week 8
2	Week 2: Safety Data Sheet Course Outcome: CO3: Demonstrate shop safety practices		
	<ul style="list-style-type: none"> Describe the different characters and methods of label warnings Recognize the different types of hazardous wastes generated in a collision repair facility; discuss the regulations for handling hazardous waste. Apply the proper procedures for handling and storing all hazardous materials in the collision shop. 	Safety Inspection: Shop Safety Inspection Label: Label Worksheet	End of Class End of Class
3	Week 3: Tools and Equipment Course Outcome: CO1: Identify the use of tools and equipment. CO3: Demonstrate shop safety practices.		
	<ul style="list-style-type: none"> Identify and describe the different types of repair equipment found in a collision repair facility. 	Lift: Lift Inspection and Lifting Points Worksheet	End of Class
4	Week 4: Tools and Equipment Course Outcome: CO3: Demonstrate shop safety practices		
	<ul style="list-style-type: none"> Identify and describe the different types of tools found in a collision repair facility. 	Tool Identification : Tool Identification Lab Performance #1: Labels Performance Lab Performance #2: Shop Safety Inspection Performance	In Lab End of class In Lab
5	Week 5: Specifications and Measurement in Collision Repair Course Outcomes: CO1: Identify the safe use of tools CO2: Identify the safe use of equipment CO3: Demonstrate metric measuring competencies CO4: Demonstrate Society of Automotive Engineers (SAE) measuring competencies CO5: Demonstrate shop safety practices		
	<ul style="list-style-type: none"> Perform structural analysis using various measuring equipment. 	Measuring: Measuring Worksheet Lab Performance #3: Lift Inspection/ Lifting Points Performance	In Lab In Lab
6	Week 6: Specifications and Measurement in Collision Repair Course Outcomes: CO1: Identify the safe use of tools CO2: Identify the safe use of equipment CO3: Demonstrate metric measuring competencies CO4: Demonstrate Society of Automotive Engineers (SAE) measuring competencies CO5: Demonstrate shop safety practices		

	<ul style="list-style-type: none"> Explain the types of measurements required for paint mixing and vehicle dimensional measuring. 	Liquid Measurements: Liquid Measurement Worksheet In Class Lab Performance #4: Measuring In Lab
7	Week 7: Review Course Outcomes: CO1: Identify the safe use of tools CO2: Identify the safe use of equipment CO3: Demonstrate metric measuring competencies CO4: Demonstrate Society of Automotive Engineers (SAE) measuring competencies CO5: Demonstrate shop safety practices	
	<ul style="list-style-type: none"> Review information discussed from Week 1 through Week 6 	Lab Performance #5: Liquid Measurement End of Class
8	Week 8: MID-TERM EXAM Course Outcomes: CO2: Demonstrate metric and SAE measuring competencies. CO3: Demonstrate shop safety practices.	
	<ul style="list-style-type: none"> Recall information previously discussed from Week 1 through Week 7. 	Mid-Term Exam: Comprehensive exam covering previously assigned chapters. In class
9	Week 9: Vehicle Construction and Terminology Course Outcomes: CO1: Identify the use of tools and equipment. CO3: Demonstrate shop safety practices.	
	<ul style="list-style-type: none"> Identify the differences between space frame, body-over-frame (BOF) and a true unibody vehicle. 	Review: Review Mid-Term Exam End of class 8. ICAR Intro Series ICM00e : Intro to Vehicle Construction Materials Week 14 9. ICAR Intro Series IRP00e: Intro to Collision Repair Process Overview Week 14 10. ICAR Intro Series IMT01e: Intro to Mechanical Systems Terminology, Part 1 Week 14 11. ICAR Intro Series IMT02e: Intro to Mechanical Systems Terminology, Part 2 Week 14 12. ICAR Intro Series IMV00e: Intro to Mechanical Repair Terms and Vehicle Protection Week 14 13. ICAR Intro Series ISS00e: Intro to Safety Systems Week 14 Vehicle Components: Identify body and frame components Worksheet End Of Class
10	Week 10: Collision Energy Management Course Outcome: CO3: Demonstrate shop safety practices.	
	<ul style="list-style-type: none"> Explain how a vehicle absorbs collision energy to protect occupants. 	Lab Performance #6: Identify body and frame components In Lab
11	Week 11: Shop Layout and Design Course Outcome: CO1: Identify the use of tools and equipment.	
	<ul style="list-style-type: none"> Explain the major work areas of typical collision repair facility. 	
12	Week 12: Vehicle Technology and Trends 2016 Course Outcome: CO1: Identify the use of tools and equipment.	
13	Week 13: Vehicle Technology and Trends 2016 Course Outcome: CO1: Identify the use of tools and equipment.	
14	Week 14: Overview of Course Materials Course Outcomes: CO1: Identify the use of tools and equipment. CO2: Demonstrate metric and SAE measuring competencies. CO3: Demonstrate shop safety practices.	
15	Week 15: FINAL EXAM Course Outcomes: CO1: Identify the use of tools and equipment. CO2: Demonstrate metric and SAE measuring competencies. CO3: Demonstrate shop safety practices. Administer the final exam Read: No Assignment Final Exam Complete Comprehensive Final Exam In Class	

Final Exam Complete Comprehensive Final Exam in Class

Final Exam: Comprehensive exam covering entire semester class lessons In class