



Dr. E. P. Scarlett High School

Introductory Mechanics (Mech10)

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Automotive Shop (Rm. 146)

WELCOME TO MECHANICS 10!

Throughout this course, you will be introduced to a variety of automotive systems. You will learn how to and be required to work efficiently and safely around vehicles and equipment in this course. We will be focussing mostly on safe use of tools and equipment, basic hand skills and preventative maintenance of vehicles.

PREREQUISITE

- Positive attitude

LEARNING OUTCOMES

- Students will develop skills in: mechanical knowledge and dexterity, safe practices, tool management, task-oriented research, teamwork, and adaptability.
- <http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=231834#>

COURSE CONTENT:

Safety:

Before we give students access to the shop, we do a shop tour and point out all the safety features of the shop, which include the Power, shut off switches, Fire extinguishers, fire blankets, first-aid kit. We then go through fire drills and lock down procedures. When that is all completed, we then give the students a safety quiz in which the student is required to get a minimum of 80% to pass.

MEC1015 – Mechanics Tools and Materials

- Students will develop knowledge, skills and attitudes in the safe use of specialty hand tools, measuring tools, and, fasteners.
- 1. create a health and safety plan with special emphasis on conditions and factors related to the specific pathway or series of courses
- 2. research common processes and methods of hazard identification, assessment and control specific to the pathway or series of courses
- 3. identify, describe and demonstrate the safe and correct use of shop procedures and equipment
- 4. identify, describe and demonstrate the safe and correct use of power and specialty hand tools used in the trade

- 5. identify, describe and demonstrate the safe and correct use of measuring tools used in the trade
- 6. list and describe fastening devices used in the trade
- **MEC1020 – Vehicle Service & Care**
 - Students will develop knowledge, skills, and, attitudes to care for and service a motor vehicle. Students may have an opportunity to work on customer vehicles.
 - 2. develop a preventive maintenance service schedule for a vehicle
 - 3. inspect and service a vehicle according to the vehicle service schedule
 - 4. clean and apply a protective coating to the exterior and interior surfaces of a vehicle for use or Storage
- **MEC1040 – Engine Fundamentals**
 - Students will investigate and describe operating principles, construction, and, application of engines. Students will perform an engine lab that requires disassembly and reassembly of a small engine.
 - 2. compare operating principles of two- and four-cycle piston engines
 - 3. determine the condition of an internal combustion engine
 - 4. describe the by-products of combustion and their impact on the environment
- **MEC1090 – Electrical Fundamentals**
 - Students will identify and describe the operating principles and applications of electricity. Students will perform an electrical lab that requires measurements of automotive circuits.
 - 1. demonstrate the safe use of electrical tools and equipment and follow established laboratory Procedures
 - 2. apply electrical principles and concepts to test electrical circuits and component
- **MEC1110 – Pneumatics and Hydraulics**
 - Students will identify and describe the operating principles and application of pneumatics and hydraulics. Students will apply their knowledge by disassembly and assembly of various hydraulic systems in a vehicle.
 - 2. compare operating principles of pneumatic and hydraulic systems
 - 3. apply principles and concepts of pneumatics and hydraulics to test and operate a pneumatic and/or hydraulic system
 - 4. demonstrate basic competencies

COURSE EXPECTATIONS

- **Attendance:**
 - All students are expected to attend class every day.
 - Coming to class late is highly disruptive. The student will be at risk of missing out on important instructions, demonstrations, or, discussions.
 - If you must leave class (to use the washroom, etc.) you must notify the teacher in charge. You might be asked to wait as only one person is allowed to leave at a time. A sign out sheet will be used
- **Behavior:**
 - We will not tolerate or abide any of the following:
 - *Bullying of any kind*
 - *Harassment of any kind*
 - *Violence of any kind*
 - *The use of crude, sexist, homophobic, racist, or otherwise inappropriate language or gestures.*
 - *Horseplay or dangerous activity.*
- **Food and Drink:**
 - Students are discouraged from eating and drinking in the shop.
- **Personal Electronic Devices:**
 - Personal electronic devices, including cell phones and head phones are not to be used in the shop as they are distracting and could pose a safety risk to you and those around you.

EQUIPMENT & MATERIALS

- A course fee of \$35 will be requested to cover such things as:
 - coverall use for the semester (cleaning and mending)
 - mechanics' gloves
 - safety glasses
 - hearing protection
 - nitrile gloves
- Pen or pencil (dark ink)

COURSE EVALUATIONS

In CTS (Career and Technology Studies), modules are worth **1 credit**, and in order to earn that credit you must achieve a grade of 50% or higher in that module.

Breakdown of evaluation for each module is as follows (subject to change):

- **Shop:** **70%**
 - lab Activities
 - shop work
 - safety
 - employability
- **Theory:** **30%**
 - written/computer assignments
 - presentations
 - tests/quizzes

ASSESSMENT POLICY

At Dr. E. P. Scarlett High School, we believe that marks should be a fair and accurate reflection of our students' understanding of the course learning outcomes.

- In order for teachers to evaluate this, we believe that students need to complete all course work. All assignments and tests impact course grades.
- To that end and within reason, the staff and administration are committed to providing the students with opportunities to complete their course work.
- Students are encouraged to keep up to date with all their assignments in every course.
- If clarification is needed or a problem is anticipated, they should speak with their teacher.
- Students who are not completing course work on time can be asked to remain after school and/or work in the Completion Room until they are caught up.
- Our principles for assessment are explained in more detail on posters in each classroom and on the school website.

RESOURCES

- Alberta Program of Studies, CTS, Mechanics (Mec)
 - Resources to support: (n.d.). Retrieved September 1, 2017, from <http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=231834#>
- CDX Automotive instructional website <https://alberta.cdxauto.ca/scar/>
- ProDemand Automotive Repair Information
 - ProDemand Automotive Repair Information - Mitchell1, Snap-on Tools. (n.d.). Retrieved September 1, 2017, from <https://www.prodemand.com/>
- Modern Automotive Technology
 - Duffy, J. E. (2017). *Modern automotive technology: workbook*. Tinley Park, IL: Goodheart-Willcox Company, Inc.

HAZARDOUS ENVIRONMENT

Due to the nature of the environment, nicks and cuts are almost a daily occurrence in the shop. Please note that we supply gloves to reduce the chance of students hurting themselves. In such an event, we do assess the scratch/cut and then perform any first aid required. We will contact home if we feel that the situation requires further attention.

Mechanics 10 Agreement

I have reviewed the Mechanics 10 course outline and understand that:

1. Safety is our number one priority. Everyone is responsible for assuring everyone's well-being in class and, as such, will always:
 - a. Report any hazards or hazardous behavior.
 - b. Always wear the required personal protective equipment (PPE) and remind others if they have forgotten to wear theirs.
 - c. No student is to touch or use any piece of equipment they have not been trained on.
 - d. **Personal Electronic Devices are not to be used in the shop** unless otherwise specified (i.e. using cameras to photograph work done). **They are distracting and could pose a safety risk to the student and those around the student.**
 - e. Students need to remain in assigned areas of the shop until they are given permission to move (i.e. no wandering outside or up on the mezzanine.)
 - f. Accept that the teacher may exclude students from any activities if they feel the student is endangering themselves or others.
2. Regular attendance is crucial to success in Mechanics 10.
 - a. If a student is absent, they are responsible for finding out any materials or instructions they may have missed.
 - b. If a student is absent for an extensive period of time, they are responsible for making up the missed work or discussing an alternative assignment with the teacher. Each module is approximately three weeks long. If you miss a week of school, you will have missed one third of a module – this can affect your mark for that module significantly.
 - c. It is disruptive when students arrive to class late. Late students also miss important instructions.
 - d. If a student needs to leave class (to use the washroom or attend a guidance appointment, etc.), they may do so only after notifying the teacher. Time absent from class will be monitored, so, use your time wisely.

Students are responsible for cleaning up their tools and work space used.

Student Name (please print): _____

Student Signature: _____

Parent/Guardian Signature: _____

Date: _____