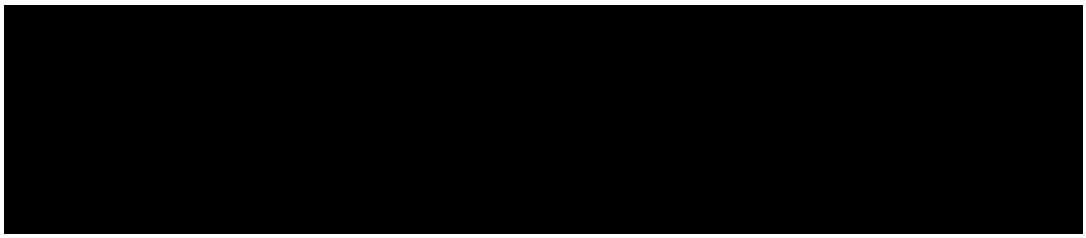
Engine/Electric Fund & Repair

MOTO1010 001

Instructor Information



M-F 0900-1600
MATC

Course Description

Designed to give experience from all aspects of small engines. Theory and operation are reviewed from the textbook during class, and students will service and repair engines and machine systems during lab. Students complete work on two- and/or four-cycle engines. Safe shop practices and professional behavior will be emphasized.

Course Student Learning Outcomes

- Complete units to understand the principles and importance of safety in the shop as well as environmental protection.
- Complete units to understand the proper use of tools and how to use and read precision measuring tools.
- Complete units to understand the proper use of sealants and the fundamentals of proper fastener and gasket installation.
- Complete units to understand the theory of operation and the fundamentals of repair of four cycle and two cycle engines.
- Complete units to understand the theory of operation and the fundamentals of repair of engine lubrication and cooling systems.

- Complete units in failure analysis.
- Complete units on calculating engine displacement and performance.
- Complete units to understand electrical theory and the importance of OHMS law.
- Complete units to understand the theory of operation of the battery and charging systems.
- Complete units to understand the theory of operation and fundamentals of repair for accessory, lighting and chassis electrical systems.

Course Prerequisites

None

Transfer/Certification/Licensure/Employment Information

In this course you will have the opportunity to become familiar with many different types of engine systems from multiple different product lines and manufacturers. Employers across the Wasatch Front view this course with a high degree of value and frequently employ current and former students. You will have the opportunity to apply for graduation and receive your Associates Degree or Certificate.

Communication Plan

I will respond to email within 24 hours.

I will offer feedback on major assignments within 24 hours.

The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.

All official communication will be done through Canvas **Moto 1010**

Keys for Success (how to succeed in the course)

In this course students spend 5 hours per day learning about small engines, their applications in lawn and garden, power generation, pumps, and various other uses.

Class is held from 9:00 AM till approximately 9:50 AM and lab time will be from 10AM till 1:50 PM daily. All machines to be worked on will be checked in through SLCC Auto Parts and there will be a $20 lab fee plus the parts needed to complete the repair. The knowledge gained here applies across the transportation world. You will discover that the motorcycle systems you study, closely compares to the automotive and heavy-duty truck systems, such as electrical systems, and fuel injection systems. The information and the applications of these systems are universal, and we will discuss these topics regularly.

As you study, learn and practice in the lab, you will see how and why engineers made progress in the design of their engines, the simplicity of a line trimmer, to the complexity of a fuel injected side by side. It all begins with the basics, and as you grab hold of the basics and they make sense, you will come to understand why engines became more complex, more efficient, or less efficient to meet environmental standards.

Students participate in classroom discussions regarding what you will see regularly in the lab. Lab Projects will need prior approval from your instructor. Please keep your eyes open and be observant of what others are working on, share with your peers what you and they are learning. Get to know your classmates and plan to collaborate with them on projects, it makes the jobs much easier.

Course Content Warnings/Trigger Warnings

During this course there will be loud noises. Proper hearing protection is recommended for the course.

Required Text or Materials

Title: Small Gas Engines Course Textbook, 12th Edition
ISBN: 978-1-63776-072-7
Authors: Alfred C. Roth/ Blake J. Fisher/ W. Scott Gauthier
Publisher: G-W Goodheart-Wilcox
Publication Date: 2023
Edition: 12th

For more information on textbook accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Brief Description of Assignments/Exams

Formative quizzes for each chapter and a summative final exam are given for this course. These tests are closed book unless specified and can include multiple choice, true/false, fill-in the blank and essay type questions. See the Canvas modules for due dates, points, and grading.

The course progression is outlined in modules in Canvas with the assignment description, point values, due dates, and other course dates or notes. All assignments and due dates are also listed chronologically in the Canvas calendar. Assignments will be submitted electronically in Canvas using a file type openable in Canvas.

Read the classroom manual lab manual chapters indicated in each section. Pay attention during lecture and review additional information provided. Questions included on tests or quizzes are often derived from the additional presented materials.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Ch. 10 Quiz - Ignition Systems	Quiz	15
	Ch. 11 Quiz: Lubrication Systems	Quiz	20
	Ch. 12 Quiz: Cooling Systems	Quiz	15
	Ch. 13 Quiz: Preventative Maintenance and Troubleshooting	Quiz	15

Due Date	Assignment Name	Assignment Type	Points
	Ch. 14 Quiz: Fuel System Service	Quiz	20
	Ch. 15 Quiz: Ignition and Electrical System Service	Quiz	20
	Ch. 16: Engine Disassembly and Inspection	Quiz	20
	Ch. 17 Quiz: Cylinder, Crankshaft and Piston Service	Quiz	20
	Ch. 4 Fundamentals of Electricity Quiz	Quiz	15
	Ch. 8 Quiz: Fuel Supply, Air Induction and Emissions	Quiz	15
	Ch. 9 Quiz - Carburetion and Fuel Injection	Quiz	15
	Chapter 1 - Safety: Quiz	Quiz	15
	Chapter 2 - Tools: Quiz	Quiz	14
	Chapter 3 - Fasteners: Quiz	Quiz	15
	Chapter 5 Quiz - 2 and 4 Cycle Engines	Quiz	15
	Chapter 6 Quiz - Engine Components	Quiz	16

Due Date	Assignment Name	Assignment Type	Points
	Chapter 7 - Measuring Engine Performance: Quiz	Quiz	15
	Introduce Yourself	Discussion	0
	Roll Call Attendance	Assignment	100
8/20	Acknowledgement of Syllabus	Quiz	1
9/20	Chapter 1 Review Questions	Assignment	10
9/20	Chapter 2 Review Questions	Assignment	35
9/20	Chapter 3 Review Questions	Assignment	15
9/20	Chapter 4 Review Questions	Assignment	20
9/20	Chapter 5 Review Questions	Assignment	16
9/20	Chapter 6 Review Questions	Assignment	20
9/20	Chapter 7 Review Questions	Assignment	15
9/20	Unit 1 Test Chapters 1-7	Quiz	58
10/11	Chapter 10 Review Questions	Assignment	15
10/11	Chapter 11 Review Questions	Assignment	10

Due Date	Assignment Name	Assignment Type	Points
10/11	Chapter 12 Review Questions	Assignment	10
10/11	Chapter 8 Review Questions	Assignment	10
10/11	Chapter 9 Review Questions	Assignment	15
10/16	Midterm Test: Chapters 8-12	Quiz	53
12/5	Shop Clean Up	Assignment	99
12/6	Final - Chapters 13-17	Quiz	54
12/6	Chapter 13 Review Questions	Assignment	14
12/6	Chapter 14 Review Questions	Assignment	8
12/6	Chapter 15 Review Questions	Assignment	20
12/6	Chapter 16 Review Questions	Assignment	6
12/6	Chapter 17 Review Questions	Assignment	5

Grading Scale

Grades will be assigned for performance in accordance with the policy outlined in the college catalog. The final grade is based on the total number of points received in several areas. The final grade will be computed as a percentage of total possible points listed in Canvas grading section.

Grading Rubric:

Chapter Assessments	18%
Task Sheets / Work Sheets / Reflection	13%
Formative Exam	17%
Summative Exam	22%
Shop / Lab / Live work	30%

This is a Pass/Fail course. Final grades are calculated on available points. To earn a Pass score, a cumulative score of 80% or higher is required.

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

You can access the document by clicking on the following link: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, please visit the Institutional Syllabus under the Tutoring and Learning Support tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. We encourage you to take advantage of these resources to help you succeed in your studies. If you

have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, please visit the Institutional Syllabus under the Advising and Counseling Support Services tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar

Additional Policies

Tools:

Students are encouraged to purchase and use their own tools; which is standard practice throughout the industry. Students must Have a box or cart that is lockable, and must be secured at the end of each day. A tool list will be provided as well as teacher recommendations.

The tools you buy will be with you your entire life if cared for. Bring them to class and use them. Never borrow a tool more than twice, that borrowed tool then goes on your wish list to buy next. Often people buy the same tool, so be sure to engrave your name on all your tools.

Live Work:

All equipment in the shop require a completed Repair Order and Lab invoice/release document. Invoices must reflect the repair process descriptions to industry standards. A Repair Order and Lab invoice/release for the project must be turned in upon completion. Contact the instructor to determine availability.

You are encouraged to schedule work for the Engine Repair Lab. Consult with the instructor to check availability of special tools, parts and time needed. Remember: you are responsible for the successful completion of the Lab work you do.

If you choose to bring in your own projects they must be cleared by the instructor prior to bringing them into the lab. If you bring in a project, if must be accompanied by a manufacturer Service Manual.

Helmets and Motorcycle Endorsements:

Helmets must be worn during all test rides. In order to ride a motorcycle you must have a valid motorcycle endorsement. No motorcycle will be ridden by anyone who does not have a valid endorsement. The learn to ride program at the college offers a discount for students of the program.

Required Equipment:

Safety glasses, ear protection, and automotive service tools to perform lab and live work.

Students will wear industry approved clothing such as long pants and a uniform style shirt or coveralls with closed-toed shoes during all lab activities. No tank tops, sandals or flip flops will be allowed during lab time. You are required to wear a helmet, eye protection and gloves while riding a motorcycle during this class. Please get a quality helmet if you are a rider, find an inexpensive, yet DOT rated helmet if you do not ride often.

Student Conduct

I expect professionalism. Profanity is prohibited, and courtesy to your fellow students will be expected.

Conducting yourself in this manner will put money in your pocket. Team concepts that are commonplace within the industry at dealerships and aftermarket shops are

incorporated in this course.

Students are expected to check their Canvas site daily, contact or message instructor in the event of an illness or absence, track their individual course progress, and prepare reflections on course content or assigned selected topics.