

Course Outline

Course Title:	Heavy Equipment Fundamentals		
Course Number:	MECH295	Approval Date:	2018/9/6
Course Hours:	54 hours	Academic Year:	2018
Academic School:	School of Environmental & Natural Resource Sciences		
Faculty:	Richard Hyde - Richard.Hyde@flemingcollege.ca		
Program Co-ordinator or Equivalent:	Richard Hyde - Richard.Hyde@flemingcollege.ca		
Dean (or Chair):	Rick Gray - Rick.Gray@flemingcollege.ca		

Course Description

This course in heavy equipment fundamentals requires the use of tools, equipment and material necessary to maintain and operate heavy equipment safely. It focuses on inspection and preventative maintenance procedures following the manufacturers' recommendations. Students will become familiar with heavy equipment controls through the use of simulators. After the required hours of simulator achievement, students will have an opportunity to operate the appropriate heavy equipment.

Prerequisites: None.

Corequisites: None.

Learning Outcomes

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

1. Describe and demonstrate inspection procedures for machine components and systems in order to properly maintain equipment.
2. Use service literature and material to determine best maintenance and procedures as outlined in the Equipment Operation and Maintenance Manual.
3. Select proper machine lubricants and fluids as outlined in the Equipment Operation and Maintenance Manual in order to properly maintain equipment.
4. Perform basic heavy equipment operations through the use of simulators and heavy equipment to complete multiple job tasks in a safe manner and according to government regulations.

Assessment Summary

Assessment Task	Percentage
Labs	25%
Quizzes	20%
Tests	55%

Student Success: Policies and Procedures

Mutually, faculty and learners will support and adhere to college Academic Regulations, and Student Rights and Responsibilities. The following policies and guidelines have been developed to support the learning process.

Please click on the link for information about:

- [Academic Integrity \(2-201A\)](https://department.flemingcollege.ca/hr/attachment/7750/download)
(<https://department.flemingcollege.ca/hr/attachment/7750/download>)
- [Accessibility for Persons with Disabilities \(3-341\)](https://department.flemingcollege.ca/hr/attachment/5619/download)
(<https://department.flemingcollege.ca/hr/attachment/5619/download>)
- [Grading and Academic Standing \(2-201C\)](https://department.flemingcollege.ca/hr/attachment/7752/download)
(<https://department.flemingcollege.ca/hr/attachment/7752/download>)
- [Guidelines for Professional Practice: Students and Faculty](https://flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf)
(<https://flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf>)
- [Student Rights and Responsibilities \(5-506\)](https://department.flemingcollege.ca/hr/attachment/269/download)
(<https://department.flemingcollege.ca/hr/attachment/269/download>)

Alternate accessible formats of learning resources and materials will be provided, on request.

Program Standards

The Ministry of Training, Colleges and Universities oversees the development and the review of standards for programs of instruction. Each college is required to ensure that its programs and program delivery are consistent with these standards, and must assist students to achieve these essential outcomes.

This course contributes to Program Standards as defined by the [Ministry of Training, Colleges and Universities](#) (MTCU). Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following elements:

- **Vocational standards** (the vocationally specific learning outcomes which apply to the program of instruction in question);

- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction that contribute to the development of citizens who are conscious of the diversity, complexity and richness of the human experience; and, the society in which they live and work).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program. For further information on the standards for your program, follow the MTCU link (www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/)

Detail Plan

Term:	2018 Fall
Faculty:	Richard Hyde - Richard.Hyde@flamingcollege.ca
Program Co-ordinator or Equivalent:	Richard Hyde - Richard.Hyde@flamingcollege.ca
Dean (or Chair):	Rick Gray - Rick.Gray@flamingcollege.ca

Learning Plan

Wks/Hrs Units	Topics, Resources, Learning, Activities	Learning Outcomes	Assessment
Week 1	Introduction to Course and Operators Manual/Machine Components/Grease Guns and Greasing	1-4	Quiz, Maintenance Lab
Week 2	Schedules and Intervals/Common Maintenance Symbols	1-4	Simulator and Maintenance Labs
Week 3	Engine Oil and Filters	1-4	Quiz, Simulator and Maintenance Lab
Week 4	Diesel Fuel Systems	1-4	Simulator and Maintenance Lab
Week 5	Intake and Exhaust Systems	1-4	Quiz, Simulator and Maintenance Lab
Week 6	Midterm	1-4	Midterm 25%
Week 7	Diesel Engine Cooling Systems	1-4	Quiz, Simulator and Maintenance Lab
Week 8	Electrical Systems	1-4	Simulator and Maintenance Lab

Wks/Hrs Units	Topics, Resources, Learning, Activities	Learning Outcomes	Assessment
Week 9	Hydraulic Systems	1-4	Quiz, Simulator and Maintenance Lab
Week 10	Powertrains and Tires	1,2,4	Simulator and Maintenance Lab
Week 11	Undercarriage and Ground Engaging Tools	1-4	Maintenance Lab
Week 12	Final	1-4	Final 30%

Assessment Requirements

Assessment Task	Date/Weeks	Course Learning Outcome	Percentage
Simulator	Weeks 2-11	4	20%
Maintenance Quizzes	Weeks 1-5,7-11	1-3	20%
Maintenance Lab	Weeks 2-11	1-4	5%
Midterm	Week 6	1-4	25%
Final	Week 12	1-4	30%

Exemption Contact

Richard Hyde, Heavy Equipment Operator 705-324-9144

Prior Learning and Assessment and Recognition (PLAR)

PLAR uses tools to help learners reflect on, identify, articulate, and demonstrate past learning which has been acquired through study, work and other life experiences and which is not recognized through formal transfer of credit mechanisms. PLAR options include authentic assessment activities designed by faculty that may include challenge exams, portfolio presentations, interviews, and written assignments. Learners may also be encouraged and supported to design an individual documentation package that would meet the learning requirements of the course. Any student who wishes to have any prior learning acquired through life and work experience assessed, so as to translate it into a college credit, may initiate the process by applying through the Registrar's office. For more information please click on the following link: <http://flemingcollege.ca/admissions/prior-learning-assessment-and-recognition>

Course Specific Policies and Procedures

It is the responsibility of the student to retain this course outline for future reference. Course outlines may be required to support applications for advanced standing and credit transfer to other educational

institutions, portfolio development, PLAR and accreditation with professional associations.

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1. ALL assignments and projects must be completed and handed in at the specified date, time, and location.
2. Final grades in this course are assigned based on the level of academic achievement which corresponds to the assessment components as cited in this course outline. It is also important to note that faculty member(s) will NOT offer any additional evaluation activities beyond those cited in this course outline.
3. What ever the reason, missed evaluations and due dates for assignments, including those missed due to illness, will be dealt with on an "INDIVIDUAL BASIS", by the faculty member(s).
4. ALL electronic devices MUST BE TURNED OFF in the equipment, facility, shop, working field or compound. Their use is only allowed in the designated area (smoking area). ANY FACULTY MEMBER observing a student using them, without prior permission from a faculty member, will be given a mark of "0" and dismissed from class for the rest of the day. An infraction card will also be issued.
5. Health and Safety Issues are paramount in the Heavy Equipment Industry. Therefore, constant vigilance in these areas are a MUST, and strictly enforced. Safety equipment must be readily available and worn when required in all areas at the Centre for Heavy Equipment Technology this includes Green patch work boots worn at all times, Hard Hats, Safety glasses and High visibility clothing.