ORIGINAL COURSE IMPLEMENTATION DATE: September 2015

REVISED COURSE IMPLEMENTATION DATE:

COURSE TO BE REVIEWED: (six years after UEC approval) February 2021

Course outline form version: 05/29/14

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: HMF 170 **Number of Credits: 2** Course credit policy (105)

Course Full Title: Drivetrains
Course Short Title (if title exceeds 30 characters):

Faculty: Faculty of Applied and Technical Studies

Department (or program if no department): Heavy Mechanical Foundation

Calendar Description:

In this course students will learn the theory and operation of drivetrain related components. Topics include clutches, manual transmissions, automatic transmissions, powershift transmissions, drivelines, differentials, and final drives. Students will identify, service, and maintain these components.

Prerequisites (or NONE): Admission to the Heavy Mechanical Foundation program.

Corequisites (if applicable, or NONE): None

Pre/corequisites (if applicable, or NONE): None

Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.

Transfer Credit

Transfer credit already exists: ☐ Yes ☒ No

Transfer credit requested (OReg to submit to BCCAT):
☐ Yes ☒ No (if yes, fill in transfer credit form)

Resubmit revised outline for articulation: ☐ Yes ☒ No

To find out how this course transfers, see **bctransferguide.ca**.

Total Hours: 78

Typical structure of instructional hours:

Lecture hours	26
Seminars/tutorials/workshops	
Laboratory hours	52
Field experience hours	
Experiential (practicum, internship, etc.)	
Online learning activities	
Other contact hours:	
Total	**78**

Special Topics

Will the course be offered with different topics?
☐ Yes ☒ No

If yes, different lettered courses may be taken for credit:
☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

Note: The specific topic will be recorded when offered.

Maximum enrolment (for information only): 20

Expected frequency of course offerings (every semester, annually, every other year, etc.): Annually

Department / Program Head or Director: Rolf Arnold	**Date approved:**	October 2014
Campus-Wide Consultation (CWC)	**Date of posting:**	January 23, 2015
Faculty Council approval	**Date approved:**	October 9, 2014
Dean/Associate VP: John English	**Date approved:**	October 9, 2014
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	February 27, 2015

Learning Outcomes

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

- Identify clutches, manual transmissions, torque converters and dividers, powershift and automatic transmissions, drivelines, axles, differentials, final drives and related components.
- Describe the theory of operation for clutches, manual transmissions, torque converters and dividers, powershift and automatic transmissions, drivelines, axles, differentials, final drives and related components.
- Service clutches, manual transmissions, torque converters and dividers, powershift and automatic transmissions, drivelines, axles, differentials, final drives and related components.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Lectures, Homework Assignments, Shop Practical Assignments

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials (if more space is required, download supplemental Texts and Resource Materials form)

	Author Surname, Initials	Title (article, book, journal, etc.)	Current Ed.	Publisher	Year
1.	Bennett	Heavy Duty Truck Systems	☒	Delmar	2011
2.	Bennett	Heavy Equipment Systems	☒	Delmar	2013
3.			☐		
4.			☐		
5.			☐		

Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

Personal Protective Equipment, Pencil & Paper and Basic Hand Tools

Typical Evaluation Methods and Weighting

Final exam:	40%	Assignments:	50%	Midterm exam:	%	Practicum:	%
Quizzes/tests:	%	Lab work:	%	Field experience:	%	Shop work:	%
Homework:	10%	Other:	%	Other:	%	Total:	100%

Details (if necessary): This course requires actual percentage grading to meet ITA requirements. (Not Letter grades)

Grading system: Letter Grades: ☒ Credit/No Credit: ☐ Labs to be scheduled independent of lecture hours: Yes ☒ No ☐

Typical Course Content and Topics

Component Theory: 26 hours

Service and Maintain Systems: 52 hours