

	<b>Internal Combustion Engine AUTO106N Fall 2020</b>
<b>Department</b>	Transportation
<b>Instructor</b>	Tim Hogan
<b>NCC Email</b>	thogan@ccsnh.edu
<b>Telephone Number</b>	603-578-6885
<b>Office Hours</b>	Monday 10:00-10:50 Wednesday 10:00-10:50, 2-2:50
<b>Office Location</b>	Automotive Building
<b>Class Days/Meeting Time</b>	Lecture: Tuesday 8:00-8:50 Lab: Thursday 9:00-11:50
<b>Class Location</b>	Lecture: GreL1 31 3CTJ Tm( )Tecture- (e

## Course Competencies:

Competency (Knowledge and Skills)	Critical Thinking Level
Students will be able to:	
Identify design and manufacturing techniques of automotive engines	Identify
Understand the physical properties of energy conversion	Identify
Explain the combustion principles of 2 and 4 stroke engines, gasoline and diesel	Identify
Identify the operating systems of gasoline and diesel engines	Identify and relate
Identify the internal components of an internal combustion engine	Identify
Develop a sense of precision fit of engine components	Analyze and compare
Use precision measurement tools to measure the internal components of an internal combustion engine	Apply and analyze
Diagnose no-start condition of single cylinder engines	Analyze

## Essential Questions:

What Safety precautions should I practice while performing work of this nature?

What kind of specialty equipment should I be using while performing work

## Course Expectations:

Including but not limited to:

Students are responsible for completing assignments on time.

Students are expected to take notes. Not all covered material is in the book.

Students are expected to be professional and courteous.

Students are expected to arrive on time for classes/labs.

Students are expected to have the essential books/supplies/tools.

Students must maintain appropriate personal hygiene

Protective eyewear is required in any lab (shop).

Food is prohibited in all labs and classrooms during classes.

Lab service bays must be cleaned and/or washed at the end of each lab session.

All students must contribute to the clean-up process.

No students will be dismissed from lab session until service bays are clean.

There is no make up for this class. Assignments are due at the beginning of class and are listed on the course calendar. If you are going to miss a class, you must email the assignment that is due that day 9 (s)-2 (s)-2 (ig)3 dliss a 3-(s)8.rib



## Available Support Services



## Transportation Technologies Attendance Policies:

We understand that sometimes “life happens” and you cannot get to class on time or at all but all students are expected to attend each class for the full amount of time scheduled. It is an important part of your education and we want you to be successful.

All lectures and labs begin on the hour.

Tardiness: All students will be allowed 2 “late entrances” to class. On the third time that student will not be allowed into class and will receive a zero for that class. This will result in an absence and be counted towards the attendance policy for the AF grade.

Absences: Any student that will miss a class should notify the instructor by phone or email prior to the beginning of the class. All absences will result in accrued time towards the AF policy. Students are responsible for any make-up work, missed quizzes and exams due to absence. It is the instructor’s discretion to allow make-up work, take a quiz or exam.

### Make Up Policy

There is no make-up work. If you will miss a class, you may email your homework assignment, before the class meets, to me for full credit. There will be one extra credit assignment at the end of the semester.

There is no provision for make-up of a midterm exam, final exam, or lab practical exam.

### College Policies

**AF Policy:** If a student misses more than the number of hours the course meets during a two

5

Vice President of Academic Affairs and/or removal from the course with AF grade.

An "AF" grade is calculated in the GPA as an "F". Students should refer to the



- x Students using their College email account do so under the policies set forth in the Student Handbook under "Student Computer Conduct Code".

**Sensitive Materials Policy:** During the semester, in order to cover certain academic topics, there may be occasions to view or discuss material which may not meet the student's own personal definition of appropriateness. At such times, every student has the right to decide not to participate. Every effort will be made by the instructor to notify students in advance of when such sensitive material will be used so that students can make alternative arrangements. Faculty will guide students in the identification of alternate learning opportunities consistent with relevant course objectives so that students opting out of scheduled "sensitive" learning experiences will not be penalized academically in any way. Please note the opportunity to leave the classroom discretely is always available to each student when such sensitive material is being discussed. The student then has the responsibility before the next class meeting to inform the instructor as to the reason for leaving.

**Plagiarism Policy:** Plagiarism is a serious violation of a student's academic integrity and the trust between a student and his or her teachers. Plagiarism is the act of a person presenting another

This schedule is subject to change. In the event of class cancellation due to inclement weather or instructor illness, students are directed to the course Canvas site for an alternate assignment for that day.

**AUTN106N Course Calendar (Subject Change), Fall 2020**

Week #	Begins	LECTURE/DISCUSSION	LAB	ASSIGNMENTS DUEThursdays Chapter Review
1	Tuesday Sep 1	Chapter 6 Review syllabus Introduction to the Engine	Introduction, Safety and hardware Review Ch6	Review Ch1,6,7
2	Sep 8	Chapter 15 Gasoline Engine Operation Basic 4 stroke quiz, 106	Vernier caliper Review Ch6	Ch15 Review-10, ASE-5
3	Sep15	Chapter 16 Engine Classifications Blocks, Diesel, 2 stroke, Wankel	Micrometer	Ch16 ASE-10
4	Sep 22	Chapter 17 Engine Size and Measurements Quiz on Chapters 15, 16 and 17 106-2	Test run engines and begin disassembly. Vernier Caliper quiz	Ch17 Review-10, ASE-5
5	Sep 29	Chapter 18 up to page 271 Engine Upper End	Check valve lash clearance and lift Measure valve guides and stems	Chapter 18 up to page 271
6	Oct 6	Chapter 18 from page 272 Engine Upper End(advanced cam timing) Quiz on chapter 18, 106	Measure cylinder bore and stroke, Remove piston and crankshaft	From page 272 ASE 5 and ASE-5
7	Oct13	Chapter 19 Engine Lower (Bottom) End	Disassemble and inspect all components Valve guide measurement quiz	Ch19 Review-10, ASE-5
8	Oct 20	Review for the Mid Term Assign extra credit report	Measure piston, cylinder bore and crankshaft Begin reassembly	Review for MidTerm
9	Oct 27	Chapter 42 up to p792 Intake and Exhaust Systems Quiz on chapter 42	Continue reassembly	Review Ch42
10	Nov 3	Chapter 42 up to p792 Intake and Exhaust Systems Quiz on chapter 42 106-4	Disassemble carburetor, check/set float level. Piston and cylinder quiz	Review Ch42
11	Nov10	Chapter 42 from p792 Turbocharges, Blowers, and Nitrous Quiz on Turbos and Blowers, 106	Continue work on carbs	Ch42 ASE-10
13-1	Nov 17	Chapter 40 Fuel System Fundamentals, carburetors Quiz on Ch40	Finish Reassembly	Review Ch40
13-2	Nov 24	Fuel System Fundamentals, EFI Quiz on Ch40, 106-	Test Run engines	Ch40 ASE-5
14	Dec 1	Chapter 37		

Updated: 8/2020