

MEC 537: Combustion Research Laboratory

Course Syllabus (Fall 2016)

Course Information

Time: Tuesdays and Thursdays: 2:30 – 3:50 AM

Location: SOCBEHAV SCI N117 and AERTC 118

Credits: 3

Pre-requisites: MEC 423/523 or similar

Required Textbook: Internal Combustion Engine Fundamentals by John B. Heywood

Description: Experimental methods for testing and development of internal combustion engines. Methods for measuring engine performance and emissions. Review of combustion chemistry and thermodynamics. Engine cycle quantities measurements. Students will apply these methods to reciprocating engines and gas turbines.

Grading:

7 Assignments: 49%

Midterm Exam: 25%

Final Paper: 26%

Instructor Information

Name: Professor Benjamin Lawler

Office Location: Light Engineering 131

E-mail: benjamin.lawler@stonybrook.edu

Office Hours: Mon + Wed: 11:00 AM – 1:00 PM

Class				
#	Date	Description	Who	Assignment Due
1	8/30/2016	Lecture 1	All	
2	9/1/2016	Lab 0: Introduction to the lab	All	
3	9/8/2016	Lab 1: Load	Group A	
4	9/13/2016	Lab 1: Load	Group B	
5	9/15/2016	Lecture 2	All	
6	9/20/2016	Lab 2: Spark Timing	Group B	Assignment 1
7	9/22/2016	Lab 2: Spark Timing	Group A	
8	9/27/2016	Lecture 3	All	
9	9/29/2016	Lecture 4	All	Assignment 2
10	10/4/2016	Lab 3: Equivalence Ratio	Group A	
11	10/6/2016	Lab 3: Equivalence Ratio	Group B	
12	10/13/2016	Lecture 5	All	Assignment 3
13	10/18/2016	Lab 4: Compression Ratio	Group B	
14	10/20/2016	Lab 4: Compression Ratio	Group A	
15	10/25/2016	Lecture 6	All	
16	10/27/2016	Midterm Exam	All	Assignment 4
17	11/1/2016	Lab 5: Knock	Group B	
18	11/3/2016	Lab 5: Knock	Group A	Midterm Paper Due
19	11/8/2016	Lab 6: Higher Octane Fuel	Group A	
20	11/10/2016	Lab 6: Higher Octane Fuel	Group B	Assignment 5
21	11/15/2016	Lecture 7	All	
22	11/17/2016	Lecture 8	All	Assignment 6
23	11/22/2016	Lab 7: HCCI	Group B	
24	11/29/2016	Lab 7: HCCI	Group A	
25	12/1/2016	Lecture 9	All	
26	12/6/2016	Lecture 10	All	Assignment 7
27	12/8/2016	Lecture 11	All	
				Final Paper Due Dec. 13th

Statement on Academic Dishonesty: Academic dishonesty is an extremely serious offense and will not be tolerated in any form. Academic dishonesty in general is the presentation of intellectual work that is not originally yours. Examples include, but are not limited to, copying or plagiarizing class assignments including homework, reports, designs, and other submitted materials; copying or otherwise communicating answers on exams with other students; bringing unapproved aids, either in physical (written) or electronic form to an exam; obtaining copies of an exam prior to its administration, etc. Academic dishonesty violates both the ethical and moral standards of the Engineering profession and all infractions related to academic dishonesty will be prosecuted to the fullest via the CEAS CASA committee. For you, the honest student, academic dishonesty results in lower class curves, hence a depression in your GPA and class standing, while cheapening the degree you earn.

DISABILITY SUPPORT SERVICES (DSS) STATEMENT

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, [\(631\) 632-6748](tel:6316326748). They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>

ACADEMIC INTEGRITY STATEMENT:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

CRITICAL INCIDENT MANAGEMENT:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.