MEC 423/523: Internal Combustion Engines
Fall 2012

Instructor: Prof. Aris Babajimopoulos (Aristotelis.Babajimopoulos@stonybrook.edu)
151 Light Engineering

Teaching Assistant: Mr. Vishnu Nair (Vishnu.Nair@stonybrook.edu)
136F Light Engineering

Lectures: MW 9:00-10:20am (079 EAS)

Office Hours: Aris Babajimopoulos: MTu 11:00am-1:00pm (151 Light Engineering)
Vishnu Nair: Th 2:00-4:00pm (136F Light Engineering)
Fr 11:00am-1:00pm (136F Light Engineering)

Prerequisites: MEC 30

Notes will be provided.

Homework: Six homework sets. In addition there will be a project for the MEC 523 students.

Exams: One midterm (date TBD).
One final exam (Wednesday 12/12, 8:30-11:00pm).
No makeup exams, unless arranged prior to the exam.

Grading:

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<th>MEC 423</th>
<th>MEC 523</th>
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<tbody>
<tr>
<td>Homework:</td>
<td>40%</td>
<td>28%</td>
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<td>Project:</td>
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<td>Midterm:</td>
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<td>Final:</td>
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Course Outline:
1. Introduction – Engine Classification
2. Engine Design and Operating Parameters
3. Ideal Properties Models of Engine Processes and Cycles
4. Combustion Thermodynamics
5. Thermodynamic Properties of Engine Working Fluids
6. Fuel/Air Cycle Analysis
7. Spark-Ignition Engine Combustion Basics
8. Diesel Engine Combustion Basics
9. SI and Diesel Engine Emissions
Blackboard: All homework assignments and solutions will be posted on the Blackboard course account (http://blackboard.sunysb.edu). For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site, you can also call: 631-632-9602 or e-mail: helpme@ic.sunysb.edu

All communication off class/office hours will be done exclusively with Blackboard. It is your responsibility that your email address registered on the Blackboard system is current. It is highly recommended that you use a university email address for this class; it is free and official.

Academic Honesty: 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, computer programs, graphics, 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.

Special note on ADA: 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, room 128, (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following web site http://www.stonybrook.edu/facilities/ehs/fire/disabilities.shtml.

Allowed Calculators: Following the Mechanical Engineering Department’s mandatory calculator policy, only the following calculators will be allowed to be used on the midterm and final exams. There will be no exceptions. This list of calculators is identical to that allowed for the National Council for Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering (FE) exam that many of you will take in your senior year, as well as the Professional Engineering (PE) exam that you may take several years from now. The sooner you become comfortable on one of these calculators, the better.

**Casio:** All fx-115 models. Any Casio calculator must contain fx-115 in its model name.

**Hewlett Packard:** The HP 33s and HP 35s models, but no others.

**Texas Instruments:** All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

The NCEES policy on calculators can be found here: http://www.ncees.org/exams/calculators/