Course Outline and Grading Policy

Course:  **Combustion**

Course No:  ME 609

Credit hours:  3Hr.

Semester:  **Spring 2006**

**Catalog Data:** The course will cover combustion thermodynamic and chemical kinetics; fluid mechanics, heat and mass transfer in combustion process; flame propagation and detonation; auto-ignition and source of ignition; quenching and flammability limits; combustion in practical systems.

**Text and Reference:** Class notes and hand-outs by the instructor

Prerequisite:  ME 571 or consent of the instructor.

Lect. Hours:  Tuesday 4 – 6:50 PM

Class Room:  Rm: **G113** Parkview Campus

**Instructor:**  Dr. Bade Shrestha, Associate Professor, P.Eng.
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Office:  Room G 218, Parkview Campus

**Office Hours:** Mondays – Thursdays: 2:00 – 3:00 PM and by appointments.

**Topics to be covered:**

1. Combustion thermodynamics
2. Combustion chemical kinetics
3. Fluid mechanics, heat and mass transfer in combustion process
4. Flame propagation and detonation
5. Auto-ignition and source of ignition
6. Quenching and explosion hazards, flammability limits
7. Combustion in practical systems, homogeneous and heterogeneous combustions
8. Pollution and emissions
9. Combustion efficiency
10. Some experimental combustion methods.

**GRADING:** The final grade will be based on the following criteria:

1. Projects: All students are expected to complete an individual project (see below for more information)  
   40%
2. Mid Term Examination {**Tuesday, February 21, 2006**}  
   30%
3. Final Examination {**Tuesday, April 25, 2006 at 7:00 – 9:00 PM**}  
   30%

**Grading Scale**

- **A:** Above 90.0 %
- **B+:** 85.0 - 89.9 %
- **B:** 80.0 - 84.9 %
- **C+:** 75.0 - 79.9 %
- **C:** 70.0 - 74.9 %
- **D+:** 65.0 - 69.9 %
- **D:** 60.0 - 64.9 %
- **E:** Below 60.0 %

**Projects:**

All students are expected to complete a project. The purpose of the project is a student to gain an in depth knowledge of an area of combustion and to inform other classmates of this subject in a 15-20 minute presentation. A detailed bound copy of report is due on the day of the oral presentation is given. The audience will discuss the project. Projects reports will not be return to the students. Tentatively, presentation will be scheduled for the final week of the semester. Students need to get the instructor’s approval for their project topics by the end of the first month of classes.

The project can be either a research projects or actual survey type in combustion areas. Each project grade is based on Final Report and Work Quality (75%) and Presentation (25%).

**Important Notice:** You are responsible for making yourself aware of and understanding the policies and procedures in the Undergraduate (pp. 274-276 and pp. 26-28 for Graduate) Catalog that pertain to Academic Integrity. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Judicial Affairs. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.