ME 475/675 Introduction to Combustion  
Fall 2017  
MWR 9 to 9:50 AM, PE 102

**Professor:** Dr. Miles Greiner  
**Office:** PE 204A; (775) 784-4873; greiner@unr.edu  
**Office Hours:** Tuesdays and Thursday, 1-2 PM, or by appointment

**Course Website:** [http://wolfweb.unr.edu/homepage/greiner/teaching/MECH.475.675.Combustion/index.htm](http://wolfweb.unr.edu/homepage/greiner/teaching/MECH.475.675.Combustion/index.htm)

**Teaching Assistants:** Dilesh Maharjan dileshz@gmail.com


**Prerequisites:** ENGR 360 Fluid Mechanics; ME 311 Thermodynamics I; ME 314 Heat Transfer or CHE 374 Transport Theory

**Overview and Objectives:** The study of combustion is relevant to heating, electric power generation, transportation, manufacturing, reducing atmospheric pollution, and safety. This course uses thermodynamics, heat/mass transfer, fluid dynamics and chemical kinetics to understand the combustion process. Students will derived and apply fundamental equations and concepts to describe combustion. They will apply these concepts to simplified systems for mainly laminar flows. Topics covered include premix and diffusion flames, and particle combustion.

**Grading:**

- Assignments (Homework and Computer Projects) 22%
- Midterm 1 (October 2, 2017, **1.5 hours**) 25%
- Midterm 2 (November 17, 2017, **1.5 hours**) 25%
- Final Exam (December 18, 2017, 7:30-9:30 AM, 2 hour) 25%
- **Project** (i.e. Construct Backpack Stove, Design Experiment, analyze technical paper) 3%
- **Extra Credit:** (Turn in clearly re-worked class examples by the next class period, checked) 3%

**Disabilities:** UNR welcomes students with documented disabilities and encourages them to contact the Disability Resource Center (http://www.unr.edu/drc) to discuss appropriate accommodations

**Final Date to Drop Classes and Receive a “W”:** November 2, 2017.

**Courtesies:** Please arrive to lecture on time. If you are late, please sit by the door (do not walk in front to find a seat or turn in an assignment). If you are on time please do not sit by the door. Please participate in lecture (ask questions, minimize phone use) and be careful not to distract other students or the instructor.

**Academic Dishonesty:** Academic dishonesty may be grounds for receiving an F in this course.

**No Make-up Exams Will be Given** unless arrangements are made with the instructor before the exam period. No late homework will be accepted. Homework must be turned in before lecture starts. Some one-line answers are posted on the website. Full solutions will be posted after HW is due.

**Recording:** Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

**Student Learning Objectives:** This course will provide the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context; a recognition of the need for, and an ability to engage in life-long learning; and a knowledge of contemporary issues.