

**CHEM/ENGR 3830**  
**Engineering Thermodynamics**  
**Spring 2007**

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| <b>Instructor</b>                   | Dr. Sharmistha Basu-Dutt<br>Email: sbdutt@westga.edu  | Office: 2131 TLC<br>Phone: (678)839-6018 |
| <b>Office Hours</b>                 | M,W: 9 am – 12:15 pm  | T,R : 2:00 – 3:30 pm                     |
| <b>Class Time/Place</b><br>NO CLASS | T, R 11:00 – 12:15 pm<br>February 1, February 20, March 27, April ?   | Room 3104 TLC                            |
| <b>Textbook</b>                     | “Introduction to Chemical Engineering Thermodynamics” by J. M. Smith, H.C. Van Ness, M. M. Abbot, 7 <sup>th</sup> edition, McGraw Hill Publishers, 2004.  |  |
| <b>Course Outline</b>               | An introductory engineering approach to thermodynamics for physical and chemical processes will be developed in this course. Applications of first and second laws, engines, refrigeration and compression cycles, equations of states, fluid properties, laws of corresponding states will be emphasized. Chapters 1 – 9 will be covered during the semester.  |  |
| <b>Quizzes and Exams</b>            | There will be <u>twelve quizzes</u> each worth 20 points for a total of <u>240 points</u> .<br>The <u>mid-term</u> and <u>final exams</u> will be take-home and each worth 100 points for a total of <u>200 points</u> .<br>The mid-term will be due March 1, 2007 and the final will be due at 11 am on May 1, 2007.   |  |
| <b>Written Reports</b>              | This course has been designated as a writing intensive course for the <b>Writing Across the Curriculum</b> Program (WAC). You will be required to write several formal and informal reports. The reports are worth <u>60 points</u> .<br>Located in TLC 1201, the Writing Center assists all students with any sort of writing assignment. Make an appointment with a tutor and focus on your writing reports early in the semester. Their phone number is 678-839-6513 and their web address is <a href="http://www.westga.edu/~writing">www.westga.edu/~writing</a> . The Center’s staff will work with you and help you at any stage of the writing. |  |
| <b>Grading</b>                      | The final score will be based on 500 points with the following grade scale<br>> 90.0%      A<br>80-89%        B<br>70-79%        C<br>60-69%        D<br><60.0%        F  |  |

## Formal Report on “Power Production” – 30 points

You will write a 5-page, double spaced, font size 12, 1 inch margins term paper on “*Power production*”. The paper will follow a format that covers the scope, theory and impact of the technique in the form of examples published in the chemical literature. You will have the opportunity of writing several drafts of the paper. If you do not complete any of the parts of this assignment, you will receive a zero for the entire assignment. If you do not complete this assignment, you will receive a grade of F for the course regardless of your points standing on the other parts of the course.

The assignment on the term paper will be broken into three parts. They are

- I. **Outline Draft** - submit a 2-4 page outline of your paper by March 8, 2007.
- II. **Initial Draft** - submit a 5-page draft of your paper for editing by March 29, 2007. Copies of all referenced articles must also be submitted. Figures cannot be counted in the page count.
- III. **Final Paper** - submit the 5-page final draft of your paper along with a copy of your initial draft and any additional references not cited previously by April 26, 2007.

Part of your grade on the formal report will be based upon how you model your report after this type of format.

1. **Title:** Title of report, together with your name, department, and college should appear on a separate title page which is not counted in the 5-page limit.
2. **Abstract:** A one-paragraph abstract must be included on the lower half of the title page. In the abstract, you must briefly state the purpose of the report and summarize your findings. This paragraph should be limited to no more than five sentences.
3. **Introduction:** Outline the theory of the process.
4. **Description:** A descriptive outline of the different processes should be included. This should be the most extensive section of your report.
5. **Discussion:** Discuss the pros and cons of the different sources of power production.
6. **Conclusions:** Report the most feasible technology and the future of the industry.

## Informal Reports – 2 x 15 = 30 points

You will write two 3-page, double spaced, font size 12, 1 inch margins informal reports. The two topics are “*Motive Power*” (Due January 30, 2007) and “*Heating and Cooling of your home*” (Due February 22, 2007).

All informal reports will be modeled after this type of format.

1. **Title:** Title of report, together with your name, department, and college should appear on a separate title page which is not counted in the 3-page limit.
2. **Abstract:** A one-paragraph abstract must be included on the lower half of the title page. In the abstract, you must briefly state the purpose of the report and summarize your findings. This paragraph should be limited to no more than five sentences.
3. **Description:** Briefly describe the technology used.