PS334 – Thermodynamics  
Washburn University  
Spring 2014

Instructor: Dr. Brian Thomas  
Office: Stoffer 210B  
Office Hours: By appointment; please contact me in class, by phone or email.  
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Instructor’s website: http://www.washburn.edu/faculty/bthomas/

REQUIRED TEXT:  
Classical and Statistical Thermodynamics, by Ashley H. Carter

Recommended:  
• Quantify! A Crash Course in Smart Thinking by Göran Grimvall (available at Mabee Library)  
• Concepts in thermal physics by Stephen J. Blundell and Katherine M. Blundell (available at Mabee Library)

DESCRIPTION:  
The purpose of this course is to give you an introduction to the study thermodynamics as used in physics. Topics covered include:  
• Classical thermodynamics  
• Equations of state  
• Thermodynamic potentials  
• Kinetic theory of gasses  
• Statistical thermodynamics  
• Classical and quantum statistics  
• Classical treatment of an ideal gas

Thermodynamics concepts are important in virtually every area of science, from cosmology to biology. I will therefore try to bring in as many different applications as possible, and you are encouraged to look for and suggest related topics of interest.

REQUIREMENTS:  
Attendance  
Class attendance is strongly recommended; if you’re not here you’re bound to miss out on something. If you need to miss class, try to let me know ahead of time so we can make sure you stay caught up.

Reading  
You should read ahead in the text. I will let you know where we are going next and what topics we will cover.

Homework  
Homework will be assigned regularly. You may collaborate on homework. The use of computers is encouraged for visualization, etc., but you should be conscious of learning the solution methods.

Please note:  
Homework is due before 5:00 pm on the due date. I will allow a grace period up to 9:00 am the day following the due date. Except in the instance of major issues such as illness, homework will not receive full credit if turned in past the due date. However, homework may be turned in for half credit up to and no later than the due date of the exam covering the associated material.
Homework will not be accepted any later than the due date of the exam covering the associated material. This policy is for your benefit, as homework is essential to understanding the material.

Exams
I will make every attempt to provide graded homework assignments from chapters covered in time for you to use in studying. Unless I announce otherwise, exams will be take-home. Collaboration on take-home exams is NOT permitted; one instance of cheating will result in a zero grade on that exam; a further violation will result in a failing grade for the course. There will be a comprehensive final exam.

GRADING:
Grades will be based on the following:
- Final exam 20%
- Midterm exams 50%
- Homework 30%

GRADING SCALE:
- A = 100%-90%
- B = 89%-80%
- C = 79%-70%
- D = 69%-60%
- F = below 60%

SCHEDULE: (tentative – subject to change)
We will try to cover about a chapter each week. We may not cover all of the chapters listed here.
- Chapters 1 – 3
- Exam
- Chapters 4 – 6
- Exam
- Chapters 7 – 10
- Exam
- Chapters 11-14
- Final Exam

Mission of the University:
Washburn University enriches the lives of students by providing opportunities for them to develop and to realize their intellectual, academic, and professional potential, leading to becoming productive and responsible citizens. We are committed to excellence in teaching, scholarly work, quality academic and professional programs, and high levels of faculty-student interaction. We develop and engage in relationships to enhance educational experiences and our community. Washburn University Board of Regents, 2010

Definition of a Credit Hour:
For every credit hour awarded for a course, the student is typically expected to complete approximately one hour of classroom instruction, online interaction with course material, or direct faculty instruction and a minimum of two additional hours of student work each week for approximately 15 weeks for one semester or the equivalent amount of work over a different amount of time.

Academic Misconduct Policy:
All students are expected to conduct themselves appropriately and ethically in their academic work. Inappropriate and unethical behavior includes (but is not limited to) giving or receiving unauthorized aid on examinations or in the preparation of papers or other assignments, or knowingly misrepresenting the source of academic work. Washburn University’s Academic Impropriety Policy describes academically unethical behavior in greater detail and explains the actions that may be taken when such behavior occurs. For guidelines regarding protection of copyright, consult http://www.washburn.edu/statements-disclosures/copyright/index.html. For a complete copy of the Academic Impropriety Policy, contact the office of the Vice President for Academic Affairs, Bradbury Thompson Alumni Center Suite 200, or go online to: http://www.washburn.edu/faculty-staff/faculty-resources/faculty-handbook/faculty-handbook-section-7.html.

Student Health Services/WU Counseling Services:
Student Health Services (SHS) works closely with WU Counseling Services to provide support for students experiencing challenges with learning and adapting to university life. SHS also offers urgent care for illness and injury, sports, school, and travel abroad physicals, well woman exams, immunizations/vaccinations and care of chronic illness such as diabetes and high blood pressure. More information can be found at http://washburn.edu/current-students/services/health-services/index.html and http://washburn.edu/current-students/services/counseling/index.html

Disability Services:
The Student Services Office is responsible for assisting in arranging accommodations and for identifying resources on campus for persons with disabilities. Qualified students with disabilities must register with the office to be eligible for services. The office MUST have appropriate documentation on file in order to provide services. Accommodations may include in-class note takers, test readers and/or scribes, adaptive computer technology, brailled materials. Requests for accommodations should be submitted at least two months before services should begin; however, if you need an accommodation this semester, please contact the Student Services Office immediately.

Location: Student Services, Morgan Hall Room 135 (new location)
Phone: 785-670-1629 or TDD 785-670-1025
E-Mail: student-services@washburn.edu

Students may voluntarily identify themselves to the instructor for a referral to the Student Services Office.

Office of Academic Advising:
As a Washburn student, you may experience difficulty with issues such as studying, personal problems, time management, or choice of major, classes, or employment. The Office of Academic Advising is available to help students either directly through academic advising, mentoring, testing and developing learning strategies or by identifying the appropriate University resource. If you feel you need someone with whom to discuss an issue confidentially and free of charge, contact Academic Advising in Morgan 122, 785-670-1942, advising@washburn.edu.

Withdrawal Policy:
During fall and spring semesters, students may go online and withdraw from full semester courses through the second week of class with no recorded grade. From the third through the eleventh week a “W” is recorded for any dropped course. After the eleventh week, there are NO withdrawals, and a grade will be assigned for the course. These deadlines will be different for short-term, out-of-sequence, or summer courses. To view the deadline dates for your courses visit the “Last Day” Deadlines web page at: https://www2-prod.washburn.edu/self-service/coursedates.php. Depending on the timing of the request to withdraw from a course, students may be responsible for repaying all or a portion of their financial aid. Students who do not attend their courses and fail to officially withdraw themselves will receive a grade of “F” and may also be required to repay all or a portion of their financial aid based on their non-attendance. For further information, contact the Financial Aid Office at 785.670.1151 or e-mail financialaid@washburn.edu.
Attendance/Administrative Withdrawal:
Although it is the student's responsibility to initiate course withdrawals, an instructor, after due notice to the student, may request withdrawal of the student from a course because of nonattendance through the same date as the last day a student may withdraw from a course. This would NOT absolve the student of financial responsibility for tuition/fees for the course in question. The inclusion of this information in the course syllabus is considered due notice.

Official E-Mail Address:
Your Washburn University e-mail address will be the official address used by the University for relaying important messages regarding academic and financial information and the University will consider this your official notification for important information. It may also be used by your instructors to provide specific course information. If you prefer to use an alternate e-mail address to receive official University notices, you can access your MyWashburn e-mail account, choose the "Options" tab, and select "Settings", scroll to the bottom of the screen, click enable forwarding and enter the e-mail address you would like your Washburn emails forwarded to in the “mail forwarding” area. Click add and the click on save changes. This will complete the process of forwarding your Washburn e-mail. It is your responsibility to ensure that your official e-mail box does not exceed your message quota resulting in the inability of e-mail messages to be accepted into your mailbox.

Success Week:
Success Week for undergraduate students is designated as the five week days preceding the first day of scheduled final examinations each Fall and Spring semester. Success Week is intended to provide students ample opportunity to prepare for final examinations. For academic programs, the following guidelines apply:

A. Faculty are encouraged to utilize Success Week as a time for review of course material in preparation for the final examination. If an examination is to be given during Success Week, it must not be given in the last three days of Success Week unless approved by the Dean or Department Chair. Assignments worth no more than 10% of the final grade and covering no more than one-fourth of assigned reading material in the course may be given.

B. Major course assignments (extensive research papers, projects, etc.) should be due on or before the Friday prior to Success Week and should be assigned early in the semester. Any modifications to assignments should be made in a timely fashion to give students adequate time to complete the assignments.

C. If major course assignments must be given during Success Week, they should be due in the first three days of Success Week. Exceptions include class presentations by students and semester-long projects such as a project assignment in lieu of a final. Participation and attendance grades are acceptable.

The Success Week policy excludes make-up assignments, make-up tests, take-home final exams, and laboratory examinations. It also does not apply to classes meeting one day a week for more than one hour. All University laboratory classes are exempt from this policy.