

# AME 310

## Engineering Thermodynamics

### Summer 2016 (Madrid)

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**Class Information:** Blackboard (<https://blackboard.usc.edu/>)

**Text:** *Fundamentals of Thermodynamics*, by Borgnakke & Sonntag (7<sup>th</sup> or 8<sup>th</sup> edition)

<u>WEEKS</u>	<u>TOPICS</u>
1	Introduction, Units
2	Properties of a Pure Substance Energy, Work and Heat
3-4	1 <sup>st</sup> Law of Thermodynamics (Control Mass) 1 <sup>st</sup> Law of Thermodynamics (Control Volume)
4	Formulation of 2 <sup>nd</sup> Law of Thermodynamics
5-6	Entropy
7	2 <sup>nd</sup> Law of Thermodynamics (Control Volume)

**Grading:** Weekly exams/quizzes 100%

**Examinations:** Weekly exams/quizzes: typically each Thursday, starting in week 2; covering material from four previous days of classes (previous week Th and the current week MTuW)

#### **General remarks:**

Homework assignments will be given every day. Homework will not be graded but homework problems may appear in weekly exams/quizzes. All examinations will be open book. Homework and other written materials will not be allowed. Is it on the test? The purpose of AME 310 is to acquaint you with the basic principles of Thermodynamics, not only for its intrinsic merit, but also to acquaint you, as future professionals, with one of the fundamental pillars of modern engineering. There is much to this field that cannot be covered in the lectures of any single course (including this one) and, conversely, you may not encounter many things that will be discussed in class ever again (even on exams). The best way to do well in this course is to keep up with all aspects of the class (e.g., attending lectures, doing the homework on time, participating in class discussions, etc.).

# Statement on Academic Conduct and Support Systems

## Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu> or to the *Department of Public Safety* <http://capsnet.usc.edu/departments/public-safety/online-forms/contact-us>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

## Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* [http://sait.usc.edu/academicsupport/centerprograms/dsp/home\\_index.html](http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.