EML 3100 - Thermodynamics, Spring 2026 (January 3, 2026)
MWF 4th Period, 10:40-11:30am, 303 MAE-A, (Section 132B-Class Number 11675)

Instructor
Dr. S.A. Sherif
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https://mae.ufl.edu/people/faculty/primary/profiles/sa-sherif/
Office Hours: MWF 2:30-3:30pm on Zoom (or as announced in Canvas)

Teaching Assistants: There are three undergraduate graders who can provide TA help and two graduate graders who cannot provide TA help.

1. **Skyler P. Comstock, skyler.comstock@ufl.edu (undergraduate TA)**
2. **Paula A. Aguirre Gonzalez, paguirregonzalez@ufl.edu (undergraduate TA)**
3. **Christa (Grace) G. Wilson, wilson.cgrace@ufl.edu (undergraduate TA)**
4. **Hossein Papi, hosseinpapi@ufl.edu (graduate TA)**
5. **Vishaal Vasandan, ramasamyvishaalv@ufl.edu (graduate TA)**

Catalog Description: Credits: 3; Application of the first and second laws of thermodynamics to closed and open systems and to cyclic heat engines. This includes the development of procedures for calculating the properties of multiphase and single-phase pure substances.

Pre-requisites and Co-requisites: *Pre-requisites: CHM 2045, MAC 2313 and PHY 2048.*

Course Objectives: This course provides intermediate level coverage of thermodynamics. Students will learn concepts such as system and control volume analyses, evaluation of thermodynamic properties, application of conservation of mass, energy, and the second law of thermodynamics, the use of entropy, the application of availability and irreversibility to engineering problems, and analysis of power and refrigeration cycles.

Materials and Supply Fees: N/A

ABET Student Outcomes
This course achieves the following ABET outcomes [note that the outcome number corresponds to the respective ABET outcomes (1) through (7):

(1) **Outcome 1**: Ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (**High**)
(2) **Outcome 3**: Ability to communicate effectively with a range of audiences (**Low**).
(3) **Outcome 4**: Ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts (**Low**).
(4) **Outcome 7**: Ability to acquire and apply new knowledge as needed, using appropriate learning strategies (**Low**)

Meeting Times: 10:40-11:30am MWF (4th Period)

Class/Laboratory Schedule/Homepage: No lab

Homepage: Students have access through E-Learning with Canvas

Meeting Location: MAE-A 303

Required Textbooks and Software Required: Fundamentals of Thermodynamics, 7th or 8th Editions, C. Borgnakke and R. Sonntag, John Wiley and Sons, Inc. (Make sure you have a hard copy book during the exams. Loose pages are

not allowed unless they are permanently bound. Three-ring binding is not acceptable but spiral binding is). **Do not get the International Student Edition as it does not have all the appendices needed**.

Recommended Reading: None

Course Outline

Course Schedule and Assignments: Exams 1, 2, and 3 are scheduled in the evening

Section numbers below are based on the 7th Edition

Date	Topic	Date	Topic
Jan 12	2.1 to 2.5	March 9	9.1, 9.2
Jan 14	2.6 to 2.12	March 11	9.3, 9.4
Jan 16	3.1 to 3.3	March 13	9.5, 9.6
Jan 19	**Martin Luther King Holiday**	March 16	**Spring Break**
Jan 21	3.4 to 3.6	March 18	**Spring Break**
Jan 23	3.7 to 3.10	March 20	**Spring Break**
Jan 26	4.1 to 4.3	March 23	10.1, 10.2
Jan 28	4.4 to 4.6	**March 25**	**EXAM 2 (Chapters 6, 7, 8)**
Jan 30	4.7 to 4.9	March 27	10.2 (continued)
Feb 2	5.1 to 5.3	March 30	11.1 to 11.3
Feb 4	5.4 to 5.5	April 1	11.4 to 11.5
Feb 6	5.6 to 5.7	April 3	11.6 to 11.7
Feb 9	5.8 to 5.10	April 6	11.8 to 11.9
Feb 11	6.1 to 6.4	April 8	11.10 to 11.12
Feb 13	6.5 to 6.6	April 10	12.1 to 12.3 **(Project 2 Due)**
Feb 16	**EXAM 1 (Chapters 2, 3, 4, 5)**	April 13	12.4 to 12.6
Feb 18	7.1, 7.2		
Feb 20	7.3, 7.4	April 15	12.7 to 12.9
Feb 23	7.5 to 7.7	April 17	12.10, 12.11 **(Withdrawal deadline)**
Feb 25	7.8 to 7.10	**April 20**	**EXAM 3 (Chapters 9, 10)**
Feb 27	8.1 to 8.4	April 22	12.12
March 2	8.5 to 8.8	April 23, 24	Reading Days
March 4	8.9, 8.10 **(Project 1 Due)**	**May 1**	**Final Exam (7:30-9:30am MAE-A 303)**
March 6	8.11 to 8.13		**(Final Exam is comprehensive)**

Locations, Dates, and Times of Midterm Exams:

Date	Room	Period	Time
February 16	**FL Gym 220 and 270**	**E2 and E3**	**8:00-10:00pm**
March 25	**Pugh Hall 170**	**E2 and E3**	**8:00-10:00pm**
April 20	**FL Gym 220 and 270**	**E2 and E3**	**8:00-10:00pm**

Attendance Policy, Class Expectations, and Make-Up Policy

The lecture videos on Canvas are supplementary materials and start with the coverage of Entropy. They will help you get more out of the course if you watch all of them or watch a portion of them. On the other hand, the in-person lectures cover the whole course. If you miss an in-person lecture, make sure you watch the corresponding topic on video. Office hours will be on Zoom. There will be some help sessions on Zoom, especially before the exams. These "help sessions" will be recorded. It is extremely important that students attend the class regularly. Irregular attendance always results in poor or mediocre performance. **Policy on Homework Assignments:** Homework problems will be assigned via Canvas and submitted through Canvas. No email or hard copy submissions will be accepted. Only two problems will be graded at random. A correct solution will be posted on Canvas. You may upload homework assignments early, but not past the due date. The assignments can be submitted until 11:59pm on the day the assignments are due. Late homework is not accepted via any other means. **Policy on exams:** There will be three midterm exams (20% each) and a Final Exam (25%) of the course grade. The Final Exam will be given during Finals Week in the time slot specified by the University. All exams will be in person. The Final Exam is comprehensive.

Each midterm exam will cover a portion of the course material as specified in this syllabus. **No make-up exams will be given unless there is an extreme and documented emergency**. **All exams are open-book and closed-notes. Make sure you have a hard copy book or print your eBook and bind it. You will need it during the exams (3-ring binding is not acceptable. All other types of binding are acceptable).**

Miscellaneous Policies

Students will be held responsible for knowledge of all scheduling and policy announcements made in class. You may call Dr. Sherif or send him an e-mail 24 hours a day, 7 days a week, at 352-392-7821. Please make sure you leave a phone number if you call and cannot find him. If you send an Email, please also list a phone number where you can be reached. Dr. Sherif will return your call within a few hours. Sending an Email along with the voice message can also help alert him to your request. Excused absences are consistent with university policies in the undergraduate catalog at the following URL: **https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx**
Excused absences require appropriate documentation.

Pre-recorded Help Sessions

There are 20 pre-recorded help sessions (Labeled E1 through E20) on Canvas that students are strongly encouraged to watch. These lectures cover Entropy (Chapter 8 in the 7th Edition) through the end of the course. These 20 lectures have lots of solved problems that will teach you how to apply the concepts in different situations. There are also two substitute lectures (labeled Substitute Lectures 1 and 2) that I will be letting you know when to watch.

Grading

Homework	7%
Project 1	3%
Project 2	5%
Exam #1	20%
Exam #2	20%
Exam #3	20%
Final Exam	25%

Grading Scale

A	90-100		
A-	86-90	B+	82-86
B	78-82	B-	74-78
C+	70-74	C	66-70
C-	62-66	D+	58-62
D	54-58	D-	50-54
E	0-50		

Academic Policies & Resources

To support consistent and accessible communication of university-wide student resources, instructors must include this link to academic policies and campus resources: https://go.ufl.edu/syllabuspolicies. Instructor-specific guidelines for courses must accommodate these policies.

Commitment to a Positive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:
• Your academic advisor or Undergraduate Coordinator
• HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
• Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu