

**Department of Materials Science and Engineering
University of Maryland, College Park**

ENMA 180: Materials Science and Engineering: The Field and the Future

Course Information

Description: Overview of the profession and the components of the Materials Science and Engineering program. Students will become familiar with the departmental faculty, areas of specialization within MSE, the professional student society, research opportunities and other resources available to students.

Prerequisites: none

Course Goals: The objective of this class is to provide students new to the major with information about the field of materials science and engineering and the administrative requirements of the major. Students will be able to:

1. Identify specialization areas in the MSE major
2. Identify academic benchmarks which must be met
3. Identify Department and University resources available to MSE
4. Discuss the importance of ethical and professional behavior in engineering
5. Communicate individually and as a member of a team

Student Outcomes Covered by the Class:

ABET F: Understanding of professional and ethical responsibility

ABET G: Ability to communicate effectively

Textbook: none

Class Schedule: Tuesdays, 3:00pm-4:15pm, JMP 2202

| WEEK | DATE | TOPIC(S) | ASSIGNMENT DUE |
|------|---------|---|-------------------------|
| 1 | 8/27/19 | Introduction: Adaire Parker Course Expectations/Syllabus Review | |
| 2 | 9/3/19 | Resources in the Department and in the College and University Minors, Dual Degrees and the 5 Year BS/MS Degree Engineering Library and MakerSpace | Quiz 1 |
| | | Schedule Adjustment Period Ends at 4:30 pm on Sept 9th | |
| 3 | 9/10/19 | <i>Counseling Center; Accessibility and Disability Services</i> | Time Management Project |
| 4 | 9/17/19 | <i>MatES and Materials Advantage; Materials Engineering</i> *Internship discussion: Students who completed internships | |
| 5 | 9/24/19 | Academic Integrity | |

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|----|----------|---|-----------------------------|
| 5 | 10/1/19 | Engineering Career Center | UAchieve Assignment |
| 6 | 10/8/19 | Group Project time | |
| 7 | 10/15/19 | Guest speaker: MSE Alum-Ms. Sarah Adams Materials Engineer Parsons | Mid-Semester Check-in |
| 8 | 10/22/19 | Departmental Advising and Mentoring Process | |
| 9 | 10/29/19 | Specialization Area: Soft and Biomaterials Drs. Briber and Martinez-Miranda | |
| 10 | 11/5/19 | Specialization Areas: Materials Science and Materials for Applications, and <i>Materials</i> for Energy Dr. Lloyd | Four (Graduation) Year Plan |
| | | November 4 at 4:30 pm – Schedule Adjustment Ends; Last Day to Drop with a W | |
| 11 | 11/12/19 | Ethics in the Engineering Profession *Mentoring Organization (MEMO) Mentoring with Upperclassman How to Prepare for Midterms | |
| 12 | 11/19/19 | Research and internships/National Scholarships Office Francis DuVinage, Director | Mentoring Form Submission |
| 13 | 11/26/19 | Group work (presentation) **Can work in class or remote if all group members agree. | |
| 14 | 12/3/19 | Wrap up and Group Presentations | Quiz 2 |
| | | December 9 – Last Day of Classes December 10 – Reading Day (no classes) December 11-17– Final Exams | |

Grading Policy

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|----------------------------------|---------------------------|
| Class Participation (14 classes) | 70 points (5 points each) |
| Quizzes | 20 points |
| Time Management Project | 25 points |
| UAchieve Exploration | 25 points |
| Mid Semester Check in | 25 points |
| 4-Year (Graduation) Plan | 25 points |
| Mentoring with MSE Faculty | 25 points |
| Group Project | 35 points |
| Total | 250 points |

Grading Scale

Students will be graded using the traditional grading scale

| | |
|-----------|-----|
| Above 90% | - A |
| 80-89% | - B |
| 70-79% | - C |
| 60-69% | - D |
| Below 60% | - F |

Assignments (upload to Canvas by 11:59 pm on the due date). No late assignments will be accepted.

Class rules:

Cell phones, tablets, and computers are prohibited unless instructor states it can be used.

Sign-in/Attendance: You will need to sign in for each class and this is your responsibility. A sign in sheet will be passed around.

1. Time Management Project (25 points)

Due: September 10, 2019

This assignment will be available to download on Canvas under the Files tab. There are four parts to this assignment:

- 1) Identify how much free time you have based on your academic/work/personal commitments.
- 2) Answer a few questions about your studying and learning patterns.
- 3) Fill in a week-long calendar with all your class times, intended study times, extracurricular activities, practices and other activities.
- 4) Plan on an electronic calendar (of your choosing) all of your exams, papers, and assignments, for all of Fall 2018 classes on the day they are due.

2. UAchieve (25 points)

Due: October 1, 2019

Visit the University Registrar website: <http://www.registrar.umd.edu/current>. Click on the Policies and Guidelines/Degree Audits link. Log-on with your directory ID and password.

Answer the following questions:

1. What is your major?
2. What are the basic science courses you are required to take for your major?
3. What engineering science course do you have to take for your major?
4. What is the GPA requirement for all courses in your major?
5. How many diversity courses are you required to enroll in for your degree? Are there different types of diversity courses? If so please identify them.

3. Mid Semester Update (25 points)

Due: October 15, 2019

Write a one-page report which explains how the first 7 weeks of this semester have been for you. Be sure to include information about how your classes are going, how your interaction with faculty and TAs has been, a new activity you have tried, interactions with roommates and/or individuals on your floor/apartment, how balancing your activities and demands is going, etc.

4. Four year (Graduation) Plan (25 points)

Due: November 19, 2019

Fill in all the sections in blue on the MSE Advising Record on Canvas. Update the 4 year graduation plan

template. If you completed any of the classes on the form at UMD, note the semester, year and grade. If you completed them via AP or work at a community college, note that. If you have significant credits from AP or community college you can draft a plan to reflect the classes you have already taken. NOTE: Classes that have numbers next to them need to be taken in the order on the template because later classes build on what you learn in earlier classes. Use uachieve to help you fill out the forms. These forms will be used and updated during advising for Spring 19.

5. Mentoring with a MSE Faculty Member (25 points)

Due: November 19, 2019

Schedule a mentoring meeting with one of the Materials Science and Engineering faculty members. Send them the mentoring form on Canvas the day before your meeting. Ask your faculty mentor to email the mentoring form to Ms. Parker (nparker1@umd.edu). After your mentoring meeting write a brief summary (~500 words) about the meeting and be sure to include: (1) how your prepared for the meeting; (2) who you met with; (3) what you discussed; and (4) what you gained from the meeting.

How to schedule Mentoring:

1. Visit this website: <https://mse-umd.appointy.com/>
2. Click on “General Mentoring” and select the faculty member.

Note: It often takes time (1-3 weeks) to schedule a mentoring meeting. Don't leave it to the last minute.

6. Group Project (25 points)

Due: December 3, 2019

Students will work in small groups (5-6 students) on a project. Each group will produce game (physical or digital) highlighting some aspect of the Materials Science and Engineering Department at UMD. Please include at least one visit to a lab, faculty office, or other department related location. All group members must contribute in small way to the video or game. Each student will provide a short peer and self-evaluation of the group project using the form will be uploaded on Canvas.

7. Quizzes (30 points)

Due: September 10, 2019

Quizzes will be posted on Canvas

Due: December 3, 2019

University Policies and Resources

Changes in policies affecting undergraduate classes and syllabi were passed by the University Senate at the end of 2015. Rather than including campus-wide policy information in individual course syllabi, they are provided on the university's page of policies and resources <http://www.ugst.umd.edu/courserelatedpolicies.html>.

The page includes links to resources related to each policy. Students should familiarize themselves with these pages, particularly the new excused absence policy and the academic integrity policy.

Attendance: Regular attendance and participation in this class is the best way to grasp the concepts and principles being discussed. However, in the event a class must be missed, the University policy is available at:

<https://www.faculty.umd.edu/teach/#expectations>

It is important to notify your instructors if you will need to miss a class as soon as possible, generally before the class unless you are so ill you can't send an email. Documentation may be requested of the student.

Academic Accommodations: If you have a documented disability, contact Accessibility and Disability Support Services (0126 Shoemaker Hall). Each semester students with documented disabilities should apply to DSS for accommodation request forms, which you can provide to your professors as proof of your eligibility for accommodations. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site at <https://www.counseling.umd.edu/ads/>

Academic Integrity: It your responsibility to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.shc.umd.edu/SHC/Default.aspx>

You may be asked to write the following signed statement on examinations or assignments: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment)." You may also be asked to write the names of your seat neighbors on an exam. Violations of the code of academic integrity will be referred to the Office of Student Conduct.

CourseEvalUM Fall 2018: Your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member of your academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University as well as the tenure and promotion process. CourseEvalUM will be open for you to complete your evaluations for semester courses sometime in December 2018. Please go directly to the website: <https://www.courseevalum.umd.edu/> to complete your evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing online, at Testudo, the evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations.

Relationship of the class to the program objectives: This course is a required class for materials science and engineering students. Students will receive basic information about the field of materials science and engineering and the administrative requirement that they must meet.

Student Services Program Director: Ms. Adaire Parker, 1111 CHE, nparker1@umd.edu, (301) 405-5989

Office Hours: Tuesdays from 11am-12pm and by appointment

August 26, 2019