

## Course Information

### Course Information:

contains the # credits, # contact hours and ABET designation

### EN.510. 502 16 : Research in Materials Science



Spring 2024



EN Materials Science & Engineering



Whiting School of Engineering

Student participation in ongoing research activities. Research is conducted under the supervision of a faculty member and often in conjunction with other members of the research group.



### Instructor Information:

Instructor name

Instructor email address

### Instructor



Michael Falk

[mfalk@jhu.edu](mailto:mfalk@jhu.edu)



### Textbooks:

Required

Rich text editor toolbar with icons for undo, redo, formats, bold, italic, bulleted list, numbered list, indent, outdent, link, unlink, table, and code.

### Specific Course information:

Required

#### UGRAD COURSES ONLY

- brief description (from catalog)
- list all pre- and co-reqs
- required, elective or selective elective (per ABET)

Rich text editor toolbar with icons for undo, redo, formats, bold, italic, text alignment, list creation, link, text color, background color, and source code.

Days and times:

Required

Indicate the days of the week and meeting times

Empty text input field for days and times.

Optional Syllabus Upload:

Optional

File upload area with a document icon and a blue button labeled "SELECT FILE".

Specific goals for the course

This section is required for undergraduate courses and not applicable to graduate courses.

a. specific outcomes for this course:

University Recommended

e.g. The student will be able to explain the significance of current research about a particular topic.

Rich text editor toolbar with icons for undo, redo, formats, bold, italic, text alignment, list creation, link, text color, background color, and source code.

b. ABET student outcomes:

Required

Choose which of the following ABET student outcomes will be addressed in the course:

- SO1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- SO2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- SO3. an ability to communicate effectively with a range of audiences
- SO4. an 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
- SO5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- SO7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

## Brief list of topics

Provide a bulleted list of topics that will be covered

topics:

Required

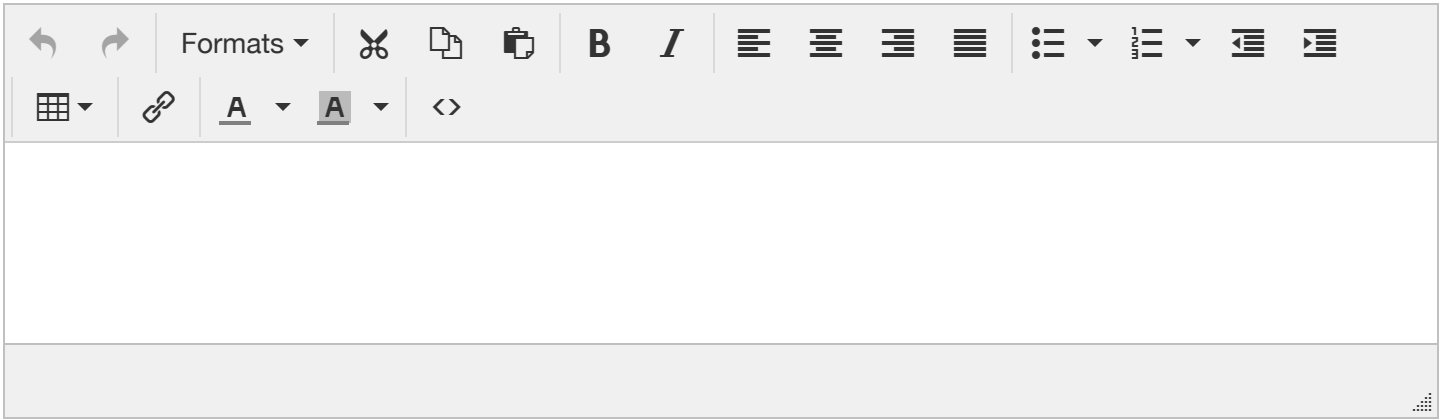
provide a bulleted list of topics that will be covered

A rich text editor toolbar with the following icons from left to right: undo, redo, a 'Formats' dropdown menu, cut, copy, paste, bold (B), italic (I), bulleted list, numbered list, decrease indent, increase indent, table, link, text color (A), background color (A), and source code (<>). Below the toolbar is a large empty text area for entering the bulleted list of topics.

## Evaluation and Grading

## Grading Breakdown:

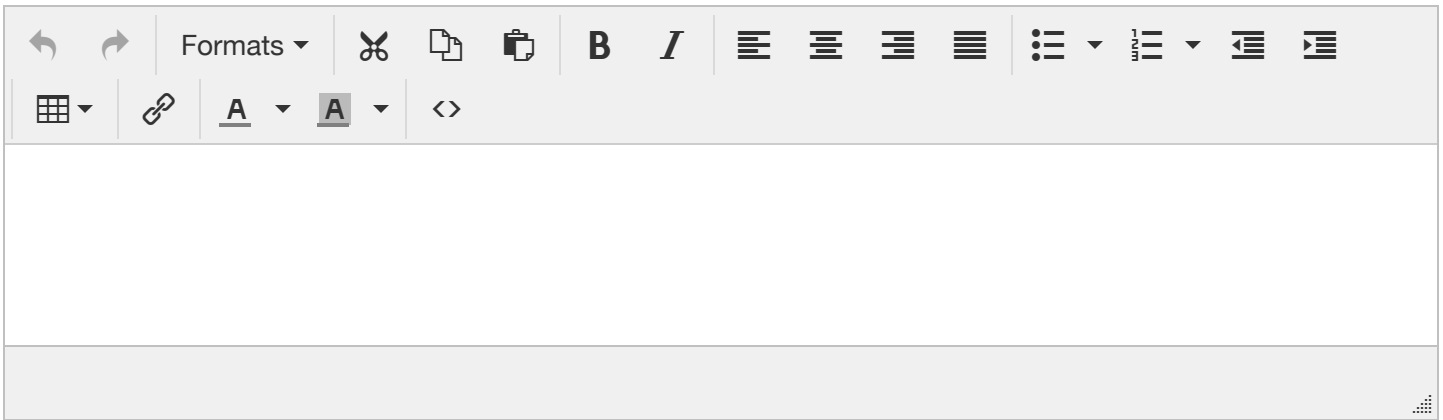
Required



A rich text editor toolbar with the following icons from left to right: undo, redo, a dropdown menu labeled 'Formats', a scissors icon (cut), a document icon (copy), a clipboard icon (paste), bold (B), italic (I), left-align, center-align, right-align, justify-align, bulleted list, numbered list, decrease indent, and increase indent. Below the toolbar are two empty text input fields.

## Grading Scale:

Required



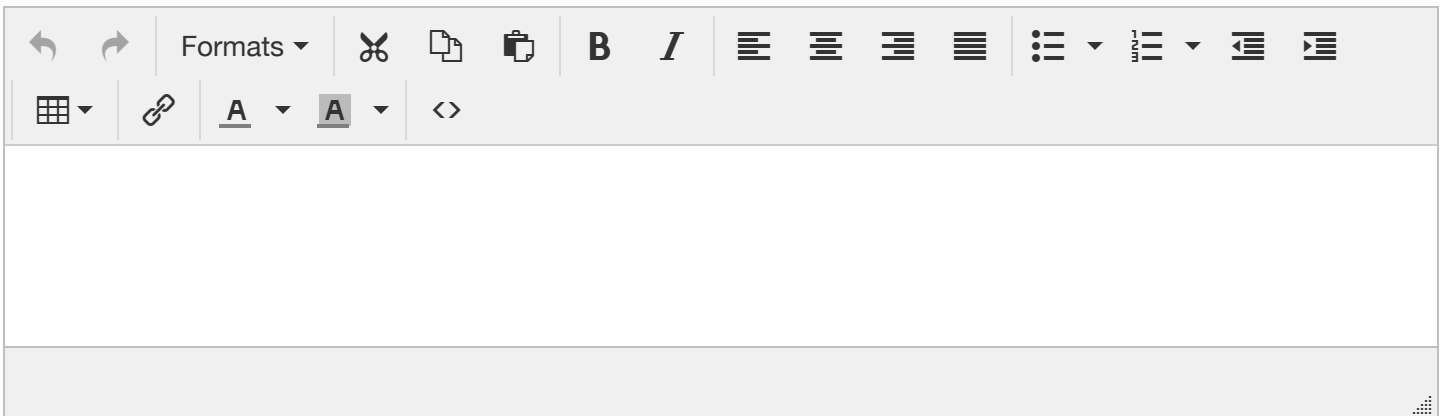
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## Key Dates:

Required

Dates for exams, presentations, etc.

If not yet available please use this statement: "these dates will be posted in Canvas closer to the start of the semester."



A rich text editor toolbar with the following icons from left to right: undo, redo, a dropdown menu labeled 'Formats', a scissors icon (cut), a document icon (copy), a clipboard icon (paste), bold (B), italic (I), left-align, center-align, right-align, justify-align, bulleted list, numbered list, decrease indent, and increase indent. Below the toolbar are two empty text input fields.

## Course Learning Objectives

## Course Learning Outcomes (CLOs):

University Recommended

Course Learning Objectives (CLOs) will automatically be pre-populated this section if they have been entered for the course.

+ ADD A CLO



### No Course Learning Outcomes were found

Course Learning Outcomes were not found for this course.  
You may add Course Learning Outcomes one at a time by clicking the **Add a CLO** button.

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### Course Learning Outcomes to Assignment Alignment:

University Recommended

A rich text editor toolbar with various icons for text formatting and editing. The icons include undo, redo, a 'Formats' dropdown, cut, copy, paste, bold (B), italic (I), bulleted list, numbered list, decrease indent, increase indent, link, unlink, font color (A), background color (A), and source code (<>).

## Policies

### Academic Policies:

Course and general academic policies and personal well-being  
This section will pre-populate any institution or college policies populated in AEFIS



## Disability Services

Johns Hopkins University values diversity and inclusion. We are committed to providing welcoming, equitable, and accessible educational experiences for all students. Students with disabilities (including those with psychological conditions, medical conditions, and temporary disabilities) can request accommodations for this course by providing an Accommodation Letter issued by Student Disability Services (SDS). Please request accommodations for this course by reaching out directly to the instructor as early as possible to provide time for effective communication and arrangements.

For further information or to start the process of requesting accommodations, please contact Student Disability Services at Homewood Campus, Shaffer Hall #101, call: 410-516-4720 and email: [studentdisabilityservices@jhu.edu](mailto:studentdisabilityservices@jhu.edu) or visit the [website](#).



## Mental Health Statement

JHU has several resources to support students. Many students struggle with stress at times with stress, anxiety, and depression. The Counseling Center has many resources available to students:

[Johns Hopkins University Student Well-Being \(jhu.edu\)](https://www.jhu.edu/student-well-being)



In addition, The Johns Hopkins University Behavioral Health Crisis Support Team (BHCST) pairs experienced, compassionate crisis clinicians with specially trained public safety officers on every shift on and around the Homewood campus, seven days a week. The BHCST will provide immediate assistance to those who need it and, just as importantly, link individuals in crisis to ongoing support services in the days and weeks that follow. Call Public Safety, 410-516-5600, and ask for a BHCST clinician.

If you have concerns about a specific student, please contact:

- For [emergencies](#) (threat to self or others): 410-516-4600 or 911
- For on-scene mental health support: BHCST at 410-516-4600
- For undergraduates: Student Outreach & Support at 410-516-7857 or [studentoutreach@jhu.edu](mailto:studentoutreach@jhu.edu) (undergraduates)
- For KSAS Graduate Students: [Renee Eastwood](#), Assistant Dean for Graduate and Postdoctoral Academic and Student Affairs
- For WSE Graduate Students: [Megan Barrett](#), Assistant Dean for Engineering Student Affairs



## Teaching Policies and Guidelines

[Teaching Policies and Guidelines – Undergraduate Advising \(jhu.edu\)](#)



## Academic Integrity

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition.

Report any violations you witness to the instructor. You can also contact:

- For undergraduates: the associate dean of student conduct (or designee) by calling the Office of the Dean of Student Life at 410-516-8208 or via email at [studentconduct@jhu.edu](mailto:studentconduct@jhu.edu)
- For KSAS Graduate Students: [rseitz5@jh.edu](mailto:rseitz5@jh.edu)
- For WSE Graduate Students: [christinekavanagh@jhu.edu](mailto:christinekavanagh@jhu.edu)

For undergraduate students, the adjudication procedures can be found online [here](#).

For graduate students the policy can be found on the Homewood Graduate and Postdoc Affairs [website](#).

### Optional

Course-Specific Academic Integrity Policies:

Please populate any Course-Specific Academic Integrity Policies

e.g.[In addition, the specific ethics guidelines for this course are: (1) (Insert unique rules here, such as your policy regarding collaboration on assignments or use of old exams/graded materials.) (2) (etc.)]



## Inclusivity

Johns Hopkins University is committed to creating a classroom environment that values the diversity of experiences and perspectives that all students bring. Everyone here has the right to be treated with dignity and respect. Fostering an inclusive climate is important because research and experience show that students who interact with peers who are different from themselves learn new things and experience tangible educational outcomes. Please join us in creating a welcoming and vibrant classroom climate. Note that you should expect to be challenged intellectually by the instructor, the TAs, and your peers, and at times this may feel uncomfortable. Indeed, it can be helpful to be pushed sometimes in order to learn and grow. But at no time in this learning process should someone be singled out or treated unequally on the basis of any seen or unseen part of their identity.

If you ever have concerns in this course about harassment, discrimination, or any unequal treatment, or if you seek accommodations or resources, please reach out to your instructor or the TAs who will take your communication seriously and will seek mutually acceptable resolutions and accommodations. Reporting will never impact your course grade. You may also share concerns with the department chair, the Director of Undergraduate Studies ([WSE Department Heads and DUSes](#)), the WSE Assistant Dean for Diversity and Inclusion (Darlene Saporu, [dsaporu@jhu.edu](mailto:dsaporu@jhu.edu)), the KSAS Assistant Dean for Diversity and Inclusion (Araceli Frias, [afrias3@jhu.edu](mailto:afrias3@jhu.edu)) or the Office of Institutional Equity ([oiie@jhu.edu](mailto:oiie@jhu.edu)). In handling reports, people will protect your privacy as much as possible, but faculty and staff are required to officially report information for some cases (e.g., sexual harassment).



## Course-Specific Academic Integrity Policies:

Optional

Please populate any Course-Specific Academic Integrity Policies

e.g.[In addition, the specific ethics guidelines for this course are: (1) (Insert unique rules here, such as your policy regarding collaboration on assignments or use of old exams/graded materials.) (2) (etc.)]

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## Classroom Climate Policy:



I am committed to creating a classroom environment that values the diversity of experiences and perspectives that all students bring. Everyone here has the right to be treated with dignity and respect. I believe fostering an inclusive climate is important because research and my experience show that students who interact with peers who are different from themselves learn new things and experience tangible educational outcomes. Please join me in creating a welcoming and vibrant classroom climate. Note that you should expect to be challenged intellectually by me, the TAs, and your peers, and at times this may feel uncomfortable. Indeed, it can be helpful to be pushed sometimes in order to learn and grow. But at no time in this learning process should someone be singled out or treated unequally on the basis of any seen or unseen part of their identity.

If you ever have concerns in this course about harassment, discrimination, or any unequal treatment, or if you seek accommodations or resources, I invite you to share directly with me or the TAs. I promise that we will take your communication seriously and seek mutually acceptable resolutions and accommodations. Reporting will never impact your course grade. You may also share concerns with the department head, Director of Undergraduate Studies, the WSE Assistant Dean for Diversity and Inclusion (Darlene Saporu), the KSAS Assistant Dean for Diversity and Inclusion (Araceli Frias), or the Office of Institutional Equity (oie@jhu.edu). In handling reports, people will protect your privacy as much as possible, but faculty and staff are required to officially report information for some cases (e.g., sexual harassment).

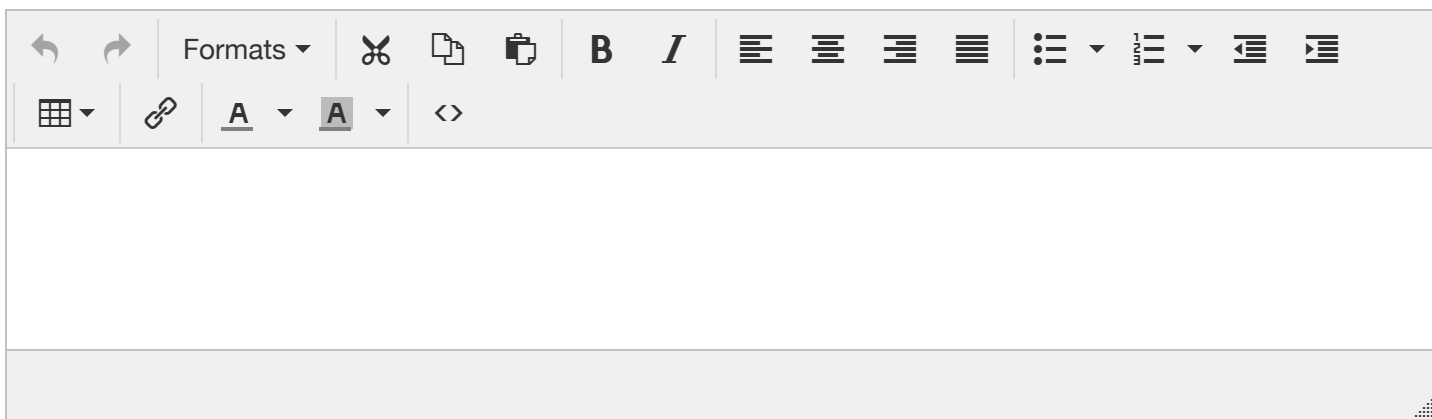
 Click [here](#) for a list of Department Heads and Directors of Undergraduate Studies.

## Course Evaluation

### Course Evaluation:

Optional

Students will be asked to complete course evaluations at the end of the semester. Grades will be released to students upon completion of the evaluation.



A rich text editor toolbar with various icons for text formatting and editing. The toolbar includes: undo and redo arrows, a 'Formats' dropdown menu, icons for cut, copy, and paste, bold (B) and italic (I) text styles, bulleted and numbered list creation, indent and outdent list items, bulleted and numbered list removal, a table grid icon, a link icon, text color (A) and background color (A) dropdowns, and a code icon (<>). The editor area below the toolbar is currently empty.