

BE 466 Syllabus, Spring 2022

Course Instructors:

Dr. Diane Joseph-McCarthy
djosephm@bu.edu
Office: ERB 239
Office Hours: By Appointment

Dr. Darren Roblyer
roblyer@bu.edu
Office: ERB 231
Office Hours: By Appointment

Course Administrator:

John Benducci
jbenducc@bu.edu
Office: ERB 408

Course Meeting Locations:

PHO 206 (Photonics Center)

Course Meeting Time:

Fridays 12:20pm -2:05pm

Course Website:

<https://learn.bu.edu/>. The course is BE 466.

Course Description: The BME Senior Design Course consists of a two-part course sequence: BE 465 and BE 466. Students will work together in a team of 2-5 people with a Principal Investigator in Industry, Academia or a Hospital Setting to develop a solution to a biomedical engineering challenge. Students will research their problem using scientific literature, clearly write about their projects appropriately citing scientific literature, perform remote and hands-on design work, collect and formally present work in oral and written formats. In addition to the scientific and engineering content in the course, there will be an emphasis on clear writing and professionalism.

Class Format:

- Lecture series explaining course assignments, the design process, and career preparation.
- Workshops to work on and refine course assignments.
- Time outside of class researching project and working with principal investigators.
- Online videos, readings and assignments.

In BE 466, students will complete:

- *Progress Report 1 (Group)*: Describe completed tasks as well as plan to complete project.
- *Project Report 2 (Group)*: Present a correlated progress to proposed aims. Include draft of Methods section, Results section, and a Gantt timeline.
- *Final Report (Group)*: Written project summary including: Abstract, Introduction, Methods, Results, Discussion, Conclusions, and References.
- *Final Presentation*: Oral presentation of project to technical audience.

Course Schedule:

Date	Topic	Assignments Due
Jan 21	Lecture 1: Overview, Design Competitions, Progress Report Guidance, Project Advising Scheduling	
Jan 28	No Class	
Feb 4	Project Advising (no formal class)	<i>Progress Report 1 (Group)</i>
Feb 11	Project Advising (no formal class)	
Feb 18	Project Advising (no formal class)	
Feb 25	Lecture 2: Data Analysis 1	
Mar 4	Lecture 3: Data Analysis 2, Progress Report	
Mar 11	Spring Break – no class	
Mar 18	Lecture 4: Colin Brennan	<i>Progress Report 2 (Group)</i>
Mar 25	Lecture 5: Abstract and Resume, Final Report	
April 1	Lecture 6: Nicole Wagner	<i>Resume on VMOCK</i>
Apr 8	Lecture 7: Roger White	
Apr 15	Lecture 8: Final Presentation Guidance	
Apr 22	Practice Presentations	<i>Graphical Abstract (Group)</i>
Apr 29	Practice Presentations	<i>Final Report (Group)</i>
May 6	FINAL PRESENTATION DAY	<i>Presentations (Group)</i>

Course Grade Distribution (out of 100%):

Progress Report 1: 10%
Progress Report 2:* 25%
Project Effort:* 15%
Class Participation: 5%
Final Paper: 25%
Final Presentation: 20%

*The student's technical advisor will provide input on Project Effort grade; however, the course instructors will determine the final effort grade.

Course Objectives:

At the end of BE 466 students are expected to demonstrate¹:

- an ability to communicate effectively with a range of audiences
- 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
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- 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
- 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,

¹ <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2018-2019/>

environmental, and societal contexts”

Course Policies:

Attendance: Class attendance is required. Students will be responsible for the knowing the material covered in classes.

Expectations Regarding Safety: Students must wear masks covering nose and mouth at all times and maintain at least 6 ft of social distance in the classroom. All students are expected to follow all University guidelines with respect to daily symptom checks, testing, social distancing, and mask wearing when they leave their dorm or home. There is no eating/drinking in the classroom.

Academic Integrity: Any incident of Academic Misconduct as described by the BU Code of Conduct will result in a zero for the assignment.

“Academic misconduct is conduct by which a student misrepresents his or her academic accomplishments, or impedes other students’ opportunities of being judged fairly for their academic work. Knowingly allowing others to represent your work as their own is as serious an offense as submitting another’s work as your own”²

Accommodations: “Boston University provides reasonable accommodations to eligible individuals with disabilities in conformance with Section 504 of the Rehabilitation Act of 1973 and with the Americans with Disabilities Act of 1990. Requests for disability accommodations must be made in a timely fashion to Disability Services, 19 Deerfield Street, Boston, MA 02215; 617-353-3658 (Voice/TTY). Students seeking accommodations must submit appropriate medical documentation and comply with the policies and procedures of Disability Services.”²

Late Assignments: It is essential to submit assignments by 9am on the specified due date. Most of the submissions will be through Blackboard. To prevent incidents of late submissions, make a habit of beginning your submission no later than 8:45am on the specified due date. Late submissions will be penalized by a full letter grade per day late. For example, if an assignment is due on Friday at 9am and you submit it anytime between 9:01am on Friday and 9am on Saturday, the highest possible grade you will receive is a B.

² <https://www.bu.edu/academics/policies/academic-conduct-code/>