

BE491 Fall 2021 COURSE OVERVIEW

Lecture: Mondays at 10:10am – 11:00am, Pho206

Lab: BTEC (48 Cummington Mall, Room 201)

Instructors:

Michael Economo

24 Cummington Mall, Room 201

Email: mne@bu.edu

Office hours: Make appointments via email

Monday lecture and Labs B1, B2

Aleks Zosuls

44 Cummington Mall, Room 422

Email: azosuls@bu.edu

Office hours: Make appointments via email

Labs B3, B4

Graduate Teaching Fellows (GTFs):

Ezira Wolle

Email: ezirayw@bu.edu

Office hours: Tuesday 2:00-3:00

Lab B3 - Monday

Brandon Williams

Email: bdwills@bu.edu

Office hours: Friday 11:00-12:00

Lab B2 - Tuesday

Roman Addokhi

Email: aaddokhi@bu.edu

Office hours: Monday 9:00-10:00

Lab B4 - Wednesday

Anna Novoseltseva

Email: annanov@bu.edu

Office hours: Thursday 3:00-4:00

Lab B1 - Thursday

Chenxin Sun

Email: scx@bu.edu

Office hours: Wednesday 1:00-2:00

Lab Sections:

Note: There are **a** and **b** subsections for each of the sections listed below, please consult the BE491 schedule document for more details

B3: Monday 2:30pm – 5:15pm

B2: Tuesday 8:00am - 10:45am

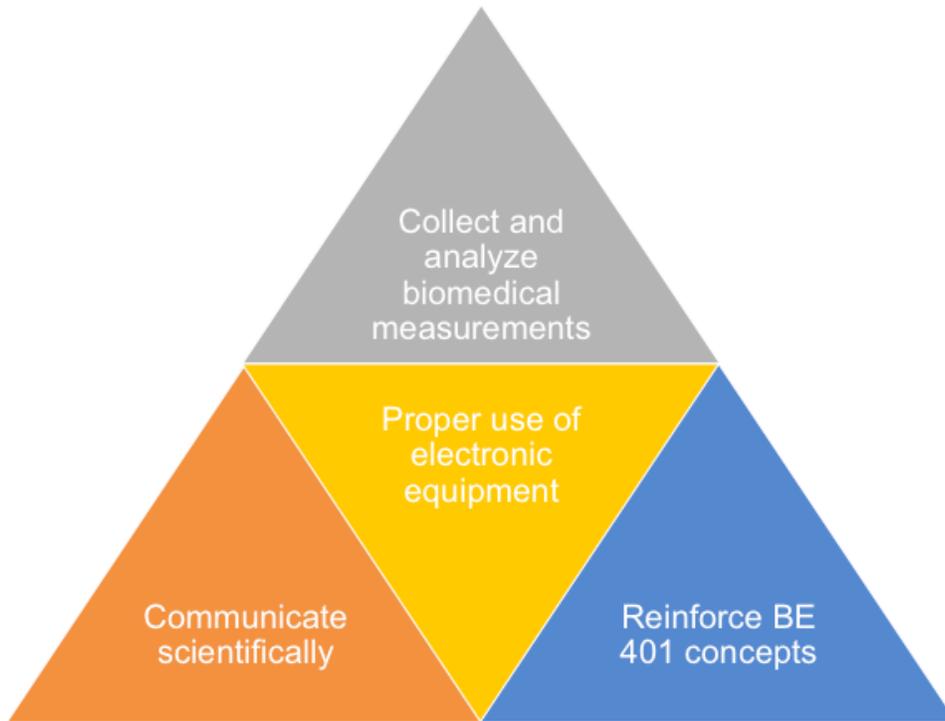
B4: Wednesday 2:30pm - 5:15pm

B1: Thursday 8:00am - 10:45am

COURSE OBJECTIVE

BE491 is designed to accomplish four goals, shown below in the pyramid.

BE491 Learning Objectives

***GRADING***

Grades will be based on composite performance as follows (subject to change during the semester):

Quizzes	10% (2 lowest grades will be dropped)
Lab Worksheets (2)	30% (15% each)
Lab Reports (3)	60% (20% each)
Midterm Exam	Pass/Fail (must pass to pass course)

LAB ATTENDANCE

All students must attend their assigned lab section. If students cannot attend their assigned lab section, they must notify their instructor/GTF in advance and make other arrangements to complete the lab exercises.

Students must complete the LAB CHECKPOINTS and show them to a GTF/instructor before the end of their scheduled lab section (more below).

MAINTAINING A HEALTHY AND SAFE LAB ENVIRONMENT

All students who attend the labs in-person:

- 1) Must wear a face mask at all times
- 2) Must show their green badge to a GTF upon arrival
- 3) Are responsible for disinfecting their workspace at the start and end of their lab section. Cleaning supplies will be supplied.

LAB CHECKPOINTS

Labs will require you to show results to your GTF before then end of your lab section. A portion of lab scores will be dependent upon demonstrating that you have reached these checkpoints **during your scheduled lab section**. This is to ensure that students have collected the data necessary for completing their worksheets/reports

LAB WORKSHEETS

You will complete and turn in lab worksheets for Labs #1 and #2. Answer the questions in worksheet and include figures, as described. Lab worksheets will be **due** one week from the end of your scheduled lab section.

LAB REPORTS

Lab reports are required for labs #3-5. They are also due one week from the end of your scheduled lab section.

LATE WORK POLICY

For all lab worksheets and reports, scores will be reduced by 25% if turned in within one week of the scheduled due date. Scores will be reduced by 50% if turned in more than one week late. Quizzes cannot be completed late under any circumstances (2 lowest grades will be dropped).

ACADEMIC INTEGRITY

- 1) **No raw data, processed data, figures, text, tables, or any other component of the lab may be shared between lab groups.**
- 2) **Data analysis and lab reports must be completed by students individually.**

Plagiarism in any form will not be tolerated! Viewing another students written lab report/analysis code and/or providing your lab report/analysis code to other students are both violations of the plagiarism policy. Plagiarized assignments will be assigned a zero grade. Students found to have plagiarized assignments or provided their assignments to others may receive a failing grade in the course and/or a referral to the College of Engineering Academic Conduct Committee.

The University's conduct code is here. all items apply to this course:
<http://www.bu.edu/academics/policies/academic-conduct-code/>

MIDTERM

The Midterm Exam takes place during scheduled lab time and tests student mastery of skills, such as setting up equipment, taking measurements, and analyzing data. The midterm is pass/fail and students must pass the midterm in order to pass the course.

BE491 Fall 2021

Lecture and Lab Schedule (subject to change):

Week of:	Lecture Topic	Lab
2021-08-30	Short week, No Class or Lab	
2021-09-06	Labor day , No Class or Lab	Lab 0: Introduction to BE491
2021-09-13	Introduction to biomedical measurements	Lab 1a: Making measurements with the Arduino Nano
2021-09-20	Signal acquisition	Lab 1b: Making measurements with the Arduino Nano
2021-09-27	Filtering	Lab 2a: Filtering in hardware and software
2021-10-04	The frequency domain	Lab 2b: Filtering in hardware and software
2021-10-11	Indigenous Peoples' , Writing lab reports	Lab 3a: Introduction to the frequency domain
2021-10-18	Biopotentials	Lab 3b: Introduction to the frequency domain
2021-10-25	Practical review	Practical
2021-11-01	Light and life	Lab 4a: Imaging and image analysis I
2021-11-08	Microscopy	Lab 4b: Imaging and image analysis I
2021-11-15	Imaging biological processes	Lab 5a: Imaging and image analysis II
2021-11-22	Thanksgiving , No class, no labs	
2021-11-29	Bioethics	Lab 5b: Imaging and image analysis II