

## 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](mailto: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](mailto:azosuls@bu.edu)

Office hours: Make appointments via email

Labs B3, B4

### ***Graduate Teaching Fellows (GTFs):***

Ezira Wolle

Email: [ezirayw@bu.edu](mailto:ezirayw@bu.edu)

Office hours: Tuesday 2:00-3:00

Lab B3 - Monday

Brandon Williams

Email: [bdwills@bu.edu](mailto:bdwills@bu.edu)

Office hours: Friday 11:00-12:00

Lab B2 - Tuesday

Roman Addokhi

Email: [aaddokhi@bu.edu](mailto:aaddokhi@bu.edu)

Office hours: Monday 9:00-10:00

Lab B4 - Wednesday

Anna Novoseltseva

Email: [annanov@bu.edu](mailto:annanov@bu.edu)

Office hours: Thursday 3:00-4:00

Lab B1 - Thursday

Chenxin Sun

Email: [scx@bu.edu](mailto: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

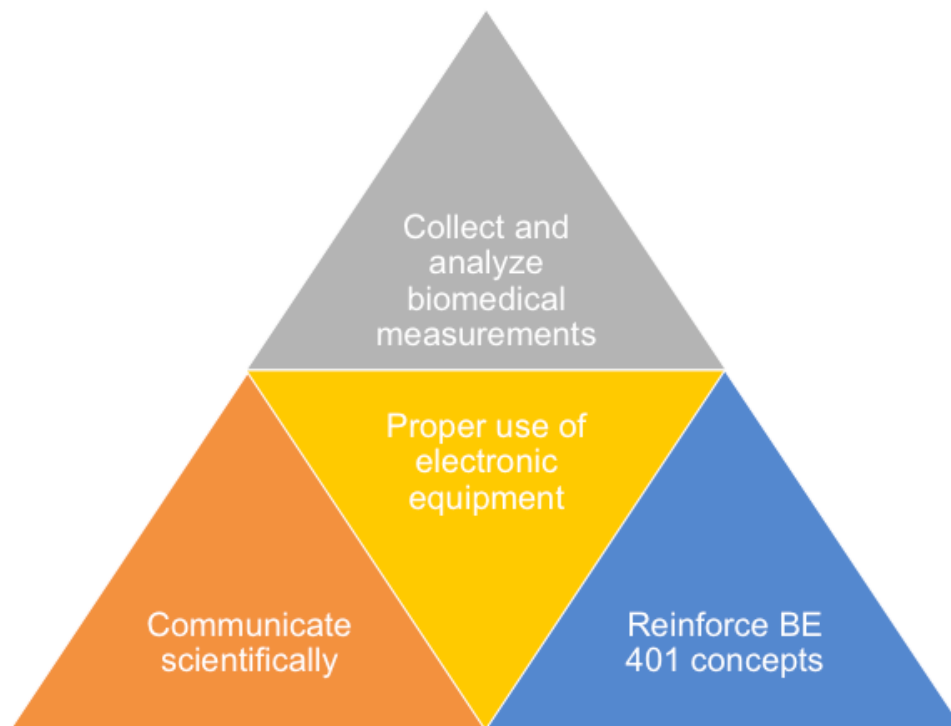
B4: Wednesday 2:30pm - 5:15pm

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):**

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