

## Spring 2020

### **BME Student/Faculty Guide for Course Selection (Machine Learning content)**

Below is a list of courses (Engineering and Computer Science) that have Machine Learning (ML) content. In some cases, there is overlap of content, so BME students and faculty should use this document a guide for selecting (and approving) courses for Plans of Study.

#### **ENGR:2995 -- Intro AI and Machine Learning for AI**

This is a new introductory level Machine Learning (ML) course offered by College of Engineering (COE). If you have taken any other COE ML course, you cannot take this course due to "regression." This course can be taken as an elective towards the BME degree requirements.

#### **ECE:5450 / IGPI:5450 Machine Learning**

As of 11/06/2019, engineering students cannot take both ENGR:2995 and ECE:5450, since ECE:5450 has not yet been adapted for content in ENGR:2995. This course can be taken as an elective towards the BME degree requirements.

#### **CEE:4511 Scientific Computing and Machine Learning**

#### **ME:4111 Scientific Computing and Machine Learning**

This course is cross-listed in CEE and ME. This course does NOT overlap content with ECE:5450 Machine Learning. This course can be taken as an elective towards the BME degree requirements.

#### **CS:4480 / ECE:4480 Knowledge Discovery**

This course can be taken as an elective towards the BME degree requirements.

#### **ISE:4172 Big Data Analytics**

#### **CS:4740 Large Data Analysis**

These two courses have some overlap with each other. Only ONE of the two courses can be taken as an elective towards the BME degree requirements.

#### **ISE:6380 Deep Learning**

This course can be taken as an elective towards the BME degree requirements.

#### **CS:5430 Machine Learning**

This course has overlap with ECE:5450 Machine Learning. Engineering students should take ECE:5450. This course is RESTRICTED to only CS graduate students, so engineering students cannot register for this course.

#### **ECE:5450 Pattern Recognition**

This course has the same content as ECE:5450 -- Machine Learning. The name was changed from "Pattern Recognition" to "Machine Learning" in 2019, and Pattern Recognition is unlikely to be offered again. Students that took Pattern Recognition CANNOT take ECE:5450 -- Machine Learning.

#### **MSCI:7000 / IGPI:7000 Management Sciences Topics (Interpretable Machine Learning and Explainable Artificial Intelligence)**

Course is "intended" for PhD students. This course is a survey course on current topics and papers related to machine learning. This course can be taken as an elective towards the BME degree requirements; HOWEVER, instructors of this course have indicated that this course is too advanced for undergraduates. Students would need permission from the instructor to take this course.

#### **BIOC:3310 / CBIO:3310/ MMED:3310 Practical Data Science & Bioinformatics**

This course is intended for students with NO computational background and is also intended for students in life-science programs/departments. This course cannot be taken as an elective towards the BME degree requirements.