# Syllabus for CMSC 490

**Fall Term 2025  3:10 MWF  Mr. Diederich, Mr. Gregg**

**Course Description and Objectives**

CMSC 490 is an introduction to neural networks, including a survey of modern applications. The programming language for this course is Python. We will be working with the PyTorch library to implement neural networks.

We plan to cover the following topics:

- Introduction to Python, numpy, and pandas
- An overview of the early history of neural networks
- Introduction to PyTorch, including tensors and basic network architecture
- Neural networks for machine vision applications
- Neural networks for natural language processing
- Generative AI
- Reinforcement learning

**How this Course is Structured**

We will meet three times a week for lectures.

We will assign weekly programming projects.

We will have one midterm exam and a final exam.

**Grading Policy**

Assignments and exams have the following weights:

Homeworks - 60%  Midterm exam - 15%  Final exam - 25%

Late policy for assignments is that assignments may be turned in after the initial due date for a 5% penalty for each day the assignment is late. We will waive all or part of the late penalty if you have a valid excuse; however, you must contact us before the initial due date to ask for an extension.

**Textbook**

Our text is *Deep Learning with PyTorch, Second Edition* by Luca Antiga, Eli Stevens, Howard Huang and Thomas Viehmann. The textbook is still in its prerelease stage, and is currently available only through the publisher's website, manning.com.

**Office Hours**

Prof. Gregg's office hour this term are 1:00-3:00 M-F. Prof. Diederich's office hours are 12:30 – 1:30 M, 9:30 – 10:30 W, 11:00 – 1:00 Th.

**Course Web Site**

The course web site is at http://www.lawrence.edu/fast/greggj/cmsc490.html. The web site will feature lecture notes and other supplementary materials.

**AI Use Policy**

We will allow limited use of AI to assist you with the assignments in this course. Acceptable use of AI includes asking an AI to explain some code to you, or asking an AI to explain how to do some specific small task in Python.

Getting an AI system to write your entire homework solution for you by simply dumping a problem statement in a prompt is not acceptable use of AI, and constitutes an Honor Code violation.