

# SUMMER 2020

## Computer Science

---

### CS 391-201 / CS 491-201

Monday, Wednesday, Friday  
1:20-3:00 PM  
EGRA 307

Instructor – Dr. Sharon Huang

### Current Topics: Hands-On High Performance Computing

High-performance computing (HPC) is a fundamental technology used to solve complex computational problems through computer modeling, simulation, and data analysis.

This course is designed to provide instruction in the design and implementation of HPC technologies through implementing a small-scale cluster. The course is delivered using a mixture of lectures and hands-on sessions and has a very practical focus.

The course covers HPC history, component technologies, HPC hardware, software, programming models and commodity cluster design process. Students will learn how to design, build and configure a high performance computing cluster.

During the hands-on sessions, students will get the chance to build a small-scale cluster from scratch, including hardware wiring, software stack installation and system configuration. Students will then install an application program on the HPC cluster they develop, and optimize the parameters to create an efficient computational solution.

**Prerequisite:** Basic Linux experience (possibly CS 306).

**Textbook:** No textbook required.