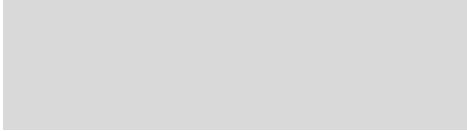# Syllabus - Research Unit Classes
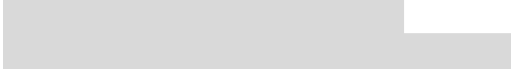
Course Number and Title: <Insert Course Number(s) Here> Directed Research
Instructor Information:

Course Description
This course is for directed research conducted in the

Course Requirements
- **Weekly Meetings**
Weekly for up to 1 hour and additionally as needed. Specific time will be arranged between the student and the instructor, which may change each quarter. Meetings will be used to give updates on research projects, discuss fellowship applications, go over manuscripts, etc. Other than pre-arranged absences (holidays, conference travel), missed meetings should be rescheduled within the same week or as soon as possible if missed meeting was due to illness or some other unforeseen reason. Meetings will be held in person if/when possible.
- **Lab Meetings and Journal Club Meetings**
Students are expected to attend all lab-wide and 1:1 meetings as well as lab reading/writing clubs (student-led) in person if/when scheduled. Students are expected to present a research-related talk to 1+ other members of the lab and share an article at a writing club meeting at least 1-2 times per year.
- **Research**
Students must make steady and continuous progress towards degree requirements and publications must be working toward a research paper submission to a conference or a journal venue (workshops approved only in special cases) each quarter. Specific expectations will vary for each student but will be discussed and agreed upon at the start of each quarter with the instructor. Activities may include
    - Software engineering, deployment, and management of software for distributed computer systems
    - Research question/hypothesis development
    - Measurement and experimentation of programming systems in support of research questions
    - Rigorous data analysis, validation, and evaluation of computing systems, software, algorithms, tools, and applications
    - Remote deployment (off-site) and maintenance of experimental deployments and infrastructure
    - Background reading of research articles written by others from high quality research venues
    - Research brainstorming sessions with others in the lab (or in other labs)
    - Preparation of fellowship applications, dissertation proposals, MAE/MS exams, and presentations as required by degree program
    - Research paper submission or preparation of a near-future submission

Assessment
Grading is Satisfactory/Unsatisfactory (SU or P/F) and will be based on the successful completion of meetings, club requirements, participation in meetings, progress toward a scientific research paper submission, and specific research advances defined per project.

Prerequisites
Experienced with programming languages Python, C, and C++, distributed systems programming, and technical writing. Ability to produce high quality, well documented, fault resilient, and efficient software. Deep understanding of computers and computer systems. Familiarity with university-managed git repositories and Google Drive for file management and sharing. Experience with Linux, Docker, and cloud computing systems is preferred but not required.