Advanced Communication Networks

TR, 10:45–12:00, A&S 143

Instructor  Dr. Andrew Sutton
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Office hours MW 3:00-4:00

Note: This syllabus may change throughout the course of the semester.

Course Description: Communications networks, and the applications that run on top of them, are ubiquitous in modern computing. This course explores advanced ideas in the design and implementation of network services and network applications. In particular, the course will emphasize trends related to services and applications related to the Software Defined Networking. Students are not required to have prior knowledge of communication networks; those topics will be introduced in this course.

Prerequisites: Graduate standing.

Course Credits: 3

Books:


Course Objectives: At the completion of this course, students will:

• understand basic concepts of communication networks,
• be familiar with layered networking architectures
• be able to explain the components of a modern networking stack,
• understand the role software defined networking in modern communications,
• understand engineering concerns related to the implementation of networking protocols,
• implement an efficient and secure networking protocol, and
• be able to read and discuss computer networking research.

Grading Scale:
A (93), A- (90), B+ (87), B (83), B- (80), C+ (77), C (73), C- (70), D+ (67), D (63), D- (60), F

Grade Distribution:
Participation 25%, Projects 75%
Attendance: It is in your best interest to attend class.

Participation: Over the course of the semester, students will read and present research papers on programming language design and implementation.

Projects: Students will primarily be evaluated on the progress of their projects, specifically the implementation of a compiler or evaluator of a programming language of their own design. Projects will be implemented in the C++ programming language.

Policies: The class will be taught using a variety of sources. A primary source will be examples given by the instructor and discussed during class. Notes will be from web sources, the instructors own web pages, and written on the board. Attendance is necessary for complete understanding of the material, and therefore expected.

All work created for this course will be committed as they are developed into a source code repository (i.e., Subversion). The work must appear in the repository in order to be graded. The use of a repository will assist in the communication between the student and the Instructor and in any collaborative projects.

All submitted work must be your own. Submission of work that is entirely or partly not yours will be reported to the Office of Student Conduct.

In order that work can be graded and returned promptly late assignments will not be accepted without a valid excuse. It is up to the student to make up any missed material. Make-ups of any work for this class will only be given in the case of a university-approved excuse. I may be contacted in advance to arrange for known absences.

Notices: Any student who feels that she or he may need an accommodation based on the impact of a disability should contact the Office of Accessibility at 330-972-7928. The office is located in Simmons Hall, 105.

Students whose names do not appear on the University’s official 15-day class list will not be permitted to participate (attend class, take exams, or receive credit).

The University withdrawal policy can be found here: [http://www.uakron.edu/ssc/withdrawal-policy.dot](http://www.uakron.edu/ssc/withdrawal-policy.dot)