CS481-102-RT: Syllabus

CS 481-102: Senior Software Design I (YCAS Radio Telescope Project)

Fall 2020

Meeting Times:

- **I will be teaching 100% remotely this semester, and will not be on campus. As such, all meetings, status updates, and assignment and Milestone presentations that I attend will be conducted via Zoom.**
- **Mondays (4:00p-5:15p):** This class session is reserved for status updates, assignment presentations, and Milestone presentations. I will be scheduling and conducting these sessions via Zoom. NOTE: It is not unusual for the class to run well past 5:15 at times, especially during the bi-weekly status reports and milestone presentations. If you have another class scheduled immediately following this class, please let me know, and I will try to make accomodations. For Milestone presentations, you might need to make accommodations with your professor.
- **Wednesday (4:00p-5:15p):** This class session is resereved for you to work as a team, unencumbered by “interference” from the faculty. Your YCAS clients will frequently be available to work with you during this time. They will likely join you via Zoom, so I suggest holding these meetings via Zoom (even if you are in the project workspace together at that time) so that they can join you.

Location: KEC 118 (the back 2 benches are reserved for the Radio Telescope project - although I will conduct all status meetings and presentations remotely via Zoom for the Fall 2020 semester)

Webpage: https://ycpcs.github.io/cs481-fall2020-RT/

Instructor:

Donald J. Hake II
Email: djhake2@ycp.edu
Office: KEC 137 (although all of my office hours will be remote via Zoom
Phone: (717) 815-6587 (this is definitely NOT a reliable way to reach me
Office Hours: I will conduct all office hours by appointment via Zoom

Course Description

This is the third year of a multi-year effort to design and develop the various software components for the York County Astronomical Society (YCAS) Radio Telescope, which is being developed in collaboration with the 2020-2021 Radio Telescope Engineering Capstone team. This project is being developed under the direction of the course instructors and other Engineering and COmputer Science faculty members, YCAS clients, recent York College Engineering and Computer Science graduates, and local industry partners.

There are currently 5 sub-projects (listed below). Some of those sub-projects require significant additional work, others do not. Our clients - the York County Astronomical Society (YCAS) will determine the substance of the tasks to be accompished, as this is expected to be the final year of major SW development for the project.

We will organize as teams of 2-3 people, working in a coordinated fashion to continue developing the entire Radio Telescope software suite. The teams will be working on:
* **Team Venus:** Front-End User Interface Website (Vue.js, Vuetify, etc.)
* **Team Mercury:** Back-End Server and Database (Kotlin, Spring, AWS, etc.)
* **Team Jupiter:** Control Room Application, including HW simulation and Testing Tools (C#, .NET)
* **Team Saturn:** Visualization and Virtualization (C#, .NET, JS, Unity, VR (HTC Vive), AR (MS Hololens)
* **Team Luna:** Cross-Platform Mobile Application (Android, Swift, XCode, React, Xamarin, etc.)

The standard user interface for the Radio Telescope is a web-based GUI. The website and control room application interface via the AWS back-end server and database. The mobile development applications will also interact with the AWS back-end server and database. The simulation, visualization, and virtualization components will be able to substitute for the physical radio telescope, serve as SW test tools, and also be used as educational tools by YCAS.

The Radio Telescope Engineering Capstone Team Drive has been shared with you - you can view all of their accumulated information. It is not, however, open for you to create or edit content. You may use their work, but whatever content you do use, you must cite or reference the source.

Your YCAS clients, Kerry Smith and Todd Ullery will be present at most meetings to provide guidance, mentorship, and serve as true real-world clients. They will specify many of the requirements for the various SW components. You will be expected to interact with them on a frequent, perhaps even daily basis, especially as you develop the requirements and specifications for this year’s effort, and as they get deeper into testing your software.

Prerequisites: CS 320 with a grade of 2.0 or higher (or PC from Spring 2020)
Credit: 3 credit hours
Text: None

Grading Policy

Your team’s grade will be determined as a weighted average of the grades on the 7 assignments, as follows:

- Assignment 1 - Team Project Proposal - **5%**
- Assignment 2 - Weekly Progress Journals, Status Reports, Demonstrations - **20%**
- Assignment 3 - Requirements - **10%**
- Assignment 4 - Analysis and Design - **15%**
- Assignment 5 - Minimal Working System - **10%**
- Assignment 6 - 50% Working System - **10%**
- Assignment 7 - Final Working System (10%), Presentation (10%), Report (10%) - **30%**

NOTE: You will be presenting your work for each of these assignments in class on the Monday they are due. On the days that you do not have an assignment or milestone due, you

will be presenting progress reports, as part of assignment 2. Your weekly journal entries are **due EVERY Monday by 4:00p, immediately prior to EVERY class period, regardless of what is due that day.**

Grades will be assigned on a 100-point scale according to the following table:

Range	Grade
≥ 90 and ≤ 100	4.0
≥ 87 and < 90	3.5
≥ 80 and < 87	3.0
≥ 77 and < 80	2.5
≥ 70 and < 77	2.0
≥ 60 and < 70	1.0
< 60	0

Attendance Policy

Attendance at every status/presentation meeting (Mondays) and every team meeting (Wednesdays) is mandatory.

Academic Integrity

York College's mission statement stipulates that strict adherence to principles of academic honesty is expected of all students. Therefore, academic dishonesty will not be tolerated at York College. Academic dishonesty refers to actions such as, but not limited to, cheating, plagiarism, fabricating research, falsifying academic documents, etc., and includes all situations where students make use of the work of others and claim such work as their own.

When a faculty member believes a student has committed an act of academic dishonesty, the faculty member must promptly notify the student in writing and obtain confirmation of notification from the student. The faculty member then has ten business days from that written notification to the student to report the incident to the Dean of Academic Affairs and the Department Chair. Documentation related to instances of academic dishonesty will be kept on file in the student's permanent record. The faculty member has full discretion to determine a suitable penalty for the student, up to a course grade of 0. This discretion is limited to the course in which the dishonesty took place. Students may not withdraw from a course in which they have been accused of academic dishonesty, unless and until the accusation is withdrawn by the faculty member or is overturned by the Student Welfare Committee or the Dean of Academic Affairs.

Students who believe they have been unjustly charged or sanctioned must discuss the situation with the faculty member and have 10 business days thereafter to submit an appeal to Student Welfare Committee through the Dean of Academic Affairs. If an appeal is filed, the Student Welfare Committee will then conduct a hearing to review the charge and/or sanction. In the case of an egregious first offense, the faculty member may request that the Student Welfare Committee conduct a hearing and determine a sanction, which may involve academic probation, suspension or dismissal from the College.

If the Dean of Academic Affairs determines that the academic dishonesty is the student's second offense, the Dean will provide written notification to the student, the faculty member, and the Department Chair. The Student Welfare Committee will automatically conduct a hearing to review the charge and decide on an appropriate sanction, which will involve academic probation, suspension or dismissal from the College. Students who believe the Student Welfare Committee has unjustly sanctioned them may submit a written appeal to the Dean of Academic Affairs within 72 hours of receiving notification of the Student Welfare Committee's sanction.

Personal Technology Policy

While York College recognizes students' need for educational and emergency-related technological devices such as laptops, PDAs, cellular phones, etc., using them unethically or recreationally during class time is never appropriate. The college recognizes and supports faculty members' authority to regulate in their classrooms student use of all electronic devices.

Communication Standards

York College recognizes the importance of effective communication in all disciplines and careers. Therefore, students are expected to competently analyze, synthesize, organize, and articulate course material in papers, examinations and presentations. In addition, students should know and use communication skills current to their field of study, recognize the need for revision as part of their writing process, and employ standard conventions of English usage in both writing and speaking. Students may be asked to further revise assignments that do not demonstrate effective use of these communication skills.

Students with Disabilities

If you are a student with a disability in need of a classroom accommodation and have not already registered with Linda Miller, Director of Disability Support Services, please contact her at 815-1785 or lmille18@ycp.edu to discuss policies and procedures related to disability services and to establish the accommodations for which you are eligible.

Disclaimer: This syllabus is subject to change by the instructor.