Syllabus - COMP402 - Senior Project - Implementation

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Spring 2015

1 Logistics

- **Where:** Center for Science & Business, Room 309
- **When:** Th 11-11:50 am
- **Instructors:**

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- **Website:** `http://jlmayfield.github.io/MC-COMP401-402/`
- **Credits:** $\frac{1}{2}$ course credit

2 Course Content and Goals

The senior project is designed allow students to demonstrate their abilities to apply all that they have learned about Computer Science and thereby act as a culminating experience for their studies in computing at Monmouth College. Depending on class size, either groups of students or each individual student will be responsible for planning and carrying out a Computer Science related project.

COMP 402 is focused on implementation of the plans proposed by the student in COMP401. The class will meet on a semi-regular basis for brief presentations on the current state of the projects in order to receive feed back from peers and faculty. At the end of the semester, students will present the final results of their work to the campus at large and at the Science Poster session held each spring on Scholar's Day.

3 Attendance and Expectations

Students in this course are expected to be respectful of their peers and the instructor. As this course is comprised entirely of student presentations, it is crucial that you are always in class and always on time. Come prepared to listen, discuss, and present. Failure to arrive on time and be a productive member of the course will have a detrimental effect on your grade. Not only that, but it leaves a certain impression on the faculty from whom you'll soon want letters of recommendation for jobs.

4 Deliverables

Students projects generally fall into one of two categories: Software development based projects or research projects. Development projects are generally programming centric and result in working software. Research projects fall in line with traditional scientific research projects and generally result in a paper.

4.1 Software Development Based Projects

Software-based projects must include:

- A working, publicly available final product
- Source code with relevant documentation
- End-User documentation
- A research-style poster

Your project does not need to be open-source but you must submit your source to the course instructors.

Software may be made publicly available in many different ways. A few options include:

- Hosting the code and executable as an open-source project on a site such as `http://github.com`
- Hosting final product, possibly closed-source, on software hosting/download site such as an App Store.

Students may "publish" their work in other ways, but must get the OK from the instructors before doing so.

4.2 Research Projects

Research projects must include:

- A complete, published paper
- An annotated bibliography and works cited
- A research-style poster

Publication of final papers need not be in a peer-reviewed journal or conference proceeding. The following are a few examples of ways in which students might meet their publication requirements:

- Submission to a peer-reviewed journal or conference with no requirement for acceptance
- Submission to a reputable pre-print archive such as `http://www.arxiv.org`

Students may "publish" their work in other ways, but must get the OK from the instructors before doing so.

4.3 Checkpoints

The class will meet for regular project checkpoints. At the start of the semester the projects will be split into two groups and those groups will alternate weeks for presentations. At these checkpoints you will give a **five to ten minute presentation** that covers:

1. Intended project state based on current time line
2. Actual project state and progress since last checkpoint
3. Reflection on and evaluation of progress since the last checkpoint
4. *Demonstration of Progress.*
5. The plan for next checkpoint time period

Notice that you must actually demonstrate or present something concrete and/or functional at each checkpoint.

At your first checkpoint, you must present your time line with respect to the remaining checkpoint presentations. You should be able to modify the time line from your proposal to fit the checkpoint schedule listed below.

4.4 Final Presentation

The final presentation should be **30-45 minutes in length plus time for questions** and should address the following:

- High-level overview of the project and its goals
- Presentation and demonstration of the final product
- Presentation of a key technical problem overcome within the context of the project.
- Technical and General lessons learned. (Should have both)

This presentation should not only highlight the work done but manner in which it was carried out. A key moment in the presentation is identifying a key, general problem in Computer Science that your encountered while completing your project. You should discuss the specific form that problem took in the context of your project and how your solution relates to known solutions and best practices. In doing this, you'll demonstrate an awareness of the larger body of work in computer science as it relates to your project.

4.5 Scholar's Day Posters

Everyone will produce a research poster that complements your final presentation. The poster will focus on the key, general problem in CS that you intend to highlight in your presentation. In short, your poster presents a very specific instance of a known problem in computer science and the solution you developed in the context of your project.

Students can expected to present their posters for at least one of the two poster session times on Scholar's Day. This typically covers a 1-2 hour time block during the afternoon. You should dress well and be prepared to engage passers by in conversations about your work. This is not a formal presentation in front of a crowd.

The poster should be

5 Grading

At the completion of this course, the grade for both COMP401 and COMP402 is determined. Students will typically receive the same grade in both courses to reflect the work throughout the capstone project and not in one individual phase of the project. Grades will be determined based on the following items:

- Appropriateness of project difficulty (evaluated during COMP401)

- COMP401 checkpoints
- COMP401 Technical Presentation
- COMP401 Proposal Poster
- CMP401 Written Proposal
- COMP401 Proposal Presentation
- COMP402 Checkpoint Presentations
- COMP 402 Research Poster and Scholar's Day Participation
- COMP 402 Final Presentation
- A Completed Project and required components

More abstractly, what all of the above elements should reflect is a student's:

- effective use of technical and problem solving skills befitting a major in Computer Science
- professionalism
- ability to make informed, mature decisions as they relate to a larger-scale project
- understanding and appreciation of the computing disciplines

6 Schedule

Week	Dates	Assignments
1	1/12 - 1/16	Initial Meeting
2	1/19 - 1/23	Checkpoint 1A
3	1/26 - 1/30	Checkpoint 1B
4	2/2 - 2/6	Checkpoint 2A
5	2/9 - 2/13	Checkpoint 2B
6	2/16 - 2/20	Checkpoint 3A
7	2/23 - 2/27	Checkpoint 3B
8	3/2 - 3/6	
SPRING BREAK	3/9 - 3/13	
9	3/16 - 3/20	Checkpoint 4A
10	3/23 - 3/27	Checkpoint 4B
11	3/30 - 4/3	Checkpoint 5A EASTER BREAK (Friday).
12	4/6 - 4/10	EASTER BREAK (Monday). Checkpoint 5B
13	4/13 - 4/17	Checkpoint 6A
14	4/20 - 4/24	Checkpoint 6B
15	4/27 - 5/1	Final Presentations. Scholar's Day Poster Session.
16	5/4 - 5/6	
Final's Week		

6.1 Course Engagement Expectations

The weekly workload for this course will vary by student but on average should be about 5-7 hours per week. While regular class meetings are scheduled for two hours a week, it is unlikely that we'll use all of that time each week. We therefore expect students to dedicate at least 4-6 hours a week towards the development of their projects. Being a capstone project, it is likely that your weekly work will exceed the expected amount.