NAZARBAYEV UNIVERSITY
SCHOOL OF ENGINEERING AND DIGITAL SCIENCES

Course Syllabus (v 1.0)

CSCI 409 – Senior Project 2

Spring 2020

Course Instructors

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Pre-Requisites

This is a required course for CS majors, and perhaps coupled with its pre-requisite CSCI 408 Senior Project 1, the most important course in the undergraduate CS curriculum. It is the culmination of four years of study, which allows students to demonstrate their practical and theoretical skills in the discipline via a two-semester, group software development project, which will be demonstrated to their peers and to industry.

Course Description

During this two-course sequence, students will learn to work on long term (1 year) projects with the emphasis on teamwork, achievements, problem solving, reporting, continuous improvement, regular meetings with advisors and regular deliverables. During the first semester, CSCI 408 serves as to define all the basis for the project including review of previous work, prototyping, project problem solving and an end of term paper. The second term, CSCI 409 serves to develop the final product with a full paper describing the details, problems, challenges and results. Additionally at the end of this second term a meeting with industry in form of a poster presentations and best project competition serves as a final evaluation.

Course Aims

The aims of the course are:

1) To teach students process of working in group, continuously towards a goal
2) To teach students regular reporting and deliveries forcing them to provide weekly incremental improvements to their project
3) To teach the students group work assignment and groups problem solving
4) To teach students presenting their own projects and the responsibility for their own work and team
   To teach students basics of applied research

Student Learning Outcomes

By the end of the course the student will be expected to be able:

1) Define a problem or project to work on
2) Formulate plan of development
3) Weekly provide constant work towards the project
4) Present their project
5) Write a paper about the project in a form of conference paper
6) Prepare and present an oral presentation and a poster

Class Structure

For CSCI 409, we will be meeting twice a week to make announcements, provide general guidance, and to also have relevant presentations for our Senior students who will likely be entering the work force or graduate school in the following year. However, the main work and effort will be done outside of the classroom, where the student project groups that were formed in the previous semester will further develop, evaluate, and refine their projects that they began in the fall. Students are required to meet regularly (i.e., weekly) with their project advisors to share their progress and get direction.

Students are required to use the Redmine project management tool to track their projects, and to submit deliverables such as the code of the system under development (multiple iterations), documentation, data and evaluation results, presentation slides, and a final report. Students will also need to give an interim and final presentation (including demonstrations of the system under development), and will need to create a poster to be presented during Demo Day to industry.

Course Assessment and Tentative Schedule

The final grade will be calculated as follows:

- Lecture Attendance 5%
- Redmine milestones – to be evaluated by the project advisor (48%):
    - Updated Requirements Document (F, Jan 31) 6%
    - Development Iteration 1 (F, Feb 14) 6%
    - Development Iteration 2 and Interim Presentation slides (F, Feb 28) 6%
    - Testing and Analysis/Evaluation Document (F, Apr 3) 6%
    - Final Report (F, Apr 24) 12%
    - Final Development Iteration (F, Apr 24) 12%
- To be evaluated by a committee of instructors and invited professors (47%)*:
    - Interim Presentation (~ Feb 28) 10%
    - Final Deliverable Assessment (~ Apr 28)
      (including effort, complexity, completeness) 19%
    - Quality of Final Presentation and Demo (~ Apr 28)
      (incl. slides, communication, Q & A) 10%
    - Poster (~ Apr 28) 8%

The given dates are tentative, and subject to change.

* Note that project advisors that serve on the external evaluation committee are not allowed to score their own groups, and that these scores will be normalized across the evaluators.

Final letter grades will be assigned using the following:

A	95 or above	C	65 up to 70
A-	90 up to 95	C-	60 up to 65
B+	85 up to 90	D+	55 up to 60
B	80 up to 85	D	50 up to 55
B-	75 up to 80	F	0 up to 50
C+	70 up to 75		

Course Expectations

Attendance
Missing classes and habitual tardiness will have a negative effect on your grade, both directly (through your attendance grade) and indirectly (by not benefitting from the in-class experience). You are also responsible for any announcements made during the class period, so be sure to ask your instructor, TAs, or classmates for any info that you may have missed if you did not attend.

Electronic Resources
You are expected to check your Nazarbayev University e-mail on a daily basis for updates and announcements about the course. During the semester, we will be using the Redmine system for project management and tracking.

Submissions and Late Policy
Most project deliverables must be submitted by the announced due date and time, as directed by the instructors via Redmine. Some deliverables may need to be submitted in the form of physical hard-copy, or take the forms of a presentation, project poster, or system demonstration. Late submissions will not be accepted, accept in cases where a documented and validated excuse is provided to student services. You should inform your project advisor and course instructors as soon as you believe that you may miss a submission deadline for the course.

Classroom Behavior
You are expected to act respectfully towards your fellow classmates, TAs, and instructors inside and outside of the classroom. Talking on your phone, texting, chatting online, browsing Facebook or other social media sites, and talking excessively with your neighbors about non-class related stuff in class are just a few examples of behavior that is not acceptable, and will negatively impact your grade.

Meetings with Project Adviser
Students are expected to meet every week with adviser to consult on the state of the project, assess the progress and modify the course of action if necessary. Each week signatures must be provided by the adviser and by the student to document that the meeting happened and that students are showing up. Missing more than two weekly meetings with the adviser may result in heavy penalties.

Bi-weekly deliverables
Students are to honor the agreement of continuously work on the project. As a result, regular uploads to the Redmine project monitoring website are compulsory. The uploads contain either the progress reports, papers, documents or code that has been implemented in the past two weeks. It is up to the project adviser to monitor the quality of the uploads and the progress of the overall project. Again, missing such a deadline will negatively affect your grade.

Academic integrity

Nazarbayev University has established high standards for academic integrity, using an approach in which students are trained to produce original work according to professional standards, and to properly cite and reference the work of others when it is appropriate to do so.

The specific guidelines are published in the NU Student Handbook. In particular,

- The class is designed to introduce important concepts and techniques, and enable you to explore the material independently so as to gain insight and comprehension of the subject.
- You are welcome—and encouraged—to talk through concepts and ideas with your fellow students outside of your assigned groups, but do not give or receive direct help from them unless otherwise instructed by the instructors.
- Copying and facilitating copying of others' work is strictly prohibited, as is taking credit for others' work. You should consult your instructors about proper use and documentation of third-party libraries and frameworks, as necessary.

Serious cases of academic misconduct can result in failure of the course and potential suspension or expulsion from the university.

When a student suspects that another student has violated the academic honesty policy, a report should be made to the one of the instructors.