CSC480A Capstone Project I Requirements

This document describes the BSCS capstone project requirements. The three capstone project courses are CSC480A, CSC480B and CSC480C. This first course CSC480A consists of the student team finding/identifying/creating a software project proposal (4 weeks duration). The student teams will implement the project in the two courses (8 weeks duration).

The project requirement of the course can be satisfied with doing a real-world group project. The purpose of the project is to let students apply their computer science knowledge gained in the program to help solve a real-world situation or a problem to in order to gain practical experience.

Students will form a project team, generally 3-5 members and to search for an organization or business to participate as a sponsor with a problem/issue they would like to see resolved with the team's software solution. The group will perform an analysis of a problem or issue, design and implement an appropriate software solution. The software solution will be demonstrated to the NU Faculty and to the sponsor. Each team should consider themselves as a group of consultants hired by the sponsor to help solve their problem.

Purpose and Nature of Project

The goal of the Capstone Project is to provide students with a comprehensive real-world software application development experience. The Capstone Project should incorporate the knowledge and skills learned in the BS Computer Science program. This set of knowledge and skills consists of but is not limited to:

1. The ability to identify and define a specific computing related area situation, problem, issues
2. The ability to analyze the existing system(s) for a client and identify existing problems,
3. Agile Scrum methodology for implementation.
4. The ability to define product requirements and clearly re-defining them in Agile methodology – product backlog user scenarios/user stories, iterations
5. Writing a project proposal plan (CSC480A output), and a final project report to support the specific software solution (CSC480B and CSC480C)
6. Utilizing Object Oriented software approach to a solution, database, network and wireless technologies, as applicable and required for a solution
7. Complete a project proposal document per requirements defined in an Instructor given proposal template (CSC480A), grading.
8. Presenting the project in both written and oral presentation forms in CSC4900A (project proposal) and in CSC480C (final project implementation and demonstration of the software).

Project Selection and Approval Guidelines - CSC480A

Students are expected to select a real-world organization as the basis for their project. The need identified could involve correcting an existing problem or proposing a new software solution. It would likewise be advantageous if students were to form a project team as early as possible so that optimum use of time can be attained in CSC480A/B/C.
Some students come with a team already in place before the start of CSC480A. If not, teams need to be finalized within the first week of CSC480A and the team will be required to submit their project identification as a part of the proposal plan (see template provided and see what due at the end of the first week).

In CSC480A project proposal plan must be formally approved by the Instructor within the first two week of the course.

Project Selection Considerations

Consider the following when selecting the client organization:

1. Client organizations may be the student's employer, a small business seeking assistance, a planned new venture organization, a non-profit organization, or a government agency.
2. Client organizations must be willing to provide students the opportunity to study and develop a general management perspective including operational, financial and human resource plans.
3. Client expectations regarding confidentiality and other issues should be discussed explicitly.
4. Client organizations should assist students in the development of the project by identifying problem areas where research is needed and by providing data for analysis.
5. Consider the following responsibilities of the student or team:
    a. The student or team must identify sources of information relevant to the project and negotiate access to that information and to those persons who can provide it.
    b. The student or team should have a clear understanding of what the client expects to be the outcome of the project.

Non-Sponsored Project – Student Team's Own Initiative

A team may identify and propose a project that does help to solve a real-world situation or problem. The team will need to take full responsibility to be able to collect all the background and data needed to analyze the problem towards a software solution.

Project Sponsorship and other Process Details

For a client or company sponsored project, a sponsor letter from the client will be required within the first two weeks of CSC480A. This will assure the student teams full cooperation and

data that the student team will need to implement a solution. This sponsorship is a commitment from the client not to cancel the project.

As this is a course-class project, all hardware and software requirements will need to be within the provisions provided by the university. Any special software and/or hardware required will need to be provided/funded by the sponsor or by the student team.

Besides those expenses covered by the sponsor (e.g., buying hardware or buying commercial off-the-shelf software for implementation), group members must pay for all other expenses involved to finish the project (e.g., photocopying, gas for driving to the company to do interviews, etc.). National University does not have the policy of paying for students' projects.

The proposal process (CSC480A and the implementation process (CSC480B/C) will be the same whether project is sponsored by a client or if it's a team-initiated project.

Steps a Team Should Take with a Sponsor

1. Search for a particular company and explain to the owner/manager about the project (to see if he/she wants to become a sponsor): the objectives, the format of carrying out the project, the commitment needed from him/her, the items to be expected out of this project, and the confidential nature of the project. Show him/her any course related information (e.g. course outline, project proposal format, etc.).

2. Make appointments with the sponsor to interview him/her concerning the company and the real-world issues they are facing - one or two of the issues could potentially become a project. The group may also visit the sponsor for implementing a proof of concept prototype on the sponsor's site.

3. Ask the owner/manager to complete a sponsor letter in the company's letterhead assuring continued support to the project with any additional guidelines, data, etc. The letter should be delivered to the Instructor (within the first 2 weeks of the course).

4. Understand the nature, requirements, and possible workload of the project. Get approval of a written requirements for the project (see proposal template for details).

5. The sponsor can be invited to attend the team's presentation (subject to NU's policy).

Project Proposal Submissions and Grading Rubric

Student teams will submit the project proposal in the template already provided in the course homepage in Blackboard. The sections and subsections in the template are the minimum required for completion of the proposal document. Student teams are encouraged to add additional sections as required to improve the proposal and to be innovative.

The proposal document is written and submitted by the student teams at the end of each week in the template in incremental fashion as noted in the template.

The following grades apply to this CSC480A course:
H Honors - Signifies Outstanding Achievement. No grade points are assigned.
S Satisfactory - Signifies Acceptable Achievement. No grade points are assigned.
U Unsatisfactory - Signifies Unacceptable
See course outline for grade percentage allocation for the above.

Students should review the university policy for any withdrawal from the course (Grade W).
All projects are expected to be completed within the three-course time frame meeting the grading requirement for each of the three capstone courses.
Each student should get grade S or above to move on to CSC480B.

Students should refer to the project proposal template for details on the expected content since the point distribution is based on the content quality of each of the sections of the project proposal document.

Student Team Meetings

Collaborative sessions will be set up in Blackboard for each team by the Instructor. These sessions will be set up and will be available to the student teams as soon as the teams are formed with a leader. The sessions will be open 'continuously' for the whole duration of this class. This will facilitate offline meetings for the team any time they want to meet. These Bb sessions will be set up for modality of the class – onsite, online or async.
For onsite classes, there will time made available to the student teams to meet in the class as well.

Project Proposal Grading Rubric

See Posted Rubric for project proposal plan report evaluation and presentation under Project content.

Project Proposal Weekly Deliverables Schedule

Refer to the Project Proposal Template posted in the Project Content. The sections noted below refer to the sections in the project template. All these sections are required to be developed, written and submitted by each team for their project. Student teams are welcome to add additional innovative sections/subsections, as needed, to help present their project in a better light, for easier understand and implementation.

See Table 1 below indicating sections to be delivered each week – for four weeks, in the course.

Table - 1

Week Number	Project Proposal Sections to be completed	Percent of Project Grade for each submission
1	1, 2, 3, 4	15%
2	5, 6, 7	15%
3	8, 9, 10	25%
4	11, 12, 13	30%
4	Presentation	15%

For each subsequent submission, student teams can update previous sections in a controlled manner when additional details are available.
Each week's submission should cover all expected sections to be eligible for the allocated grade percentage.
Important student teams to remember that this is the project plan to implement during the other two capstone courses B and C.