Course Title: Capstone Project in Computer Science-1

Course Number: CS-UH 4001

Number of credits: (4)

Prerequisites: Research Seminar CS-UH 3090

Instructor Information:
Each student taking this course has his/her own supervisor from among the CS faculty.

Class time:
Students work individually at the time of their choosing and meet regularly with their supervisor.

Course Description:
The senior Capstone Experience in computer science requires students to engage in a long-term, mentored learning experience that culminates in a piece of original research and/or scientific theory. The specific project is developed during their junior year as part of the Capstone Seminar (CS-UH 3090). During the Capstone Project 1 and 2 (CS-UH 4001 and CS-UH 4002), the proposed work will come to fruition in the form of a research paper along the lines of those in the proceedings of top conferences and journals of the relevant field of research. After completing the course CS-UH 4002 (Capstone Project in Computer Science-2), students will defend their project before their supervisor and a secondary grader, and they will also participate in a Capstone Research Festival during which they present their work to the wider campus community.

Deliverables:
The Capstone Research Project 1 consists of two stages. During the **first stage** the students carry out research, obtain results, and meet regularly with their supervisor once per week at the times and places of their agreement. In the **second stage** students write a **2500-word Research Progress Report** and hand it to the supervisor and Program Head.

Learning Outcomes: Students who successfully complete this course will be able to
1. Read, critique and comprehend literature in computer science.
2. Develop the art of asking or identifying well-posed questions or research problems.
3. Plan and carry out suitable approaches for problem solving.
4. Hone technical writing skills related to the research project.

Grading:
The 2500-word written progress report will be evaluated and graded by the Capstone Supervisor, who will forward the grade to the Program Head. Grading will be based on the following rubric.

Written Report Grading Rubric: (100 points - 100% of grade)

o   **Formal Aspects** (10 points max)
    The project report uses the (LaTeX) formatting guidelines and has the requested length. The report fully uses academic language, is well written and persuasive with no spelling or grammar errors, and uses correct style of referencing. All references are cited, all citations are listed as references. Figures, tables, etc. have clear labels and captions.
    The Overleaf NYUAD CS Capstone Template is available here:
    https://www.overleaf.com/latex/templates/nyuad-cs-capstone-template/wtvbmfhgvnzw.

o **Structure** (10 points max)
The project report abides to the overall structure of the project expectations, is convincing, and has an easy to follow pattern. Subsections are used to structure longer parts of the report and they follow a logical pattern. What is described in each section fully fits to what should be described in it.

o **Related Work** (20 points max)
References are fully appropriate in terms of quantity and quality. Appropriate quantity depends on the topic of the project, but 5 high-quality references may be a sufficient number (more may be justified). Quality refers to the fit of the references: the majority are academic papers and journals at impactful venues.

o **Clarity of Goal** (20 points max)
The project has a clearly formulated, convincingly argued, and well-justified scientific goal. If the goal consists of several parts, each part is convincingly argued.

o **Methodical Approach** (20 points max)
The project's approach and methodology or technique are appropriate for achieving the scientific goal. Steps and milestones are elaborated.

o **Independence and Creativity** (20 points max)
The student demonstrates full independence in developing the project. The topic itself or major parts of it are proposed by the student him-/herself. Only minor hints or recommendations are required by the supervisor.

Grade conversion: A=95-100; A-=90-94; B+=87-89; B=83-86; B-=80-82; C+=77-79; C=73-76; C- =70-72; D+=67-69; D=63-66; F=below 63

Deadlines:
The deadline for submission of the written progress report is **the last day of classes of the semester (December 10, 2020)**. Intermediate deadlines may be set by the capstone advisor.

Academic Integrity: As set forth in NYU Abu Dhabi's Academic Integrity Policy, the relationship between students and faculty at NYU Abu Dhabi is defined by a shared commitment to academic excellence and is grounded in an expectation of fairness, honesty, and respect, which are essential to maintaining the integrity of the community. Every student who enrolls and everyone who accepts an appointment as a member of the faculty or staff at NYU Abu Dhabi agrees to abide by the expectation of academic honesty. The full policies and procedures relating to Academic Integrity may be found on the NYUAD Student Portal.

Wellness: As a University student, you may experience a range of issues that can interfere with your ability to perform academically or impact your daily functioning, such as: heightened stress; anxiety; difficulty concentrating; sleep disturbance; strained relationships; grief and loss; personal struggles. If you have any well-being or mental health concerns please visit the Counseling Center on the ground floor of the campus center from 9am-5pm Sunday - Thursday, or schedule an ap- pointment to meet with a counselor by calling: 02-628-8100, or emailing: nyuad.healthcenter@ nyu.edu. If you require mental health support outside of these hours call NYU's Wellness Ex- change hotline at 02-628-5555, which is available 24 hours a day, 7 days a week. You can also utilize the Wellness Exchange mobile chat feature, details of which you can find on the student portal. If you need help connecting to these supports please contact me directly.