

COS 492 Senior Integration Project in Computer Science

Syllabus

Catalog Description

An independent study required of all students majoring in computer science. The student will explore and analyze a topic related to the student's area of interest in computer science in the light of Christian worldview. The study will result in a written thesis. Prerequisite(s): COS 230, Senior standing and approval by the instructor. 2 hour(s).

I Objectives

- a. The student will demonstrate their understanding of faith integration with computer science.
- b. The student will demonstrate either an understanding of the field of computer science through a research paper, or a level of skill in the field of computer science through a project.
- c. The student will demonstrate an ability to make appropriate use of the literature of the field of computer science.

II Methods

Independent study and research under the direction of a faculty member

III Assessment

There are two approaches to a SIP in computer science:

- 1) A research paper. This paper should combine research of the literature in the field with an explanation of the student's integration of Christian faith with CS. The paper is expected to be 30+ pages long and contain a dozen or more citations of the literature. The paper will be judged on content, writing style, and writing mechanics. The student will provide a thesis, an abstract and an annotated bibliography one month after the beginning of the semester. Failure to do so will result in a penalty of one letter grade. A complete draft must be provided to the faculty member supervising the SIP by the last day of the semester. Failure to do so will result in a penalty of one letter grade. The paper must be presented to an audience outside the department, either in writing or in a verbal presentation. This may be done by submitting it for publication, or to a student writing contest, or by placing substantial portions of the paper in an ongoing web site, such as the Wikipedia. In all cases it is recognized that to present in writing to an outside audience may require substantial editing and reduction in size. A presentation would typically be 15 to 45 minutes long, supported by visuals, such as PowerPoint. Examples of presentation venues might include local community users groups, and could include Covenant student groups provided that they draw from outside the department. Failing to present to an outside audience will typically result in a penalty of one letter grade. Presenting both in writing and verbally will typically result in a bonus of one letter grade. In all cases the faculty adviser

has the final determination of the value of the presentation, written or verbal, towards the grade.

- 2) A project. This is a software project. It may have either a research focus, such as demonstrating a new idea or approach. Or it may be a project that provides practical benefits. In the case of a project SIP a paper of approximately 10 pages will be written describing the project including: why the product was chosen, explaining the student's sense of faith integration as it relates to the project, and a discussion of what the student learned from the project. This paper should have a half dozen or more citations to explain the projects connection to the existing CS field. The student will provide a short product statement, typically a page long, stating the goal of the project and discussing the anticipated approach to implementing the project one month after the beginning the semester. Failure to do so will result in a penalty of one letter grade. The student will provide appropriate design documentation to the faculty member supervising the SIP by the last day of the semester. Failure to do so will result in a penalty of one letter grade. The project must be presented to an audience outside the department, either in writing, or in a verbal presentation, or as an open source project. This may be done by submitting it for publication, or to a student writing contest, or by placing substantial portions of the paper in an ongoing web site, such as the Wikipedia. In all cases it is recognized that to present may require substantial editing and reduction in size. A presentation would typically be 15 to 45 minutes long, supported by visuals, such as PowerPoint. Examples of presentation venues might include local community users groups, and could include Covenant student groups provided that they draw from outside the department. An additional way to present a project to an outside audience is to make it available as an open source project. In this case the project is made available through an existing open source site, such as gethub or sourceforge. An open source license must be provided. The project must be documented to the recommendations of the site it is posted on or, if they do not have documentation guidelines, shall be documented on a publicly available web site. The quality of the documentation will be considered in the grade. Failing to present to an outside audience will typically result in a penalty of one letter grade. Presenting in more than one way (written, verbal, and open source) will typically result in a bonus of one letter grade, per approach. In all cases the faculty adviser has the final determination of the value of the presentation, written or verbal, towards the grade.