

Computer Science I.S. Student/Advisor Guidelines

Independent Study is the student's opportunity to do a significant piece of work in an area of personal interest and to expand his or her understanding of computer science. This guide provides a description of what the I.S. advisor expects from the student.

1) Project Topics

Although the faculty advisor must approve all topics, the student is free to pursue virtually any area of computer science that is of interest. The topic should be challenging, but manageable with the resources and time available. A typical I.S. involves a theoretical investigation of a topic in Computer Science accompanied by a software implementation that illustrates concepts developed in the theoretical investigation.

2) Project Submissions

It is the student's responsibility to meet all deadlines and submission requirements, and to contact their advisor for clarification when necessary.

Project Summary/Abstract

The project abstract is a formal document, not a slip of paper with a few vague ideas on it about what the student thinks would be interesting to do. In order to receive approval for a project, the student will present a proposal outlining the following.

1. The project's focus (e.g., examine artificial intelligence and speech synthesis, investigate microcomputer security, examine the importance of documentation (human factors, etc.).
2. The project's objectives in terms of the topics that the theoretical portion of the IS thesis will cover, the software or documents that the project will produce, and the learning that will result from accomplishing the project.
3. The efforts that will contribute to the project: programming, interviews, special library research, trips, and needed materials (languages, machines, documentation, etc.).
4. Potential problems in the project that might become trouble spots. Identify the challenges the student might encounter in accomplishing the project. The student should investigate whether these trouble spots could make the rest of the project impossible if they can't be surmounted.
5. A suggested timetable specifying the points throughout the two semesters at which the various phases of the project will be complete.

6. A minimum of five references (journal articles, technical reports, books) on your proposed topic. Online references are not, generally, acceptable.

Annotated Bibliography

An annotated bibliography is a bibliography in which each entry includes a description of the entry's content and the role it might take in the research. This description is *not* a copy of the entry's abstract.

Thesis Outline

The thesis outline is a proposed table of contents for the thesis. The table of contents should include a project title and a specification of chapters and sub-sections, each annotated with a title.

Project Research

The project should begin with a substantial amount of library research. The description of this research should involve a clear exposition of the problem or research area, an annotated bibliography, and an outline for conducting the research.

Completed Chapters

In mid-October, the student will reach an agreement with his/her advisor about which chapters are to be completed as a prerequisite to satisfactory completion of the first semester of Senior IS. These chapters must be submitted by the date given on the timeline later in this document. A completed chapter is not an outline or a draft, but a chapter that has been through at least one review by the advisor. Satisfactory progress in the first semester should result in approximately 25-30 well written pages that are free of grammatical errors and that contain proper citations in the ACM format.

Preliminary Software

In mid-October, the student will reach an agreement with his/her advisor about the software component that is to be completed as a prerequisite to satisfactory completion of the first semester of Senior IS. The software component may consist of a prototype showing proof of principle, a set of software modules, data analysis using a software tool, etc.

Digital Submission

The I.S. in LaTeX format as a pdf file, the I.S. abstract in text format, source files and results are provided in digital form, on a CD, DVD, USB, or other digital media, to the advisor before the oral defense.

Poster

This document represents the I.S. in poster form and must be presented during the Senior I.S. Symposium. The student must register for the symposium. The Dean of Faculty Development typically announces, in mid-February, the registration deadline and requirements for symposium presentations.

3) Guidelines for Professional Conduct

The student will meet with the advisor once a week and will provide 24-hour notice when unable to attend a meeting due to illness or a personal problem. The student will come prepared to discuss ideas relating to the project, review progress, and map out work to be done. It is expected that 10 - 12 hours per week will be dedicated to the I.S. and that progress toward completion of the project will be demonstrated on a weekly basis. The student will respond to all e-mail correspondence from the advisor in a timely manner. The student will submit for review all presentation slides and the symposium poster to the advisor, typically a week before their due date. It is the student's responsibility to contact their advisor with questions concerning submission deadlines, submission format, etc.

4) Document Submission and Oral Presentation Schedule

All Computer Science I.S. students will meet as a group to give a brief presentation of their work to that point (see timeline below).

With the exception of the oral defense and preliminary I.S. meeting, the student will submit a typed document for each item by 4:00 PM on the indicated day. The poster is submitted online following the directions announced by the Dean of Faculty Development. The student will submit the final thesis to the Registrar's office on the indicated day; all other documents will go to the advisor. Advisors will not discuss assignments with students on the day they are due or the day before.

Junior Year Schedule

Attend preliminary Senior I.S. meeting – Department Chair announces time and place of meeting.

Junior Year, Second Semester, Friday of last week of classes – I.S. Preliminary Proposal must be submitted to the Department Chair.

Senior Year Schedule

Email your advisor a copy of the following table, **Week 1**
where the weeks have been replaced
by the calendar date of your corresponding
meeting day for the indicated week

Project Summary/Abstract **Week 3**

I.S. Student Meeting, Taylor Hall, T 11 – 12:00 **Week 6**
A five-minute presentation on your I. S. topic

Thesis outline and **agreement** on the chapters **Week 6**

to be completed by the end of the semester

Annotated bibliography	Week 8
Chapters and preliminary software specified in above agreement completed	Last week of classes, Fall
Final draft	Last week before Spring break
Final thesis	End of Spring break
Digital Media, Poster, Senior Exit Survey	Last day of March
Oral Defense	TBA (Scheduled between April 1st and I.S. Symposium day)

5) Grading Fall Semester

The list below specifies point allocations. The maximum possible total points are 100. The number of points awarded in each category will measure promptness, clarity of presentation, thoroughness, and consistency with documents already submitted. To obtain a satisfactory (S) grade in CS 451, the student must complete all indicated submissions and receive *at least* 80 total points of credit.

Project summary/abstract	10 points
Five-minute oral presentation on project abstract	10 points
Thesis outline and annotated bibliography	30 points
Completed chapters and preliminary software	35 points
Attendance	15 points

Grade for first semester:

S: 80 to 100 points

NC: 0 to 79 points

Spring Semester

The spring semester grade (H, G, S, NC) is an evaluation of the final thesis, the oral presentation, the organization of the project effort, and participation in the I.S.

Symposium. Part of this evaluation includes attending weekly meetings, providing timely and grammatically clean drafts, and demonstrating weekly progress. The following criteria determine the final grade. You should also look at the attached evaluation rubrics for the thesis and oral presentation.

6) Grading Criteria

Content

The content of the independent study document must meet the requirements agreed upon by the advisor and advisee. These requirements will differ for each project.

Form

The final document is evaluated for mechanical and grammatical errors. The text must be well organized, grammatically correct, and complete - including a table of contents, an introductory and conclusion chapter, a bibliography, and a user manual if necessary.

Methodology

The essential factor here is the degree to which the student has approached the project in an organized and efficient manner and has applied effort consistently throughout the entire year. The quality and promptness of intermediate submissions is highly important. A major item is the promptness and quality of the rough draft submission since it measures the ability of the student to effectively coordinate the research effort in an efficient manner. Attendance and presentation issues from the first semester will carry a heavy weight for this criterion. Participation in the I.S. Symposium is also factored into the grade for the Methodology category.

Oral Presentation

Grading of the oral presentation evaluates the organization, spontaneity, flow, continuity, and comprehensibility of the presentation. It also evaluates the student's ability to respond to reasonable questions and explain points of confusion. The student should use visual aids as a means of guiding the presentation, but should avoid reading material to the audience. The presentation should last approximately thirty-five minutes to permit approximately fifteen minutes for questions and extended discussion. A major challenge of the presentation is to identify the key points to cover in giving a good description of the project in a relatively short time period.

7) Paper Formatting

Degree text on first page of the manuscript

CS majors should use:

Presented in Partial Fulfillment of the Requirements for
the Degree Bachelor of Arts in Computer Science in
the Department of Mathematical & Computational Sciences
at The College of Wooster

A CS and History double major should use:

Presented in Partial Fulfillment of the Requirements for
the Degree Bachelor of Arts in Computer Science and History
in the Department of Mathematical & Computational Sciences
and Department of History at The College of Wooster

Overall Document

Left margin 1.5 in

Right margin 1.25 in

Top margin 1 in

Bottom margin 1 in

Pages should also be numbered

Double-sided and Spiral bound

Chapters start on a new page

Theorems, lemmas, examples, corollaries, definitions, propositions, remarks, notation, terminology, figures, and tables numbered within Chapters.

Title page (no page number - everything centered except Advisors which are on left margin)

Title

Independent Study Thesis

Presented in Partial Fulfillment of the Requirements for the Degree Bachelor of Arts in
the Department of Mathematics and Computer Science at the College of Wooster

by

Author

The College of Wooster

Year

Advised by:

Advisors

Frontmatter (Page numbers at bottom of pages)

Blank page hidden page number

Copyright page (optional and hidden page number)

Abstract (roman page number (ii or iii based on copyright or not))

Dedication (optional)

Acknowledgments (optional)

Vita (optional)

Table of Contents

List of Figures (only needed if there are figures)

List of Tables (only needed if there are tables)

List of Listings (only needed if there are code listings)

Preface (optional) (A chapter which is not numbered or lettered)

Mainmatter

Numbered Sections (Page numbers in arabic, first page number of chapter centered at bottom, remaining page numbers in upper right and running header on upper left)

(Chapter number Chapter title))
Introduction (Chapter 1)
Body (Chapters 2-?)

Backmatter

Lettered Sections (Page numbers in arabic, first page number of appendix centered at bottom, remaining page numbers in upper right and running header on upper left
(Appendix letter Appendix title))
Appendices

Sections not lettered or numbered

Afterword (optional)
References
Index (optional) (two column alphabetized)
Colophon (optional)
Blank page (hidden page number)

An example of a completed thesis can be seen in the LaTeX IS Guide found at:
<https://wiki.wooster.edu/display/latex/Downloads>

8) Grading 452: Use CS 452 Evaluation Rubric