Course Description

This course will introduce you to principles of the design, evaluation, and implementation of computer programming languages. As such, it is not a crash course to teach you to program in a half dozen new dialects, although you will find learning new languages easier as a result of this study. Our emphasis will be on the kinds of features languages might have, how they influence a programmer's thought processes, and how they may be implemented on a computer.

At this level of study, we will find that complex tradeoffs between language principles coupled with a variety of differing design goals often can lead designers to radically different design decisions. There seems to be no single “right” way to design a programming language, and no single language that is “right” for all applications. You will be asked to explore some of these tradeoffs through a series of writing assignments in which your thought processes and ability to balance fairly many aspects of complex issues will often be more important than the specific conclusions you reach. Because of this subject matter and pedagogical approach, this course meets the University graduation requirement for Writing Proficiency, and you need to have passed the University Writing Proficiency Screening Test before enrolling.

Grading

Final grades will be based upon the following activities, and at the end of the term will be rounded to the nearest full letter grade (A, B, C, D or F) without pluses or minuses. Except for designated collaborative activities in connection with the term project, all writing and other work you present for credit in this class must be entirely your own, or developed on your own in consultation with the course instructor or other Department faculty. Penalties for representing other people’s work as your own will range from No Credit on the assignment through failure of the course and possible University disciplinary action.

PROJECTS and ASSIGNMENTS: Homework usually will require you to organize your thoughts about some aspect of the material we are studying, and to write a carefully crafted and thoughtful paper. Some parts of some assignments will be used only for class discussion and not turned in, but usually they will be graded. You will always be informed in advance how much, if any, each assignment will count towards your final grade. In aggregate, all of the homework you turn in will comprise 30% of your final grade. Some of the questions will require problem solving or programming skills, but programming segments or other technical language will generally be in service of some larger point and supported by prose arguments. Essays must be prepared on a word-processor. Late assignments will be accepted unless you are notified otherwise, but will suffer a grading penalty dependent upon the degree of lateness.

TERM PROJECT: In addition to these assignments, you will be required to write a term project. Specific requirements and a timetable for this paper will be distributed early in the term. The project will take the place of a final exam, and the final draft will be due at the time normally scheduled for the final. It will not be accepted after that time. The project grade will be based upon prewriting activities as well as the final product, and will in aggregate count as 30% of your final course grade.

EXAMS: There will be two exams given during the course of the semester, approximately in the sixth and the last weeks of the semester. The exact time of these exams will be announced a week in advance of each exam. Each exam will account for 20% of your final grade.