SYLLABUS

ISC 3313 - Introduction to Scientific Computing
Programming Language: C
Summer Session A 2012

http://people.sc.fsu.edu/∼jburkardt/isc/syllabus.pdf

Lecture:	time: Monday/Wednesday 11:15-12:05
	room: 499 DSL (take elevator on left in Dirac Library lobby).
Lab:	time: Thursday 11:15-12:05
	room: 152 DSL (entrance near Woodward traffic circle).
Instructor:	John Burkardt,
	email: `jburkardt@fsu.edu`
	office: 445 DSL
	office hours: MW 12:05-1:00, 445 DSL
TA:	Detelina Stoyanova,
	email: `dks10d@fsu.edu`,
	office hours: MWTh: 12:05-1:00, 152 DSL
	(If no one shows up after 15 minutes, she might leave,
	so let her know if you plan to come to her office hours!)
Suggested Text:	*Programming in C*, Steve Kochan, ISBN:978-0672326660.
	You are not required to use this textbook, but you should find
	some good textbook on C for your reference.
Exams:	Thursday, June 21; Thursday, August 2
Project:	Report and presentation due August 9.
Web page:	http://people.sc.fsu.edu/∼jburkardt/isc/

Official Course Description: This course introduces the student to the science of computations. Topics cover algorithms for standard problems in computational science, as well as the basics of an scientific programming language, to facilitate the student's implementation of algorithms.

Instructor's Course Description: I want to teach you to program. My second goal is to expose you to algorithms for solving scientific problems.

Course Objectives: At the end of the course, students will be able to:

- identify the components of scientific computing;
- identify standard problems in scientific computing;
- describe algorithms for standard problems in computational science;
- implement algorithms as computer programs;
- run and debug computer codes;
- present results as printed text, data files, or graphic illustrations.

Programming Topics:

- operating system, editor, files, compiler, graphics;
- program format, variable names, statement structure;
- control structures: if, while, switch;
- functions and segmented programs;
- arrays and vectors;
- pointers;
- input/output and files;

Scientific Computing Topics:

- iteration;
- finding the solution of a nonlinear equation;
- polynomials;
- approximating a function;
- solving a differential equation;
- approximating the integral of a function;
- random number generation and use;
- using graphics to display data.

Grading Policy: The student's grade for the course will be based upon classwork, programming homework, a midterm and a final capstone project. This work is weighted as follows:

- Weekly in-class work - 20%
- Weekly programming homework - 30%
- Two exams - 30%
- A final capstone project - 20%

Submissions: In-class lab exercises should be completed during the last 15 minutes of a lab class, and must be shown to the TA for credit. Homework assignments and programs must be submitted via email to the TA. The capstone project will require the submission of printed copies of a report and program.

Late Assignment Policy: You can turn in *one* laboratory assignment and *one* homework program late with no questions asked and no penalty. However, the assignment must be turned in no more than one week past its due date. Once you have reached your limit, no other late work will be accepted.

Computer Competency Requirement: In order to fulfill FSU's Computer Competency Requirement, the student must earn a "C-" or better in the course.

Capstone Project: This course requires a final "capstone project", in order to fulfill FSU's Computer Competency Requirement. The student, with the guidance and approval of the instructor, selects a computer project to work on. Completion of the project requires a working program, a written report, and an oral presentation. Details about the capstone project will be presented sometime after the fourth week of classes.

University Attendance Policy: Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Academic Honor Policy: The Florida State University Academic Honor Policy outlines the Universitys expectations for the integrity of studentss academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to . . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University. (Florida State University Academic Honor Policy, found at http://dof.fsu.edu/honorpolicy.htm.)

Americans With Disabilities Act: Students with disabilities needing academic accommodation should:

1. register with and provide documentation to the Student Disability Resource Center; and
2. bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

> Student Disability Resource Center
> 874 Traditions Way
> 108 Student Services Building
> Florida State University
> Tallahassee, FL 32306-4167
> (850) 644-9566 (voice)
> (850) 644-8504 (TDD)
> sdrc@admin.fsu.edu
> http://www.disabilitycenter.fsu.edu/

Syllabus Change Policy: Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.