

Applied Computational Science I
ISC 5315

Spring 2011

Instructors:	Janet Peterson email: jpeterson@fsu.edu office: 444 DSL phone: 644-1979	Peter Beerli email: beerli@fsu.edu office: 150-T DSL phone: 645-1324
Office Hours:	T 11-12 R 8:30-9:30	T 11-12 R 8:30-9:30
Class:	TR 9:30-10:45 152 DSL	
Lab:	M 3:30-6 p.m., 152 DSL	
Prerequisites:	ISC 5305	
Website:	http://people.sc.fsu.edu/~pbeerli/classes/ISC5315	
Text:	None required; see reading list	

Course Description: This course is the first in a two semester sequence which introduces students to computational science. Algorithms are introduced and analyzed for various computational problems. For convenience, this course is divided into nine parts:

- Part I - Data Structures (Beerli)
- Part II - Linear Algebra (Peterson)
- Part III - Clustering (Peterson)
- Part IV - Data Mining (Peterson)
- Part V - Interpolation (Gunzburger)
- Part VI - Numerical Quadrature (Beerli)
- Part VII - Approximation Theory (Peterson)
- Part VIII - Numerical Differentiation & ODES (Beerli)
- Part IX - Random Processes (Beerli)

Grading Policy: The grade for the course will be based upon labs, homework, and a final project. This work is weighted as follows:

Final project - 15%
Homework - 50%
Labs - 35%

Late Assignment Policy: You can turn in *one* laboratory assignment and *one* homework late with no questions asked and no penalty; however, the assignment must be turned in no later than 1 week after its due date. Additional late assignments will be penalized

by applying a graded scale which terminates with a 25% reduction at the end of one week; no assignments will be accepted more than a week past the due date. Exceptions to these rules are made only if extenuating circumstances (such as illness, etc.) arise which can be documented.

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.

Honor Code: The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students 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>.)

ADA: 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
97Woodward Avenue, South
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.

Calendar
Applied Computational Science I

Week	M	T	R
1, 1/4-1/7	-	Data Structures	Data Structures
2, 1/10 -1/14	Lab 1	Data Structures	Linear Algebra
3, 1/17 -1/21	Holiday	Linear Algebra	Linear Algebra
4, 1/24 -1/ 28	Lab 2	Linear Algebra	Linear Algebra
5, 1/ 31-2/4	Lab 3	Clustering	Clustering
6, 2/7-2/11	Lab 4	Data Mining	Data Mining
7, 2/14-2/18	Lab 5	Interpolation	Interpolation
8, 2/21-2/25	Lab 6	Interpolation	Interpolation
9, 2/28-3/4	Lab 6	Numerical Quad.	Numerical Quad.
Spring Break			
10, 3/14-3/18	Lab 7	Approximation	Approximation
11, 3/21-3/25	Lab 8	Approximation	Approximation
12, 3/28-4/1	Lab 8	Num. Diff.	Num. Diff.
13, 4/4-4/8	Lab 9	ODEs	ODEs
14, 4/11-4/15	Lab 10	ODEs	ODEs
15, 4/18-4/22	Lab 10	Random Proc.	Random Proc.
16, 4/25-4/29	Lab 11	Random Proc.	Random Proc.
Lab 1	1/10	Data Structures (Beerli)	
Lab 2	1/24	Linear Algebra (Peterson)	
Lab 3	1/31	Linear Algebra (Peterson)	
Lab 4	2/7	Clustering (Peterson)	
Lab 5	2/14	Data Mining (Peterson)	
Lab 6	2/21,2/28	Interpolation (Gunzburger)	
Lab 7	3/14	Numerical Quadrature (Beerli)	
Lab 8	3/21, 3/28	Approximation Theory (Peterson)	

Lab 9	4/4	Numerical Differentiation (Beerli)
Lab 10	4/11, 4/18	ODEs (Beerli)
Lab 10	4/25	Random Processes (Beerli)
