Fall 9-1-2000

CS 471.01: Scientific Computing

Donald Morton
University of Montana - Missoula

Computer Science 471 - Autumn 2000

Scientific Computing

Prerequisites

At least one semester programming in a high-level language
At least one semester of calculus and knowledge of basic linear algebra.
Consent of instructor if student is delinquent in the above prerequisites.

Outcomes of the Course

It is expected that students will finish the course with the following skills/knowledge:
Ability to solve math-based science and engineering problems using numerical and symbolic computational methods.
Ability to discuss limitations and advantages of standard numerical and symbolic methods.
Ability to build visualisations of computational model results
Ability to write, compile, run and debug simple parallel programmes.

Instructor Information

Don Morton
Social Sciences 416
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Office Hours

See http://www.cs.umt.edu/u/morton/office_sched.html for current information.

Class Meeting Times/Place

0810 - 0900 MWF
Social Sciences 362

Attendance Policy

Class attendance is not a factor in determining grades. When a class is missed, it is the STUDENT'S responsibility to obtain any notes, assignments, etc. from classmates.

Required Text

An Introduction to High-Performance Scientific Computing, by Lloyd D. Fosdick, Elizabeth R. Jesup, et. al.

Grade Evaluation

Programming and laboratory assignments - 60%

Assignments will *NOT* be accepted after the stated deadlines.
Approximately one assignment per week
Assignment with lowest grade will be dropped
Programme assignments which do not compile will not be graded.
In general, no extensions of programme deadlines - plan ahead and anticipate system outages, etc.

Final Project - 20%

Either an individual programming project or a research paper should be completed by the student.
Topics will be chosen by students, subject to instructor approval.
Class presentation

Final Exam - 20%

Possibly a programming or laboratory assignment

Grading Scale

Grade	Average
A	**90 or greater**
B	**80-89**
C	**70-79**
D	**60-69**
F	**less than 60**

Tentative Course Topics

Introduction to Scientific Computing
Brief Introduction to Unix
Numerical Methods
Symbolic Methods
High-level tools for numerical and symbolic computations
Visualisation
Parallel Computing
Advanced Topics and Student Presentations

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