MA/CSSE 335 Course Syllabus

Rose-Hulman Department of Mathematics

Spring Quarter 2015

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Catalog Description and Prerequisites

MA 335 Introduction to Parallel Computing 4R-0L-4C S (odd years) Pre: MA212 and programming experience

Principles of scientific computation on parallel computers. Algorithms for the solution of linear systems and other scientific computing problems on parallel machines. Course includes a major project on RHIT's parallel cluster. Same as CSSE 335.

Textbook: Parallel Programming: Techniques and Applications Using Networked Workstations and Parallel Computers

Course Goals:

1. Develop working knowledge of different parallel computing architectures
2. Learn vocabulary common in scientific and parallel computing
3. Gain familiarity with C
4. Gain familiarity with working in a remote, Linux based environment
5. Study basic algorithms in scientific computing
6. Study the parallel implementation of the aforementioned algorithms

Course Content:

This is a joint MA/CSSE course taught by the math department. At least 50% of class time will be spent talking about mathematical topics. The remainder of the time will be spent talking about C programming, the Linux environment, features of MPI, parallel implementation issues, debugging, etc. Although the majority of class time will be spent talking about mathematics, you may find that ideas

that are simple to write down in your notes are somewhat more difficult to realize in code. You may spend significantly more than 50% of your time dealing with debugging, reading documentation, etc.

Grading

This course consists of homework and a final project. The final project will be 20% of your final grade .

The final letter grades will be assigned as follows:

If your grade, g, satisfies	Your final grade will be
$90 \leqslant g \leqslant 100$	A
$87 \leqslant g < 90$	B+
$80 \leqslant g < 87$	B
$77 \leqslant g < 80$	C+
$70 \leqslant g < 77$	C
$67 \leqslant g < 70$	D+
$60 \leqslant g < 67$	D
$g < 60$	F

Homework assignments will be announced in class and can be found on the course Moodle page.

Course Policies

- All homework is due at 5pm on the assigned due date. **No late homework will be accepted**.
- No cell phones are allowed in class.

Academic Honesty

- Be aware of the Rose-Hulman Honor Code and that honesty and integrity in one's work is of the utmost importance. Inappropriate sharing of work and information, including electronic sharing, will not be tolerated. In particular, finding implementations of algorithms on the internet and turning them in as your own work is explicitly prohibited.
- Note, however that you are encouraged to collaborate with others on homework, and in class you may be directed to work in groups. If you are in doubt about what is or is not appropriate just ask me. If you consult others in your submitted work you must acknowledge their contributions in writing on the assignments. You will not be penalized for honest collaboration, but don't just copy.