

CMPSC 450: Concurrent Scientific Computing

Class Hours: Tuesday and Thursday (4:15-5:30 p.m.) 110 Walker

Prerequisite: CSE103;CMPSC 201C or CMPSC201F; MATH220; MATH 230 or MATH 231

Course Materials:

- TextBook: *Parallel Programming in C with MPI and OpenMP* by M. J. Quinn (published by Addison Wesley)
- Notes on course web page

Objective: Design, analysis and implementation of parallel algorithms for scientific computing

Timeline:

- **Introduction** (Chapters 1 and part of 2): Week 1 (Aug 26)
- **Parallel Computing Fundamentals** (Chapters 2, 3 4): Week 2-4 (Sep 2-Sep 16)
- **Design of Algorithms** (Chapters 5,7): Week 5-6 (Sep 23-Sep30)
- **Discrete Applications** Sorting (Chapter 14), Combinatorial Problems (Chapter 16): Week 7-8.5 (Oct 7-Oct 21)
- **Matrix Computations**(Chapter 8, 11,12 (upto 12.4), 13): Week 8.5-(Oct 23-Nov 18)
- **Shared Memory Programming** (Chapter 17, 18): Week 13-14 (Dec 2-Dec 9)

Assignment and Tests: There will be two tests and one final, each worth 15%. Presentation of technical papers will cover 10%. There will be 3 assignments each covering 10% and one programming project covering 15%.

Test 1: Sep 30 4:15-5:30 p.m. 110 Walker(in class)

Test 2: Nov 14 4:15-5:30 p.m. -110 Walker (in class)

Assignments : Sep-Oct

Paper Presentations: Sep -Dec

Project: Posted on course web page Nov 1

Other Information:

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Course Web page: <http://www.cse.psu.edu/~bhowmick/cse457.html>