CSC510
Spring 2016

Course
CSC510 Multiprocessing

Course Homepage
http://www.cs.usm.edu/~zhang/csc510
It provides more details about topics, schedule, assignment/project requirements, office hours, supplementary materials and other related resources.

Meeting Time & Location
9:30 – 10:45 AM Tuesday and Thursday
Classroom: TEC205

Instructor
Dr. Joe (Chaoyang) Zhang

Contact Information
Email: chaoyang.zhang@usm.edu
Phone: (601) 266-5510

Office
Tec 206

Office Hours
1:00 – 3:30 PM Tuesday and Thursday

Prerequisites
CSC307; Background in computer system, algorithms and C/C++ programming

Optional Textbooks

Course Description
Parallel programming is becoming increasingly critical for a computer scientist. All new machines are now parallel. For current CPUs, it requires awareness of the multicore architecture and the cache hierarchy. This course covers parallel architecture, algorithms, programming, performance analysis and other selected topics in high performance computing.

Topics to be covered include:
- Parallel architecture
- Parallel algorithm design
- Matrix multiplication
- Graph algorithms
- Solving linear systems
- MPI programming
- OpenMP programming
- Performance analysis
- Other selected topics

Objectives
Upon completion of the course, students will
- be familiar with both shared memory and distributed memory systems as well as modern parallel architecture and software
- be able to design and analyze parallel algorithms for a variety of problems and computational models
- have experience with the implementation of parallel applications on
different platforms
• be able to measure, tune, and report their performance

Resources
Access to the high performance computing systems in the School of Computing at Southern Miss and at the Mississippi Center of Supercomputing Research (MCSR)
http://www.mcsr.olemiss.edu/

Grading
Your course grade consists 3 components:

<table>
<thead>
<tr>
<th>Components</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>40%</td>
</tr>
<tr>
<td>One group project</td>
<td>30%</td>
</tr>
<tr>
<td>Midterm and final exams</td>
<td>30%</td>
</tr>
</tbody>
</table>

Course grading scale:
- 90 to 100 A – Excellent work
- 80 to 89 B – Good work
- 70 to 79 C – Average work
- 60 to 69 D – Inferior work
- 0 to 59 F – Fail

Assignments
All assignments and projects are mandatory for all students. The requirements and due dates are provided in the handouts or on the course homepage.

Attendance
Students are expected to attend all classes.

Academic Honesty
Students are expected to do their own work on all assignments, projects and tests except the assignments are indicated as team work. Assignments that appear to be substantial duplicates of other submitted student work will be treated as instances of academic misconduct.

The following text is extracted from the USM Undergraduate Bulletin:
"When cheating is discovered, the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student should be reported to the Dean of Students."

In addition to being a violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. Students on disciplinary suspension may not enroll in any courses offered by The University of Southern Mississippi."

DAD Policy
If a student has a disability that qualifies under the American with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

Address:
The University of Southern Mississippi
Office for Disability Accommodations
118 College Drive # 8586
Hattiesburg, MS 39406-0001
Voice Telephone: (601) 266-5024 or (228) 214-3232 Fax: (601) 266-6035
Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1-800-582-2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu.