

INTRODUCTION TO SUPERCOMPUTING MCS 572 SPRING 2019

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Course Webpage: <http://www.math.uic.edu/~awanou/MCS572>

Office hours: M 1:00 pm – 1:50 pm, W 1:00 pm – 1:50 pm and by appointments, for example: F 03:00 pm – 03:50 pm.

Office information: SEO 1221, phone (312) 413-2167

Course information: MW F 2:00 pm - 2:50 pm Taft Hall 204

Textbooks: Scientific Parallel Computing, L. Ridgway Scott, Terry Clark, & Babak Bagheri

An Introduction to Parallel Programming, Peter Pacheco

Prerequisite: Consent of the instructor.

Grade distribution: There will be 3 homeworks counting for 50 % of the grade and a final project counting for 50 % of the grade.

Gradelines: A \geq 90%, B \geq 80%, C \geq 70%, D \geq 60%, F < 50 %.

Tentative schedule: Instruction begins M Jan 14 and ends F May 3. No class M March 25 through F March 29 (Spring break).

Course goal and objectives: Fundamentals of parallel and cluster computing pertinent to scientific computing, key issues of decomposing computations to exploit pipeline floating point units and code restructuration to minimize data traffic between processor and memory systems, parallel computing hardware options: experience using MPI, OpenMP and GPU

Introduction–Parallel performance–Computer architecture–Dependences–Linear systems–Parallel languages–Collective operations–Current Programming standards–Advanced MPI–OpenMP (Multi Processing)–Machine and deep learning–Guest lectures and presentations

Drop and Withdrawals: All drops of or withdrawals from courses must be accomplished before the applicable deadlines indicated in the Schedule of Classes, F March 22.

Academic Honesty and Civility in the Classroom: Academic honesty and mutual respect (student with student and instructor with student) are expected in this course. Mutual respect means being on time for class and not leaving early, (if you have to leave, arrange to sit near the door and leave quietly), being prepared to give full attention to class work, not reading newspapers or other material in class, not using cell phones, pagers or other electronic devices during class time, no sleeping, no eating, not bringing children to class, not talking to classmates outside of group work, not copying the solutions of the home works from unnamed sources and not looking at another student's work during exams. Academic misconduct and incivility in the classroom, as defined by the Student Disciplinary Policy, will not be treated lightly.

Disability services: If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it or which will require academic accommodations, please notify me within the first two weeks of class.

Disclaimer: This syllabus provides a general guide for the course: deviations may be necessary. Deviations from the textbook should be expected.