MCS 572 Introduction to Supercomputing Spring 2023

**TIME TABLE:** CRN 41672 AH 303 MWF 2:00-2:50, from 01/09/2023 to 04/28/23.

**PREREQUISITES:** MCS 471 or consent of the instructor. Familiarity with programming and computing (or willingness to acquire those skills) is needed.

**CURRICULUM:** MCS 572 is one of the courses on the computational science prelim.
In a broader context, MCS 572 fits in an interdisciplinary computational science and engineering (CSE) curriculum.

**INSTRUCTOR:** Jan Verschelde. Email: janv@uic.edu. URL: http://www.math.uic.edu/~jan.

**OFFICE HOURS:** For in-person meetings, Between 1:00PM and 1:50PM on Monday, Wednesday, and Friday, or immediately after class. Online meetings are possible as well. We can also meet by appointment.


**MCS 572 SITE:** See http://www.math.uic.edu/~jan/mcs572/index.html for a copy of the syllabus, posting of slides, reference materials, lecture notes, and changes in the scheduling.

**HOMEWORK:** At every lecture, several exercises are listed. Some exercises provide inspiration for an interesting project. At every lecture, interesting homework problems will be recommended. The collection of homework will be announced at least one week before the deadline.

**PROJECTS:** Three projects will be assigned during the semester. In the first project we will use MPI to experiment with the concepts and algorithms in the book. The goal of the second project is a computational detailed study of a parallel algorithm. In the third project we consider application fields, still to be determined, and depending on personal interests and preferences. The third project could be developed into a final project, instead of a final exam.

**EXAMS:** During the semester, there is one midterm on the first half of the course. As a take-home exam, the midterm functions as an important homework collection. The midterm and the final exam are excellent preparations for the *Computational Science Prelim*. Students not interested in this Prelim may opt out of the exams, and focus on research projects instead.

**COMPUTERS:** Access to the UIC supercomputer is to be confirmed. Access will be given to an 88-core work station with the NVIDIA P100 GPU.

**STUDENTS WITH DISABILITIES** who require accommodations for access and participation in this course must be registered with the Disability Resource Center.

**SOME IMPORTANT DATES:**
Monday 16 January : Martin Luther King, Jr., Day. No classes.
Monday 20 - Friday 24 March 2021 : Spring vacation. No classes.
Monday 1 - Friday 5 May : final exam, to be announced.