CSE 5441: Introduction to Parallel Computing

Instructor:	Dr. Jeffrey S. Jones					
Office:	Dreese 283					
Office Hours:	regular hours:	W F	2:15pm	-	3:45pm	
	by appointment:	Tu	4:00pm	-	6:00pm	
Electronic Mail:	jones.5374@osu.edu					
Meeting Times:	sec. 10984/10985	Tu Th	12:45pm	-	2:05pm	Caldwell 171
	sec. 6969/7754	Tu Th	2:20pm	-	3:40pm	Caldwell 171
graders:	Karan Grover	grover.120@osu.edu				office: Caldwell 420 office hrs: TuTh 11:00am - 1:00pm
	Gregory Ochs	ochs.33@osu.edu				office: Caldwell 420 office hrs: M 12:45pm - 2:45pm

Course Materials

Required Text: none

Additional Readings: will be made available in class and/or via Carmen.

Lecture Presentations:

- Lectures are the main course delivery method. Please attend and participate in lectures.
- Please get to know your classmates. Should you miss a lecture, it is your responsibility to review that material with someone who is willing to share their notes with you and then bring follow-up questions to office hours.

Electronic media:

- A Piazza discussion account is available for our section(s). The intent of Piazza is to provide another resource to help when you are stuck or forget something. Piazza is not to be used to post answers to homework/quiz/review/exam questions, and is monitored regularly by our grader(s). Exceptionally good assistance to your classmates may earn extra credit points.
- Any announcements on Carmen or Piazza are considered "course material."
- Please ensure your OSU email account is properly set-up and that you check it regularly or have it properly forwarded to another address you use actively. Both general and time-sensitive (class delays due to weather, illness etc.) course announcements may be sent via email.
- Presentation slides and lecture hand-outs will be made available on Carmen. Please note that the lecture slides are meant to be a vehicle for you to help you organize your notes. They are not meant to be a replay of the lectures.

Course Objectives:

Upon course completion, students can be expected to:

- Be competent with certain fundamental factors affecting the performance of sequential programs – understand architectural characteristics of common high-performance computers which directly affect both serial and parallel performance, as well as the implications of computing architecture design decisions on high-performance algorithmic implementations;
- Be competent with program transformations to enhance data locality and improve performance – be able to design and implement algorithms which take advantage of performance-related architectural characteristics;
- Be familiar with prevalent parallel programming models – understand the alternative computing architectures for implementing multi-processing systems;
- Be familiar with the design, implementation and performance analysis of parallel programs – be familiar with current parallel programming APIs and tools for instrumentation.

Grading: Your grade will be based on a composite score computed according to the following breakdown:

Homework	10%
Midterm Exam	30%
Programming projects	30%
Final Exam	30%

% scale	letter
93+	A
90 - <93	A-
87 - <90	B+
83 - <87	B
80 - <83	B-
77 - <80	C+
73 - <77	C
70 - <73	C-
65 - <70	D+
60 - <65	D
<60	E

Programming projects are graded according to the following scale and expectations:

project grade	requirements
5	professional quality, correct & documented code, brief well-substantiated conclusions, thoughtful and neatly completed (.pdf, word, etc.), correctly submitted.
4	essentially correct in all aspects, lacking in quality of arguments or submission.
3	contains one or two minor errors or omissions of key concepts.
2	contains a significant or multiple minor errors or omissions.
1	lacking multiple significant components.
0	work not submitted.

Project grades are converted to a percentage equivalent on a scale specific to and provided with each project.

Important Dates:

Tue	Aug 22	CSE 5441 lectures begin
Tue	Oct 10	midterm exam (in class)
	Oct 12-13	autumn break
	Nov 22 - 24	Thanksgiving break
Tue	Dec 5	final exam (in class)

Course Expectations and Policies:

General policies:

- Attendance is not required, but highly recommended. Lecture slide decks are for reference and not meant to replace lecture participation.
- Following instructions is a graded part of all assignments.
- All quizzes and exams are closed book, closed notes.
- Out of town? Miss a lecture? It is your responsibility to check with a classmate to ensure you have all course materials.
- Not feeling well? For an excused absence due to illness, you must provide a note from a physician stating that he advised you not to attend class on that day (this is usually because you are contagious). A hangover, an upset stomach or too little sleep (commonly due to waiting until the night before the due date to start a programming assignment) are not grounds for an excused absence.
- Students anticipating a scheduling conflict with an exam should seek prior absence permission from the instructor at least two weeks prior to the scheduled exam time and make arrangements for a make-up exam. Make-up exams must be completed prior to the regularly scheduled exam time.
- In the event of an unavoidable unanticipated absence from an exam, the student should notify the instructor as soon as possible.
- When communicating with your professor via email or voicemail, please be sure to include your name, class and section.
- The midterm and final exam will be comprehensive.

Homework:

- Homework will be assigned via posting to Carmen in the “files/homework” section.
- Homework is due at the beginning of your registered class period on its due date.
- Homework should be in .pdf format, emailed as an attachment to your lead grader (grover.120@osu.edu).
- Please retain a copy of your homework for in-class review and in the event of a grade entry or Carmen error.
- Late homework will be subject to a minimum 30% penalty.
- Notwithstanding the above, no homework may be turned in for credit after we have begun reviewing the answers in class or they have been otherwise made generally available.

Programming Assignments:

- All programs will be written in the C programming language. It is expected that students are either proficient in C or have sufficient programming background and experience to become proficient through self-study.
- Office hours are not for general program development. Office hours should be used for specific design questions or debugging specific issues. It is expected that students are familiar with basic debugging techniques such as conditional compilation and gdb.