INTRODUCTION TO PARALLEL PROGRAMMING
(4:25-7:05 PM, Monday, FH 334)

Instructor: S.K. Dhall, #231 DEH TEL: 325-4042

Office Hrs: 10:30am – 12:00 noon, Monday

Text: Introduction to Parallel Programming, Peter Pacheco, Morgan Kaufmann, 2011.

Reference texts
1. CUDA by Example: An Introduction to General Purpose GPU Programming, Jason Sanders, Edward Kandrot, Nivida, Addison-Wesley, 2010.


Course Outline: Parallel Computing, Hardware, and Software
Distributed Memory Programming with MPI
Shared Memory Programming with OpenMP
Parallel Algorithms and Applications
CUDA and OpenCL programming for the GPUs and multicore architectures
Distributed Programming Issues and Algorithms
Distributed Computing Tools and Technologies: MapReduce, Hadoop, etc.
Grid and Peer-to-Peer Computing

Homework: All homework should be turned in when due. The homework must be typed. Late and/or illegible work will not be accepted. Homework may include reading/writing a technical paper. Homework will count for 30% towards the final grade.

Each student will work on a project that will be worth 25% of the grade.

Each student will be required to make a short presentation – 5% of the grade.

Examinations:
Mid-term Exam (20%): Date to be announced later
Final Exam (20%): As scheduled according to University Calendar

Grading: Grade assignment will be as follows:
'A': 90% and above;
'B': 78% - 90%;
'C': 65% - 78%;
'D': 50% - 65%;
'F': below 50%.
Cooperation: A good way to learn the material is to explain it to someone else, so student-student discussion is encouraged. Student conversation is a valuable tool in suggesting different approaches to problem solution. However, since a grade must be assigned to each student that reflects the individual's mastery of the subject, and not the communication talent, the work you turn in must be your own. **COLLABORATION IS NOT ALLOWED, AND WHEN DISCOVERED, WILL BE REPORTED TO THE APPROPRIATE AUTHORITIES TO BE DEALT WITH ACCORDING TO THE UNIVERSITY REGULATIONS.**

ANY STUDENT IN THIS COURSE WHO HAS A DISABILITY THAT MAY PREVENT HIM/HER FROM FULLY DEMONSTRATING HIS/HER ABILITIES SHOULD CONTACT ME PERSONALLY AS SOON AS POSSIBLE SO WE CAN DISCUSS ACCOMMODATIONS NECESSARY TO ENSURE FULL PARTICIPATION AND FACILITATE YOUR EDUCATIONAL OPPORTUNITIES.

The College of Engineering utilizes student ratings as one of the bases for evaluating the teaching effectiveness of each of its faculty members. The results of these forms are important data used in the process of awarding tenure, making promotions, and giving salary increases. In addition, the faculty uses these forms to improve their own teaching effectiveness. The original request for the use of these forms came from students, and it is students who eventually benefit most from their use. Please take this task seriously and respond as honestly and precisely as possible, both to the machine-scored items and to the open-ended questions.