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

Instructor:  S.K. Dhall,  
Office Hrs:  2:30 – 4:00 pm, Monday, Wadnesday  

Reference Books:  
1. Introduction to Parallel Programming, Peter Pacheco, Morgan Kaufmann, 2011.  
2. CUDA by Example: An Introduction to General Purpose GPU Programming, 
   Jason Sanders, Edward Kandrot, Nivida, Addison-Wesley, 2010.  
3. Heterogeneous Computing with OpenCL, Benedict Gaster, Lee Howes, David R. 
   Kaeli, Perhaad Mistry, Dana Schaa, Morgan Kaufmann, 2012.  
5. https://computing.llnl.gov/tutorials/mpi/  

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

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 20% 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 (25%): Last day of classes  

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.

**Religious observance:** It is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required class work that may fall on religious holidays. If you need to observe any religious holiday, **PLEASE LET ME KNOW IN ADVANCE.**

**Adjustments for Pregnancy/Childbirth Related Issues:** Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact me as soon as possible to discuss. Generally, modifications will be made where medically necessary and similar in scope to accommodations based on temporary disability. Please see [www.ou.edu/content/eoo/pregnancy-faqs.html](http://www.ou.edu/content/eoo/pregnancy-faqs.html) for commonly asked questions.

**Title IX Resources:** For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24.7, counseling services, mutual no contact orders, scheduling adjustments and disciplinary sanctions against the perpetrator. Please contact the Sexual Misconduct Office 405-325-2215 (8-5) or the Sexual Assault Response Team 405-615-0013 (24.7) to learn more or to report an incident.