

303 GPU Parallel Programming

Syllabus:

Instructors: Dr. Jerry Ebalunode

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Course description: This course is divided into 2 main parts,

Part 1: Programming GPUs using high level programming language - MATLAB and directive based approaches including OpenACC and OpenMP (if time permits)

Part 2: Use of CUDA which makes it easier for specialists in parallel programming to use GPU resources

Prerequisites: Familiarity with a low level programming language such as C/C++, or Fortran, Matlab and working comfortably in a UNIX/Linux environment or completed corresponding CACDS courses (cluster computing, C++).

*Note for HPC certificate – you should have completed the linux/cluster computing course or passed the placement test to get credit for this course towards HPC certificate.

Attendance: Attendance is mandatory. Grades (Pass/Fail), and badges, will not be assigned to students who fail to attend at least 12 hours of synchronous instruction.

Textbook: None; Lecture notes would be provided through the course website.

Evaluation (tentative): Attendance: 20%, In-class/HW assignments: 30% each, final exam: 50% (last day of class)

Attendance Requirement:

Good standing on Attendance grade (>50%) would be required to see new course materials, homework assignments, and exams/projects as the course proceeds.

Also, for students interested in getting a badge or certificate for completing this course, an attendance grade of at least 75% of the class meeting sessions is required, to be qualified for passing the course and getting the badge.

Tentative Course Schedule:

Week 1	• Intro	
Week 1,2,3	• OpenACC	
Week 4,5	• CUDA	

Week 5	• Final Exam	
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Course Policies:

During Class

Electronics will be important for class and so computers will be allowed in class. Please refrain from using computers for anything but activities related to the class. Phones are prohibited as they are rarely useful for anything in the course. Eating and drinking are not allowed in the class room but we will have a break.

Attendance Policy

For complete attendance and excused absence policies, please see <http://www.uh.edu/nsm/students/undergraduate/policies/>. Attendance is expected in all lecture and lab sections. Valid excuses for absence will be accepted before class. In extenuating circumstances, valid excuses with proof will be accepted after class.

Late Assignments

Late assignments will be accepted for no penalty if a valid excuse is communicated to the instructor before the deadline. After the deadline, assignments will be accepted for a 50% deduction to the score up to 2 days after the deadline. After this any assignments handed in will be given 0.

UH Academic Honesty Policy

University of Houston students are expected to adhere to the Academic Honesty Policy as described in the UH Undergraduate Catalog. "Academic dishonesty" means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at the University of Houston or by a course instructor to fulfill any and all academic requirements. Academic dishonesty includes, but is not limited to, the following: Plagiarism; Cheating and Unauthorized Group Work; Fabrication, Falsification, and Misrepresentation; Stealing and Abuse of Academic Materials; Complicity in Academic Dishonesty; Academic Misconduct. Refer to UH Academic Honesty website (<http://www.uh.edu/provost/policies/honesty/>) and the UH Student Catalog for the definition of these terms and university's policy on Academic Dishonesty. Anyone caught cheating will be reported to the department for further disciplinary actions, receive sanctions as explained on these documents, and will have an academic dishonesty record at the Provosts office. The sanctions for confirmed violations of this policy shall be commensurate with the nature of the offense and with the record of the student regarding any previous infractions. Sanctions may include, but are not limited to: a lowered grade, failure on the examination or assignment in question, failure in the course, probation, suspension, or expulsion from the University of

Houston, or a combination of these. Students may not receive a W for courses in which they have been found in violation of the Academic Honesty Policy. If a W is received prior to a finding of policy violation, the student will become liable for the Academic Honesty penalty, including F grades. Student Disability Accommodations and Services. The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students who have a disability. In accordance with Section 504 and ADA guidelines, University of Houston strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please visit The Center for Students with DisABILITIES (CSD) website at <http://www.uh.edu/csd/> for more information.

Counseling and Psychological Services (CAPS) Statement

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach (CAPS) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus.

Copyright protection:

The course materials and online lecture videos posted on MS TEAMS are only meant to be used within this course and should not be distributed.