

University of Houston

HPE Data Science Institute

Syllabus: 101 Introduction to Cluster Computing

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Office Hours: Online and By appointment

Location: Online

Website: <https://secure.hpedsu.uh.edu/training>

Course description:

This course introduces participants to the computing environment found in UH high performance computing clusters such as Carya, Sabine and Opuntia, including how to prepare work-flows, submit jobs to the queuing systems, and retrieve results. Other topics covered include general HPC concepts, Opuntia's system architecture, system access, customizing your user environment, compiling and linking codes for CPUs or GPUs, the SLURM batch scheduling system, batch job scripts, Matlab jobs, submission of serial or interactive or parallel (gpu/cpu) jobs to the batch system. Topics in Linux covered include user accounts, file permissions, file system navigation, the Command Line Interface (CLI), command line utility programs, file & folder manipulation, and common text editors. Topics covered in Shell scripting include built-in commands, control structures, file descriptors, functions, parameters & variables, and shell scripting.

Prerequisites: None

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

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

Evaluation (tentative): Attendance: 20%, In-class/HW assignments: 40%, final exam: 40% (last day of class)

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Tentative Course Schedule:

Topic	Class
Concepts of HPC, Linux, Shell scripting	1-4
Queueing systems	5-6
Software installation, Awk & sed	7-8
Customizing environment	9

Copyright protection:

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

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<http://www.uh.edu/provost/policies/honesty/>

Students in need of counseling:

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to the demands of a professional program, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/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.

http://www.uh.edu/caps/outreach/lets_talk.html