

# CSC 415

Parallel Computing (Fall 2021)  
Lecture 1: Class Logistics

Prof. Marco Alvarez, University of Rhode Island

## Welcome !

### ▸ Lectures / Labs

- MWF 1 - 1:50p @ Tyler 106

### ▸ Office Hours

- TBA

### ▸ Team

- Marco Alvarez, Instructor
- Young Koh, TA

### ▸ Course Website

- <https://homepage.cs.uri.edu/~malvarez/teaching/csc-415/>

## From the 2021-22 catalog ...

### **CSC 415: Introduction to Parallel Computing**

**LEC:** (4 crs.) Programming techniques to engage a collection of autonomous processors to solve large-scale numerical and non-numerical problems. Processor interconnections. Parallel programming languages and models. Performance measures. (Lec. 3, Project 3) Pre: CSC 411 or ELE 305, and student must be admitted to a degree-granting college. In alternate years.

## Course organization

## Applications of Parallel Computing

- This course uses materials from the XSEDE and the University of California, Berkeley course “Applications of Parallel Computing”
  - Most lectures, quizzes and homework assignments
  - XSEDE supercomputer is available for the class
    - Bridges2 (<https://www.psc.edu/resources/bridges-2/>)
- Moodle access for Quizzes
  - <https://moodle.xsede.org>

## Grading

- Quizzes (15%)
- Homework Assignments (25%)
- Technical Presentation (25%)
- Final Project (35%)



## Assignments

- Discussions and collaboration are allowed
  - you must write your own code and solutions
- Late submissions **NOT** accepted
  - ample time given for assignments (~9 days)
  - start and submit early, leaving plenty of time for updates
- Plagiarism?
  - just don't do it
  - reports are sent to the chair with copies to your dean, the student's dean, and the office of student life

## Ed Discussion

Centralised class Q&A to leverage peer learning and reduce emails

The screenshot shows the Ed Discussion interface with several annotations:

- Familiar interface**: Just like email only better
- Stay engaged**: Endorse, heart or comment
- Stay organized**: Filter, sort and search
- Real time**: Always up to date
- Chronological**: Just like your inbox
- Question**: Ask anything
- Answer**: Answer anything
- Comment**: Context maintained

The interface itself shows a list of questions and answers, with a search bar, filters, and a list of questions. One question is highlighted: "How do I solve this equation?" with 3 answers. The answers include a link to a video and a graph of a parabola.

## Ed Discussion

Express yourself in anyway

The screenshot shows the Ed Discussion interface with a toolbar at the top containing icons for Format text, Hyperlink text, Create lists, Upload images, Embed videos, Write equations, Upload documents, Write code, and Annotate images. Below the toolbar is a text editor with a rich text toolbar (Paragraph, Bold, Italic, Underline, Link, Unlink, Bulleted list, Numbered list, Indent, Outdent, Undo, Redo) and a list of allowed content types: Upload images, Embed videos, Write math equations, Upload documents, Embed runnable code, and Annotate images. The main text area contains a math equation: 
$$u(x, t) = \frac{1}{\sqrt{4\pi kt}} \int_0^\infty \left[ \exp\left(-\frac{(x-y)^2}{4kt}\right) - \exp\left(-\frac{(x+y)^2}{4kt}\right) \right] g(y) dy$$
 Below the equation is a code editor with a 'Run' button and a 'Runnable' checkbox. The code editor contains the following code: 

```
print("Hello, world!")  
Hello, world!
```

 The output shows a green checkmark and the message 'Program exited with code 0'. At the bottom of the interface is a navigation bar with tabs: Ed Overview, Ed Discussion (selected), Ed Workspaces, Ed Challenges, and Ed Lessons.

## How to succeed?

### ▸ Attend all lectures/labs

- lectures run **synchronously** and are not being recorded
- attendance usually correlates with higher grades

### ▸ Participate and think critically

- use the online forum (**EdStem**)
- use office hours regularly

### ▸ Start working on assignments early

- avoid copying/pasting or google'ing answers

## Summary of Tools

### ▸ Primary Source

- Course Website

### ▸ Homework and Project Submission

- Gradescope

### ▸ Course Communication

- Ed Discussion

### ▸ Quizzes

- Moodle @ XSEDE

### ▸ Supercomputer

- Bridges-2 @ XSEDE