

# Data Structures

## *Fall Semester 2019 Syllabus*

### **Lectures:**

#### Section A:

MWF

5:00pm - 5:50pm.

Emerson Electric - G31

### **Website:**

<http://web.mst.edu/~ricardom/cs1510/19.3>

### **Instructor:**

|                        |   |
|------------------------|---|
| Dr. A. Ricardo Morales | Computer Science Building Rm 340<br>Phone: (573) 341-6353<br>Fax: (573) 341-4501<br>Email: <a href="mailto:ricardom@mst.edu">ricardom@mst.edu</a><br>URL: <a href="http://www.mst.edu/~ricardom">http://www.mst.edu/~ricardom</a> |
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### **Office Hours:**

TBA. CS Rm-212 (Computer Lab)

### **LEAD Learning Center:**

Time TBA: Place: CS Room 212 *(or CS-206 if attendance requires it)*

More information at: <http://lead.mst.edu>.

### **Course Objective and Topics:**

This course extends the study of structured programming by presenting the concepts and implementations of various abstract data types (ADTs) including lists, stacks, queues, trees, and graphs. We will discuss the tradeoffs associated with implementing these ADTs with alternative data

structures. You will also learn about more advanced C++ constructs.

### **Prerequisites:**

Grade of "C" or better in CS 1570 is **required**.

### **Textbook:**

Clifford A. Shaffer, *"Data Structures and Algorithm Analysis"*,  
Edition 3.2 (C++ Version)

Available FREE here [\[Link\]](#)

Required readings and activities will be assigned from this book.

Pat Morin, *"Open Data Structures"* C++ version  
Edition 1.0GB

Available FREE here [\[Link\]](#)

Complimentary material will be sourced from this book.

### **Evaluation Criteria:**

There will be multiple programming assignments, multiple tests, and a final exam.

|               |     |
|---------------|-----|
| Tests / Exam: | 50% |
| Assignments:  | 50% |

### **Grading Scale:**

A : [90 - 100]%

B : [80 - 90)%

C : [70 - 80)%,

D : [60 - 70)%,

F : < 60%

### **Programming Assignments:**

There will be multiple programming assignments. Programs will be graded (on a scale from 0 to 100) primarily on their correctness. Complete and correct output for every test input case is necessary for a full score.

- A non-compiling program will receive a score of **10**.
- A crashing (Seg-fault, core dump) program will receive a score of **25**.
- If a program compiles and runs, then points will be deducted for each incorrect test case output.
- Points will also be deducted for:
  - Missing name.
  - Incorrectly formatted output. (Presentation Error)
  - Memory Leaks.
- Late submissions will not be accepted.
- Your **lowest** assignment score will be dropped from your grade.

### **Tests:**

- You will have in-class tests after completion of each subject module, roughly once every **2 weeks**.
- Test days will be announced the previous class before the test.
- Published experimental studies in the fields of research in cognitive psychology and education have shown that frequent (rather than sparse) testing, is both more effective for learning, retention, and synthesis, and also encourages frequent smaller bouts of studying, rather than cramming.
- Your **lowest** test score will be dropped from your final grade.

### **Attendance Required:**

Attendance will be taken. Missing classes would greatly diminish your chances for a good grade in this class. Missing more than 5 classes will cause you to be dropped from the class.

### **Makeups:**

- No assignment re-submission is allowed, but the lowest assignment grade is dropped from your final grade.
- No makeup tests will be given, but the lowest test grade will be dropped from your final grade. If you have an S&T-acceptable documented reason (i.e., illness, death in the family, etc), please see the professor to discuss potential re-scheduling or accommodation.

**Contact:**

I will do my best to address any concerns you have about the class. Please feel free to approach me.

My immediate supervisor is Prof. Clayton Price. If there are any problems that I am unable to resolve for you relevant to this class, address your concerns to Prof. Price. His office is CS-325 and his e-mail is [price@mst.edu](mailto:price@mst.edu).

**The Burns & McDonnell Student Success Center**

The Student Success Center is a centralized location designed for students to visit and feel comfortable about utilizing the campus resources available. The Student Success Center provides peer mentors, caring staff, and approachable faculty and administrators who are student centered and supportive of student success. Visit the B&MSSC at 198 Toomey Hall; 573-341-7596; [success@mst.edu](mailto:success@mst.edu); facebook: [www.facebook.com/mstssc](http://www.facebook.com/mstssc); web: [www.studentsuccess.com](http://www.studentsuccess.com)

**S&T Early Alert System:**

All faculty are encouraged to utilize the online Early Alert System. The purpose of the Early Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

**Academic Dishonesty:**

<http://registrar.mst.edu/academicregs/index.html>

Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. Additional guidance for faculty, including the University's Academic Dishonesty Procedures, is available online at <http://ugs.mst.edu>.

## **Classroom Egress Maps:**

<http://designconstruction.mst.edu/floorplan/>

Please familiarize yourselves with the classroom egress maps.

## **Disability Support Services:**

<http://dss.mst.edu>

Any student inquiring about academic accommodations because of a disability should be referred to Disability Support Services so that appropriate and reasonable accommodative services can be determined and recommended. Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is [dss@mst.edu](mailto:dss@mst.edu). Instructors may consider including the following statement on their course syllabus as a means of informing students about the services offered:

*"If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation."*

If you have any questions about the information listed above, please contact the Office of Undergraduate Studies at 573-341-7276.

## **Title IX:**

Missouri University of Science and Technology is committed to the safety and well-being of all members of its community. US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Furthermore, in accordance with Title IX guidelines from the US Office of Civil Rights, Missouri S&T requires that all faculty and staff members

report, to the Missouri S&T Title IX Coordinator, any notice of sexual harassment, abuse, and/or violence (including personal relational abuse, relational/domestic violence, and stalking) disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Missouri S&T's Title IX Coordinator is Vice Chancellor Shenethia Manuel. Contact her directly (manuels@mst.edu; (573) 341-4920; 113 Centennial Hall) to report Title IX violations. To learn more about Title IX resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit <http://titleix.mst.edu>.