**Data Structures

IST 236 – 101, CRN 2640

Fall 2015 | Course Syllabus

# Course Details

**Meeting Times:** Tuesday and Thursday, 9:30AM – 10:45PM

**Location:** Weisburg Family Applied Engineering Complex (WAEC) Rm. 1104

**Course Description:** This is a three (3) credit hour course. This course covers fundamental topics of information technology including the concepts of object-orientation, linear data structures, data representation, data manipulation algorithms and their applications, and project participations.

**Prerequisites**: IST 163 Programming Practicum with C++

**Required Texts: Starting Out with C++ Early Objects Eighth Edition**, Gaddis et al.

ISBN#: 9780133360929

# Instructor

**Name:** Matthew Mundell

**Office:**  Prichard Hall 208

**Phone:**  (304) 696-3436

**Email:**  mundell2@marshall.edu

**Office Hours:** Tuesday 12:30PM – 1:30PM

Thursday 12:30PM – 4:00PM

Or by appointment.

# Objectives

There will be three (3) contact hours of classroom lecture and discussion per week. Coursework will include classroom lectures, assignments, and exams along with in-class discussion.

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| **Learning Outcomes** | **Practice** | **Assessment** |
| Students will be able to demonstrate a disciplined approach to problem solving methods using data structures. | In class lecture and hands-on examples and discussion | Assignments 1-8, Midterm Exam, Final Exam |
| Students will learn to use specific data structures such as linked lists, stacks and queues. | In class lecture and hands-on examples and discussion | Assignments 7, 8, Final Exam |
| Students will be able to provide a clear understanding of the concepts of data abstraction and abstract data types. | In class lecture and hands-on examples and discussion | Assignments 3-4, Midterm Exam |
| Students will be able to demonstrate the concepts of proper object oriented programming. | In class lecture and hands-on examples and discussion | Assignments 1-8, Midterm Exam, Final Exam |
| Students will be able to program using recursion. | Lecture and in class hands-on practice | Assignment 5, Final Exam |

# Policies

## Computer Requirements

Course materials will be provided through MUOnline (<http://www.marshall.edu/muonline/>). Class announcements and other communications will be sent using your Blackboard account. You can reach me by emailing me through MUOnline or at my Marshall email (mundell2@marshall.edu). Please use your official Marshall University email address when sending class related communications. It’s good practice to check your email and MUOnline frequently (at least once a day). If you have a smart phone, I encourage you to setup your Marshall account on it so you get notified as soon as possible when you receive email.

Assignments will rely on Microsoft Visual Studio 2013. This is provided on university computers. As students in the IST Department, you also have access to put these on your personal computers through your DreamSpark accounts accessible via <http://www.marshall.edu/isat/software/>.

## Grading

Coursework will account for the following percentages of your final grade:

Assignments: 60%

Midterm Exam: 20%

Final Exam: 20%

Final letter grades are determined based on the following scale:

90-100% A

80-89% B

70-79% C

60-69% D

0-59% F

The instructor reserves the right to change these values depending on overall class performance and/or extenuating circumstances.

### Submission Guidelines

Assignments will be given and turned in through MUOnline unless otherwise noted. Programming projects should be submitted as a compressed .zip file containing all relevant files, including solution (.sln), source and header files, .exe, and output files if applicable. Submissions should follow the following naming convention:

 IST236\_*LastName*\_*FirstInitial*\_*AssignmentName*.zip

### Assessment of Work

Grading of coursework will primarily be based on correctness; in other words if a given program compiles without error and exhibits the required functionality. However, the following will also be considered in grading programming projects:

 Coding Efficiency

 Documentation

 Readability (Indentation, consistent naming schemes, etc.)

 Robustness (How easily can your code be broken?)

### Late Policy

Assignments will be due by midnight on the date specified. Assignments turned in late will be accepted at a penalty of 10% of the assignments value per day late. For example, if an assignment is due Thursday Sept. 3 at 11:59PM and it is turned in at 4:00AM Monday Sept. 7, the maximum grade it can receive is 60%. Remember, it is still much better to get a 60% and the experience than to get no credit at all.

## Attendance

Attending class is your best opportunity to practice the course materials, ask questions, and learn firsthand. Regular attendance will improve your ability to complete assignments and exams and give you more experience to draw from when applying the skills you learn here in your personal and professional activities.

However, while highly recommended, attendance is NOT mandatory and your grade will not be directly impacted by a missed class. You are still responsible for all assignments and exams. If you have obligations which will cause you to miss an exam and inform me ahead of time OR you provide a University Excused Absence for an exam day, a make-up exam time will be arranged. Otherwise, missed exams will receive a grade of zero (0).

## Inclement Weather

Students can find information concerning Marshall’s policy regarding inclement weather regarding inclement weather online via <http://www.marshall.edu/ucomm/weatheremergency-closings/>. Please note that a two-hour delay means that classes that begin at 10:00 a.m. begin on time. Classes that begin at 9:30 a.m. meet at 10:00 a.m. and continue for the remaining period of that class.

## Withdrawal Policy

This course follows standard University policy for withdrawals. The last day to drop this course with a “W” is October 30.

## Cell Phones

Please be respectful of others and set your phone to ‘Silent’ or ‘Vibrate’ during class. If you need to take a call, please take it outside.

## Academic Dishonesty

As described in the Marshall University Creed, Marshall University is an “Ethical Community reflecting honesty, integrity and fairness in both academic and extracurricular activities. ”Academic Dishonesty is something that will not be tolerated as these actions are fundamentally opposed to “assuring the integrity of the curriculum through the maintenance of rigorous standards and high expectations for student learning and performance” as described in Marshall University’s Statement of Philosophy. A student, by voluntarily accepting admission to the institution or enrolling in a class or course of study offered by Marshall University accepts the academic requirements and criteria of the institution. It is the student’s responsibility to be aware of policies regulating academic conduct, including the definitions of academic dishonesty, the possible sanctions and the appeal process. For the purposes of this policy, an academic exercise is defined as any assignment, whether graded or ungraded, that is given in an academic course or must be completed toward the completion of degree or certification requirements. This includes, but is not limited to: Exams, quizzes, papers, oral presentations, data gathering and analysis, practical and creative work of any kind.

If you are found cheating on projects or plagiarizing answers from the Internet or other sources there will be no second chance. In this course, STUDENTS ARE NOT TO “COPY & PASTE” MATERIAL FROM A SOURCE INTO ANY ASSIGNMENT UNLESS SPECIFICALLY AUTHORIZED BY THE INSTRUCTOR. Your penalty is that you will receive a failing grade for the course. In those cases in which the offense is particularly flagrant or where there are other aggravating circumstances, additional, non-academic, sanctions may be pursued through the Office of Judicial Affairs. Notice of an act of academic dishonesty will be reported to the Department Chair, Dean of the College of Science, and to the Office of Academic Affairs. Please refer to the Marshall University Undergraduate Catalog for a full definition of academic dishonesty.

## University Policy

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to [www.marshall.edu/academic-affairs/policies/](http://www.marshall.edu/academic-affairs/policies/).

*Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment*

# Schedule

The following is a tentative class schedule with topics and due dates. Please note this may change based on class progress or extenuating circumstances.

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| --- | --- | --- | --- | --- |
| Week 1 | T | August 25 | Overview and Syllabus |  |
| R | August 27 | Chapter 10 |  |
| Week 2 | T | September 1 | Chapter 10 |  |
| R | September 3 | Chapter 10 | Assignment 1 Given |
| Week 3 | T | September 8 | Chapter 7 |  |
| R | September 10 | Chapter 7 |  |
| Week 4 | T | September 15 | Chapter 7 | Assignment 1 Due, 2 Given |
| R | September 17 | Chapter 11 |  |
| Week 5 | T | September 22 | Chapter 11 |  |
| R | September 24 | Chapter 11 | Assignment 2 Due, 3 Given |
| Week 6 | T | September 29 | Chapter 15 |  |
| R | October 1 | Chapter 15 |  |
| Week 7 | T | October 6 | Chapter 15 | Assignment 3 Due |
| R | October 8 | Review |  |
| Week 8 | T | October 13 | Midterm Exam |  |
| R | October 15 | Chapter 14 |  |
| Week 9 | T | October 20 | Chapter 14 | Assignment 4 Given |
| R | October 22 | Chapter 16 |  |
| Week 10 | T | October 27 | Chapter 16 |  |
| R | October 29 | Chapter 16 | Assignment 4 Due, 5 Given |
| Week 11 | T | November 3 | Chapter 17 |  |
| R | November 5 | Chapter 17 |  |
| Week 12 | T | November 10 | Chapter 17 | Assignment 5 Due, 6 Given |
| R | November 12 | Chapter 18 |  |
| Week 13 | T | November 17 | Chapter 18 |  |
| R | November 19 | Chapter 19 | Assignment 6 Due, 7 Given |
| Week 14 | T | November 24 | No Class – Thanksgiving Break |  |
| R | November 26 | No Class – Thanksgiving Break |  |
| Week 15 | T | December 1 | Dead Week, Chapter 19 |  |
| R | December 3 | Dead Week, Final Review | Assignment 7 Due |
| Week 16 | T | December 8 | Final Exam – 8:00AM – 10:00AM |  |
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