# Course Details

**Course ID:** CIT 236: Data Structures – Section 102 – CRN 4620

**Meeting Times:** Tuesday and Thursday 11:00AM – 12:15PM

**Location:** Weisburg 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 participation.

**Prerequisites**: CIT or IST 163: Introduction to Programming

**Required Texts:** *C++ Programming From Problem Analysis to Program Design*, by D.S. Malik, 8th Edition. ISBN: 9781337102087. Publisher: Cengage Learning

Please pick the option most affordable for you; If you have Cengage Unlimited ($119.99/semester), you already have access to the e-book version of our textbook. This is probably the cheapest option if you use Cengage books in multiple classes. Otherwise, consider using an e-book version or rental version, as the full paperback version is more expensive than I would like.

You do NOT need the ‘Digital Platform/MindTap’ version which provides online exercises, quizzes, etc. unless you want those for your own benefit. If you got that last semester and still have access, you can continue using it and don’t need to purchase anything else.

# Instructor

**Name:** Matthew Mundell

**Office:**  Morrow Library 103

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

**Email:**  [mundell2@marshall.edu](mailto:mundell2@marshall.edu)

**Office Hours:** MWF: 12 – 1PM

TR: 9:30 – 11AM

Or by appointment.

Also, a tutor is available in Morrow Library 102 at the following times:

MW: 12:30 - 1:30PM

TR: 8:30 - 10:45AM

F: 8:30 - 11:30AM, 12:30 - 4:30PM

# 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, discussion, readings and hands-on examples | Assignments 1-8, Midterm Exam, Final Exam |
| Students will be able to demonstrate the concepts of proper object oriented programming. | In class lecture, discussion, readings and hands-on examples | Assignments 1-8, Midterm Exam, Final Exam |
| Students will be able to provide a clear understanding of the concepts of data abstraction and abstract data types. | In class lecture, discussion, readings and hands-on examples | Assignments 3-4, Midterm Exam, Final Exam |
| Students will be able to program using recursion. | In class lecture, discussion, readings and hands-on examples | Assignment 5, Final Exam |
| Students will learn to use specific data structures such as linked lists, stacks and queues. | In class lecture, discussion, readings and hands-on examples | Assignments 7-8, Final Exam |

# 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](mailto: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 highly recommend you setup your Marshall account on it so you get notified as soon as possible when you receive email.

Coursework will rely on Microsoft Visual Studio 2019. This is provided on university computers. You can download the community edition for free at <https://visualstudio.microsoft.com/downloads/>. For Mac users, you can use XCode, or for Linux users you can use Visual Studio Code or Code Blocks instead.

# Grading

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

Assignments: 50%

Midterm Exam: 15%

Final Exam: 15%

Readings: 10%

Attendance 10%

Notice that ***assignments are* *the biggest chunk of your grade***. Don’t expect to pass if you only show up on exam days and never submit anything.

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:

CIT236\_*LastName*\_*FirstInitial*\_*AssignmentName*.zip

## Assessment of Work

Grading of coursework will primarily be based on correctness and in the case of larger projects, completeness of provided requirements; in other words, if a given program compiles without error and exhibits the required functionality. However, points may also be deducted for redundant or unnecessary code, lack of proper documentation, poor readability (indentation, naming schemes, etc.), lack of robustness (how easily your code can be broken), and warnings or logical errors.

While students are encouraged to help each other learn and study, **you are responsible for turning in your own work**. If you give or receive assistance to/from another student, please include a comment about it with your submission, or it may be investigated as Academic Dishonesty (see below).

## Attendance

Attendance is worth 10% of your final grade. The attendance portion of your grade will be reduced by **5% for each unexcused absence after your 3rd**. (In other words, you can miss 3 classes at no penalty. If you miss 4 with no official excuse, your attendance grade will drop to 95%, and so on).

Class will involve a lot of hands on examples, practice programs and opportunities for me to walk around and look at your code and answer any questions you have 1-on-1. So please come to class every day!

If you miss 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).

## Late Policy

Unless otherwise noted, all assignments are due by midnight on the provided due date. Assignments turned in late will receive a penalty of **5% off per day late after the first day** (so if you are 5 minutes late there will be no penalty, 1 day late and it will be 5% off, 2 days will be 10% off, etc.). No late work will be accepted after **Friday, December 13**.

If you have trouble understanding something which prevents you from completing an assignment on time, please ask in class, email or visit my office during office hours and I will happily help you. And remember, if you have to turn something in late, a few points **and** **the experience** are better than nothing.

# University Policies

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*

## Withdrawal Date

This course follows standard University policy for withdrawals. The last day to drop this course with a “W” is **Friday, October 25**.

## 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.

## 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.

# Schedule

The following is a tentative class schedule with topics and due dates. This can change based on class progress or extenuating circumstances.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week 1 | T | 27-Aug | Overview and Syllabus, Review |  |
| R | 29-Aug | Review of Chapters 1-8 |  |
| Week 2 | T | 3-Sep | Chapter 9: Structs | Reading 1 Due |
| R | 5-Sep |  | **Assignment 1 Due** |
| Week 3 | T | 10-Sep | Chapter 10: Objects and Classes | Reading 2 Due |
| R | 12-Sep |  |  |
| Week 4 | T | 17-Sep | Chapter 11: Inheritance | Reading 3 Due |
| R | 19-Sep |  | **Assignment 2 Due** |
| Week 5 | T | 24-Sep | Chapter 12: Pointers | Reading 4 Due |
| R | 26-Sep |  |  |
| Week 6 | T | 1-Oct | Chapter 12: Polymorphism | Reading 5 Due By Thursday 7.23 |
| R | 3-Oct |  | **Assignment 3 Due 7.24** |
| Week 7 | T | 8-Oct | Chapter 13: Overloading | Reading 6 Due Tuesday 7.27 |
| R | 10-Oct | Midterm Review |  |
| Week 8 | T | 15-Oct | Midterm Exam |  |
| R | 17-Oct | Chapter 13: Templates | **Assignment 4 Due 7.29** |
| Week 9 | T | 22-Oct |  |  |
| R | 24-Oct | Chapter 14: Exceptions | Reading 7 Due Wednesday 7.28 |
| Week 10 | T | 29-Oct | Chapter 15: Recursion |  |
| R | 31-Oct |  | **Assignment 5 Due** |
| Week 11 | T | 5-Nov | Chapter 16: Vector | Reading 8 Due 7.30 |
| R | 7-Nov |  |  |
| Week 12 | T | 12-Nov | Chapter 17: Linked Lists | Reading 9 Due 7.31 |
| R | 14-Nov |  | **Assignment 6 Due** |
| Week 13 | T | 19-Nov | Chapter 18: Stacks & Queues | Reading 10 Due |
| R | 21-Nov |  | **Assignment 7 Due** |
| Week 14 | T | 26-Nov | Thanksgiving Break – University Closed | |
| R | 28-Nov |
| Week 15 | T | 3-Dec | Dead Week; Advanced Topics |  |
| R | 5-Dec | Final Review |  |
| Week 16 | R | 12-Dec | 10:15AM – 12:15PM Final Exam | **Assignment 8 Due** |