

Course Syllabus - Spring 2015

Course Title/Number: Algorithms / IST238

Location: Prichard Hall 200

Times: MWF, 11:00am – 11:50am

Instructor: Dr. Alice Lin

Office: 346 Old Main

Phone: (304) 696-6418

E-Mail: lina@marshall.edu

Office hours: MW 12:00 - 1:00, 2:15 - 2:45, PH 200

T 3:15 - 3:45, PH 200

MW 2:45 – 3:45, My Office

T 3:45 – 4:15, My Office

Other times by appointment

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 and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to 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

Course Description: From Catalog

Covers algorithm-design methods, algorithm performance analysis, and optimization techniques. Covers algorithm applications used in solving frequently occurring problems, such as pattern matching, data compression, searching, and sorting.

Textbook:

Data Structures and Algorithms in C++, 4th Edition

Author: Adam Drozdek

ISBN-10: 1133608426

ISBN-13: 9781133608424

Publisher: Cengage Learning

Copyright Year: 2013

Credit:

The course is three (3) credit hours. It includes classroom lectures, exams, homework assignments and a project.

Course Student Learning Outcomes and Assessment Measures:

Course student learning outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
The student should be able to create and use C++ classes to implement basic data structures (stacks, queues, linked lists, hash tables, and trees).	In-class lectures, in-class examples and in-class exercises.	Homework, a project and exams
The student should be able to design and code programs for application areas in which these data structures would be useful.	In-class lectures, in-class examples and in-class exercises.	Homework, a project and exams
The student should be able to analyze the complexity of algorithms, and solve problems computationally through the application of fundamental data structures and algorithms.	In-class lectures, in-class examples and in-class exercises.	Homework, a project and exams

Grading Policy:

Homework – 30%

Project - 15%

Midterm Exam - 20%

Final Exam - 35%

Final letter grades are determined based on the following grading scale:

90-100% A

80-89% B

70-79% C

60-69% D

Below 60 F

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

Attendance Policy:

Attendance is strongly encouraged. Lecture material will not be reiterated for persons failing to attend a previous session. It is the student's responsibility to meet with instructor to discuss absences due to illness or other reasons. The university attendance policy will apply for excused absences.

Withdrawal Policy:

The University withdrawal policy is followed in this course. The last day to drop an individual course for the Spring Semester is March 27, 2015.

Course Schedule:

Please note this is a tentative schedule. The instructor reserves the right to make changes as appropriate based on the progress of the class.

Week	Start date	Topics, Due dates
1	1/12	Syllabus, Review C++
2	1/19	Martin Luther King, Jr. Holiday, Complexity Analysis
3	1/26	Complexity Analysis
4	2/2	Linked Lists
5	2/9	Stacks and Queues
6	2/16	Recursion (Homework 1 due)
7	2/23	Binary Trees
8	3/2	Midterm Exam
9	3/9	Multiway Trees
10	3/16	Spring Break, Classes dismissed
11	3/23	Graphs (Homework 2 due)
12	3/30	Graphs
13	4/6	Sorting
14	4/13	Hashing
15	4/20	Present your project (Homework 3 due)
16	4/27	Dead Week (Project due)
17	5/4	Final Exam