



Boise State University-Meridian Technical Charter High
School
Concurrent Enrollment



CS 221: Computer Science 2/Software Applications 2024 (3 credits) 2 Credits MTCHS

Instructor: Duane Erickson

Location: Meridian Technical Charter High School

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Required Texts/Web:

*Java Foundations: Introduction to Program Design and Data Structures, 3rd edition
by John Lewis, Peter DePasquale, and Joseph Chase..*

Class Web Page

<http://mtchs.moonami.com/course/view.php?id=252>

Course Description:

Object-oriented design including inheritance, polymorphism, and dynamic binding. Graphical user interfaces. Recursion. Introduction to program correctness and testing/analysis of time/space requirements. Basic data structures: lists, collections, stacks, and queues. Basic searching and sorting. PREREQUISITES: COMPSCI 121.

Course Objectives:

At the end of this course, the student is expected to be able to

- understand Object-Oriented Design including inheritance and polymorphism,
- determine basic space/run-time requirements of algorithms and code fragments,
- evaluate trade-offs in algorithm selection for a variety of problems,
- understand abstractions used for lists, stacks, queues, and collections,
- analyze and decompose complex problems in terms of algorithmic and data structure design,
- use an Integrated Development Environment effectively

Attendance

Students are expected to attend all classes.

MTCHS students taking the class for high school credit only

MTCHS students not taking the class for college credit will have the same grading policies with the exception that they may follow the MTCHS redo policy for tests, programming and homework assignments.

Assignments:

Programming Projects

There will be several programming projects throughout the semester. Written communication skills are assessed in documentation for programming projects.

- Programming projects require the implementation of working programs using the language constructs and techniques introduced in class.
- Programs must be written individually. Students who copy programs or sections of programs from each other or from any other source will be considered to be cheating as will students who allow their programs to be copied. See Academic Honesty section below for more information.
- Programs must run on the instructor's test computer. Any programming project that does not compile and run on will be awarded a score of 0 points. In order to improve that score, students must spend enough time with the instructor or a tutor to get the program running.
- Programs must be submitted by midnight the day they are due. Late programs are subject to a deduction of 10% every 2 days from the maximum possible score (e.g. a perfect program is worth 100 points if submitted before midnight and is only worth 90 points at 12:00 AM the second day). Programs will not be accepted more than 4 days late.

Exams and Quizzes

In-Class Quizzes

Quizzes will be given in class over assigned reading and/or material covered in class. In-class quizzes must be taken in class on the day they are given. Make-up quizzes will not be granted.

Final Exam

The final exam date is shown on the course website. Unless alternate arrangements are made in advance, only officially excused absences will be accepted for missing an exam. Any resources allowed for exams will be at the instructor's discretion.

Grading Policy

- Programming Projects and Assignments: 50%
- Quizzes: 25%
- Final Exam: 25%

Final Grade Scale:

A = 90% – 100%

B = 80% – 89%

C = 70% – 79%

D = 60% – 69%

F = 0% – 59%

Student Code of Conduct

Please note that high school students enrolled in concurrent credit classes are held to the same student standards found in the Boise State University Student Code of Conduct.

Official University Academic Dishonesty Policy

Overview reproduced below. The full policy and procedures may be found at

<http://deanofstudents.boisestate.edu/academic-dishonesty>

The term "academic dishonesty" may include cheating, plagiarism, or other forms of academic dishonesty. All assignments submitted by a student must represent her/his own ideas, concepts, and current understanding or must cite the original source. Attempts to violate the academic integrity of an assignment do not have to be successful to be considered academic dishonesty. Academic dishonesty may include, but is not limited to:

1. Stealing and/or Possessing Unauthorized Material: The unauthorized appropriation, possession or use of the property of another; the forgery or misuse of documents;
2. Fabrication and Falsification: The unauthorized alteration or invention of any information or citation;
3. Multiple Submission: The submission of substantial portions of the same assignment for credit more than once without the prior permission of all involved faculty members;
4. Abuse of Academic Material: Destroying, stealing, or making inaccessible library or other academic resource material;
5. Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another commit an act of academic dishonesty.

Procedures for Breach of Academic Misconduct

First offense: Student will receive a 0 on the assignment and an Academic Misconduct Report Form will be submitted to the Office of the Dean of Students.

Second offense: Student will receive an F in the course and an Academic Misconduct Report Form will be submitted to Office of the Dean of Students.

Academic Misconduct Form:

http://deanofstudents.boisestate.edu/wp-content/uploads/2014/10/Academic_Dishonesty_Report_Form.pdf

Class Schedule: M-F, August – December

Seniors: 7:45 - 9:33 AM

Week 1	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Encapsulation Review <p>Assigned Project – Grid Monitor</p>
Week 2	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Inheritance • Polymorphism <p>Assigned Project – Poly Painter</p>
Week 3	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Exceptions <p>Quiz 1 – Inheritance & Polymorphism</p> <p>Assigned Project - Debugging</p>
Week 4	<p>Topics and Notes</p> <p>Assigned Project – Format Checker</p>
Week 5	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Analysis <p>Assigned Project – Analysis of Algorithms</p>
Week 6	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Abstraction • ADTs <p>Quiz 2 –Exceptions & Analysis</p> <p>Assigned Project – List Testing (Part 1)</p>
Week 7	<p>Topics and Notes</p> <ul style="list-style-type: none"> • ADTs <p>Assigned Project – List Testing (Part 2)</p>
Week 8	<p>Topics and Notes</p> <ul style="list-style-type: none"> • ArrayList with Iterator <p>Quiz 3 –ADTs</p> <p>Assigned Project – ArrayList</p>
Week 9	<p>Topics and Notes</p> <ul style="list-style-type: none"> • ArrayList with Iterator
Week 10	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Single-linked list with Iterator <p>Quiz 4 –Lists (Part 1)</p> <p>Assigned Project – SingleLinkedList</p>
Week 11	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Single-linked list with Iterator
Week 12	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Double Linked List with Lister Iterator <p>Quiz 5 –Lists (Part 2)</p> <p>Assigned Project – Double Linked List</p>
Week 13	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Recursion <p>Assigned Project – Recursive List Sort</p>
Week 14	<p>Topics and Notes</p> <ul style="list-style-type: none"> • Searching and Sorting <p>Assigned Project – Circuit Tracer</p>
Week 15	<p>Topics and Notes</p> <p>Quiz 6 –Recursion, Searching and Sorting</p> <p>Assigned Project – Double Linked List</p>
Week 16	Final Exam