

LEARNING OUTCOMES:

As a result of taking this course, students will gain the ability to:

- analyze problems, design algorithms and data structures to implement computational solutions to problems using an object oriented computer language.
- design and implement object oriented classes, using inheritance and polymorphism.
- design and implement array based and linked data structures like: strings, stacks, queues, lists, trees, heaps, sets, dictionaries and graphs.
- design and implement efficient accessor and mutator methods for data structures.
- describe and implement common algorithms related to searching, sorting, traversals, and hashing. (This includes recursive algorithms.)

TRANSFERABILITY:

University of Alberta
University of Calgary *
University of Lethbridge *
Athabasca University
Augustana Faculty, University of Alberta
Concordia University College
Canadian University College
King's University College
Grant MacEwan University

* An asterisk (*) beside any transfer institution indicates important transfer information. Consult the Alberta Transfer Guide.

***Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities.** Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page <http://www.transferralberta.ca> or, if you do not want to navigate through few links, at <http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2>

**** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

EVALUATIONS:

Assignments	25%
Quiz	10%
Midterm Exam	25%
Final Exam	40%

GRADING CRITERIA:

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines	Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100	C+	2.3	67-69
A	4.0	85-89	C	2.0	63-66
A-	3.7	80-84	C-	1.7	60-62
B+	3.3	77-79	D+	1.3	55-59
B	3.0	73-76	D	1.0	50-54
B-	2.7	70-72	F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Sequence	Topic
1	Introduction and Review
2	Strings and Files
3	Thinking in Objects (Introduction to the Stack)
4	Inheritance and Polymorphism
5	Binary Search
6	Abstract Classes, Interfaces, and Object Oriented Design
7	Exception Handling
8	Array Based Lists and Stacks
9	Recursion
10	Algorithm Analysis and Sorting (n^2 and $n \log_2 n$)
11	Linked Lists
12	Stacks and Queues
13	Trees
14	The Heap
15	Hashing
16	Graphs
17	Generics and Iterators

STUDENT RESPONSIBILITIES:

Assignments are to be handed in and/or demonstrated in the scheduled lab on the due-date. Late assignments will **not** be accepted. Students will be eligible for a passing grade, only if they obtain 37.5 out of a possible 75 marks (on exams).

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at <http://www.gprc.ab.ca/about/administration/policies/>

**Note: all Academic and Administrative policies are available on the same page.

Additional Information:

CS 1150 A3	Instructor	Room	Day	Time
Lecture	David Gregg	J228	Tuesday, Thursday	11:30 to 12:50
Lab	David Gregg	J101	Wednesday	14:30 to 17:20