



DEPARTMENT OF SCIENCE

COURSE OUTLINE - CS2040

ALGORITHMS -FALL 2014

INSTRUCTOR: franco carlacci
OFFICE: c422
OFFICE HOURS:TBA

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PREREQUISITE(S)/COREQUISITE:

Prerequisite : cs1150, cs2720, ma1130

REQUIRED TEXT/RESOURCE MATERIALS:

Introduction to the Design and Analysis of Algorithms, 3rd Edition, Anany V. Levitin, Addison-Wesley; 2012.

I will also provide powerpoint slides on the website <http://www.carlacci.com>

CALENDAR DESCRIPTION:

The first course of a two course sequence on algorithm design and analysis stream, with the emphasis on the fundamentals such as searching, sorting and graph algorithms. Examples include divide and conquer, dynamic programming, greedy method, backtracking, and local search methods. Analysis techniques will be developed to aid in judging program efficiency.

CREDIT/CONTACT HOURS: 3 credits (3-0-1) / 60 contact hours

DELIVERY MODE(S): classroom

OBJECTIVES (OPTIONAL):

TRANSFERABILITY:

University of Alberta ,University of Calgary ,University of Lethbridge ,
Athabasca University , Augustana Faculty, University of Alberta , Concordia
University College , GMU, King's University College

** 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

GRADING CRITERIA:

GRANDE PRAIRIE REGIONAL COLLEGE		
GRADING CONVERSION CHART		
Alpha Grade	4-point Equivalent	Percentage Guidelines
A⁺	4.0	90 – 100
A	4.0	85 – 89
A⁻	3.7	80 – 84
B⁺	3.3	77 – 79
B	3.0	73 – 76
B⁻	2.7	70 – 72
C⁺	2.3	67 – 69
C	2.0	63 – 66
C⁻	1.7	60 – 62
D⁺	1.3	55 – 59
D	1.0	50 – 54
F	0.0	0 – 49
WF	0.0	0

EVALUATIONS:

Assignments	: 20%
Quizzes	: 20%
Midterm	: 25%
Final	: 35%

Assignments that are less than one week late will be penalized 50%; assignments submitted after that period will receive a grade of 0. Please note that you must submit ALL assignments (even late ones!) if you want the assignment portion to count towards your final grade.

STUDENT RESPONSIBILITIES:

1. Student are responsible for adhering to all requirements laid out in the assignments.
2. Students must attend all lectures/labs. A student missing more than 20% of classes/labs may be barred from writing the final exam.
3. Students must submit ALL assignments (even late ones) if they want the assignment portion to count towards your final grade.

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the College Policy on Student Misconduct

https://www.gprc.ab.ca/files/forms_documents/Student_Misconduct.pdf

Note : all Academic and administrative policies are available at

<https://www.gprc.ab.ca/about/administration/policies/>

COURSE SCHEDULE/TENTATIVE TIMELINE:

Introduction

Fundamentals of Analysis of Algorithm efficiency

Brute Force and Exhaustive Search

Decrease-and-Conquer

Divide-and-Conquer

Transform-and-Conquer

Space and Time Trade-offs

Dynamic Programming

Greedy Technique

Iterative Improvement

Limitations of Algorithm Power

Coping with Limitations of Algorithm Power