DEPARTMENT OF SCIENCE

COURSE OUTLINE – CS 2040
ALGORITHMS I

INSTRUCTOR: David Gregg   **PHONE:** 780 539 2976
OFFICE: C-427   **E-MAIL:** dgregg@gprc.ab.ca

OFFICE HOURS: TBA and by prior arranged appointment

PREREQUISITE(S)/CO-REQUISITE: CS 1150, CS 2720, MA 1130 prerequisite.

REQUIRED TEXT/RESOURCE MATERIALS: Introduction to the Design and Analysis of Algorithms, 2nd ed; Anany V. Levitin; Addison-Wesley; 2007. Please make good use of the on-line and library resources related to algorithms also.

DESCRIPTION:

This is the first course of a two course sequence on algorithm design and analysis, with the emphasis on fundamentals such as searching, sorting and graph algorithms. Topics include algorithm analysis-running time, Big–O, Big–Ω, Big–Θ, recursion, recurrence, induction, brute force algorithms, divide and conquer, space vs. time, dynamic programming, greedy algorithms, and the limitations of algorithm power.

COURSE LAYOUT: This course is three lecture hours and 1 lab hour per week. Student grades and course information (notes, assignments etc) will be posted on the GPRC moodle system (moodle.gprc.ab.ca). It is the student's responsibility to check their "gprcstudents.net" email account for announcements related to the course.

CREDIT/CONTACT HOURS: 3(3-0-1)

TRANSFERABILITY: UA, UL, AU, AF, CU, KUC, UC. See the GPRC College Calendar and the Alberta Transfer Guide

GRADING CRITERIA:

The total percentage obtained in the course will be converted to a letter grade according to the GPRC grading conversion chart as published in the GPRC College Calendar.

EVALUATION:

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

STUDENT RESPONSIBILITIES: Assignments are to be handed in and/or demonstrated in the scheduled lab on the due-date. Late assignments will be penalized by 50%. Late assignments may not be accepted after the end of classes. Some assignments may be weighted differently than others. Students will be eligible for a passing grade, **only if** they obtain 40 out of a possible 80 marks (on exams and quizzes). Students who are absent for more than 20% of lectures may be barred from writing the final examination and will receive a grade of F.

It is the student's responsibility to check their "gprcstudents.net" email account for announcements related to the course.

STATEMENT ON PLAGIARISM AND CHEATING:

Please refer to pages 49-50 of the College calendar regarding plagiarism, cheating and the resultant penalties. These are serious issues and will be dealt with severely.