COQUITLAM COLLEGE
Established 1982

COURSE OUTLINE

Last Revised: May 2014

COURSE INFORMATION

Course Title: Quantitative Methods I   **Course Number:** STAT 290   **Credits:** 3

Total Weeks: 14 (Fall, Spring)   **Total Hours:** 39   **Course Level:** ☐ First Year   ☒ Second Year
12 (Summer)   ☐ New   ☐ Revised Course
                                                                                         ☐ Replacement Course

Department: Math / Statistics   **Department Head:** G. Belchev   **Former Course Code(s) and Number(s) (if applicable):** N/A

Pre-requisites (If there are no prerequisites, type NONE): MATH 111 with MATH 112 recommended

Co-requisite Statement (List if applicable or type NONE): NONE

Precluded Courses: N/A

COURSE DESCRIPTION

This course provides students with an introduction to operations research. Linear programming models are used to formulate a variety of problems of optimal allocation of resources. Complex decision problems are analyzed via simulation and include an introduction to probability and statistics to deal with uncertainty.

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Formulate a business problem into its mathematical model via LP (Linear Programming) Formulation.

- Solve LP by graphical method.

- Solve LP by Excel Spreadsheet.

- Formulate and solve a transportation (assignment) problem.

- Understand the project management (PERT/CPM).

- Understand the probability models – Binomial Distribution, Poisson Distribution, Uniform Distribution, Normal Distribution, and Exponential Distribution.

- Understand the decision theory.

INSTRUCTION AND GRADING

Instructional (Contact) Hours:

Type	Duration
Lecture	39
Seminars/Tutorials	
Laboratory	
Field Experience	
Other (*specify*):	
Total	39

COURSE OUTLINE

Grading System: Letter Grades ☒   Percentage ☐   Pass/Fail ☐   Satisfactory/Unsatisfactory ☐   Other ☐

Specify passing grade: 50%

Evaluation Activities and Weighting (total must equal 100%)

Assignments: 12.5% *Specify number of, variety, and nature of assignments:*	Lab Work: %	Participation: % *Specify nature of participation:*	Project: % *Specify nature of project:*
Quizzes/Test: 12.5%	Midterm Exam: 30%	Final Exam: 45%	Other: % *Specify:*

TEXT(S) AND RESOURCE MATERIALS
Provide a full reference for each text and/or resource material and include whether required/not required.

Commerce 290: Introduction to Quantitative Decision Making
Some selected chapters from Spreadsheet Modeling and Applications, Albright and Winston, Thompson Learning Inc, 2005; and Quantitative Methods for Business 9th edition, Anderson, Sweeney and Williams, Thompson 2004.

COURSE TOPICS
List topics and sequence covered.

Week	Topic	Chapter
Week 1	Introduction to modeling	1 – part 1
Week 2	LP Formulation	4 – part 1
Week 3	LP Formulation and graphical method	4 – part 1
Week 4	Solving LP problems with Excel Spreadsheet	3, 4 – part 1
Week 5	The art of Spreadsheet modeling	2, 3 – part 1
Week 6	Spreadsheet modeling and Transportation Problems	2, 5 – part 1
Week 7	Network models **MIDTERM EXAM**	5 – part 1
Week 8	Network models (PERT/CPM)	5 – part 1
Week 9	Introduction to Probability	2 – part 2
Week 10	Introduction to Probability; Probability Distributions	2, 3 – part 2
Week 11	Probability Distributions	3 – part 2
Week 12	Decision Analysis	4 – part 2
Week 13	Decision Analysis, and Simulation (if time permits)	4 – part 2

Week 14   **FINAL EXAM**

NOTES
1. Students are required to follow all College policies. Policies are available on the website at: Coquitlam College Policies
2. To find out how this course transfers, visit the BC Transfer Guide at: bctransferguide.ca