Alexander College
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# CURRICULUM GUIDE: OFFICIAL COURSE OUTLINE

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|---|---|---|---|---|---|---|
| Course Code | COMM 290 | Course Title | Introduction to Quantitative Decision Making | | | |
| Credit Value | 3 | Department | Commerce | | | |
| No. of weeks | 14 | Hrs. per week | *Lecture* | *Tutorial* | *Laboratory* | *Total* |
| | | | 3 | 0 | 0 | 3 |
| Course Description | This course introduces the student to the tools and value of using spreadsheet models in the solution of business problems. Students will learn to formulate, revise, and solve models, as well as interpret computer output for communicating useful information to management. Likewise, students will be introduced to the quantitative methods of business using statistics, particularly probability and probability distributions. linear programming, non-linear programming and forecasting tools. | | | | | |
| Prerequisite(s) | ENGL 098, MATH 104 | | | | | |

| Initial Articulation Targets | *UBC* | *SFU* | *UVic* | *UNBC* | *TRU* |
|---|---|---|---|---|---|
| | COMM 190 (3) | BUS 1XX (3) | MATH 1XX (1.5) | | MATH 1070 (3) |
| | For updated information on the transferability of this course, please consult the BC Transfer Guide, www.bctransferguide.ca | | | | |

**Learning Outcomes**

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

- Explain the significance and use of quantitative methods in business operations, problem-solving, and decision-making
- Use and apply the variety of statistical and quantitative techniques which are applicable to realistic and practical business solutions
- Recognize and apply specific quantitative techniques in problem-solving for management decision-making
- Analyze, create and design a business model
- Use statistics in solving business problems
- Use linear and non-linear programming in solving business problems
- Explain the probability theory, its relation to statistics, and its application to business
- Apply sampling methodologies and analysis to business cases
- Use historical data to obtain point and interval predictions as well as forecasts
- Conduct and interpret business statistical hypothesis tests
- Critically interpret statistical and econometric results.



**Alexander College**
Main Campus 4805 Kingsway, Burnaby, BC V5H 4T6
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<table>
<tr><td>Content</td><td colspan="3">Core topics – all of the following will be covered:<ul><li>Introduction to spreadsheet modeling</li><li>Linear programming (LP) using Excel-based models</li><li>LP using algebraic and geometric models</li><li>LP formulation and applications: product mix, blending, scheduling, transportation, multi-period problems, integer and network models</li><li>LP sensitivity analysis</li><li>Introduction to probability models, basic probability rules, conditional and joint probability</li><li>Decision analysis models: sequential decisions and Bayesian revision</li><li>Probability distributions</li><li>Random variables; discrete and continuous</li><li>Covariance and correlation</li><li>Introduction to simulation using Excel</li></ul>Additional topics may also be covered, at the discretion of the instructor.</td></tr>
<tr><td>Methods of Instruction</td><td colspan="3">Lecture, problem solving session, computer applications</td></tr>
<tr><td>Required Textbook(s)</td><td colspan="3">The following textbook(s) is/are required, or approved equivalent(s).<br><br>Bernard W. Taylor, Introduction to Management Science, 13th Edition.2016 Pearson Publishing.</td></tr>
<tr><td>Required Equipment and Technology</td><td colspan="3">Students are required to have a computer with internet access.<br>The following resources are provided by the College:<ul><li>Office 365</li><li>Student email</li></ul></td></tr>
<tr><td>Homework Hours</td><td colspan="3">At minimum, students can expect one hour of homework for every hour of instructional time.</td></tr>
<tr><td rowspan="2">Evaluation</td><td>Component</td><td colspan="2">% Value</td></tr>
<tr><td>Participation/Exercises/Assignments<br>Quizzes<br>Midterm exam<br>Group/Individual project/ Skills Test<br>Final exam<br>*Students must pass the final exam to be eligible to pass the course</td><td colspan="2">10-20%<br>15-25%<br>15-25%<br>15-20%<br>30-35%</td></tr>
<tr><td>Completion Requirements</td><td colspan="3">The minimum grade to pass this course is D (50%). Unless otherwise stated, a minimum grade of C- (55%) is required for this course to fulfil a prerequisite.</td></tr>
<tr><td>Course Designer(s)</td><td>Brian Graham, MBA, Sauder School of Business, University of British Columbia</td><td>Consultant(s), if applicable</td><td>Ron Giammarino, Ph.D., Sauder School of Business, University of British Columbia, and Aidan Vining, Ph.D., Beedie School of Business, Simon Fraser University</td></tr>
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| Dean's Approval | Barbara Moon, Ph.D., Dean of Arts and Sciences, Alexander College | Dean's Approval Date | September 27, 2006 |
| Curriculum Committee Approval Date | September 27, 2006 | First Term Offered | Winter 2007 |
| Last Review Date | August 30, 2022 | Next Review Date | August 30, 2027 |
| Revision History | September 2, 2008 – Prerequisite MATH 105 dropped (MATH 104 still required).<br><br>August 30, 2016 – Updated by David Crawford in collaboration with Enrico Tanafranca.<br><br>August 30, 2022 – Updated by Enrico Tanafranca | | |