

Justice Institute of British Columbia
COURSE OUTLINE

Course Code:	PSA340
Course Title:	Statistical Foundations for Decision Making
Prerequisite Courses:	Stats 100 (or equivalent), Computer Applications 100 (or equivalent)
School:	School of Public Safety & Security
Division/Academy/Centre:	Fire & Safety Division
Previous Course Code & Title:	FSS240 Statistical Foundations for Decision Making in the Fire Service
Course First Offered:	2007

# of Credits:	3.0
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Course Description:

Learners will gain an introduction to the tools and techniques for rational decision making in the emergency services. These include: databases, statistics, probability, decision analysis, utility modeling, resource allocation, cost-benefit analysis and linear programming. They will be able to explain the relationship between a variety of analytical methods and the data requirements. Identifying and using the major steps in systems thinking, they will be able to perform a step-by-step analysis of a problem.

Course Goal(s): The ability to select the most appropriate analytical approach to solving issues or making decisions in areas of fire service and emergency service management, while providing a grounded rationale and quantitative evidence for the choice.

Learning Outcomes:

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

- Evaluate the validity of others' research
- Apply system analysis statistical techniques to decision making
- Predict reasonable outcomes, regarding the system being modeled, using mathematical techniques
- Identify and assess resource allocation issues and prepare recommendations supported by analysis
- Perform the five steps in a cost benefit analysis
- Solve fire and emergency management related linear programming problems using statistical tools.

Course Topics/Content:

- Rational Decision Making and Decision Analysis
- Databases

- Descriptive Statistics
- Inferential Statistics
- Probability
- Mathematical Modeling
- Resource Allocation
- Cost Benefit Analysis
- Linear Programming

Text and Resource Materials:
Required:
Recommended:
Course Level:

	First Year		Second Year	X	Third Year		Fourth Year
	Graduate		Other (describe):				

Equivalent Course(s) within the JIBC:
Class Delivery Methods:

Delivery Methods	Class Option A (Hours)	Class Option B (Hours)	Class Option C (Hours)	Class Option D (Hours)
Classroom/Lecture/Discussion				
Simulation/Lab				
Practicum/Fieldwork				
Online	42			
Correspondence				
Total Class Hours	42			

Comments on Delivery Methods:
Course Grading System:

	Letter Grades	X	Percentage		Pass/Fail
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	Complete/Incomplete	Attendance Only
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Passing Grade:	50%
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Evaluation Activities and Weighting:

Final Exam	%	Assignments	50%	Group Project	20%	Capstone Project	%
Midterm Exam	%	Individual Paper	20%	Participation	10%	Other	%
Quizzes/Test	%	Simulations	%	Practicum	%	TOTAL	100%

Comments on Evaluation Activities and Weighting:
Other Course Guidelines, Procedures and Comments:

View official versions of related JIBC academic regulations and student policies in the *JIBC Calendar* on the following pages of the JIBC website:

Academic Regulations:

<http://www.jibc.ca/programs-courses/jibc-calendar/academic-regulations>

Student Academic Integrity Policy
 Academic Progression Policy
 Admissions Policy
 Academic Appeals Policy
 Evaluation Policy
 Grading Policy

Student Policies:

<http://www.jibc.ca/programs-courses/jibc-calendar/student-policies>

Access Policy
 Harassment Policy – Students
 Student Records Policy
 Student Code of Conduct Policy

JIBC Core Competencies

The JIBC promotes the development of core and specialized competencies in its programs. Graduates of our programs will demonstrate high levels of competence in the following areas:

Critical thinking

Identify and examine issues and ideas; analyze and evaluate options in a variety of fields with differing assumptions, contents and methods.

Problem solving

State problems clearly; effectively and efficiently evaluate alternative solutions; choose solutions that maximize positive and minimize negative outcomes.

Communication, oral and written

Demonstrate effective communication skills by selecting the appropriate style, language and form of communication suitable for different audiences and mediums.

Leadership

Inspire individuals and teams to reach their potential by embracing innovation through strategic thinking and shared responsibility.

Independent learning

Show initiative by acting independently in choosing effective, efficient and appropriate applied learning, research and problem solving strategies.

Interpersonal relations

Know and manage oneself; recognize and acknowledge the needs and emotions of others including those with diverse backgrounds and capabilities.

Inter-professional teamwork

Understand and work productively within and between groups, respect others' perspectives and provide constructive feedback with special attention to inter-professional relationships.

Information literacy

Recognize and analyze the extent and nature of an information need; efficiently locate and retrieve information; evaluate it and its sources critically, and use information effectively and ethically.