

COURSE IMPLEMENTATION DATE:	January 2007
COURSE REVISED IMPLEMENTATION DATE:	
COURSE TO BE REVIEWED:	February 2011
(Four years after UPAC final approval date)	(MONTH YEAR format)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and the material will vary - see course syllabus available from instructor

FACULTY/DEPARTMENT:	MATHEMATICS AND STATISTICS	
MATH 170		6
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
	Statistics and Mathematical Methods for Business	
COURSE DESCRIPTIVE TITLE		

CALENDAR DESCRIPTION:

This course is an introduction to the mathematics of finance and to elementary statistics. The mathematics portion of the course covers mathematical applications to retail operations, simple and compound interest, discounts, annuities, financial papers, and depreciation methods. The statistics portion covers descriptive statistics, sampling, probability, estimation, hypothesis testing, regression, and correlation. Emphasis is on applications with the use of relevant computer software.

Credit cannot be obtained for both MATH 170 and MATH 106 or BUS 162. Credit cannot be obtained for MATH 104 after MATH 170, but credit can be obtained for MATH 170 following MATH 104.

PREREQUISITES: Acceptance to the BBA for Trades Management, or permission of the Business department.

COREQUISITES: None

SYNONYMOUS COURSE(S)	SERVICE COURSE TO:
(a) Replaces: N/A	Business Administration
(Course #)	(Department/Program)
(b) Cannot take: MATH 104, 106, or BUS 162 for further credit.	
(Course #)	(Department/Program)

TOTAL HOURS PER TERM:	90	TRAINING DAY-BASED INSTRUCTION
STRUCTURE OF HOURS:		LENGTH OF COURSE: _____
Lectures:	90 Hrs	HOURS PER DAY: _____
Seminar:	Hrs	
Laboratory:	Hrs	
Field Experience:	Hrs	
Student Directed Learning:	Hrs	
Other (Specify):	Hrs	

MAXIMUM ENROLLMENT:	36
EXPECTED FREQUENCY OF COURSE OFFERINGS:	As Required
WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	<input type="checkbox"/> Yes <input type="checkbox"/> No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

AUTHORIZATION SIGNATURES:

Course Designer(s): _____	Chairperson: _____
Departmental Committee	Art Last (<i>Curriculum Committee</i>)
Department Head: _____	Dean: _____
Gillian Mimmack	Jackie Snodgrass
UPAC Approval in Principle Date: _____	UPAC Final Approval Date: Feb. 2, 2007

COURSE NAME/NUMBER**LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:**

The successful student will be able to:

- 1) Solve a wide variety of practical financial problems using basic simple interest, compound interest, and annuity formulae (these include problems concerning consumer loans and Canadian mortgages);
- 2) Solve complex financial problems requiring the use of a time diagram and more than one finance formula;
- 3) Be able to set up linear and exponential formulae to describe a variety of business processes, including depreciation and break-even analysis;
- 4) Use a spreadsheet to produce amortization and depreciation schedules;
- 5) Construct frequency tables, histograms and cumulative frequency diagrams, scatter diagrams, and regression lines from raw data by the use of appropriate technology;
- 6) Obtain and interpret simple measures of location and dispersion;
- 7) Obtain, interpret, and use the correlation co-efficient and least squares regression line;
- 8) Solve simple problems in probability requiring knowledge of conditional probability and statistical independence;
- 9) Use simple mathematical models for commonly occurring situations such as sampling with replacement, and commercial or biological measurements;
- 10) Use formulae for expectations and variances of random variables;
- 11) Find confidence intervals and test hypotheses about proportions and means for one and two populations;
- 12) Calculate sample sizes required to achieve margins of error;
- 13) Apply Pearson's chi-square statistic to draw inferences in appropriate categorical sampling situations.

METHODS:

Lectures, mixed with sessions in the computer lab.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR (Please check :) Yes No

METHODS OF OBTAINING PLAR:

Course challenge. Please refer to http://www.ucfv.ca/math/Course_Challenge_Policy.htm

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]
The text is chosen by a departmental curriculum committee.

Recent text:

McClave and Sincich. *Statistics*. 10th edition. Prentice-Hall.

Zima and Brown. *Mathematics of Finance*. 5th edition. McGraw Hill.

SUPPLIES / MATERIALS:

A scientific calculator with statistical functions is required.

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Assignments and quizzes	20 – 30%
Mid-term examinations (2)	30 – 40%
Final examination	40 – 45%

Students must achieve at least 40% on the final exam in order to receive credit for this course.

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

1. Simple interest/simple discount.
2. Compound interest and depreciation, equations of value.
3. Annuities, simple and general (perpetuities, mortgages, amortization, and sinking funds).
4. Introduction to statistical concepts, e.g. variation; and software, e.g. MINITAB, Excel.

5. Descriptive statistics for uni-variate data:
 - Frequency tables, histograms, cumulative frequencies, etc.
 - Measures of location, e.g. mean, median, mode; and scale, e.g. standard deviation, quantiles.
 - Linear transformations.
 - Interpretation of computer output.
6. Descriptive statistics for bi-variate data: correlation, least squares linear regression, interpretation of computer output.
7. Probability:
 - Two-way tables, Venn and tree diagrams; joint, marginal, and conditional probability.
 - Independence and dependence; Bayes' Theorem.
 - Counting rules.
 - Simple models for discrete random variables, sampling with and without replacement.
 - Expectation, mean, variance, and standard deviation.
 - The normal distribution, standardization, linear transformations.
 - The chi-square probability distribution.
 - Random sampling, simulation, especially as applied to limit theorems, e.g. the Central Limit Theorem.
8. Inferential statistics: estimation, confidence intervals, and tests of hypothesis.
 - These techniques applied to proportions and means for one and two populations.
 - Pearson's chi-squared test of independence.
 - Confidence intervals and test of hypothesis about the slope in simple linear regression.