

COURSE IMPLEMENTATION DATE:	Sept, 1995
COURSE REVISED IMPLEMENTATION DATE:	Jan, 2004
COURSE TO BE REVIEWED:	Jan, 2008
(Four years after implementation 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:	Science, Health & Human Services / Mathematics & Statistics	
MATH 125		4
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS
	Introduction to Discrete Mathematics	
	COURSE DESCRIPTIVE TITLE	

CALENDAR DESCRIPTION:

Discrete mathematics is a new and important part of mathematics, and is concerned primarily with the analysis and computational representation of 'finite structures'. Its applications are widespread in modern technology and include scheduling, network construction, data communications, and computer engineering. This course serves as an introduction to some of the basic techniques of the discipline, including methods of counting, modular arithmetic, and formal logic. The focus of the course will be on formulating problems into mathematical models and on methods applicable to the analysis of these models.

PREREQUISITES: **MATH 110, or a C+ average or better in MATH094/095, or a C+ or better in Principles of Math 12 (provincially examined), or Applications of Math 12 with at least a B.**

COREQUISITES:

SYNONYMOUS COURSE(S)	SERVICE COURSE TO:
(a) Replaces: _____ (Course #)	_____
(b) Cannot take: MATH 243 for further credit. (Course #)	_____

TOTAL HOURS PER TERM: 75	TRAINING DAY-BASED INSTRUCTION
STRUCTURE OF HOURS:	LENGTH OF COURSE: _____
Lectures: 75 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:	every Fall and Winter
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No

AUTHORIZATION SIGNATURES:

Course Designer(s): _____ Greg Schlitt	Chairperson: _____ Peter Mulhern (<i>Curriculum Committee</i>)
Department Head: _____ Gillian Mimmack	Dean: _____ Jackie Snodgrass
PAC Approval in Principle Date: _____	PAC Final Approval Date: November 26, 2003

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

The successful student will be able to:

1. understand and use basic counting arguments to enumerate combinatorial objects
2. calculate and estimate simple probabilities
3. understand and use the techniques of propositional calculus
4. apply principles of elementary number theory

METHODS:

The course is primarily lecture-based. Individual student research is encouraged through the use of term projects.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

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

METHODS OF OBTAINING PLAR:

Course challenge.

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

The textbook is chosen by a departmental curriculum committee. Recent text used:
Grimaldi. *Discrete and Combinatorial Mathematics*. 4th edition. Addison Wesley.

SUPPLIES / MATERIALS:

Scientific calculator

STUDENT EVALUATION:

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

Assignments, Quizzes, Projects	20%
Midterm Exam	40%
Final Exam	40%

A student must obtain at least 40% on the final exam in order to pass this course.

COURSE CONTENT:

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

Set Theory Counting:

- a) induction
- b) sums and products
- c) permutations and combinations
- d) binomial theorem
- e) inclusion/exclusion arguments
- f) introduction to probability
- g) pigeon hole principle
- h) recurrence relations

Logical Syntax/Semantics:

- a) informal versus formal arguments
- b) propositional calculus
- c) Boolean algebras

Number Theory:

- a) modular arithmetic
- b) primes and composites
- c) linear Diophantine equations

