FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER	MGF 1107
COURSE TITLE:	Explorations in Mathematics
PREREQUISITE(S):	MAT 1033 with a grade of "C" or better or a satisfactory score on the placement test
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	3
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	3
Laboratory:	
Other _____:	
FACULTY WORKLOAD POINTS:	3
STANDARDIZED CLASS SIZE ALLOCATION:	25

CATALOG COURSE DESCRIPTION:
This course is designed for students who plan to major in fields that do not require an in-depth study of mathematics. The major topics introduced in this course are financial mathematics, exponential growth and decay, numbers and number systems, and elementary number theory. Additional topics include graph theory, modular arithmetic, voting techniques, elementary topology, and non-Euclidean geometry. Fractal geometry may be introduced. It is strongly suggested that students who plan to take MGF 1106 and MGF 1107 complete MGF 1106 first.

SUGGESTED TEXT(S):	Angel, Survey of Mathematics, Addison-Wesley Publishing Co., Current ed., ISBN 0-201-38407-8
	Miller, Mathematical Ideas Expanded, Addison-Wesley Publishing Co., Current ed., ISBN 0-321-07610-9
	Angel, Survey of Mathematics with Applications Expanded, Addison-Wesley Publishing Co., Current ed., ISBN 0-201-70308-4

IMPLEMENTATION DATE:	Fall Term, 1999
REVIEW OR MODIFICATION DATE:	Fall Term, 2002 (20031) Spring Term, 2005 (20052) Fall Term, 2007 (20081)

COURSE TOPICS	CONTACT HOURS PER TOPIC
I. Financial Mathematics	9
A. Percent	
B. Simple Interest	
C. Compound Interest	
D. Installment Loans	
E. Annuities	
II. Exponential Growth and Decay	9
A. Depreciation	
B. Population Growth	
C. Radio-active Decay	
D. Mathematical Models	
III. Numbers and Number Systems	9
A. Additive, Multiplicatives and Cipher Systems of Numbers	
B. Place-Value or Positional-Value Numerative Systems	
C. Other Bases	
D. Computation in Other Bases	
E. Early Computational Bases	
IV. Elementary Number Theory	9
A. Number Theory	
B. Real Number Systems	
C. Sequences	
1. Arithmetic	
2. Geometric	
3. Fibonacci	
V. Additional Topics Such as Those Listed Below	9
A. Graph Theory	
B. Modular Arithmetic	
C. Voting Techniques	
D. Elementary Topology	
E. Non-Euclidean Geometry	
F. Fractal Geometry	

Florida State College
At Jacksonville

General Education Requirements
Categories & Courses Review Checksheet

Course Prefix and Number: MGF 1107	**Semester Credit Hours: 3**
Course Title: Explorations in Mathematics	

Discipline Area for the Course:

□ Communication	X Mathematics	□ Social & Behavioral Sciences
□ Humanities & Visual/Performing Arts	□ Natural Sciences	□ Other-Designated Option

INTELLECTUAL COMPETENCIES:

X Reading	□ Speaking	X Critical Analysis	X Quantitative Skills	X Scientific Method of Inquiry
□ Writing	X Listening	□ Information Literacy	□ Ethical Judgment	□ Working Collaboratively

KNOWLEDGE	**Primary**	**Secondary**	**N/A**	**VALUE**	**Primary**	**Secondary**	**N/A**
Global and Historical Knowledge & Understanding				Intellectual honesty	X		
Comprehends a general knowledge of the nature, origins and contributions of major civilizations		X		Curiosity and openness to new ideas	X		
Comprehends the workings and interrelations of personal, business and government economies				Recognition of one's own creative potential			
Comprehends political, social and economic systems and their effects upon society				Acceptance of and respect for differences among people and cultures	X		
Cultural and Aesthetic Knowledge and Understanding							
Comprehends the contributions of the arts and humanities to the human experience on a personal, national or global level				Civic Engagement			
Comprehends the historical development of the arts and sciences		X		Lifelong Learning		X	
Comprehends religious and cultural systems and their effects upon society							
Human Awareness and Understanding							
Comprehends the dynamics of human behavior and the process of increasing self-awareness, growth and development							
Comprehends the stages of human development and the dynamics of human relationships in diverse cultures							
Comprehends the factors that promote physical, mental and social well-being							
Mathematics, Science and Technology							

Comprehends the basic concepts and investigative processes of the natural sciences							
Comprehends the breadth, significance and development of the mathematical sciences	X						
Comprehends the ways science and technology have shaped and continue to reshape human cultures and the environment		X					

Name of Person Completing This Form: J. Batson

Signature: _____ Date: 02/06/2004

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Florida State College
At Jacksonville

General Education Review Checksheet
and Learning Outcomes

Course Prefix and Number: MFG 1107	**Semester Credit Hours:** 3
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☐ Humanities & Visual/Performing Arts	☐ Natural Sciences	☐ Other-Designated Option

INTELLECTUAL COMPETENCIES:

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	Learning Outcomes	**Method Of Assessment**
1	The student will be able to:	Students demonstrate analytical reasoning skills by solving problems on tests, classroom assignments, and projects.
2	1. Apply mathematical concepts to real-world financial, economical, and demographic situations.	Students integrate knowledge of other disciplines with mathematical principles on tests, class assignments, and projects.
3	2. Understand the development and use of a variety of number systems.	Students analyze, critically assess, and develop creative solutions to real-world problems as shown on tests, class assignments, and projects.
4	3. Understand the concepts of basic number theory and sequences.	Students demonstrate assimilated and evaluated data through tests, written assignments, and classroom discussions.
5	4. Demonstrate an understanding of topics such as: graph theory, modular arithmetic, voting techniques, elementary topology, non Euclidean geometry, and fractal geometry.	Completed projects demonstrate students' ability to reason logically and analytically concerning real-world situations.
6		Students illustrate competence in forming conclusions from mathematical models through tests, class assignments, projects, and classroom presentations.
7		Students demonstrate an understanding of mathematical limatations through sound application of mathematical models on tests and class assignments.
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Name of Person Completing This Form: J. Batson

Signature: Ronald Moore Date: 02/06/2004

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12/10/02