

## MGF 1107 - Survey of Mathematics

**REQUIRED PURCHASE: MyMathLabsPlus**

### PREREQUISITE:

MAT0029 or STA1001 with a minimum grade of C

### COURSE DESCRIPTION:

This is a general education course which includes college-level skills from a variety of mathematical topics. The course will cover the mathematics of finance and at least three selected topics from among:

- linear and exponential functions; number systems
- history of mathematics
- elementary number theory
- graph theory
- numerical methods and algorithms
- game theory
- voting and apportionment theory
- student project

This course will also emphasize applications to real-world situations and the integration of other academic disciplines, including (but not limited to) business and the physical and social sciences. Meets Area 5A of the general education requirements for the A.A. degree. Meets Areas 4 or 5 of the general education requirements for the A.S. degree. Recommendation of the Mathematics Department or at least a grade of C in the prerequisite course is required.

### SPECIFIC UNIT OUTCOMES:

#### Module 01 - Real Numbers and Their Representation

Upon completion of this unit, students will be able to:

- Determine the significant number of digits in a number.
- Find the precision and greatest possible error of a measurement.
- Determine the relative error and the greatest possible error of a measurement.
- Determine an appropriate approximation of measurement calculations.
- Read a metric rule.
- Find the distance and midpoint of a line segment.

#### Module 02 - Personal Financial Management

Upon completion of this unit, students will be able to:

- Compute Simple Interest, compound Interest, continuous compounded interest
- Effective Annual Yield
- Types of Consumer Credit
- Understand terms used in Truth In Lending (APR)

- Understand Finance Charges
- Understand Costs and Advantages of Home Ownership
- Understand mortgage rates
- Understand basic terms involved with Investment

### Module 03 - Number Theory

Upon completion of this unit, students will be able to:

- Identify Prime and Composite Numbers
- Apply the Fundamental Theorem Of Arithmetic
- Identify specific types of numbers: abundant, perfect, deficient, amicable
- Understand Goldbach's conjecture
- Identify twin primes
- State and evaluate Fermats Last Theorem

### Module 04 - Graph Theory

Upon completion of this unit, students will be able to:

- Understand the meaning of the terms: graph, vertex, edge, simple graph and degree of a vertex.
- Determine if a graph is isomorphic, connected, disconnected
- Find the Bacon Number of an actor using the internet
- Understand Euler Circuits and Route Planning by applying Fleury's algorithm and Eulers Theorem
- Understand Hamilton Circuits and Algorithms

### WITHDRAWALS:

Per college policy, W's cannot be given after the official college-wide withdrawal date deadline. It is the student's responsibility to withdraw from the course by the deadline. The last day for withdrawal can be found under Academic Calendars at [www.broward.edu](http://www.broward.edu). If you simply stop attending class without formally withdrawing from the course, you will receive a grade of "F". A withdrawal is considered an attempt.

### CLASS POLICY:

Expected classroom conduct: Arrive on time, place your **phone on silent-mode**, be engaged in the day's lesson and activities without texting or using social media sites, ask lots of questions, answer questions when appropriate, listen without interruption to your professor and fellow classmates while they are talking.

### ATTENDANCE:

You are required to attend all classes. If you miss a class, a grade of "0" will be assigned for that day's class work. There will be no penalty for a student who is absent from academic activities because of religious holiday observances in his/her own faith, the student's serious illness, death in immediate family, or attendance to statutory governmental responsibilities. The students must notify the instructor of these absences via e-mail, providing necessary documentation. It is the

student's responsibility to make up the work missed.

Starting Fall 2007, Faculty will report student non-attendance. A student who does not attend class within two weeks after the drop/add period or stops attending class before the withdrawal date may be administratively withdrawn and receive a W, or an F if it is the student's third attempt. ***If a student stops attending class after the withdrawal date, the student will receive a F that will then be computed as an F in your GPA.*** In either case, no refund will be given. ***Per college policy, W's cannot be given by the professor after the official college-wide withdrawal deadline. A withdrawal is considered an attempt.***

## **METHOD OF INSTRUCTION:**

During each class period (except test days) the following format will be utilized:

- Short video presentation of the concept.
- Additional examples, explanations and clarifications by the instructor.
- Students will work with peers in completing in-class worksheets covering the concepts taught.
- Review of in-class worksheet and re-teaching if necessary.

Throughout the process, careful attention will be given to student feedback. You are encouraged to ask questions and collaborate with your peers.

## **YOUR GRADE WILL BE DETERMINED AS FOLLOWS:**

### **MyLabsPlus ( ≈ 20%):**

In MyLabsPlus students are expected to complete Unit and section assignments. **Check the due dates in MyLabsPlus for all Assignment due dates.**

### **Project ( ≈ 20%):**

A project relating mathematics to popular culture will be assigned. It will be submitted electronically to D2L and presented in class (schedule permitting). Details will be provided prior to Spring Break.

### **TESTS (4 tests ≈ 40%):**

There will be four (4) unit tests. Each test is cumulative, worth 100 points, and will be taken in class. Be certain that you are present for all tests. There are NO make-up tests, except for the reasons stated in BC Catalog (*with documentation*)! **Check the calendar in D2L for Test dates.**

### **FINAL EXAM ( ≈ 20%):**

The Final Exam is cumulative and will be given on the last day of the term. **Check the Official Broward College Academic calendar on [broward.edu](http://broward.edu) or the class D2L pages for the date of the Final Exam.**

**GRADES:** Your grade, as shown on D2L will be the most correct grade.

**CALCULATORS /MATERIALS:**

You will need a scientific calculator (such as the TI-30Xa). It may be used in class and on most tests. ***Cell phones may not be used as calculators.***

**D2L & MyLabsPlus:**

Checking your D2L and MyLabsPlus daily is mandatory. At times there may be crucial announcements posted in your course such as possible class cancellations, revision of homework assignments, change in test days, important college notices, etc. Students will be responsible for any information and assignments posted in your course. In addition, please e-mail your instructor using the e-mail tool within your D2L online course.

**ACADEMIC SUCCESS CENTER (ASC):**

The Academic Success Centers (ASC's) at Broward College are here to ensure your success in this class. You will benefit from an array of academic support services provided in a comfortable, collaborative atmosphere specifically designed to advance your academic achievement. Statistics show that students who use the ASC early and often are more successful than those who do not. Here are just some of the services provided at the ASC:

- Academic Support Labs (Science Center, Math Lab, Writing Center)
- Collaborative Project Space
- Graphing Calculators
- Open Computer Centers (Printing)
- Study Groups
- Textbook Reserves
- Tutoring by Certified Tutors (All subject areas)
- And much more!

Please visit one of our locations or online at [www.broward.edu/studentresources/lrc](http://www.broward.edu/studentresources/lrc)

Central Campus	North Campus	South Campus
University College Library  Building 17 – 2 <sup>nd</sup> Floor  954-201-6660	Broward College North Regional Library  Building 62	Building 72  954-201-8909

**Brainfuse** – is an online, web-based, tutoring program that is available 24/7 to all students currently enrolled at Broward College. **Brainfuse** supports student learning in most subject areas including accounting, anatomy and physiology, biology, chemistry, English, nursing, math and more. Students can chat online and work on a whiteboard with a tutor, submit questions, and get extensive feedback on essays and research papers. *Access Brainfuse here in D2L by clicking on the "Resources" in the navigation bar located at the top of the page.*

### **IMPORTANT:**

(The “3-Take” Rule) Be aware that Florida state law limits you to three attempts at any one course and requires out of state tuition for your third take of any course. If this is your third enrollment in this course, then the grade of “W” is not an option and you will have to complete the course

### **DISABILITY SERVICES:**

Students with disabilities must register with the [Disability Services](#) and inform the instructor. The Office of Disability Services will notify the instructor so that reasonable accommodations can be made.

***Note: The instructor reserves the right to make adjustments.***