



Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

registrar.gmu.edu/facultystaff/curriculum

Action Requested:

Create new course Inactivate existing course

Modify existing course (check all that apply)

Title Credits Repeat Status Grade Type

Prereq/coreq Schedule Type Restrictions

Other: _____

Course Level:

Undergraduate

Graduate

College/School: INTO Mason **Department:** Academic Division

Submitted by: Karyn Mallett/Ellen O'Brien **Ext:** 3-5014 **Email:** Kmallet1@gmu.edu

Subject Code: MATH **Number:** 044 **Effective Term:** Fall Spring Summer **Year:** 2016

(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Title: Current _____

Banner (30 characters max including spaces): Business Math Preparation

New: Business Math Preparation

Units: (check one) Fixed Variable 0 or _____ to _____

Repeat Status: (check one) Not Repeatable (NR) Repeatable within degree (RD) Repeatable within term (RT) Maximum credits allowed: _____

Grade Mode: (check one) Regular (A, B, C, etc.) Satisfactory/No Credit Special (A, B, C, etc. +IP) Special (English Language)

Schedule Type: (check one) Lecture (LEC) Lab (LAB) Recitation (RCT) Internship (INT)

Instructional Mode: Independent Study (IND) Seminar (SEM) Studio (STU)

Prerequisite(s): AE Level 3 Core, AE Level 3 OCS, or admission to an INTO Mason Pathway program

Corequisite(s): _____

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code.

Must be enrolled in college "INTO Mason"

Instructional Mode: 100% face-to-face Hybrid: ≤ 50% electronically delivered 100% electronically delivered

Are there equivalent course(s)? Yes No If yes, please list MATH 008

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)
Prepares INTO Mason students for Math 108, Introductory Calculus with Business Applications, which is required by the Pathways leading to Business and Information Technology majors. The course will provide an early exposure to college level mathematics, will prepare students to engage with the language – vocabulary and written/oral comprehension – of mathematics, and will facilitate the transition to a conventional mathematics classroom environment.	The successful completion of this course will serve as a prerequisite for Math 108 in lieu of the Math Placement Test.
Indicate number of contact hours: _____ Hours of Lecture or Seminar per week: 2 Hours of Lab or Studio: _____	
When Offered: (check all that apply) <input checked="" type="checkbox"/> Fall <input checked="" type="checkbox"/> Summer <input checked="" type="checkbox"/> Spring	

Approval Signatures

Department Approval _____ Date _____ College/School Approval _____ Date _____

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member _____ Provost Office _____ Graduate Council Approval Date _____

Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

The form above is processed by the Office of the University Registrar. This second page is for the COSCC's reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)

Course Number and Title:

Math 044 Business Math Preparation

Date of Departmental Approval: 9/17/15

FOR NEW COURSES (required if creating a new course)

Reason for the New Course:

INTO Mason students are often not permitted by their sponsors to take courses in an online format. Currently the only program to prepare students for Math 108 is the non-credit course, Math 008, offered exclusively in an online format.

This new course also provides an opportunity to give students whose first language is not English, some early exposure to the language and symbols of Mathematics in a non-credit and sheltered setting.

- Relationship to Existing Programs:

The existing programs, Academic English and INTO Mason Pathways, do not offer courses for this purpose. These will be the first.

- Relationship to Existing Courses:

The content level of Math 044 will duplicate that of Math 008. Unlike Math 008, Math 044 will include language support and some focus on skills necessary for success in traditional university level Mathematics courses.

- Semester of Initial Offering:

Spring 2016

- Proposed Instructors:

Michael Coleson

- Insert Tentative Syllabus Below – See attached syllabus
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MATH 044: Business Math Preparation

Overview

Prepares Academic English students for Math 108 Introductory Calculus with Business Applications, which is required by the Pathways leading to Business and Information Technology majors. The course will provide an early exposure to college level mathematics, will prepare students to engage with the language – vocabulary and written/oral comprehension – of mathematics, and will facilitate the transition to a conventional mathematics classroom environment.

The successful completion of this course will serve as a prerequisite for Math 108 in lieu of the Math Placement Test.

Course Materials

- Introductory Algebra: Concepts with Applications, by Charles P. McKeague, XYZ Textbooks, 2012. The textbook is available in hardcopy or etext. ISBN# 978-1-936368-08-2
- XYZHomework.com: an online homework system that accompanies the textbook

Content

The course will cover Beginning Algebra skills that form a vital foundation for the study of Calculus. The Learning Modules for the course are listed below:

1. Real Numbers and Algebraic Expressions
2. Linear Equations and Inequalities
3. Graphing Linear Equations and Inequalities
4. Exponents and Polynomials
5. Factoring Polynomials
6. Rational Expressions
7. Systems of Linear Equations
8. Radical Expressions and Equations
9. Quadratic Equations and Functions

Grading

In addition to three tests and a final exam, there will be graded quizzes and/or in-class group assignments throughout the semester. Online homework will be assigned for practice.

COURSE SEQUENCE

Module 1

- 1.1 Real Numbers
- 1.2 Addition and Subtraction of Real Numbers
- 1.3 Multiplication of Real Numbers
- 1.4 Division of Real Numbers
- 1.5 Properties of Real Numbers
- 1.6 Simplifying Expressions

Module 2

- 2.1 Addition Property of Equality
- 2.2 Multiplication Property of Equality
- 2.3 Solving Linear Equations
- 2.4 Formulas
- 2.5 Applications
- 2.7 Linear Inequalities in One Variables

Module 3

- 3.1 The Rectangular Coordinate System
- 3.2 Solutions and Graphs of Linear Equations
- 3.3 Graphing Linear Equations Using Intercepts
- 3.4 Graphing Linear Equations Using Slope
- 3.5 Finding the Equation of a Line
- 3.6 Graphing Linear Inequalities

Module 4

- 4.1 Multiplication with Exponents
- 4.2 Division with Exponents
- 4.3 Operations with Monomials
- 4.4 Addition and Subtraction of Polynomials
- 4.5 Multiplication of Polynomials
- 4.6 Special Products
- 4.7 Dividing a Polynomial by a Monomial

Module 5

- 5.1 Greatest Common Factor
- 5.2 Factoring Trinomials of the form x^2+bx+c
- 5.3 Factoring Trinomials of the form ax^2+bx+c
- 5.4 The Difference of Two Squares and Perfect Squares
- 5.6 Factoring: A General Review
- 5.7 Solving Quadratic Equations by Factoring

Module 6

- 6.1 Simplifying Rational Expressions
- 6.2 Multiplication and Division of Rational Expressions
- 6.3 Addition and Subtraction of Rational Expressions
- 6.4 Equations Involving Rational Expressions
- 6.6 Complex Fractions
- 6.7 Proportions

Module 7

- 7.1 Solving Linear Systems by Graphing
- 7.2 The Substitution Method
- 7.3 The Elimination Method
- 7.4 Applications of Systems of Equations

Module 8

- 8.1 Radical Expressions
- 8.2 Simplifying Radicals
- 8.3 Addition and Subtraction of Radicals
- 8.4 Multiplication and Division of Rational Expressions
- 8.5 Radical Equations and Graphs

Module 9

- 9.1 Factoring and the Square Root Property
 - 9.2 Completing the Square
 - 9.3 The Quadratic Formula
 - 9.4 Graphing Quadratic Equations
 - 9.5 Introduction to Functions
 - 9.6 Function Notation
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