**Course Syllabus**

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| Course | **MAT 0022C Developmental Mathematics** |
| Reference Number | 827808 |
| Semester | 2015-2 Spring |
| Instructor Name | Dr. Jose Serpa |
| Textbook Title, Edition and Author | Pre-algebra & Introductory Algebra, Third Edition, by Elayn Martin-Gay<br><br>*Note: Includes MyMathLab when purchased new.* |
| Calculator Policy | The use of a calculator of any kind, cellphones or any electronic devices of any kind are not permitted. |
| Class Times | MF 11:00am – 12:40 pm<br><br>W 11:00am – 11:50 am |
| Instructor Office Location | 1210 |
| Instructor Office Hours | TBA |
| Instructor Phone Number | 305-237-6110 |
| Instructor Email Address | jserpa@mdc.edu |
| Attendance Policy | Students with 3 or more absences **MAY** be withdrawn by the instructor. Students are still responsible for withdrawing themselves if they want to receive a "W". |
| Academic Dishonesty Policy | Students may be penalized on an assignment grade or on the overall grade in the course if they cheat. ANY USE OF A CELL PHONE OR CALCULATOR ON ANY QUIZ OR TEST FOR THIS CLASS WILL BE CONSIDERED ACADEMIC DISHONESY. Please refer to the ***Student Rights and Responsibilities Handbook***: http://www.mdc.edu/policy/student_rights_and_responsibilities.pdf |
| MyMathLab Access and Technical Support | Instructions for Accessing this required website are attached.<br><br>• If you have any difficulty accessing this website Contact Product Support at http://www.mymathlab.com/student-support for live CHAT, FAQ's or email, or **phone support at 1-800-677-6337.**<br><br>• If you experience long wait times, please document your wait time and report it to the Math Department via email.<br>• If you experience technical problems and you have been assigned an incident number, but you have not received assistance, email the Chairperson. |
| Purchasing MyMathLab | You must purchase an Access Code in order to use MyMathLab. If you cannot afford to purchase the access code right away, **temporary access is available through the website**. If you can document that your financial aid has been delayed, **the mathematics department can** |

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| | **loan you an access code**. Call 305-237-1358 for more information.<br><br>If you have taken MAT 0018/MAT 0022C/ MAT 0028 before with **this same textbook**, you do not need to purchase a new Access Code. |
| Course ID | |
| Chairperson of the Mathematics Department | Dr. Jermaine Brown; 305-237-6363; jbrown7@mdc.edu |
| ADA | In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to reasonable accommodations. Please notify the instructor during the first week of class of any accommodation needed for this course. |

**Grading Policy**: There are three possible grades in this course, 'S', 'P', and 'U'.

**S – Satisfactory**: A grade of 'S' promotes the student to the next course, MAT 1033 (Intermediate Algebra). To pass the course with an 'S' – **ALL of the following conditions must be met**:

1) Satisfactory attendance (see Attendance Policy above).
2) Successful completion of all 8 modules. See Course Requirements below.
3) Complete the cumulative review with a grade of at least 95%.
4) Complete the College-wide Developmental Final Exam with a score of 70% or greater.

**P – Progress**: A grade of 'P' indicates that, although a student has acquired some knowledge, the student is not ready for MAT 1033 and must re-enroll in MAT 0022C. To receive a 'P' – **the following conditions must be met**:

1) Satisfactory attendance (see Attendance Policy above).
2) Successful completion of at least 3 modules. See Course Requirements below.
3) Unsuccessful in meeting the requirements for a grade of 'S'

**U – Unsatisfactory**: Student did not meet requirements for 'S' or 'P' and must repeat MAT 0022C. Any student who does not complete at least 3 modules will receive a 'U'. Any student who stops attending and fails to withdraw from the course will get a grade of 'U'. **This 'U' counts like an 'F' in your GPA, so be careful!**

**Course Requirements:** As discussed in the Grading Policy above, to pass this course, you must attend class and successfully complete 8 modules and a College-wide Developmental Final Exam. Each module is an online unit of related mathematical topics and includes instructional videos, a by-pass test, homework assignments, a mid-module quiz, an end-of-module quiz, and a mastery test. All of these assignments will be completed in MyMAthLab with the exception of the College Developmental Final Exam. To move through the modules, the student will:

- Review the material and take a "By-Pass Test." If the student earns a grade of 80% or better on the By-Pass Test, then the student may skip that module and move to the next module. If the student earns less than 80% on the By-Pass Test, the following will be required:
- The student will begin working through the instructional videos and homework assignments (h.w. assignments must be completed with a score of at least 95% - the student has unlimited attempts to complete the h.w.

problems). At the midpoint of the module, the student will take a "Mid-Module Quiz." If the student earns at least an 80% on the Mid-Module Quiz, the student will continue to the second half of the module. If the student earns less than 80% on the Mid-Module Quiz, the student will be allowed to attempt the quiz again. If the student earns less than 80% on the second attempt, the student will meet with the instructor for help and to complete an "intervention assignment" before attempting the quiz again.

- After earning at least an 80% on the Mid-Module Quiz, the student will begin the second half of the homework assignments for that module (again, each h.w. assignment must be completed with a score of at least 95%). Upon completion, the student will take an "End-of-module" quiz that will cover the second half of the material. Again, the student will have two attempts to earn at least 80% on this end-of-module quiz. After the second attempt, the student must meet with the instructor for help and an intervention assignment before attempting the quiz again.
- After earning at least an 80% on the end-of-module quiz, the student will take the "Module Mastery Test." If the student earns at least an 80% on the Mastery Test, the student moves to the next module. If the student earns less than 80% on the Mastery Test, the student will be allowed to attempt the test a second time. If the student earns less than 80% on the second attempt, the student will meet with the instructor for an intervention assignment before attempting the Mastery Test again.
- After completing all 8 modules with at least 80% earned on each Module Mastery Test, the student will complete a cumulative review to refresh all of the concepts learned in the course. The cumulative review must be completed with a score of 95% or more.
- After completing the cumulative review, the student will take the College-wide Developmental Final Exam. If the student earns 70% or higher on the College-wide Developmental Final Exam, the student has satisfactorily completed the course. If the student earns less than 70% on the Developmental Final Exam, the student must either re-enroll in MAT 0022C or enroll in an accelerated MAT 0028/MAT 1033 course. Re-enrolling must be investigated and answered on July 26.

| Summary of Assignments | |
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| **Assignment** | **Mastery Level Requirement** |
| By-Pass Test | 75% |
| HW Assignments | 85% |
| Mid-Module and End-of-Module Quizzes | 70% |
| Module Mastery Test | 75% |
| Cumulative Review | 90% |
| College Exit Exam | 70% |

## Math Lab:

Students are invited to visit the professor during office hours. Additional support is available in the **Math Lab (located in Room 1214) where FREE tutoring is available**.

Note: Computers are available at the Math Lab for working on MyMathLab homework assignments. Computers are also available in the Computer Courtyard located on the second floor of the first building, however.

**Math Lab – Hours of Operation**
Monday – Thursday: 8:00 AM – 9:00 PM
Friday: 8:00 AM – 7:00 PM
Saturday: 8:30 AM – 12:30 PM

## MIAMI-DADE COLLEGE LEARNING OUTCOMES

**Purpose:** Through the academic disciplines and co-curricular activities, General Education provides multiple, varied, and intentional learning experiences to facilitate the acquisition of fundamental knowledge and skills and the development of attitudes that foster effective citizenship and life-long learning.

**As graduates of Miami Dade College, students will be able to:**

1. **Communicate effectively using listening, speaking, reading, and writing skills.** This outcome will be addressed through questions that are open-ended (not multiple choice) on all tests and assessments described in the syllabus, as well as through class participation.
2. **Use quantitative analytical skills to evaluate and process numerical data.** In this course students will need to read and identify data from graphs and charts. Students will also learn to develop quantitative skills to interpret data from graphs. Also, students will solve algebraic equations and inequalities and manipulate data through unit analysis.
3. **Solve problems using critical and creative thinking and scientific reasoning.** In the process of solving mathematical problems, students will need to use critical thinking skills to interpret solutions. Creativity in solving problems is constantly encouraged in this course and viewed as an important skill in mathematics. Critical thinking skills are heavily emphasized in this course.
4. **Formulate strategies to locate, evaluate, and apply information.**
   In this course students will often need to solve real-life word problems which apply the mathematical concepts presented. Students will work to solve these problems and identify relevant information in the problems in order to be able to solve them.
5. **Demonstrate knowledge of diverse cultures, including global and historical perspectives.**
   In this course, whenever possible, students will be introduced to the use of mathematics through diverse cultures as well as historical notes on the mathematical concepts you learn.
6. **Create strategies that can be used to fulfill personal, civic, and social responsibilities.** This outcome is not reinforced in this course.
7. **Demonstrate knowledge of ethical thinking and its application to issues in society.** This outcome is not reinforced in this course.
8. **Use computer and emerging technologies effectively.** In this course students will be sent information about the course via email. Students will also be required to use online software to complete assignments.
9. **Demonstrate an appreciation for aesthetics and creative activities.**
   This outcome is not reinforced in this course.
10. **Describe how natural systems function and recognize the impact of humans on the environment.** This outcome is not reinforced in this course.

## Topics Per Module, Corresponding Textbook Sections, and Timeline

Textbook: Pre-algebra & Introductory Algebra. Third Edition, by Elayn Martin-Gay

**Tentative Schedule** (16-Week term)

| Module | Week | Section | Topic |
|---|---|---|---|
| Module 1 | 1 | 1.2 | Place Value, Names for Numbers, and Reading tables |
| | | 1.3 | Adding and Subtracting Whole Numbers, and Perimeter |
| | | 1.4 | Rounding and Estimating |
| | | 1.5 | Multiplying Whole Numbers and Area |
| | | 1.6 | Dividing Whole Numbers |
| | | 1.7 | Exponents and Order of Operation |
| | 2 | 9.1 | Symbols and Sets of Numbers |
| | | 9.2 | Properties of Real Numbers |
| | | 2.1 | Introduction to Integers |
| | | 2.2 | Adding Integers |
| | | 2.3 | Subtracting Integers |
| | | 2.4 | Multiplying and Dividing Integers |
| | | 2.5 | Order of Operations |
| Module 2 | 3 | 1.8 | Introduction to Variables, Algebraic Expressions, and Equation |
| | | 3.1 | Simplifying Algebraic Expressions |
| | | 3.2 | Solving Equations |
| | | 3.3 | Solving Linear Equation in One Variable |
| | | 3.4 | Linear Equations in One Variable and Problem Solving |
| | 4 | 4.1 | Introduction to Fraction and Mixed Numbers |
| | | 4.2 | Factors and Simplest Form |
| | | 4.3 | Multiplying and Dividing Fractions |
| | | 4.4 | Adding and Subtracting Like Fractions, LCD, and Equivalent Fractions |
| | | 4.5 | Adding and Subtracting Unlike Fractions |
| | | 4.7 | Operations on Mixed Numbers |
| | | 4.8 | Solving Equations Containing Fractions |
| Module 3 | 5 | 5.1 | Introduction to Decimals |
| | | 5.2 | Adding and Subtracting Decimals |
| | | 5.3 | Multiplying Decimals and Circumference of a Circle |
| | | 5.4 | Dividing Decimals |
| | | 5.5 | Fractions, Decimals, and Order of Operations |
| | | 5.6 | Solving Equations Containing Decimals |
| | 6 | 6.1 | Ratios and Proportions |
| | | 6.2 | Percents, Decimals, and Fractions |
| | | 6.3 | Solving Percent Problem with Equations |
| | | 6.4 | Solving Percent Problem with Proportions |
| | | 6.5 | Applications of Percent |
| | | 6.6 | Percent and Problem Solving: Sales Tax, Commission, and Discount |
| Module 4 | 7 | 8.2 | Perimeter |
| | | 8.3 | Area |
| | | 8.4 | Linear Measurement |
| | | 8.5 | Weight and Mass |
| | | 8.6 | Capacity |
| | | 8.7 | Temperature and Conversions Between the US and Metric Systems |
| Module 5 | 8 | 9.3 | Further Solving Linear Equations |
| | | 9.4 | Further Problem Solving |
| | | 9.5 | Formulas and Problem Solving |
| | | 9.6 | Linear Inequalities and Problem Solving |

| Module | Week | Section | Topic |
|---|---|---|---|
| Module 6 | 9 | 10.1 | Exponents |
| | | 10.2 | Negative Exponents and Scientific Notation |
| | | 10.3 | Introduction to Polynomials |
| | | 10.4 | Adding and Subtracting Polynomials |
| | 10 | 10.5 | Multiplying Polynomials |
| | | 10.6 | Special Products |
| | | | Integrated Review-Exponents and Operations on Polynomials |
| | | 10.7 | Dividing Polynomials by a Monomial |
| | 11 | 11.1 | The Greatest Common Factor |
| | | 11.2 | Factoring Trinomials of the form $x^2 + bx + c$ |
| | 12 | 11.3 | Factoring Trinomials of the form $ax^2 + bx + c$ |
| | | 11.5 | Factor Perfect Square Trinomials and Difference of Two Squares |
| | | | Integrated Review |
| | | 11.6 | Solving Quadratic Equations by Factoring |
| Module 7 | 13 | 12.1 | Simplifying Rational Expressions |
| | | 12.2 | Multiplying and Dividing Rational Expressions |
| | | 12.3 | Adding and Subtracting Rational Expression w/ same denominators |
| | | 12.4 | Adding and Subtracting Rational Expression w/ Different Denominators (Monomial Denominators only) |
| | 14 | 13.1 | Rectangular Coordinate System |
| | | 13.2 | Graphing Linear Equations |
| | | 13.3 | Intercepts |
| | | 13.4 | Slope and Rate of Change |
| Module 8 | 15 | 15.1 | Introduction to Radicals (Square Root only) |
| | | 15.2 | Simplifying Radicals (Square Root only) |
| | | 15.3 A,B | Adding and Subtracting Radicals (Square Root only) |
| | | 15.4 A, C | Multiplying and Dividing Radicals (Square Root only) |
| | 16 | 15.6 | Radical Equations and Problem Solving |
| | | Cumulative Review for College Exit Exam | |
| | Finals Week | College Exit Exam | |

*****To complete the course in 8 weeks, the schedule should be 1 module per week. This allows the possibility of completing MAT 1033 during the second 8 weeks of a major term, thus allowing the student to complete all pre-college level mathematics in one major term (16 weeks).**

*****To complete the course in 12 weeks, the schedule should be 2 modules every 3 weeks.**

## Course Objectives:

This course prepares students for the successful study of Intermediate Algebra.

## Course Learning Outcomes:

At the completion of this course, a student will be able to:

- Perform any combination of operations on whole numbers.
- List all factors of a given whole number and write the prime factorization of a given whole number
- Change improper fractions to mixed numbers and mixed numbers to improper fractions.
- Add, subtract, multiply, and divide fractions or mixed numbers.
- Do any combination of operations with fractions.
- Change decimals to fractions.
- Round off a given decimal, or write approximate decimal as indicated.
- Add, subtract, multiply, and divide decimals.
- Work with numbers in scientific notation.
- Solve a proportion containing a variable.
- Solve word problems using proportions.
- Convert any number from one of its form (fraction, decimal, percent) to another.
- Solve percent word problems.
- Simplify numerical expressions using the rule for order of operations.
- Simplify numerical expressions using the rule for order of operations.
- Add, subtract, multiply, and divide real numbers.
- Comparing signed numbers using $<$, $>$, $=$, $\geq$, or $\leq$ .
- Recognize the commutative, associative, identity, inverse, and distributive properties of real numbers.
- Determine the absolute values of signed numbers.
- Add and subtract absolute values.
- Combine like terms.
- Solve first-degree equations including those that have fractional and decimal coefficients. (These should include linear equations that have "no solutions" – contradictions or have "all real numbers as solutions" - identities)
- Solve for variables that are used in elementary formulas.
- Solve elementary word problems. (Including: number problems, geometry problems, and proportion problems.)
- Solve first-degree inequalities and graph each solution set.
- Writing the solution set for Inequalities in one variable using Interval Notation.
- Graphing and Applications.
- Graphing Linear Equations.
- Determining the intercepts of a linear equation.
- Find the slope of a line from slope formula, graph, and equation.
- Use the elementary properties of exponents to simplify exponential expressions.
- Conversion of numbers to Scientific Notation and conversion of Scientific Notation to decimal form.
- Multiply and divide numbers that are in scientific notation.
- Add, subtract, multiply, and divide monomials.
- Add, subtract, and multiply polynomials.
- Factor polynomial expressions by taking out the greatest common factor.
- Factor by grouping.
- Factor trinomials.
- Factor the difference of two squares.
- Solve quadratic equations by factoring.
- Solve application problems involving geometry (Perimeter of a Rectangle, Supplementary and Complementary Angles, & Pythagorean Theorem)
- Reduce rational expressions involving polynomials.
- Multiply and divide rational expressions (no long division).
- Add and subtract rational expressions with monomial denominators.
- Simplify basic radical expressions (square roots only).
- Multiply and simplify radical expressions (square roots only).
- Rationalize the denominator (denominators containing one term only; square roots only).
- Add or subtract simplified radical expressions (square roots only).
- Convert units of measurements across measurement systems.

# MyMathLab

## Welcome Students!

***MyMathLab*** is an interactive website where you can:

- Self-test & work through practice exercises with step-by-step help to improve your math skills.
- Study more efficiently with a personalized study plan and exercises that match your book.
- Get help when YOU need it. MyMathLab includes multimedia learning aids, videos, animations, and live tutorial help.

## Before You Begin:

To register for MyMathLab, you need:

- ☑ **A MyMathLab student access code** (packaged with your new text, standalone at your bookstore, or available for purchase with a major credit card at www.pearsonmylab.com)
- ☑ **Your instructors' Course ID:_____rodriguez47103_____**
- ☑ **A valid email address**

## Student Registration:

- Enter www.pearsonmylab.com in your web browser.
- Under Register, click **Student**.
- Enter your **Course ID** exactly as provided by your instructor and click **Continue.** *Your course information appears on the next page. If it does not look correct, contact your instructor to verify the Course ID.*
- Sign in or follow the instructions to create an account. Use an email address that you check and, if possible, use that same email address for your username. Read and accept the License Agreement and Privacy Policy**.**

- Click **Access Code**. Enter your **Access Code** in the boxes and click **Next**. *If you do not have an access code and want to pay by credit card or PayPal, select the access level you want and follow the instructions. You can also get temporary access without payment for 17 days..*

Once your registration is complete, a **Confirmation** page appears. You will also receive this information by email. Make sure you print the Confirmation page as your receipt. Remember to **write down your username and password**. You are now ready to access your resources!

## Signing In:

- Go to www.pearsonmylab.com and click **Sign in**.
- Enter your **username** and **password** and click **Sign In**.
- On the left, click the name of your course.

The first time you enter your course from your own computer and anytime you use a new computer, click the **Installation Wizard** or **Browser Check** on the Announcements page. After completing the installation process and closing the wizard, you will be on your course home page and ready to explore your MyMathLab resources!

## Need help?

Contact Product Support at **http://www.mymathlab.com/student-support** for live CHAT, email, or phone support.