

MIDDLESEX COUNTY COLLEGE  
EDISON, NEW JERSEY

MATHEMATICS DEPARTMENT

Date: January 2010

Course Title: Basic Mathematics

Course No. MAT 010

Class Hours: 3

Laboratory Hours: 0

Credit Hours: 0

Department Head Approval: \_\_\_\_\_  
Maria DeLucia, Ph.D.

Dean Approval: \_\_\_\_\_  
Stephen Larkin, Acting Dean

Prerequisite: Appropriate score on the College placement test.

Textbook of Course:

Author: Miller, O'Neill and Hyde  
Title: Basic College Mathematics, 2e  
Publisher: McGraw-Hill

Software packaged with the text

The textbook for MAT 010 comes packaged with access codes to two different computer software systems. The first is *ALEKS* and the second is *MathZone*. For this semester, students will be **required to use the *ALEKS* program for the course**. The *MathZone* software is another option that students may use to practice their skills. *MathZone* will not be required in this class.

**Students should be told the first day of class that their textbook comes packaged with access codes for *ALEKS* and for *Math Zone*. Many students inadvertently throw out what seems like unimportant material and keep only the text.**

**Students who have purchased a used text or borrowed a book will have to buy the stand-alone Aleks access code available in the bookstore.**

Catalog Course Description:

This course focuses on computational skills and problem solving. Topics include addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals, ratio and proportion, percent, measurement, areas and perimeters of geometric figures, basic descriptive statistics and operations with integers. Applications are included as well.

*Note: A minimum grade of "C" is required for movement from one remedial course to another and for completion of the remedial requirements to qualify for credit courses.*

**Goals:**

The course shall enable students who plan to take Algebra I to become better acquainted with the elementary arithmetic fundamentals. The course is also designed to aid the student who does not need additional mathematics courses in his/her curriculum to gain competency in arithmetic fundamentals.

**Objectives of the Course:**

Students should be able to:

1. add, subtract, multiply and divide whole numbers
2. solve word problems with whole numbers
3. rename common fractions in lower and higher terms
4. put common fractions in ascending order
5. add, subtract, multiply, and divide common fractions
6. solve word problems with common fractions
7. put decimal fractions in ascending order
8. add, subtract, multiply and divide decimal fractions
9. solve word problems with decimals
10. write ratios as fractions and in simplest form
11. write rates as fractions and find unit rates and prices
12. write sentences as proportions and solve problems by writing proportions
13. solve word problems involving ratios
14. understand the meaning of percent
15. rename common fractions as percents and decimal fractions
16. rename decimal fractions as common fractions and percents
17. rename percents as decimal fractions and common fractions
18. solve percentage word problems
19. compute area and perimeter of rectangles, squares, triangles, and circles
20. understand and apply the Pythagorean theorem
21. find the mean, median, and mode of a set of data
22. add, subtract, multiply and divide integers

**Grading Criteria**

- a. In order for a student to be considered remediated in MAT 010, a **student has to achieve a minimum grade of "C" in the course.** Please make sure that your students are aware of this at the beginning of the semester. This information should be in writing for the students in the course outline which you will be giving them on the first day of class. Since there are some students who will miss the first few sessions, it would be a good idea to mention these guidelines several times throughout the semester.

**b. The final grade is comprised of four parts:**

❖ Aleks Pie *	15%
❖ Aleks quizzes (required) and in-class quizzes*	15%
❖ Tests	40%
❖ Cumulative Final Exam	30%
<u>(Students must score at least a 60% on the final exam in order to get a 'C' in the course.)</u>	

Grades should be assigned as follows:

92% - 100%	A	77%-78%	C+
89%-91%	A-	70%-76%	C
87%-88%	B+	60%-69%	D
82%-86%	B	below 60%	F
79%-81%	B-		

**\*ALEKS**

The student textbook comes with an access code to Aleks, a program that students will be required to use. You will receive a separate instructor guide and student guides to give to your students to fully explain this program and the registration process.

There will be workshops held during the week before the semester begins to familiarize you with Aleks, explain how it will be incorporated into the course and to give you an opportunity to bring up questions or concerns.

**MathZone**

The student textbook also comes packaged with an access code to an excellent multimedia program called *MathZone*. It provides the student with the online version of the textbook (e-book), videos of lessons on selected course objectives, step-by-step solutions to exercises, and hundreds of tracked tutorial exercises. **Because ALEKS will be compulsory for your class Math Zone should be optional as a resource for students practicing on their own.**

**Note:**

**As an instructor, you will be registered for ALEKS. You will be given a login and password for each and you will receive a course code so that your students can register for both programs. Your students will be able to work on MathZone with or without a course code. However, if you want to see the work they are doing in MathZone you will need to be registered and receive a course code. If you would like this option, please let Susan Shulman know and a course code will be generated for you.**

**CHAPTER TESTS**

Department chapter tests are available in Center II and must be used in this course. **Do not allow students to take the tests home, under any circumstances.** Answer keys for the tests are available and will be put in your mailboxes in the beginning of the semester.

### Quizzes

Aleks mastery quizzes online are required of your students. There are also practice quizzes that may be taken as many times as the student would like, with the mastery quizzes being taken only once. In addition to the Aleks quizzes, you will most likely give your own in-class quizzes. The mean of the Aleks mastery quizzes and your own quizzes should make up 15% of the final grade. There are 8 Mastery Quizzes for your students. **Please make at least 4 ALEKS quizzes required for your course.**

Quizzes serve many purposes during the semester. They are a fast way for you and your students to assess their understanding of the material presented in between tests. Because there is no formal attendance policy at the College, many instructors often give quizzes as a way to motivate student attendance.

### Homework

Most teachers give homework assigned from the textbook after each class meeting and take questions on those problems during the next class session. Some instructors collect and grade textbook homework, but due to time constraints, many do not. Whether textbook assignments are graded or not, students should be made aware that doing homework is of the utmost importance in order to solidify learned skills and to provide a strong foundation upon which they can learn new material.

Because students will be working on ALEKS, you will probably want to streamline the homework from the text so that students are not overwhelmed with work.

### Attendance

There is no official attendance policy. However, students should be made aware of how important attendance is for their success. Some instructors build in extra quizzes to encourage good attendance. Whatever you choose, some students will have attendance problems and the issue needs to be addressed.

### Extra Help

Students should be informed where they can get help if they have difficulty with the subject matter. Some suggestions are listed below:

1. If you are a full-time instructor, students should be encouraged to come for help during your office hours.
2. Students can get tutoring help at two different locations on campus.
  - a. The Developmental Mathematics Lab/Tutoring Center in MH 142 is available for any developmental mathematics student. The lab is well-equipped with very competent tutors and computers where students can practice their skills. It should be made clear to the students that the tutors are not private tutors and that they must be shared among all students in the lab. Also, it is always best if a student comes prepared with a specific topic or problem that is causing difficulty. The schedule for the MH 142 lab will be handed out at the beginning of the semester and posted on the window of the lab for your students' convenience.
  - b. The Tutoring Center in JL is open many hours during the day and evening. Mathematics faculty volunteer during selected hours and peer tutors are available to answer students' questions. A schedule of hours for the JL Tutoring Center will also be available at the beginning of the semester.
3. Students should be encouraged to work in study groups. This will be fostered if you allow students to work in groups, at times, during your class sessions. In particular, ask Susan Shulman about projects that are available in Center 2 on given topics. These projects lend themselves to cooperative learning in the classroom and encourage group work, while sometimes raising the motivation level. The projects can also be found in the Faculty Orientation Manual that is online on the Department website or by looking at a hard copy in Center 2

### Final Examination

A **standardized** final exam will be available for you to administer to your classes. MAT- 010 classes will take the final exam on the last meeting of the class. Information on final exam procedures will be sent to you toward the end of the semester.

### **IMPORTANT NOTE:**

**Students must pass the final exam with at least a 60% in order to pass the course with a grade of 'C' or better.**

### End-Term Summary

A summary of your students' performance is needed at the end of the semester. You will receive a form to fill out at the end of the semester.

The following is a suggested course outline for MAT 010 course. These are just suggested guidelines for you to follow and you might want to make adjustments to fit your own style. Outlines are provided for classes which meet once or twice a week.

**Outline for MAT 010 which meets once a week.**

<u>Day #</u>	<u>Material Covered</u>
1	Discuss requirements 1.1 - 1.8 * (refer to asterisk note found at the end of the twice a week outline)
2	2.1 - 2.6
3	<b>Review for Test #1</b> (Chapters 1 and 2) 3.1-3.3
4	<b>TEST #1</b> (Chapters 1 and 2) 3.4 - 3.5
5	4.1 - 4.6
6	9.4 <b>Review for Test #2</b> (Chapters 3, 4 and 9.4)
7	<b>TEST #2</b> (Chapters 3, 4 and 9.4) 5.1 - 5.4
8	6.1 - 6.7
9	<b>Review for Test #3</b> ( Chapters 5 and 6) 10.1-10.2
10	<b>TEST #3</b> (Chapters 5 and 6) 10.3-10.4
11	10.5, 8.3, 8.2
12	7.1-7.4 <b>Review for Test #4</b> (Chapters 7, 8 and 10)
13	<b>TEST #4</b> (Chapters 7, 8, and 10) <b>Review for Final Exam</b>
14	<b>FINAL EXAM</b>

**Outline for MAT 010, which meets twice a week.**

<u>Day #</u>	<u>Material Covered</u>	<u>Guide for ALEKS</u>
1	Discuss requirements, 1.1- 1.4 *	Work on
2	1.5- 1.7	Practice Quizzes
3		1 and 2 (PQ1,PQ2)
4	2.1-2.3	Complete Mastery

5	2.4 -2.6	Quizzes 1& 2 (MQ1 and MQ2) before Test #1
6	<b>Review for Test #1</b> (Chapters 1 and 2)	
7	<b>Test #1</b> (Chapters 1 and 2)	
8	3.1-3.3	Work on Practice Quizzes 3 and 4 (PQ3 and PQ4)
9	3.4 - 3.5	
10	4.1-4.4	Complete Mastery
11	4.5-4.6, 9.4	Quizzes 3 and 4 (MQ3 and MQ4) before Test #2
12	<b>Review for Test #2</b> (Chapters 3,4 and 9.4)	
13	<b>TEST #2</b> (Chapters 3, 4 and 9.4)	
14	5.1 - 5.4	Work on Practice Quizzes 5 and 6 (PQ5 and PQ6)
15	6.1 - 6.2	
16	6.3- 6.4	Complete Mastery
17	6.5 - 6.7	Quizzes 5 and 6 (MQ5 and MQ6) before Test #3
18	<b>Review for Test #3</b> (Chapters 5 and 6)	
19	<b>TEST #3</b> (Chapters 5 and 6)	
20	7.1 - 7.4	Work on Practice Quizzes 7 and 8 (PQ7 and PQ8)
21	8.3, 8.2 (Pythagorean Theorem and applications)	
22	8.4 - 8.5	Complete Mastery
23	10.1 - 10.2	Quizzes 7 and 8 (MQ7 and MQ8) before Test #4
24	10.3 - 10.4	
25	10.5	
	<b>Review for Test #4</b> ( sections from Chapter 7 , 8 and 10)	
26	<b>TEST #4</b> (sections from Chapter 7, 8 and 10)	
27	<b>Review for Final Exam</b>	
28	<b>FINAL EXAM</b> (There are special final days after the last day of class that you can use to administer the final exam. If you choose to do this, you must speak to Dr. DeLucia and give your students enough notice as to when the final exam will be so that they can adjust their schedules).	

**\*Chapter 1 should be taught in a streamlined fashion. Because student in MAT 010 should be able to do operations with whole numbers, you should not spend class time working on the four operations with whole numbers. (Students who are very weak in whole number operations should be encouraged to take MAT 010 in two semesters and make a change from your class to a MAT 010A section within the first three weeks of the semester.)**

**The emphasis in Chapter 1 should be on the following:**

- reading, writing and rounding whole numbers

- **properties of whole numbers**
- **word problems with whole numbers**
- **exponents, squares, and order of operations with whole numbers**

### **\*\*Trouble Shooting**

**A Final Exam item analysis was performed during the fall 2009 semester to let us know the strengths and weaknesses of our students. This is available in your MAT -010 instructor packet and on the Mathematics Department MCC website under MAT -010 information. Please note the topics, which cause most problems and make sure to emphasize while teaching the curriculum. There are also worksheets in the packet and on *MathZone* that correspond to these topics in order to provide your students with more practice**

### **CHECK LIST**

The following are things you will need throughout the semester:

1. A Mat-010 instructor information booklet is available in Center 2. It contains important facts about the course, final exam item analyses and reports, challenge test information, two semester Mat-010 information and the instructor guide for Aleks. This instructor information is also available online on the Mathematics Department website at <http://www.middlesexcc.edu/academi/mat/>
2. First Day Needs
  - a. On the first day of class you should give each student a course outline with pertinent information (course title, your name, how they can reach you, day-to-day outline, grading criteria, cheating policy and anything else you think they should know).
  - b. When you are registered as an instructor for Aleks (this will be done for you), a course code will be generated. You must give this course code to your students on the first day of class.
3. Throughout the semester you will be receiving memos and directives from various people on campus and in the Department. Please read these carefully and respond to them in a timely fashion.
4. Chapter tests are available for all your students in Center 2. (DO NOT ALLOW STUDENTS TO KEEP THESE)
5. The Final Exam will be ordered for you, packaged for your students and kept in Center 2 until the day you will be administering the final.

6. End term summary forms will be in your mailbox at the end of the semester for you to fill out and return to Susan Shulman.

**If you have any questions, please contact Basic Mathematics Coordinator, Susan Shulman at Extension 3734.**

e-mail: [SShulman@middlesexcc.edu](mailto:SShulman@middlesexcc.edu) or at [smshulman@yahoo.com](mailto:smshulman@yahoo.com)

Thank you in advance for cooperation.