

 **DIVISION OF ARTS AND SCIENCES**

**College Math,** Summer 2015

MAT 105,

**Section #** M06

**Days: M, Wed,**

**Time: 3:00-4:30**

**Campus, Manhattan**

**Room Number: 831**

3 credits

**Instructor: Lucie Mingla**

**Office:** 725

**Office Hours: By appointment**

**E-mail:**

lmingla@asa.edu

**COURSE DESCRIPTION**: This comprehensive, broad- based credit-bearing course is designed to familiarize students with the techniques of problem-solving. This course contains two main parts: College Algebra and Fundamental Geometry. The first part of the course is designed to introduce students to the concepts and techniques of Algebra. Topics include algebraic operations, equations, polynomials, function concepts, basic topics from plane geometry and trigonometry of the right triangle. This course is designed to ensure that students are capable of satisfactorily completing challenging exercises and demonstrating that they are aware of math concepts essential to college-level learners.

**COURSE PREREQUISITES**: Placement Examination or successful completion of MAT 005 and/or MAT 010

**REQUIRED MATERIALS:**

**Textbook:** McKeague, C. (2010). Intermediate Algebra and Geometry. Mason, OH: Cengage Learning. ASA Custom Edition. ISBN-13: 978-1-133-066682 ISBN-10: 1-133-066682

**Scientific Calculator**

 **SUGGESTED READING (on reserve in the library):**

Schwartz, A. (2005, November 21). *Learning Math Takes Attitude, Perseverance, and Courage.* Retrieved September 14, 2012, from The Hispanic Outlook in Higher Education, Edge Digest: <http://www.eddigest.com/index.php>

**RECOMMENDED WEBSITES:**

[www.mathtv.com](http://www.mathtv.com)

www.khanacademy.org

[www.mathpower.com](http://www.mathpower.com)

[www.mathsos.com](http://www.mathsos.com)

[www.mathmaster.com](http://www.mathmaster.com)

[www.aplusmath.com](http://www.aplusmath.com)

**GENERAL EDUCATION OBJECTIVES:**

This course will provide students with an opportunity to experience mathematics as an intellectual exercise and a way of thinking using problem solving skills.

**MODE OF INSTRUCTION:** Interactive lecture format

**COURSE GOALS and OBJECTIVES:**

 Upon completion of the course students will be able to:

* Apply properties of exponents to solve algebraic problems.
* Perform operations on polynomials.
* Identify and solve different types of equations.
* Utilize the knowledge of properties of functions to solve problems.
* Recognize the properties of plane figures and use algebraic equations to represent geometric concepts.

**ABSENCES:**

It is expected that all students will attend each lecture session. Students are allowed a maximum of three (3) unexcused absences. In the event of emergencies, students are expected to provide proper documentation in regards to absences as well as take full responsibility to make up missed work. Absences exceeding this limit will directly affect the final grade in the course.

* **STANDARDS OF CONDUCT:** The commission of or the attempt to commit any cheating and/or plagiarism are in violation of the Standard of Conduct and may be disciplined by an "F" on the quiz/test/exam, an "F" in the course, and up to and including suspension and expulsion from ASA.
* **BE COURTEOUS.** Please arrive on time in class. If you have an emergency and must leave in the middle of class, please do so quietly.
* **BE RESPECTFUL.** As instruction is presented, feel free to ask any pertinent questions that arise. However, please refrain from any unnecessary talking in class because it is disruptive.
* Please turn off all electronic devices when you are in class.
* ASA policy does not allow visitors in the labs or classrooms.  Only registered students may use the facilities.  Students may not bring children, spouses, friends, etc. to class.

**GRADING SYSTEM:**

A Satisfactory grade will be attained by achieving an overall score of 65% or above.

The grading system is based on the percentages as follows:

The Requirement Percentage %

 Midterm Exam 25

 Final Exam 35

 Quizzes 20

Homework/Class Participation/Professionalism 20

 Total 100 %

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| **GRADING RUBRIC** |
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| **Score** | **Description** |
| **4** | A correct solution and an appropriate strategy are shown or explained and the solution is shown with correct label or description if necessary.  |
| **3** | A complete, appropriate strategy is shown or explained, but: a) An incorrect solution is given due to a simple computational error or no solution is given. b) A correct solution is given with no solution strategy or explanation shown. c) A correct solution and appropriate strategy is shown or explained, but not labeled correctly when necessary. |
| **2** | a) Some parts of an appropriate strategy are shown or explained, but some key elements are missing. b) Some parts of an appropriate strategy are shown or explained, along with some inappropriate parts. c) Appropriate strategy shown or explained, but implemented incorrectly.  |
| **1** | Some work or explanation beyond re-copying data is present, but work would not lead to a correct solution. One or more incorrect approaches attempted or explained.  |
| **0** | a) No work or solution shown or explained. b) Incorrect solution and no work shown or explained. c) Some data from the problem copied over, but no evidence of any strategy is shown or explained.  |

**DISABILITY STATEMENT:**

ASA Institute adheres to the requirements of the Americans with Disabilities Act. If you are a student with a documented disability who will require accommodations, contact Student Disability Services at 151 Lawrence Street Room 219 to determine eligibility. Any student with a disability should contact Student Disability Services as soon as possible for assistance in developing a plan to address your academic needs in this course.

**Office of Student Disability Services**

Director: Mr. Bateman Harris, M. Ed.

Brooklyn: Manhattan:

151 Lawrence St, Rm 324 47 West 34th St, MH-2, Rm 724

Phone: (718) 522-9073 Ext. 2221 Phone: (212)672-6450 ext. 1231

E-mail: bharris@asa.edu E-mail: bharris@asa.edu

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| **Session** | **Section** | **Topic** | **Homework Assignment** |
| 1 | 1.1-1.3 | Real Numbers, Simplifying and evaluating algebraic expressions. | **HW # 1**(3hrs) **Read Chapters 1.1,1.2,1.3****Do the following problems:**Pages#11-14, Problems # 87, 91, 95, 107, 111, 115Pages#25-30, Problems# 101, 105,110  |
| 2 | 1.4 | Solving First Degree Equations | **HW # 2**(3hrs) **Read Chapter 1.4****Do the following problems:**Pages#45-52, Problems#3,5, 9, 15, 27,29,31,33,53 |
| 3 | 1.5 | Problem Solving Involving First Degree Equations | **HW #3**(3hrs) **Read Chapter 1.5****Do the following problems:**Pages#45-52, Problems#35,37,39,41,43,45,49,83,85 |
| 4 | 2.1 | Properties of Exponents | **HW # 4**(3hrs) **Read Chapter 2.1****Do the following problems:**Pages#83-87,Problems#1, 2, 3, 4, 9, 13,14, 15, 17, 19, 27,31,39, 43, 47, 51, 53,63,67 |
| 5 | 2.2-2.3 | Polynomials, Sums and Differences, Multiplication of Polynomials | **HW # 5** (3hrs) **Read Chapters 2.2, 2.3****Do the following problems:**Pages 93-97, Problems#7, 13, 17, 19, 25, 35Pages 103-106, Problems # 1, 3, 5, 7, 9,13,23, 31,39 |
| 6 | 2.4-2.5 | Greatest Common Factor, Special Factoring | **HW # 6** (3hrs) **Read Chapters 2.4, 2.5****Do the following problems:**Pages#109-112, Problems#1,3,7, 9, 19, 23, 27,33,35,37 Pages # 117-120 Problems# 33,34,41,45,49 |
| 7 | 2.6 | Factoring Trinomials, | **HW # 7**(3hrs) **Read Chapters 2.6****Do the following problems:**Page#125-128, Problems#1, 3,5,7,9, 11, 13, 21, 25, 27, 29, 31 |
| 8 | 2.7-2.8 | A General Review of Factoring. Solving Equations by Factoring. | **HW # 8**(3hrs) **Read Chapters 2.7, 2.8****Do the following problems:**Pages#131-134,Problems#1, 3, 5,9,19,31,Pages#143-146,Problems#1,3,5,21,22,25,31 |
| 9 | 3.1-3.2 | Reducing to Lowest Terms. Multiplication and Division of Rational Expressions. | **HW # 9** (3hrs) **Read Chapters 3.1, 3.2****Do the following problems:**Pages#165-169, Problems#3,7,9,15,17, 19, . Pages#175-180, Problems#1, 3, 5, 7, 9, 13 ,15,17,21,23,25,29 |
| 10 | 3.3 | Addition and Subtraction of Rational Expressions. | **HW # 10** (3hrs) **Read Chapter 3.3****Do the following problems:**Pages#187-190,Problems#3, 5, 15,17, 19, 21,25, 27, 29 |
| 11 | 3.4 | Equations Involving Rational Expressions | **HW # 11**(3hrs) **Read Chapter 3.4****Do the following problems:**Pages#197-200, Problems #1, 5, 7,9, 33, 35,41  |
| 12 | 3.5-3.6 | Simplified Form for Radicals, Quadratic Formula | **HW # 12** (3hrs) **Read Chapters 3.5, .36****Do the following problems:**Pages#209-214,Problems#1, 3,9,21,23,27,33 Pages#221-225 Problems#1(a,b,c,d), 3(a,b,c,d)  |
| 13 | 3.6 | Review |  |
| 14 |  | Midterm Examination |  |
| 15 |  |  |  |

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| **Session** | **Section** | **Topic** | **Homework Assignment** |
| 16 | 4.1-4.3 | Concept of a Function, Graphing Relations and Functions | **HW # 13** (3hrs) **Read Chapters 4.1, 4.2, 4.3****Do the following problems:**Pages#245-252,Problems#1(a,b,c,d,e,f),3Pages#261-268,Probems#1,3,5,7,11,13,21Pages#275-279,Probems#1,3,5,9,13, 15,17,19, 27,37 |
| 17 |  | Domain of a Function | **HW #14**(3hrs)**Do the following problems:****Handout HW#14 is available on the T-drive** |
| 18 | 4.4 | Algebra and Composition with Functions | **HW # 15**(3hrs) **Read Chapters 4.4****Do the following problems:**Pages#287-289,Problems#1, 2, 3, 7, 11, 13, 17, 19, 21, 23, 31(a,b,c,d), 33(a,b,c) |
| 19 | 5.1 | Basic Concepts: Lines, Angles, Angle Classifications | **HW # 16** (3hrs) **Read Chapter 5.1** **Do the following problems:**Pages#311-314,Problems#1, 5, 11, 13, 15, 19,23, 27, 31, 35,37,41, 43 |
| 20 | 5.2 | Parallel Lines and Special Angles. | **HW # 17** (3hrs) **Read Chapters 5.2****Do the following problems:**Pages#323-326,Problems#1,3,7, 11, 13, 17,21,25,31,43 |
| 21 | 5.3 | Triangles, Classification of triangles. | **HW # 18** (3hrs) **Read Chapter 5.3****Do the following problems:**Pages#331-336,Problems#11, 13, 15, 19, 21, 31, 37, 41,43,55,59 |
| 22 | 5.4 | Congruence Statement (SAS, ASA, AAS, SSS) | **HW # 19** (3hrs) **Read Chapter 5.4****Do the following problems:**Pages#343-346, Problems#1, 3, 13, 15, 25,29, 31 |
| 23 | 5.5 | Parallelograms and other Quadrilaterals | **HW # 20** (3hrs) **Read Chapter 5.5****Do the following problems:**Pages#351-354, Problems#1, 3, 11, 23, 27, 37,43 |
| 24 | 5.6 | Similar Triangles, Proportions | **HW # 21**(3hrs) **Read Chapter 5.6****Do the following problems:**Pages#361-364 Problems# 1, 5, 11, 21, 23,33,37 |
| 25 | 5.7 | Pythagorean Theorem. Special Right Triangles. | **HW # 22** (3hrs) **Read Chapters 5.7****Do the following problems:**Pages#373-376, Problems#1, 3,7,13, 17, 19, 23,31,41 |
| 26 | 5.7 | Special Right Triangles | **HW # 23** (3hrs) **Read Chapters 5.7****Do the following problems:****Handout is available on the T-drive** |
| 27 | 5.8-5.9 | Trigonometric Functions and Solution of Right Triangles, Applications of Trigonometric Functions | **HW # 24** (3hrs) **Read Chapters 5.8, 5.9****Do the following problems:**Pages#381-384, Problems#1, 3,7,9,13,15, 33, 37, 41 Pages#393-397 Problems#1,3,5,7,17,21 |
| 28 | 5.10 | Perimeter and Area of a Rectangle and a Parallelogram, Area and Circumference of a Circle | **HW # 25**(3hrs) **Read Chapter 5.10****Do the following problems:**Pages#405-408, Problems#5, 9, 13, 15, 21, 23, 29 |
| 29 |  | Review |  |
| 30 |  | Final Examination |  |

**Professionalism Rating Form:**

Acquisition of knowledge and proficiency in specified skills are not the only bases by which your progress will be measured. To complement these competencies, you will also be assessed on the level of professionalism you display during the semester. The Professionalism Rating Form lists the character trait indicators that will be considered in the assessment process. During your class sessions, your instructor will discuss the salient items of the professionalism rating form to better evaluate you on the professional behavior expected of you. At the end of the semester, the completed form will be forwarded to the CAREER SERVICES DEPARTMENT to be used as THE basis for prioritizing externship and placement assignments

***Professionalism Rating Form\****

Student Name: Course/Section:

Instructor Name Date

Instructions: Indicate the appropriate rating for each student in each category. The expected rating for all students is between -1 to +1. **Any checkmarks in the shaded "*Needs Improvement”* or "*Exceptional”* columns require written comments in the space below.**

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| --- | --- | --- | --- |
| **Category** | **Needs Improvement**Major transgressions occurred or minor errors habitually exhibited. WRITTEN COMMENTS REQ'D | **Acceptable**No major incidents; any minor events were resolved | **Exceptional**No negative incidents of any kind; specific commendable events observed. WRITTEN COMMENTS REQ'D |
| **Reliability and Responsibility** | **-3** | **-2** | **-1** | **EXPECTED** | **1** | **2** | **3** |
| Is consistently tardy or absent:does not complete assigned tasks |  |  | Is punctual and dependable |  |  | Assumes tasks beyond those assigned and completes them efficiently |
| **Willingness to Learn/ Intellectual Curiosity** | **-3** | **-2** | **-1** | **EXPECTED** | **1** | **2** | **3** |
| Is not receptive to instruction and shows no willingness to learn |  |  | Is receptive to instruction by faculty and staff |  |  | Seeks out opportunities to learn beyond the content outline |
| **Communication Skills** | **-3** | **-2** | **-1** | **EXPECTED** | **1** | **2** | **3** |
| Discourages interaction through poor language skills, inappropriate terminology, or an unreceptive attitude |  |  | Interacts comfortably with others |  |  | Facilitates interactions even under difficult circumstances |
| **Demeanor and Personal Appearance** | **-3** | **-2** | **-1** | **EXPECTED** | **1** | **2** | **3** |
| Performance is impeded by dress, grooming, or hygiene |  |  | Exhibits grooming, dress, & hygiene commensurate with college requirements |  |  | Demonstrates the maturity and manner of a future professional |
| **Honesty and Integrity** | **-3** | **-2** | **-1** | **EXPECTED** |  |
| Is distrusted by others owing to incidents of being deceitful or indiscrete |  |  | Demonstrates integrity in all situations |
| **Respect** | **-3** | **-2** | **-1** | **EXPECTED** |
| Overtly belittles or demeans others (instructors, peers) through words or mannerisms |  |  | Treats all people with courtesy both publicly and privately |

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| Written Comments (specify relevant category): |  |
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