

# MATH 107 – College Algebra

## Section 6981

### January 30 to March 26, 2017

# COURSE SYLLABUS



University of Maryland University College

**Course:** MATH 107, College Algebra  
Online Education, 3 semester hours credit

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**Course Materials:** This course uses two online (and free) textbooks. The links for those textbooks are below.

Textbook #1 (Chapter 0 only): Review of Intermediate Algebra, Stitz and Zeager, 2013  
[http://www.stitz-zeager.com/ch\\_0\\_links.pdf](http://www.stitz-zeager.com/ch_0_links.pdf)

Textbook #2 (Chapters 1,2,3,4,5,6): College Algebra, Stitz and Zeager, 2013  
<http://www.stitz-zeager.com/szca07042013.pdf>

**Calculator Requirements:** A scientific/graphing calculator is suggested for the course. It is NOT a requirement to purchase a calculator, since there are many online calculator tools. For example, a graphing calculator can be found at <https://www.desmos.com/calculator>. If you desire to purchase a graphing calculator, the TI-83-Plus is suggested. It is approximately \$95 at Wal-Mart.

### Grading Information:

Class Discussion Participation: 20%  
Quiz #1: 10% (material from week-1)  
Quiz #2: 10% (material from weeks-2,3)  
Quiz #3: 15% (material from weeks-4,5)  
Quiz #4: 15% (material from weeks-6,7)  
Linear Modeling Project: 10%  
Final Exam: 20% (cumulative)  
**TOTAL Course: 100%**

**Grading Scale:** A typical 10-point grading scale will be used.  
A= 90% to 100%, B= 80% to 89%, C= 70% to 79%, D= 60% to 69%, F= < 60% .

**Class Discussion Participation:** Students are required to participate in the discussion area weekly. The instructor will post a discussion question for student response, OR, students will post a solution to textbook homework problem. Students are required to post at least 2 weekly messages (unless otherwise noted) - an original response or problem and a response to another student's message. This participation is key to your success in the class as we will all learn from each other during this process. I expect everyone to be active participants in the class. Overall, it is very easy to receive a 100% participation grade.

**Homework:** There is NO graded homework in this class. Each week you will find a list of suggested homework problems from various sections of the textbooks. Some of these problems will be used for weekly discussions. The solutions are in the back of each textbook, but it does not include detailed work. Students should do some or all of these problems as practice to test their understanding of the material. If these problems are used for weekly discussions, students must include detailed solution detail for credit. If you have questions about any of these problems, PLEASE post them in the "Ask the Instructor" discussion area.

**Quizzes:** There will be 4 quizzes in the class. These quizzes will be open for 7 days. The material will be a combination of short answer and multiple-choice questions based on material from the textbooks.

**Linear Modeling Project:** The Linear Modeling Project will be released at the start of week-3 and will be due at the end of week-4. Students will be required to find a unique set of linear data, create a scatterplot of the data, apply curve-fitting techniques to find a linear model of the data, assess the fit of this linear model to the data and interpret the results. Student projects must be submitted by the due date in the Assignments Folder of our course.

**Final Exam:** The final examination will NOT be proctored. The exam must be taken during a 3-day period of week-8, the last week of the course. The final exam is open book and includes multiple-choice and short answer questions. **However, you are required to show your work and calculations, where requested, in order to receive full credit.** The material on the Final Exam covers the entire course. **The final exam must be individually completed and represent your own personal work. Neither collaboration nor consultation with others is allowed.** The solutions for the final examination will not be posted. The final exam will be given during the final exam week, and you are expected to take the exam as scheduled. In the event of illness or extraordinary circumstances, you must contact your instructor and provide documentation to request an exception and approval to take a makeup exam. If the request is not approved, the exam grade will be recorded as a zero.

### Additional Information

**Late Policy** - Meeting course deadlines is crucial for success in computer-mediated courses. You may read at your own pace, but homework, participation, quizzes, and projects must adhere to the timetable given in the schedule. Otherwise the grade will be zero. No late homework, participation, quizzes, or exams will be accepted.

**Guideline for Receiving Tutoring Services** - We appreciate that many students may seek tutoring services to supplement our instructional program. However, tutors may not be used to complete any portion of assignments, projects, quizzes, and exams on behalf of students. Students are expected to submit their own work. Students who are suspected of submitting the work of their tutors will be reported to the dean's office for potential investigation. If you are to receive tutoring services, inform your tutor of this expectation and clarify your tutor's role and responsibility to your academic endeavors at UMUC.

### Course Schedule:

Below you will find a summary of assignments and deadlines. More details on course modules and homework is found in the next section (Course Resources). Each week, students are expected to read the textbook material, visit the modules, complete the homework problems (ungraded), and participate in class discussions. Some weeks will also contain a Quiz, Project or Exam. *Math requires practice, so have fun with the modules, homework and discussions and improve your math skills!*

All discussions and major assignments (quizzes, project and final exam) are due on Sunday at midnight (11:59pm in the US Eastern time zone) at the end of each week.

Week	Dates	Objectives and Course Material	Assignments (due dates noted)
Week 1	January 30 to February 5	Weekly Course Modules Homework: Chapter 0	Week-1 Class Discussion (midnight Sunday) Post an Introduction ( <b>optional</b> )
Week 2	February 6-12	Weekly Course Modules Homework: Chapter 1	Week-2 Class Discussion (midnight Sunday) <b>Quiz #1</b> , Week-1 (midnight Sunday) <i>* Submit in Assignments folder</i>
Week 3	February 13-19	Weekly Course Modules Homework: Chapters 1,2 Project Released	Week-3 Class Discussion (midnight Sunday) <b>Quiz #2</b> , Weeks-2,3 (midnight Sunday) <i>* Submit in Assignments folder</i>
Week 4	February 20-26	Weekly Course Modules Homework: Chapters 0,2	Week-4 Class Discussion (midnight Sunday) <b>Linear Modeling Project</b> (midnight Sunday) <i>* Submit in Assignments folder</i>
Week 5	February 27 to March 5	Weekly Course Modules Homework: Chapters 0,3,4	Week-5 Class Discussion (midnight Sunday) <b>Quiz #3</b> , Weeks-4,5 (midnight Sunday) <i>* Submit in Assignments folder</i>
Week 6	March 6-12	Weekly Course Modules Homework: Chapters 0,5,6	Week-6 Class Discussion (midnight Sunday)
Week 7	March 13-19	Weekly Course Modules Homework: Chapter 6	Week-7 Class Discussion (midnight Sunday) <b>Quiz #4</b> , Weeks-6,7 (midnight Sunday) <i>* Submit in Assignments folder</i>
Week 8	March 20-26	Prepare for Final Exam	<b>Final Exam</b> , all material (cumulative) Released: March 24 (12:01am EDT) Due: March 26 (11:59pm EDT) <i>* Submit in Assignments folder</i>

## Course Resources:

The material for this course is found in several locations. First, we have two free textbooks that includes homework problems. These problems will not be graded or collected, but should be completed for practice and to test your understanding of the material. These problems can also be used for some of our weekly discussions. There is also a set of course modules for each week. These modules provide a great overview of the key topics and also provide “drills” for self-assessment. The modules can be found under the “Course Resources > UMUC Course Modules” area of our course. The Course Modules are also accessible via “Course Resources > eReadings”, where they are split up into learning resources by week and by topic. Most students find the course modules easier to read than the textbook because they are brief and include solved drill exercises for each topic. By contrast, the textbook is more comprehensive and has a wealth of worked exercises. A summary of the textbook material, homework problems and course modules is shown below.

### Week 1: Review of Basic Concepts of Intermediate Algebra

Course Module 1: Topics 1, 2, 3, 4, 6, 7, 8

Course Module 2: Topics 1, 6

Homework Section 0.1 (p. 13): 4, 6, 7, 8, 13, 18, 22

Homework Section 0.2 (p. 36): 4, 7, 9, 12, 17, 19, 22, 23, 25, 26, 30

Homework Section 0.3 (p. 47): 1, 5, 8, 9, 12, 23, 29, 34, 41, 45

Homework Section 0.4 (p. 58): 1, 5, 6, 14, 19-23

Homework Section 0.5 (p. 68): 1-4, 10, 13

Homework Section 0.6 (p. 81): 1, 3, 7, 8, 9, 13, 14, 19-25, (31-43)odd

Homework Section 0.8 (p. 108): 1-12

Homework Section 0.9 (p. 124): 1, 2, 3, 4, 8, 10, 30, 31

### Week 2: Relations, Graphs, and Functions

Course Module 3: Topics 1, 2, 5, 6

Homework Section 1.1 (p. 15): 20-25, 37

Homework Section 1.2 (p. 29): 1, 4, 11, 21, 26, 31, 33, 35, 36, 41, 43, 45, 47, 49

Homework Section 1.3 (p. 49): 1, 2, 13-18, 23-32, 33, 37, 41, 47

Homework Section 1.4 (p. 63): 1, 5, 9, 11, 12, 13, 15, 22, 27, 30, 31, 33, 35, 37, 41, 45, 49, 53, 64, 67, 70, 72, 74

Homework Section 1.5 (p. 84): 1, 5, 9, 13, 17, 21, 25, 47, 49

### Week 3: Transformation of Functions; Linear Functions, Absolute Value Functions, and Applications

Course Module 2: Topic 2

Course Module 3: Topics 3, 5

Homework Section 1.6 (p. 107): 1, 5, 9, 15, 19, 21-24, 27, 31, 36, 39, 42-57, 86-90

Homework Section 1.7 (p. 140): 1, 5, 9, 19, 21, 22, 23, 25, 30, 33, 34, 54, 56, 58, 60

Homework Section 2.1 (p. 163): 1, 3, 5, 7, 11, 13, 15, 17, 21, 23, 25, 30, 32, 33, 35, 37, 39, 41, 54, 56, 60, 61, 66, 67

Homework Section 2.2 (p. 183): 22-26

Homework Section 2.5 (p. 230): 2, 3, 4

### Week 4: Complex Numbers; Quadratic Equations, Functions, and Applications

Course Module 1: Topic 5

Course Module 3: Topics 3, 5, 6

Course Module 3: Topic 4

Homework Section 0.7 (Ch. 0, p. 95): 1, 2, 4, 5, 6, 8, 9, 11, 23, 25

Homework Section 0.10 (Ch. 0, p. 132): 1, 3, 5, 11, 13, 14, 19-24, 27, 30, 31, 33, 35, 36

Homework Section 2.3 (p. 200): 1-6, 10, 11, 15, 19, 20, 21, 22, 23, 25

Homework Section 2.4 (p. 220): 18, 19, 20, 23, 24, 25, 33, 34, 36

Homework Section 2.5 (p. 232): 6(b)

### Week 5: Polynomial Functions, Rational Functions, Equations, and Inequalities

Course Module 4: Topics 1, 2

Course Module 2: Topics 4, 5

Homework Section 3.1 (p. 246): 1, 2, 3, 4, 7, 11, 13, 16, 21, 23, 27, 29, 30, 31

Homework Section 4.1 (p. 314): 1, 2, 3, 4, 9, 10, 19, 21

Homework Section 4.2 (p. 333): 1, 3, 6, 7, 8, 9, 10, 17  
Homework Section 0.8 (Ch. 0, p. 108): 19, 20, 21, 22, 23, 34, 36  
Homework Section 4.3 (p. 353): 7, 8, 11, 12, 21, 23, 25, 27, 30, 33-36, 40

### **Week 6: Composition of functions; Inverse, Radical, Exponential, and Logarithmic Functions**

Course Module 3: Topics 6, 7  
Course Module 5: Topics 1, 2, 3

Homework Section 5.1 (p. 369): 1, 5, 9, 11, 13, 14, 16, 18, 21, 31, 33, 56, 57  
Homework Section 5.2 (p. 394): 1, 4, 7, 10, 15, 17, 25, 26  
Homework Section 0.9 (Ch. 0, p. 124): 17, 18, 19, 20, 21, 22  
Homework Section 5.3 (p. 407): 1, 2, 22, 23, 27, 38  
Homework Section 6.1 (p. 429): (1-29)odd, 33, 37, 45, 58, 60, 62, 64, 66, 75, 76, 77  
Homework Section 6.5 (p. 487): 36, 39, 40, 41

### **Week 7: Exponential and Logarithmic Properties, Equations, and Applications**

Course Module 5: Topics 2, 4, 5 Drills

Homework Section 6.2 (p. 445): 1, 5, 9, 13, 16, 17, 21, 24, 25, 34, 37, 38, 42  
Homework Section 6.3 (p. 456): 1, 2, 3, 4, 5, 6, 10, 11, 12, 34, 35  
Homework Section 6.4 (p. 466): 1, 3, 5, 7, 9, 11, 13, 15, 17, 25, 39, 40, 41  
Homework Section 6.5 (p. 482): 1, 2, 8, 9, 14, 18, 19, 20, 21, 23, 25, 26, 28, 31, 37, 39

**Websites:** The following webpage is an excellent resource for this class: <http://www.killoughmath.com>. This website was created by the instructor to supplement the course. On this site, view an introduction video on the first page and then select the "UMUC Math-107" link to see more specific content for our class. For example, you will find textbook PDF files and links to other supplemental content.

**Other Information:** Please visit the online course syllabus for more information about the Course Description, Course Outcomes, Late Policies, and Academic Policies. This syllabus is provided by the instructor and meant to be a "high level" summary of the grading, schedule, modules and homework. The "official" syllabus is found online in the "Content" link of our course menu.