Math 126C College Algebra Fall 2012
3 credits

INSTRUCTOR:	OFFICE:
PHONE: EMAIL: OFFICE Hours:	PREREQUISITES: Two units of algebra, one unit of geometry, and satisfactory performance on departmental placement examination or successful completion of the pre-college algebra workshop or its equivalent.
TEXT: Sullivan: College Algebra and Trigonometry: Enhanced with Graphing Utilities, (WVU)5th edition. Upper Saddle River, NJ, Prentice -Hall.	LAB MANUAL: Interactive Computer Laboratories for College Algebra: Pyzdrowski, available through WVU Bookstore STUDY GUIDE: Butler, available through WVU Bookstore
FINAL: Monday, December 10, 2012 * All Final Exams for this class will be given on Monday, December 12 in 213/215 or 421/417 labs in Armstrong Hall. Students will sign up for final exam times online after Exam 4 and you will receive an email about when to sign up. Either a scientific or graphing calculator is required for the course. **Only those calculators permitted for use on the ACT test are permitted.** Please see your instructor if you have questions.	Your grades are determined by your instructor. All course and grade questions should be first directed to your instructor. If for some reason, you or your instructor feel that it is necessary, you may wish to schedule an appointment with the M126 C Course Coordinator to discuss this course. Course Coordinator: Dr. Laura J. Pyzdrowski 411 Armstrong Hall 304.293.2011

84055 LEC 001 WF 3 0830-0920 459 BUE-D Cole, S.
      84056 LAB 002 M 0 0830-0920 421
      84057 LAB 003 M 0 0830-0920 215
84058 LEC 005 WF 3 1130-1220 458 BUE-D Waibogha, S.
      84059 LAB 006 M 0 1130-1220 421 ARM-D
      84060 LAB 007 M 0 1130-1220 215 ARM-D
84061 LEC 009 WF 3 1330-1420 459 BUE-D Waibogha,
      84062 LAB 010 M 0 1330-1420 215 ARM-D
      84063 LAB 011 M 0 1330-1420 421 ARM-D
84268 LEC 012 WF 3 1430-1520 G09 WHI-D Cole, S.
      84269 LAB 013 M 0 1430-1520 421 ARM-D
	All extreme case situations are reviewed and decided upon by the Math 126 instructional team during finals week. Such cases require written documentation from the student outlining the request and circumstances surrounding the request. Committee forms are due to your instructor by the last day of class and within two weeks of the date of the circumstance to be reviewed. Each student is to fill out his/her own committee form in the event of a group circumstance. Please contact your instructor for more information.

- **You must attend a laboratory section that is attached to your lecture section and you must work with a laboratory partner from your lecture section in order to receive participation points on a lab.**
- **Labs must be turned in only to YOUR instructor and are due IN YOUR CLASS on the Wednesday following the lab day. As a courtesy to students, labs will be accepted on Friday IN YOUR CLASS with no penalty. After that, NO LATE LABS WILL BE ACCEPTED.**
- **Each student must complete his/her own copy of the laboratory sheets. Be prepared to turn in your copy of the lab if your partner is absent the day that it is due. Only one lab per team (2-3 students) will be graded; if more than one lab is turned in, only one will be graded and returned.**
- **Only labs turned in to your instructor during regularly scheduled class time will be accepted. Make plans to get your lab turned in if you must miss class.**

This course is a part of WVU's General Education Curriculum and focuses on Basic Mathematics and has been certified as part of WVU's Liberal Studies Program, Math and Natural Sciences (cluster C). The course will focus in part on developing your ability to communicate effectively, understand alternative views and cultures, and use quantitative and scientific knowledge accurately.

Objectives: The general goals of this course are common to all the courses in the Institute for Math Learning at WVU:
- CONCEPTUAL UNDERSTANDING: rather than just rote memorization of algorithms
- MULTIPLE APPROACHES: to examine problems from analytical, geometric and numerical perspectives, to make judgements about the appropriateness of the choice of formal or approximate methods of solution
- TECHNOLOGY AS A TOOL: use technology as an integral part of the process of formulation, solution, and communication, to gain experience in selecting the proper tool for a given problem
- ACTIVE STUDENT LEARNING: to engage in the exploration and discovery of concepts and to learn to work cooperatively to solve problems
- COMMUNICATION OF IDEAS: to demonstrate understanding by explaining in written or oral form the meanings and applications of concepts
- APPLICATIONS: use mathematics to model and solve problems
- PROBLEM SOLVING: gain experience as a problem solver, to analyze problems in an organized manner

The specific goals of the college algebra course will be to stress algebraical, graphical, and numerical approaches to the study of:
- understanding and using the concept of function
- mathematical application problems
- solving equations and inequalities in one variable using multiple representations
- graphing equations and functions
- lines, parabolas, and circles
- higher order polynomial, rational, radical, absolute value, exponential and logarithmic functions
- systems of equations and matrices

To accomplish course goals, the class incorporates interactive laboratories which use technology and student activities that emphasize writing and student collaboration. Students will work in pairs or triads on the laboratories and in class exercises in order to develop mathematical communication skills. **The development of your communication skills is an integral part of the course.**

Evaluation: Multiple forms of assessment will be used to measure your understanding of algebra concepts and problem solving. The point distribution of these assessments is:

Assessment	Number	Max Points Awarded
Exams: There will be four tests given throughout the semester in the lab during your scheduled lab time, each is worth 100 points. **Make Up Exams:** If a student contacts the instructor prior to an exam, a make up exam is tentatively scheduled to be given on Monday, 12/5/11, during the last lab session. Missed exams WILL affect midterm grades. **Student Ids must be taken to all exams. All exams** are individual assessments and are closed book and closed note. No formula sheets, computer screens other than the test, notes on paper, or notes on calculator are permitted. No internet searches nor use of cell phones is permitted during exams.	4	400
Comprehensive Final: There will be a comprehensive final worth 200 points	1	200
Laboratory Assignments: There will be 8 computer laboratory assignments. The laboratory scores will be averaged. You will be awarded laboratory points that are 2 times your laboratory average. Laboratory assignments should be done with a partner in the lab during scheduled lab time. Laboratory points are awarded for the ability to do and communicate about mathematics as well as for your ability to manage your time and follow directions and a schedule. Any laboratories not submitted as a team effort (2-3 students), will not be awarded communication points. An eCampus component that is available only in the lab must be completed. **If you do not complete the eCampus component, you will not receive points for the laboratory.** No late labs will be accepted and they must be turned in by the Wednesday following the assignment and only during class time.	8	200
Quizzes: There will be 6 online VISTA homework quizzes (HQ) and two ACT quizzes. The computer homework quizzes are immediately graded and they will be averaged for a possible 100 points. HQs are open book and open notes. You may seek help from others (not from your instructor during class). You must submit your own work. You may attempt each HQ up to three times. Your best score will be used. **You must complete at least one of each HQ before the test which includes the HQ sections.** A perfect score on a quiz release must be obtained to open the first HQ. The quiz release asks you questions regarding the course policies. The homework quizzes must be done in order and a score of at least one is required to open the next HQ. The HQ portion of the course will be "turned off" by **5:00 pm, server time on December 9, 2012.** Each ACT Quiz can allow you to earn bonus course points: $1 \le$ number correct ≤ 21, earn 1 bonus point $40 \le$ number correct ≤ 41, earn 6 bonus point $22 \le$ number correct ≤ 28, earn 2 bonus point $42 \le$ number correct ≤ 44, earn 7 bonus point $29 \le$ number correct ≤ 31, earn 3 bonus point $45 \le$ number correct ≤ 47, earn 8 bonus point $32 \le$ number correct ≤ 34, earn 4 bonus point $48 \le$ number correct ≤ 49, earn 9 bonus point $35 \le$ number correct ≤ 39, earn 5 bonus point $50 \le$ number correct ≤ 60, earn 10 bonus point	6 2	100 20
Participation: You will be awarded up to 100 participation points for the course. All absences are treated the same whether University excused or not. Each instructor chooses to use sign-in sheets and/or short participation quiz/work sheets, worth up to 4 points per lecture, if completed satisfactorily. If you forget to sign the sheet or turn in work, you do not demonstrate active participation worthy of points for that day. (All students are awarded the full 16 points for the first two weeks of classes to accommodate schedule changes and/or 4 points for any lecture day holidays. Students have the opportunity to tally more than 100 points, but are only awarded up to 100 points toward their grade. Hence, a student may miss up to 5 times before the possible 100 points are affected due to absences.) Grade: points ≥ 900 A, $900 >$ points ≥ 800 B, $800 >$ points ≥ 700 C, $700 >$ points ≥ 600 D, points < 600 : Fail	30	100

TENTATIVE SCHEDULE

Week	Text Sections	Laboratory/Quiz/Exam
1	R.1 - R.5 & R.7 - R.8 (BRUSH-UP/REVIEW) The content found in the Review is considered review/foundation. Your instructor will not "teach" the content from the Review. It is quickly skimmed through during the first week as a warm-up to the course. If you do not feel comfortable working through the exercises on your own, you should consider enrolling in the Algebra Workshop or obtaining a tutor. Content from the Review will be on Test 1 and mastery of it is expected throughout the course.	**LAB:** eCampus Check in, Bonus Pre-Test (earn up to 10 bonus points) **QUIZ:** Quiz release and **HQ 1** (on R.1 - R.5, R.7 - R.8) - One attempt due before Test 1 (M126 eCampus LINK: https://ecampus.wvu.edu Your instructor will provide information in the first lab so that you can access your account.)
2	1.1 - 1.3	**LAB:** Choose partners, begin Introduction and Basic Graphs lab. This lab should be finished during open lab time if needed and is **due on the Wednesday of week 4**. See the schedule posted in 213-215 Armstrong Hall for open lab times.
3	1.5, 1.7	**LAB:** No Scheduled Lab: Holiday **QUIZ:** HQ 2: (on 1.1-1.3, 1.5) - One attempt due before Test 1
4	2.1 - 2.3	**EXAM: Test 1** (on R.1 - R.5, R.7 - R.8, 1.1-1.3, 1.5, and Basic Graph Lab - during your scheduled lab time)
5	3.1 - 3.3	**LAB:** Graphing Techniques
6	3.4 - 3.5, 6.1	**LAB:** The Box, **QUIZ:** HQ 3 (on 1.7, 2.1 - 2.3, 3.1 - 3.4)-One attempt due before Test 2
7	3.6, 4.3, 1.4	**EXAM: Test 2** (on 1.7, 2.1 - 2.3, 3.1 - 3.4, Graphing Techniques Lab and Box Lab)
8	4.4, 5.1, R.6 (synthetic div.)	**LAB:** Quadratic Functions
9	5.2 - 5.3	**LAB:** Polynomial Functions **QUIZ:** HQ 4 (on 3.5 - 3.6, 6.1, 4.3 - 4.4, 5.1, 1.4, R.6)-One attempt due before Test 3
10	5.5 -5.6	**EXAM: Test 3** (on 3.5 - 3.6, 6.1, 4.3 - 4.4, 5.1, 1.4, R.6, Quadratic Lab, and Polynomial Lab)
11	6.2 - 6.3	**LAB:** Rational Functions
12	6.4 - 6.5	**LAB:** Exponential Functions **QUIZ:** HQ 5 (on 5.2 - 5.3, 5.5 - 5.6, 6.2 - 6.3)-One attempt due before Test 4
13	6.6 - 6.7	**EXAM: Test 4** (on 5.2 - 5.3, 5.5 - 5.6, 6.2 - 6.3, Rational Lab, and Exponential Lab)
14	6.8 - 12.1	**LAB:** Logarithms
15	12.2, Review for Final, Evaluations	**LAB:** Bonus Posttest (earn up to 10 bonus points) **QUIZ:** HQ 6 (on 6.4 - 6.8, 12.1 - 12.2) The HQ portion of the course will be "turned off" by 5:00 pm December 9, 2012.

Math 126-C Course Link: https://ecampus.wvu.edu

Help: On an average, you should expect to study two to three hours outside of class for each one hour in class. If you are spending more, then you may need to seek help! There are several excellent sources for such help. First, seek help from your classmates; often they can explain the problem since they have been working on it. You may also seek assistance during open lab times in the IML laboratory, from the Math Learning Center in 301 Armstrong Hall, a residence hall study session, or you may seek help from your instructor during office hours.

Math 126C Homework - Fall 2012 - Spring 2013

Section	Name	Problem Numbers
R.1	Real Numbers	1, 21, 23, 25, 27, 33, 35, 39, 41, 45, 51, 57, 59, 65, 69, 75, 81, 87, 91, 93
R.2	Algebra Essentials	4, 11, 15, 23, 24, 31, 37, 41, 45, 47, 49, 57, 59, 61, 65, 73, 74, 75, 76, 77, 87, 89, 93, 95, 141
R.3	Geometry Essentials	11, 21, 25, 27, 29, 31, 37, 39
R.4	Polynomials	7, 9, 17, 21, 29, 31, 34, 39, 47, 55, 69, 93, 97
R.5	Factoring Polynomials	5, 13, 17, 25, 33, 39, 45, 51, 57, 61, 65, 85, 91, 95, 105, 107, 121
R.6	Synthetic Division	5, 9, 17
R.7	Rational Expressions	5, 13, 19, 25, 31, 47, 53, 63, 73
R.8	nth Roots; Rational Exponents	1, 2, 7, 15, 17, 21, 23, 31, 43, 47, 55, 63, 71, 75
1.1	Rectangular Coordinates; Graphing Utilities; Introduction to Graphing Equations	5, 7, 9, 13, 33, 39, 49, 57, 64, 75, 77, 79, 83, 95, 105
1.2	Solving Equations Using a Graphing Utility; Linear and Rational Equations	41, 43, 45, 51, 53, 55, 61, 71, 77, 89, 95, 99, 101, 105, 107, 109
1.3	Quadratic Equations	5, 6, 13, 15, 17, 23, 25, 37, 39, 41, 45, 49, 51, 63, 67, 79, 83, 97, 99, 105
1.4	Complex Numbers; Quadratic Equations in Complex Number System	9, 13, 19, 26, 27, 31, 33, 35, 49, 51, 53, 59, 73, 79
1.5	Radical Equations; Equations in Quadratic Form, Absolute Value Equations; Factorable Equations	11, 15, 23, 25, 31, 35, 51, 57, 61, 67, 69, 86, 89, 116
1.7	Solving Inequalities	11, 12, 14, 23, 27, 31, 35, 47, 49, 59, 65, 69, 71, 73, 77, 79, 83, 107, 109
2.1	Intercepts, Symmetry; Graphing Key Equations	13, 21, 27, 31, 39, 41, 45, 51, 69, 71
2.2	Lines	13, 17, 27, 29, 31, 41, 43, 45, 59, 65, 77, 83, 85, 97, 121, 127, 128
2.3	Circles	6, 9, 11, 17, 23, 27, 31, 32, 37, 39, 43
3.1	Functions	15, 19, 27, 33, 39, 41, 53, 55, 57, 61, 65, 73, 75, 93, 104
3.2	The Graph of a Function	9, 13, 15, 23, 25, 39
3.3	Properties of Functions	11, 13, 15, 17, 19, 21, 29, 33, 53, 59, 69, 73, 75
3.4	Library of Functions: Piecewise-defined Functions	9, 10, 11, 12, 13, 14, 15, 16, 25, 29, 35, 41, 43, 47
3.5	Graphing Techniques: Transformations	7, 9, 11, 13, 15, 17, 19, 27, 31, 41, 45, 63, 69
3.6	Math Models: Building Functions	2, 3, 5, 6, 7, 21, 23, 25, 26
4.3	Quadratic Functions and Their Properties	11, 13, 15, 17, 27, 37, 41, 43, 49, 83
4.4	Building Quadratic Models from Verbal Descriptions and from Data	3, 7, 8, 9, 11, 15
5.1	Polynomial Functions and Models	11, 15, 23, 25, 32, 37, 43, 55, 61, 69, 71, 79, 91
5.2	Properties of Rational Functions	13, 23, 25, 31, 41, 45, 51
5.3	The Graph of a Rational Function	7, 15, 27, 33, 35, 51, 61
5.5	The Real Zeros of a Polynomial Function	11, 13, 21, 27, 39, 43, 63, 73
5.6	Complex Zeros, Fundamental Theorem of Algebra	7, 9, 17, 23, 33
6.1	Composite Functions	7, 9, 11, 19, 47, 53, 65, 71
6.2	One-to-one functions; Inverse functions	11, 15, 19, 21, 35, 43, 50, 63, 65, 90
6.3	Exponential Functions	15, 21, 22, 23, 25, 27, 29, 31, 33, 35, 38, 49, 59, 63, 77, 81, 97, 121
6.4	Logarithmic Functions	13, 15, 19, 23, 31, 37, 57, 63, 70, 73, 79, 81, 87, 97
6.5	Properties of Logarithmic Functions	2, 13, 15, 23, 27, 41, 49, 51, 53, 61, 63, 65, 69, 75, 76, 85
6.6	Logarithmic and Exponential Equations	11, 15, 25, 37, 43, 47, 51, 81
6.7	Financial Models	7, 15, 29, 35, 41, 45, 54
6.8	Exponential Growth and Decay	1, 3, 7, 9,11
12.1	Systems of Linear Equations: Substitution and Elimination	7, 11, 19, 23, 25, 29, 41, 55
12.2	Systems of Linear Equations: Matrices	5, 11, 17, 39, 41, 51