

SYLLABUS

COURSE: College Algebra	Instructor: Dana Bortes
MAC 1105 nr. 84208, sec. B 59 Fall 2011 (08/22/2011-12/03/2011)	Phone: (954) 600 - 6670
When: M, W, F 9 am – 9: 50 am	E –mail: bortese@fiu.edu
Where: A C 1 135	Office hours: M, W, F, 8 am – 9 am room: or after class.
Deadline for DR or WI grade: Monday, October 31, 2011 Complete grade report available to students 12. 15. 2011	

Textbook: : Algebra & Trigonometry by M. Sullivan 9th edition packaged with MyMathLab access code or MyMathlab Access Code alone (Mymathlab program contains an electronic version of the textbook). Keep in mind though that if you plan to take Trigonometry, you will most likely need the textbook.

Prerequisites: C or better in Intermediate Algebra or an adequate score on the placement test

Course Description: The focus of this course is on functions and their properties. In particular, properties and graphs of linear, quadratic, polynomial, rational, exponential and logarithmic functions are discussed. Ways of solving systems of equations are introduced at the end of the semester.

Course Objectives: After finishing the course students should have a good understanding of the concept of a function, its domain and range. They should be able to graph basic functions and be familiar with their properties. They should be able to perform operations on functions, form composition and find the inverse of some one-to-one functions. They should know and be able to apply properties of logarithms. They should be able to solve exponential and logarithmic equations and systems of equations.

Material to be covered:

- Chapter R - review: Sections: 2, 4, 5, 7, 8
- Chapter 1- review: Sections: 1, 2, 4, 5
- Chapter 2: Sections: 1, 2, 3, 4
- Chapter 3: Sections: 1, 2, 3, 4, 5, 6 and departmental handout More on Functions
- Chapter 4: Sections: 3, 4, 5
- Chapter 5: Sections: 2, 3, 4
- Chapter 6: Sections: 1, 2, 3, 4, 5, 6, 7, 8
- Chapter 12: Sections: 1, 6

Examinations: There will be five in-class paper and pencil exams and a comprehensive departmental final exam (see the schedule). Moreover, you will have weekly online homework and quizzes assigned in MyMathLab.

Online Assignments: To access online assignments you must purchase an access code for MyMathLab. You can purchase it together with the textbook at FIU bookstore, or as standalone item either at the bookstore or at <http://pearsonmylabandmastering.com/>
If you are repeating the course, you will have to purchase new access code as the textbook's edition changed.

If you are not able to purchase an access code immediately, you can use a temporary access code. Ask the instructor for the information.

- First assignment is **due on August 31, at midnight**, so buy the access code as soon as possible.
- All online assignments have a due date. They will generally be available till 11:59pm on a due day. At that time, program will not allow you to continue, therefore you have to plan accordingly. You will not be able to finish 60 problems in two hours. Late submissions will not be accepted under any circumstances.
- Online problems are algorithmic iterations of textbook exercises.
- Homework assignments can be attempted an infinite number of times, but must be completed within assigned period of time.
- There is one quiz per week. Quiz is associated with the homework assigned for that week. A quiz can be taken three times and the highest score is registered.
- To take a quiz, you must score at least 80% on the associated homework. If you don't receive required 80% on the prerequisite homework, you will not be able to take the associated quiz and consequently, you will receive 0 on that quiz.
- At the end of the semester, the homework assignment with lowest grade and the quiz with the lowest grade will be dropped.

The **deadlines will not be extended** under any circumstances. All assignments are due at midnight on the due day. Do not wait till the last moment to complete the assignments since you don't know what problems, technical or not, you might encounter along the way.

Please be advised that merely completing online assignments is not a guarantee of success in the class. You need to understand what you do. A test question will not come with the "help me solve it" button. So, if you can't correctly do a homework problem without any help, you will not be able to do a similar problem on a test.

Keep in mind that your grade in this class will be determined mainly by your performance on the tests.

Grading policy: To get a full credit for a problem on a test you must show your work. An answer alone, even correct, will get no credit. Please note that **if you decide to skip online assignments, you will have to score at least 88% on each test to receive a passing grade (C).**

Your grade will be calculated as follows:

	% of Grade
Tests 1-5	11% each
Final exam	25%
MyMathLab online homework	8%

MyMathlab online quizzes	12%
Total	100%

$$\text{Grade} = .11 * \text{test 1} + .11 * \text{test 2} + .11 * \text{test 3} + .11 * \text{test 4} + .11 * \text{test 5} \\ + .08 * \text{homework} + .12 * \text{quizzes} + .25 * \text{final exam}$$

Your final grade will be assigned according to the following scale.

A: 93 – 100	B + : 86 – 88	C+: 75 – 78	D +: 60 - 64
A- : 89 – 92	B: 83 – 85	C: 70 – 74	D : 55 - 59
	B-: 79 – 82	C-: 65 – 69	F: 0 – 54

Make-up Policy: There will be no make-up tests. If you miss a test due to illness or other emergency and provide documentation supporting your claim, your final exam will count in place of the missed test. There will be no make-ups for online assignments, but the lowest score on homework assignments and quizzes will be dropped.

Attendance Policy: You are expected to attend all classes. It is your responsibility to complete all assignments on time regardless of whether or not you were present in the class. Excessive absence will be taken into consideration when assigning the grade. **Up to 5 points can be deducted** from your total at the end of the semester for missing more than 5 lectures.

Calculator Policy: Use of graphing calculators is prohibited in this course. The scientific calculator TI-30XA will be used occasionally.

Incomplete Grade Policy: The incomplete grade is given to a student who has substantially completed most of the course work but is unable to finish an exam or other work because of circumstances beyond the student's control. An IN grade cannot be given if it is necessary for the student to repeat the course. An incomplete grade must be made up within two semesters. There is no extension of the two semester deadline. The student must not register again for the course to make up the incomplete. Every incomplete grade must be approved by the Mathematics Department.

Drop Date: The last day to drop a course is **October 31**.

Academic Misconduct: Includes (but is not limited to) giving or receiving assistance on a test, quiz, or homework assignment for which such assistance is not permitted, falsifying a document to obtain an excusal from a test, and using unauthorized notes on a test or quiz. A more complete definition of Academic Misconduct is given in the Student Handbook. Penalties for Academic Misconduct range from an F in the course to expulsion from the University.

Tutoring Services: The Mathematics Department and the University offers a variety of services, ranging from online videos to free tutoring, designed to help students with their courses. Please visit <http://casgroup.fiu.edu/MathStatistics/pages.php?id=1168> for more details.

Classroom Etiquette: To create and preserve a classroom atmosphere that optimizes teaching and learning, students are expected to conduct themselves at all times in a manner that does not disrupt

teaching or learning. You are expected to come prepared to the class, be on time and remain in the classroom for the duration of the lecture. Talking, eating, sleeping, checking e-mail, using a phone, reading a newspaper, preparing for another class, packing up early is disruptive to others around you and to the instructor. Though classroom participation is always welcomed, questions and comments must be relevant to the topic at hand. If you have a question or comment, raise your hand to be recognized. Electronic devices such as cell phones, iPods, and computers must be turned off during class. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

Daily Class Schedule

Fall 2011	Date	Topics	Online assignments- due dates
Week - 1	Monday August 22	Chapter R -review	HW 1 (93 problems) due 8/31 Quiz 1 (10 problems) due 8/31
	Wednesday August 24	Chapter R- review	
	Friday August 26	Chapter R - review	
Week – 2	Monday August 29	Chapter 1 - review	HW 2 (54 problems) due 9/6 Quiz 2 (10 problems) due 9/7
	Wednesday August 31	Chapter 1- review	
	Friday September 2	5.4	
Week – 3	Monday September 5	Labor Day – No school	Review for test 1(48 problems) due 9/6 HW 3 (22 problems) due 9/12 Quiz 3 (6 problems) due 9/13
	Wednesday September 7	Test # 1 (Chapter R, 1, 5.4)	
	Friday September 9	2.1, 2.2(objectives 1-3)	
Week – 4	Monday September 12	2.2, 2.3	HW 4 (57 problems) due 9/19 Quiz 4 (10 problems) due 9/20
	Wednesday September 14	2.3	
	Friday September 16	2.4	
Week – 5	Monday September 19	3.1 (omit operations on functions)	HW 5 (36 problems) due 9/26 Quiz 5 (8 problems) dues 9/27
	Wednesday September 21	3.1+ departmental handout	
	Friday	3.2	

	September 23		
Week - 6	Monday September 26	3.3 (min/max are included in HW)	HW 6(36 problems) due 10/2 Quiz 6 (9 problems) due 10/4 Review for test 2(41 problems) due 10/2
	Wednesday September 28	3.4	
	Friday September 30	3.5 (not included in HW 6	
Week – 7	Monday October 3	Test # 2 (sec 2.1-2.4, 3.1-3.4, departmental handout)	HW 7(30 problems) due 10/10 Quiz 7 (7 problems) due 10/11
	Wednesday October 5	3.5	
	Friday October 7	3.6	
Week – 8	Monday October 10	4.3	HW 8(30 problems) due 10/17 Quiz 8 (7 problems) due 10/18
	Wednesday October 12	4.3, 4.4	
	Friday October 14	4.4, 4.5	
Week – 9	Monday October 17	5.2	HW 9(19 problems) due 10/23 Quiz 9 (5 problems) due 10/25 Review for test 3 (21 problems) due 10/23
	Wednesday October 19	5.2, 5.3	
	Friday October 21	5.3	
Week – 10	Monday October 24	Test # 3 (sec 3.5-3.6, Chapter 4,5)	HW 10 (32 problems) due 10/31 Quiz 10 (8 problems) due 11/1
	Wednesday October 26	6.1, 3.1 (operation on functions)	
	Friday October 28	6.2 (# 1-47, 73-79)	
Week – 11	Monday October 31	6.2(#49-69),6.3 Drop date	HW 11(59 problems) due 11/7 Quiz 11 (10 problems) due 11/8
	Wednesday November 2	6.3	
	Friday November 4	6.4 (#1-53)	
Week -12	Monday November 7	6.4 (# 59-113)	Review for test 4 (28 problems) due 11/8 HW 12(21 problems) due 11/8 Quiz 12 (3 problems) due 11/15
	Wednesday November 9	Test # 4 (sec 6.1- 6.4, 3.1)	

	Friday November 11	Veteran's Day – No school	
Week -13	Monday November 14	6.5	HW 13(59 problems) due 11/21 Quiz 13 (10 problems) due 11/22
	Wednesday November 16	6.6	
	Friday November 18	6.6	
Week -14	Monday November 21	6.7	HW 14(22 problems) due 11/27 Quiz 14 (4 problems) due 11/29 Review for test 5 (15 problems) due 11/27
	Wednesday November 23	6.8	
	Friday November 25	Thanksgiving Break	
Week -15	Monday November 28	Test # 5 (sec 6.5-6.8)	HW 15(21 problems) due 12/5 Quiz 15 (5 problems) due 12/6
	Wednesday November 30	12.1	
	Friday December 2	12.6	
Week-16		Final week of the semester – no classes	Review for Final (91 problems) due 12/8 (noon)
	Thursday December 8	Final Exam , 2:15 – 4:45pm room TBA	

**DEPARTMENTAL HANDOUT
MORE ON FUNCTIONS**

Find the domain of the given function

$$1) f(x) = \frac{1}{2-3x}$$

$$2) f(x) = \frac{x-2}{x^2+5x+6}$$

$$3) f(x) = \frac{2x}{3-x^2}$$

$$4) f(x) = \frac{x-1}{x^2-7x+2}$$

$$5) f(x) = \frac{-3}{x^2+1}$$

$$6) f(x) = \frac{2x+1}{x(x+1)(x-3)}$$

$$7) f(x) = \frac{4x^2}{3x^2+6x}$$

$$8) f(x) = \frac{-2}{|3x+2|-1}$$

$$9) f(x) = \frac{1-x-x^2}{4|2x-3|+1}$$

$$10) f(x) = \sqrt{\frac{1}{3}x+2}$$

$$11) f(x) = \frac{-1}{\sqrt{3-2x}}$$

$$12) f(x) = \sqrt{6+x-x^2}$$

$$13) f(x) = \sqrt{\frac{x}{1-x}}$$

$$14) f(x) = \sqrt{x^2-4}$$

$$15) f(x) = \sqrt[3]{x+2}$$

$$16) f(x) = \sqrt{3x^2-x-2}$$

$$17) f(x) = \sqrt{\frac{x}{x^2-4x-5}}$$

$$18) f(x) = \frac{5}{\sqrt{4x+1}-2}$$

$$19) f(x) = \frac{3x-1}{\sqrt{x+5}+1}$$

ANSWERS

$$1) \{x \mid x \neq \frac{2}{3}\} = (-\infty, \frac{2}{3}) \cup (\frac{2}{3}, +\infty) \quad 2) \{x \mid x \neq -3, -2\} = (-\infty, -3) \cup (-3, -2) \cup (-2, +\infty),$$

$$3) \{x \mid x \neq -\sqrt{3}, \sqrt{3}\} = (-\infty, -\sqrt{3}) \cup (-\sqrt{3}, \sqrt{3}) \cup (\sqrt{3}, +\infty)$$

$$4) \{x \mid x \neq \frac{7-\sqrt{41}}{2}, \frac{7+\sqrt{41}}{2}\} = (-\infty, \frac{7-\sqrt{41}}{2}) \cup (\frac{7-\sqrt{41}}{2}, \frac{7+\sqrt{41}}{2}) \cup (\frac{7+\sqrt{41}}{2}, +\infty)$$

$$5) (-\infty, +\infty) \quad 6) \{x \mid x \neq -1, 0, 3\} = (-\infty, -1) \cup (-1, 0) \cup (0, 3) \cup (3, +\infty)$$

$$7) \{x \mid x \neq -2, 0\} = (-\infty, -2) \cup (-2, 0) \cup (0, +\infty) \quad 8) \{x \mid x \neq -\frac{1}{3}, -1\} = (-\infty, -1) \cup (-1, -\frac{1}{3}) \cup (-\frac{1}{3}, +\infty)$$

$$9) (-\infty, +\infty) \quad 10) \{x \mid x \geq -6\} = [-6, +\infty) \quad 11) \{x \mid x < \frac{3}{2}\} = (-\infty, \frac{3}{2})$$

$$12) \{x \mid -2 \leq x \leq 3\} = [-2, 3] \quad 13) \{x \mid 0 \leq x < 1\} = [0, 1)$$

$$14) \{x \mid x \leq -2 \text{ or } x \geq 2\} = (-\infty, -2] \cup [2, +\infty) \quad 15) (-\infty, +\infty)$$

$$16) \{x \mid x \leq -\frac{2}{3} \text{ or } x \geq 1\} = (-\infty, -\frac{2}{3}] \cup [1, +\infty)$$

$$17) \{x \mid -1 < x \leq 0 \text{ or } x > 5\} = (-1, 0] \cup (5, +\infty)$$

$$18) \{x \mid x \geq -\frac{1}{4}, x \neq \frac{3}{4}\} = [-\frac{1}{4}, \frac{3}{4}) \cup (\frac{3}{4}, +\infty)$$

$$19) \{x \mid x \geq -5\} = [-5, +\infty)$$