

PROFESSOR N. SHAW

SYLLABUS

FALL 2009

CRN 20740

MA 180, PRECALCULUS

MWF 12³⁰ -1⁵⁵SE 225

PROFESSOR SHAW'S THOUGHTS ABOUT LEARNING

You and I have the same goal – that you succeed in your Intermediate Algebra course. Educational research shows that deepest learning occurs when students are actively involved and become participants in the process. I believe it is my role as an instructor to design ways and create a comfortable climate that facilitates your engagement in your learning. You will find that the classroom routines, activities and assignments are consistent with that premise. I have created opportunities for you to gain knowledge, practice new skills, reconfigure what you already know and to recognize what you have learned. Because teaching and learning are intimately connected, you will practice both during the semester.

INSTRUCTOR INFORMATION

Office Location: Science East, 222F Telephone: 240-567-5225

Email: Nancy.Shaw@MontgomeryCollege.edu (Please use grammatically corrects English.)

During the work week and many weekends, I will reply to email within a day.

Math Department Office: 240-567-5194 Math Department Fax: 240-567-5182

**There is a significant time delay before a fax is printed, then delivered to my mailbox in SE215.*

Professor Shaw's Web Site: www.montgomerycollege.edu/faculty/~nshaw/public_html

Official Office Hours: Mon 11⁰⁰ – 11³⁰, Tue 9⁰⁰ -9⁴⁵, Wed 2⁰⁰ -2⁴⁵, Thursdays 12³⁰ -1³⁰

When I am not in class, I am usually in my office, and often available to talk. There is a link to my weekly schedule on MyMC → My Courses tab → MA 180, as well as my web site. If it is important that we meet at a specific time, let me know this so we can reserve a mutually convenient time.

STUDENT INFORMATION FORM

I have tried to anticipate your learning needs as I was setting the agenda for this semester. In order to help me further to deliver more effective instruction, please answer the questions on the Student Information Form at the end of this packet. It should be returned to me at the next class meeting. I will use this information to get to know you, to adapt the class to your needs and expectations, and to contact you by mail or phone, should the need arise. A secondary purpose for your completing this form is that you will be assessing your current readiness for taking the course.

SEMESTER CALENDAR

You will find a tentative semester calendar on page 5 of this course syllabus. It lists probable dates when various topics (listed in green by chapter.section) will be attended in class, expected test dates (listed in red), and much more. To best appreciate the overall structure of the course, I suggest you consult this calendar on a regular basis.

GENERAL PURPOSE OF THIS COURSE

This course has both process and content goals. The first goal addresses how one reasons, establishes truths and communicates within the field of mathematics (both doing and talking math). The second goal is a practical, goal, that you become proficient in skills needed for a follow-up first course in Calculus.

COURSE OUTCOMES

In a general sense the college outcomes for this course can be summarized in this way:

Students in precalculus become familiar with functions presented in verbal, numerical, algebraic, and/or graphical form. They develop a language to describe mathematical relationships studied in this course and recognize that a variety of problem situations can be modeled by the same type of function. Students analyze the effects of parameter changes on the graphs of functions, and become adept at reading and working with tables of data that describe a function.

COURSE CATALOG DESCRIPTION

Precalculus intends to prepare students for a science/engineering level course in calculus such as MA 181-182. This preparation includes necessary algebraic and graphical skills, comprehension of the general properties of functions, and specific properties of algebraic, trigonometric, logarithmic, and exponential functions. These topics are studied in the context of relevant applications whenever possible. Use of appropriate technology is a requirement in the instruction of this course. Graphing calculator technology must be employed by the instructor to illustrate concepts and by the students as an aid in analysis. A grade of C or better in MA100 and MA102, appropriate score on mathematics placement test, or permission from the Mathematics Department is required. For computation of tuition, this course is equivalent to 5 semester hours and meets 5 hours each week; however, MA 180 is a 4 credit hour course.

REQUIRED MATERIALS

Textbook:

Precalculus, Enhanced with Graphing Utilities, by Sullivan and Sullivan, published by Pearson Prentice Hall, 5th edition

Because this textbook is quite heavy and expensive, and we do not use all of its chapters, the publisher has made customized book for Rockville, comprised of two lightweight paper bound volumes. These are packaged together with an access code to MathXL, the required online homework system that we will be using *Please be aware that you will need the MathXL access code as well as the textbook. If you purchase the book from an independent source, the list price is not likely to include a MathXL access code. Check first!*

MathXL:

This is an online homework system which we will use for most homework. An orientation assignment and one or two more from the first unit will be posted online a week before classes begin. In fact, you can go online now to register, and then enroll in the class, using course ID [XL0D-Y1UW-301Y-2EU2](#). I encourage you to begin familiarizing yourself with the system soon. You can re-work most parts of each assignment, up until the posted due date. As you work the homework exercises, MathXL offers tutorial help and/or related textbook references. You can purchase an access code as a stand-alone item at www.mathxl.com.

Calculator:

Each precalculus student is required to have a graphing calculator and bring it regularly to class. Texas Instruments TI-83 & TI-84 will be supported in class. Neither the TI-89 nor the TI-92 may be used at this level. If you are not comfortable with graphing, you may want to attend one of the free graphing calculator workshops offered by the Math/Science Center early in the semester. Advanced features will be introduced and discussed as appropriate opportunities occur during the course.

RESOURCES:

There are many other resources available for you. You will need to assume the responsibility to select and use which ones will be optimal for your situation. Below is a partial list:

Math/Science Center, located below the library, at Macklin Tower 02

The Center has tables for folks who wish to work in small groups, individual study carrels for those who want a quiet space to work alone, and computers for students to access MathXL on the Internet. The MSC retains textbooks and solution manuals for students to use while visiting, and free tutoring.

Contact: Telephone: 240-567-5200 Internet: www.montgomerycollege.edu/Departments/mathscriv

Hours: Mon. – Thurs. 8am – 8pm, Fri. 8am – 4pm, Sat. 10am – 3pm.

Tutoring:

You can receive free Tutoring on a drop-by basis, offered by math faculty and advanced student certified tutors at the Math/Science Center during most hours they are open. Check their website above for details.

CD Lecture Series:

This comprehensive set of CD-ROMs is tied to the textbook and contains short video clips of an instructor working key book examples. One set is located in the Math Science Center for you to view while there. If you want your own set, they can be ordered directly from the publisher.

Chapter Test Prep Video CD:

An instructor works through each chapter test problem from the textbook

MyMC (online):

I will post course related documents, such as this syllabus, the semester calendar, handouts, and printable graph paper. See MyMC? MyCourses? PreCalculus? Files (or Links) for course related materials as they are updated.

Penn's Gateway:

Professor Rick Penn has designed a gateway/skills practice website, useful for student review and drill, available at www.montgomerycollege.edu/faculty/~rpenn/public_html/Main.htm .\

Student Study Groups:

Student study groups can make a big difference! The relationships formed with study partners often continue well past one course, in one semester. Find or form a study group with other students in the class and meet weekly to discuss the homework, ask questions, and learn from your peers.

POLICIES AND EXPECTATIONS:

Participating in Your Learning

Participation and discussion are an important part of learning. You will be working regularly with other members of the class and are expected to participate actively in all learning events. Effective participation includes staying “tuned in” and “turned on” during class, venturing forth with your own ideas and questions, contributing during group activities, listening attentively to others and assisting your classmates when possible.

Attending and Being Prompt for Class

Each student is expected to come to every class, to arrive on time and to be prepared to be an active learner the moment class is scheduled to begin. If it is essential, however, that you miss a class, make sure you find out what transpired. It is not the professor's responsibility to re-teach the lesson. You will be responsible for any assignments given, work covered, and announcements made. Notice: if you miss more than a week's worth of classes for any reason, it is likely you will be dropped from the course.

Missing a Quiz/Test

If you know in advance that you have to miss a test or a quiz, you can make arrangements with me to take the test or quiz **before** it is given in class.

In addition, a TEST may be made up if and only if you

1. Contact me on or before the scheduled test date and time; and also,
2. Have submitted 85% of your MathXL and Written Homework when they were due.

Both conditions must be met in order to qualify to take an advance makeup test. If advance notification is not given, then your final exam grade can be substituted for the grade of the missed test only if you have submitted 85% of the collective homework. This special deal is offered for only one exam. If you are present for all four exams and have met the homework stipulation, then the offer applies to the test with the lowest score if that will help your overall average.

If you have not exceeded the limit for absences, then a missed QUIZ will be excused by your submitting satisfactory solutions to its questions.

Disability Support:

To any student who may need an accommodation due to a disability, please make an appointment to see me during my office hours so we can discuss what is best for your situation. A letter from Disability Support Services authorizing your accommodations will be needed.

Inclement Weather

If inclement weather forces the College or any campus or College facility to suspend classes or close, public service announcements will be provided to local radio and television stations as early as possible. You may also call MC at 240-567-5000 or check the college website www.montgomerycollege.edu to verify MC school closings. Any exams planned on days classes are suspended will be administered at the first class meeting once classes resume. Note that the Montgomery County Public Schools (MCPS) and Montgomery College are different; they do not follow the same school closing procedures.

Cheating

Cheating will not be tolerated and would likely result in an "F" for the course.

Academic Regulations & Student Code of Conduct:

All MC students are expected to follow "Academic Regulations" & "Student Code of Conduct", described in the MC Student Handbook. These regulations/guidelines can be found at:

www.montgomerycollege.edu/departments/academic/vp/Student_PandP.htm

GRADING

One component of your grade will be Written Homework, taken from exercises in the textbook. This Written Homework will be done outside of class and evaluated on criteria more than simply stating a final answer. It will be based on how well you present your reasoning, how well you make use of graphs and/or tables to communicate mathematical ideas, how coherent and structured is the work you show to establish final answers, how you state your final conclusions and relate them to the original situation presented.

As it relates to assessment, you are the person who knows best your own strengths and weaknesses. Because I believe that you will be more successful if you have a stake in your own assessment, I ask you to select by 9/11/09 how your grade will be determined, within these ranges:

- Tests & Quizzes (4 unit tests + an average of all announced quizzes = 5 Scores)

.....60-70 %	(Default: 65%)
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- Final Exam.....15-25% (Default: 20%)
- Homework

MathXL.....10-15%	(Default: 10%)
Written Homework.....5-10%	(Default: 5%)

Near the end of this packet is a contract for you to complete, telling me how to apportion your grades. Attendance and participation will be used to help determine final grades for students with borderline averages. These closed intervals will be used for a grading:

A [90, 100] B [80, 89] C [70, 79] D [60, 69] F [0,59]

You and I have the same goal – that you learn Precalculus and earn a grade that represents this. If you would like to submit a plan for an alternative grading system, please see me during the first two weeks, and we can discuss it.

PARTING COMMENT, from Professor Shaw:

Last, but not least, think positively and believe that you can understand Precalculus and do well in the course. YOU ARE THE OWNER OF YOUR EDUCATION. Please don't fall into the trap of telling yourself that, "I'm just not a math person" or "I don't learn well doing work on computers" or "I learn better by myself". If you let yourself believe this, then you may lose control of the situation and feel unable to do anything to change it. On the other hand, if you tell yourself that you can learn precalculus and that you are going to take responsibility for learning it, then you do have control over the situation and can take measures to do just that.

Ultimately, you will be the one to assume responsibility for actively shaping your learning in MA180.

Day # 1	8/31	9/1	Day # 2	9/2	9/3	Day # 3	9/4
Course Intro 1.1			1.2, A.5 [3,4]			A6, 1.3	
	9/7	9/8	Day # 4	9/9	9/10	Day # 5	9/11
Labor Day no classes		Last Day to Drop and get a Refund	1.5, A.9		Grphg Calc Workshop 1⁰⁰ – 2⁰⁰	Pretest Quiz 2.1	
Day # 6	9/14	9/15	Day # 7	9/16	9/17	Day # 8	9/18
2.2, 2.3 Grphg Calc Workshop 3⁰⁰–4⁰⁰			2.3, 2.4			2.5	
Day # 9	9/21	9/22	Day # 10	9/23	9/24	Day # 11	9/25
2.6		Last Day to Drop without "W" or « Audit	TEST Ch.1 & 2			3.1, 3.2. 3.3[1,2]	
Day # 12	9/28	9/29	Day # 13	9/30	10/1	Day # 14	10/2
3.3 [3] 3.4			3.5, 4.1			4.2 and A.3	
Day # 15	10/5	10/6	Day # 16	10/7	10/9	Day # 17	10/9
4.3			4.4, 4.5			4.6 & Summary	
Day # 18	10/12	10/13	Day # 19	10/14	10/15	Day # 20	10/16
TEST Ch. 3 & 4			5.1, 5.2			5.2, 5.3	
Day # 21	10/19	10/20	Day # 22	10/21	10/22	Day # 23	10/23
5.4, 5.5			5.6			5.7(opt), 5.8	
Day # 24	10/26	10/27	Day # 25	10/28	10/29	Day # 26	10/30
5.8, 5.9			5.9, Summary Ch. 5			TEST Ch.5 6.1	
Day # 27	11/2	11/3	Day # 28	11/4	11/5	Day # 29	11/6
6.1, 6.2, 6.3[1-4]			6.3[5&6], 6.4			6.5, 6.6	
Day # 30	11/9	11/10	Day # 31	11/11	11/12	Day # 32	11/13
6.6, Ch. 6 Wrap-Up 7.1 [1-3]			7.2, 7.3			7.4	
Day # 33	11/16	11/17	Day # 34	11/18	11/19	Day # 35	11/20
7.5, 7.7		Last Day to Drop with "W"	7.7, 7.8			8.1, 8.2	
Day # 36	11/23	11/24	11/25	11/26	11/27	11/27	11/27
8.3, 8.4(?)			no classes	Thanks (College	giving Closed)		
Day # 37	11/30	12/1	Day # 38	12/2	12/3	Day # 39	12/4
TEST Ch. 6, 7 & 8			Parametrics			Parametrics	
Day # 40	12/7	12/8	Day # 41	12/9	12/10	Day # 42	12/11
Parametrics			Parametrics MiniTEST			Course Summary	

Final Exam: Monday, December 14, 12³⁰-2³⁰

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back of semester calendar

Student Information Form (completed by student)

Semester: Fall, 2009 Course name: PreCalculus Course #: MA 180

My Name: _____ MC ID#: _____

Address: _____ Apt: _____

City: _____ State: _____ Zip Code: _____

Contact me by phone at ... Home: _____ Work: _____

Cell: _____ Other: _____

If the college e-mail system is not functioning properly, please use this alternative address: _____

Indicate how, when and where you completed these course prerequisites. Please be specific.

Intermediate Algebra: _____

Trigonometry: _____

Complete these statements regarding your current expectations for this class

A. If I had to give three reasons why I would pass this class, I would probably list these...

1.

2.

3.

B. If I do not do well in this math class, it would most likely be because I ...

C. In order to help me learn, it would help me most if Professor Shaw would ...

1. would ...

2. would not ...

D. It would be a better situation for me to learn if my fellow classmates

1. would ...

2. would not ...

E. One thing I would like Professor Shaw to know about me is that ...

PROFESSOR SHAW'S EXPECTED MA 180 HOMEWORK ASSIGNMENTS

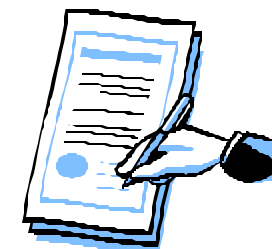
Exercises that are designated "Homework" are assigned in MathXL, the online homework system for the course.

Exercises that are designated **Other (Written)** cannot be worked within MathXL. Written Homework will be done outside of class and evaluated on criteria more than simply a final answer. That will be based on how well you present your reasoning, how well you make use of graphs and/or tables to communicate mathematical ideas, how coherent and structured is the work you show to establish final answers, how you state your final conclusions and relate them to the original situation presented.

Ch.Sect	Textbook Exercises	MathXL Category
0.1	1,2,3,4,5,6,7,8	Homework
1.1	21, 23, 27, 29, 33, 37, 43, 49, 55, 63, 65, 69, 71, 73, 75, 77, 83, 101, 105, 107, 113	Homework
1.2	23, 25, 29, 31, 33, 35, 37, 39, 41, 47, 51, 57, 59, 71	Homework
A.5	43, 51, 63, 67, 71	Homework
A.6	23, 31, 37, 45, 51, 63, 77, 105	Homework
1.3	5,15,29,33 <i>These exercise numbers may change – check to the grading rubric</i>	Other (Written)
1.5	9, 17, 23, 31, 33, 37, 39, 41, 43, 45, 49	Homework
A.9	69, 71, 73, 79, 93, 95	Homework
2.1	15, 17, 19, 21, 27, 39, 45, 51, 55, 65, 71, 75, 77, 81, 83, 85, 91, 93, 103	Homework
2.2	9, 13, 15, 25, 27, 33	Homework
2.3	11, 13, 15, 17, 19, 21, 29, 45, 53	Homework
2.3	33, 63, 69, 71, 81 <i>These exercise numbers may change – check to the grading rubric</i>	Other (Written)
2.4	9, 11, 13, 15, 25, 31, 33, 35, 41, 51, 53, 55	Homework
2.5	7,9,11, 13, 15, 17, 19, 21, 23, 25, 27, 31, 33, 35, 37, 45, 47, 49, 51, 53, 55, 61, 69	Homework
2.6	3, 5, 7, 15, 23, 25	Homework
3.1	17, 19, 21, 23, 27, 31, 33, 39	Homework
3.2	5, 7, 9, 11, 21	Homework
3.3	11, 13, 15, 17, 19, 21, 29, 35, 39, 43, 45, 79	Homework
3.3	47, 74, 80, 82, 97 <i>These exercise numbers may change – check to the grading rubric</i>	Other (Written)
3.4	3, 9, 13, 17, 27	Homework
3.5	5, 9, 13, 23, 25, 35	Homework
4.1	11, 13, 15, 17, 45, 57, 61, 65, 93	Homework
A.3	61, 63, 67, 71	Homework
4.2	13, 21, 23, 25, 31, 37, 43, 45	Homework
4.3	13, 25, 27, 33, 47, 53, 55, 57	Homework
4.4	7, 9, 19, 29, 33, 39, 67, 73	Homework
4.5	11, 19, 21, 27, 39, 55, 63, 67, 75, 77, 85, 87	Homework
4.6	7, 11, 15, 17, 27	Homework
4.6	33, 39, 41, 42 44	Other (Written)
5.1	7, 9, 11, 21, 25, 33, 35, 49, 53, 61, 65, 75	Homework
5.2	11, 13, 15, 17, 19, 27, 31, 35, 41, 45, 49, 63, 71, 73, 75, 83, 89	Homework
5.3	11, 13, 21, 23, 27, 29, 31, 37, 51, 53, 59, 67, 75, 77, 79, 81, 87, 95, 97, 101	Homework

5.mix	5.2 #49; 5.3 #112, 113; 5.4 #133; 5.5 #96; 5.8 #21 These exercise numbers may change – check to the grading rubric	Other (Written)
5.4	9, 15, 17, 23, 25, 29, 31, 33, 49, 57, 59, 63, 69, 71, 87, 99, 111, 117, 123	Homework
5.5	7, 9, 11, 13, 15, 17, 19, 23, 25, 27, 31, 45, 51, 53, 57, 65, 73, 81, 85	Homework
5.6	11, 13, 21, 31, 41, 53, 63, 71, 75, 85, 87	Homework
5.8	1, 3, 5, 7, 11, 17	Homework
5.8&5.9	Optional Material. Newton's Law Cooling 5.8:13,15,23,27 Logistic Models 5.9: 1,3,5	Homework
5.9	1, 3, 5	Homework
6.1	11, 13, 15, 17, 19, 21, 35, 39, 41, 45, 47, 51, 55, 57	Homework
6.1	Optional Material: Arcs & Speeds. 71, 73, 75, 91, 99, 103, 109	Homework
6.2	11,13,15, 19, 21, 23, 25, 27, 37, 39, 45, 47, 53, 59, 63, 71, 73, 75, 83, 87, 91, 105	Homework
6.3	11, 15, 27, 31, 33, 35, 47, 49, 59, 63, 67, 77, 79, 81, 83, 89, 95, 101,103,113	Homework
6.4	9, 11, 13, 15, 17, 23, 27, 29, 31, 33, 35, 37, 53, 59, 67, 71, 75, 79, 85, 87, 91, 93	Homework
6.5	7, 11, 29, 31, 41, 43	Homework
6.mix	6.2 #119-21; 6.3 #93,94; 6.5 # 32; 6.6 # 32, 36 These exercise numbers may change – check to the grading rubric	Other (Written)
6.Proj	Chapter Project – Tidal Data, p.437	Other (Written)
7.1	13, 15, 17, 19, 21, 23, 25, 29, 35, 37, 41, 43, 45, 47, 49	Homework
7.2	9, 13, 15, 21, 27, 31, 39, 41, 57, 67, 69	Homework
7.3	13, 14, 19, 25, 49, 53, 69, 80 These exercise numbers may be converted to 14, 20, 24, 26, 34, 42, 70, 80 Check for updates later)	Other (Written)
7.4	11, 17, 23, 25, 27, 31, 37, 39, 45, 57, 73, 75, 83	Homework
7.5	7, 11, 19, 33, 39	Homework
7.7	7, 13, 15, 21, 25, 31, 35, 41, 53	Homework
7.8	21, 23, 33, 35, 41, 47, 59	Homework
8.1	19, 21, 23, 25, 27, 43, 45, 47, 51, 55, 57, 61, 69, 71	Homework
8.2	37, 39, 41, 51, 57	Homework
8.3	33, 35, 37, 45, 51, 53	Homework
8.4	Optional Material – Areas of Triangles- 5, 7, 11, 41	Homework
10.7	Parametric Equations. Series of worksheets (see Prof. Shaw)	Other (Written)

- - Ma 180 Grade Contract - -



I understand that I may select how my grade will be determined, within these ranges:

- Tests & Quizzes (4.5 Unit Tests + Average of Announced Quizzes) 60-70% (Default: 65%)
- Final Exam 15-25 % (Default: 20%)
- Homework
 - Math XL 10-15% (Default: 10%)
 - Written Homework 5-10% (Default: 5%)
(By Groups or Individuals)

After careful consideration of my individual strengths, I have decided to contract for the following set of weighted scoring:

Tests/Quizzes ____% ; Final Exam ____ % ; Hwk: MathXL ____ % ; Written Hwk ____ %
(60 - 70) (15-25) (10-15) (5-10)

The sum of the weights I have chosen = _____ (must be 100%)

Signature: _____ Printed Name: _____ Date: _____
due the 2nd Wk of Class

Professor Shaw will sign and return a copy to each student.

Approved by: _____ Date: _____