Marshall University
Syllabus

Course Title / Number	MTH 132: Precalculus with Scientific Applications (CRN 3015)
Semester/Year	Fall 2018
Days/Time	MTWRF 9AM – 9:50AM
Location	Smith Hall 511
Instructor	Dr. Michael Schroeder
Office	742F Smith Hall
Phone	(304) 696-6643
E-Mail	schroederm@marshall.edu
Office/Hours	MWF 10AM-11AM and TR 8AM-9AM (Smith 742F)
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802 Academic Rights and Responsibilities of Students Excused Absence Policy for Undergraduates Academic Probation and Suspension Computing Services Acceptable Use Students with Disabilities Academic Forgiveness Academic Dishonesty Affirmative Action Inclement Weather Sexual Harassment Dead Week

Course Description: From Catalog

Functions used in calculus including polynomial, rational, exponential, logarithmic, and trigonometric. Systems of equations and inequalities, conic sections, polar parametric equations, sequences and series, and Binomial Theorem. (PR: Math ACT 24 or above, or C or better in MTH 127 or C or better in MTH 130)

The table below shows the following relationships:
How each student learning outcomes will be practiced and assessed in the course.

Course Student Learning Outcomes	**How students will practice each outcome in this Course**	**How student achievement of each outcome will be assessed in this Course**
Students will learn ...		
how to manipulate algebraic expressions and solve algebraic equations;	homework, classwork	midterms and final exam
solving algebraic inequalities and using those results to graph polynomial and rational functions;	homework, classwork	midterms and final exam
the graphs of basic polynomial, exponential, logarithmic, trigonometric, and inverse functions and how to manipulate them;	homework, classwork	midterms and final exam
the six basic trigonometric functions and their application;	homework, classwork	midterms and final exam
an introduction to vectors and their applications; solving systems of equations, manipulating matrices, and how these two are related;	homework, classwork	midterms and final exam
sequences and series and their applications;	homework, classwork	midterms and final exam
basic counting techniques and probability; solving "real-world" problems by translating the problem into algebra.	homework, classwork	midterms and final exam

Required Texts, Additional Reading, and Other Materials

1. Stewart, Redlin, and Watson. *Algebra and Trigonometry*, 4th edition. (ISBN: 9781305071742)

Course Requirements / Due Dates

1. Homework will be assigned using WeBWorK, an on-line homework program. Almost all homework will be submitted on-line. There will be assignments due multiple times per week. Deadlines will be posted on-line. Your homework assignments can be found here:

   `http://webwork.marshall.edu/webwork2/F18-Math-132-Schroeder/`

   Homework due dates are posted in WeBWorK. Homework is worth 120 points.
2. There will be at-home prepwork and in-class assignments which will be reviewed for a grade. Class participation is also incorporated into the in-class grade. In-class assignments constitute 70 points while the classwork is worth 60 points.
3. We will have six mid-term exams and a final exam in this course. Each midterm exam will be worth 100 points, and the lowest exam score will be dropped. The final exam will be worth 250 points. Notecards, books, and all other material is prohibited. The final will be comprehensive. An unexcused absence for an exam will result in a **zero (0)** for that grade. Any absences must be discussed with me before the following class day.

Grading Policy

This course will be graded from a total of 1000 points. Letter grades will be assigned based on the chart to the right.

Graded Work	Point Value
Homework	120
Classwork	60
Class Participation	70
Midterm Exams (100 points each)	500
Final Exam	250
TOTAL	1000

Point Ranges	Letter Grade
900 - 1000	A
800 - 899	B
700 - 799	C
600 - 699	D
0 - 599	F

Attendance Policy

You are responsible for everything that is said and covered in class each day. Attendance is strongly recommended. Attendance and participation will be key factors in border-line grades getting bumped.

Course Topics

Topics discussed will include: functions used in calculus including polynomial, rational, exponential, logarithmic, and trigonometric, systems of equations and inequalities, conic sections, polar and parametric equations, sequences and series, and the Binomial Theorem.

Course Schedule

There are approximately 4 homework assignments due each week.
Their due dates are posted in WeBWorK.

There are six (6) midterms given throughout the semester.

The final exam will be given on Friday, December 14, 2018 at 8AM.

MTH 132: Precalculus with Scientific Applications

Specific Class Information

Semester:	Spring 2018	**Instructor:**	Dr. Michael Schroeder
CRN:	3015 (102)	**Email:**	`schroederm@marshall.edu`
Meeting Days:	MTWRF	**Office (Phone):**	Smith Hall 742F, (304) 696-6643
Meeting Time:	9:00AM – 9:50AM	**Office Hours:**	MWF 10AM to 11AM
Classroom:	Smith Hall 511		TR 8AM to 9AM

Math Tutoring Lab:	Smith 625
Lab Hours:	MTWR 10AM to 4PM
	MTWR 5PM to 6:30PM
	F 10AM to noon

Required Text:	Stewart, Redlin, & Watson. *Algebra and Trigonometry, 4th edition.* (ISBN: 9781305071742)
Prerequisites:	Math ACT 24 or above, or C or better in MTH 127 or C or better in MTH 130
Class Materials:	Scientific calculators are permitted – no symbolic manipulation or phones on exams.
	Regular access to an internet-accessible computer is **required**.
	A folder with pockets is **required**. A large 3-ring binder is **strongly recommended**.

Learning Outcomes, Methods, and Assessment

In this course, there are four primary learning outcomes for students. Each are listed below, along with the means by which students will practice for each outcome and methods of assessment.

Desired MTH 132 Learner Outcomes/Objectives

Successful students will ...

- further develop algebraic skills (ex. solving equations) which are essential in calculus
- learn about trigonometric functions and their applications with an intent for calculus
- learn about the functions which are used in calculus (ex. graphing and other properties)
- learn which functions are appropriate for modeling different types of growth and change

Practice and Assessment Methods

Students will have low-stakes in-class assignments, homework, and other activities to serve as practice. The midterm and final exams will serve as the assessment tool.

Course Description

Topics discussed will include: functions used in calculus including polynomial, rational, exponential, logarithmic, and trigonometric, systems of equations and inequalities, conic sections, polar and parametric equations, sequences and series, and the Binomial Theorem. (5 hours)

Course Policies

Attendance

You are responsible for everything that is said and covered in class each day, along with any class material posted online. Participation and preparation for class are expected and is part of your grade. Any absences must be discussed with me before the following class day. Please email or come to my office.

Course Policies (continued)

Homework

Homework will be assigned using WeBWorK, an on-line homework program. Almost all homework will be submitted on-line. There will be assignments due multiple times per week. Deadlines will be at 4am and the detes are posted on-line. (Pay close attention to the due dates!) Your homework assignments can be found here:

`http://webwork.marshall.edu/webwork2/F18-Math-132-Schroeder/`

Lectures and In-Class Activities

In this course, we will use a modified version of the *flipped classroom.* Lectures are posted as posted as videos online. Before each class, you will watch the lectures, take notes on the provided note shells, and complete a 3-question survey on each video.

Promptly at the **beginning of class**, these notes will be checked for completion. If you do not complete your notes before class, you will watch the video during class in the computer lab in Smith 532 or some other location if the room is in use. You will receive only a small fraction of your class participation grade for the day.

You will work in groups on problems each day in class, and these problems will be related to the material covered in the videos. Most days, your groups will present problems on the board.

Your participation in class (coming prepared with notes, completing work in class, asking questions, posting solutions, etc.) will constitute 70 points of your final grade.

Exams

We will have six (6) mid-term exams and a final exam in this course. Each midterm exam will be worth 100 points, and the lowest exam score will be dropped. The final exam will be worth 250 points and is comprehensive. An unexcused absence for an exam will result in a **zero (0)** for that grade. An excused absence as determined by the Office of Student Affairs (location at MSC2W38) will warrant a makeup exam.

The **final exam** is Friday, December 14, 2018 at 8AM **(8AM, not 9AM)** in **Smith 511.**

Classwork Collection

At each midterm exam, your classwork will be collected. It must be organized in a folder with pockets in the order that the lessons were covered. **All problems must be completed**. Each completed submission is worth 10 points.

Grade Scale

This course will be graded from a total of 1000 points. Letter grades are assigned on a 100-point scale.

Homework	120
Classwork	60
Prepwork / In-class participation	70
Midterm Exams (100 points each)	500
Final Exam	250
TOTAL	1000

Point Ranges	Letter Grade
900 - 1000	A
800 - 899	B
700 - 799	C
600 - 699	D
0 - 599	F

University-Wide Policies

You are responsible for knowing all university policies, which can be found at

`http://www.marshall.edu/academic-affairs/?page_id=802`

About this Syllabus

This syllabus is subject to change at my discretion.

List of Topics

Tentative Schedule

August 2018

20 Lesson 0	21 Lesson 1.01	22 Lesson 1.02	23 Lesson 1.03	24 Lesson 1.04*
27 Lesson 1.05	28 Lesson 1.06	29 Lesson 1.07	30 Lesson 1.08	31 Lesson 1.09

September 2018

3 Labor Day	4 Lesson 1.10	5 Lesson 1.11	6 Lesson 2.01	7 Review
10 Exam 1	11 Lesson 2.02	12 Lesson 2.03	13 Lesson 2.04	14 Lesson 2.05
17 Lesson 2.06	18 Lesson 2.07	19 Lesson 2.08	20 Lesson 2.09	21 Lesson 2.10
24 Lesson 2.11	25 Lesson 3.01	26 Review	27 Exam 2	28 Lesson 3.02

October 2018

1 Lesson 3.03	2 Lesson 3.04	3 Lesson 3.05	4 Lesson 3.06	5 Lesson 3.07
8 Lesson 3.08	9 Lesson 4.01	10 Review	11 Exam 3	12 Lesson 4.02
15 Lesson 4.03	16 Lesson 4.04	17 Lesson 4.05	18 Lesson 4.06	19 Lesson 4.07
22 Lesson 4.08	23 Lesson 4.09	24 Lesson 5.01	25 Review	26 Exam 4†
29 Lesson 5.02	30 Lesson 5.03	31 Lesson 5.04		

November 2018

			1 Lesson 5.05	2 Lesson 5.06
5 Lesson 5.07	6 Lesson 6.01	7 Review	8 Exam 5	9 Lesson 6.02
12 Lesson 6.03	13 Lesson 6.04	14 Lesson 6.05	15 Lesson 6.06	16 Lesson 6.07
19 Break	20 Break	21 Break	22 Break	23 Break
26 Lesson 6.08	27 Lesson 7.01	28 Review	29 Exam 6	30 Lesson 7.02

December 2018

3 Lesson 7.03	4 Lesson 7.04	5 Lesson 7.05	6 Review	7 Review

* The last day to add/drop a course without showing up on your transcript.

† The the last day to drop a course without affecting your GPA.

Daily Expectations

Homework

Homework is assigned for every lesson. The due date for each assignment at the end of the day after two class days. The deadline for homework submission is at 4AM. Pay attention to the date.

Prepwork

There is prepwork for every lesson. You will receive a copy of the prepwork in class, or you can print out a copy from MU Online.

Suggestions

Between classes, you will need to complete prepwork and homework. Homework assignments will overlap (some will be assigned before others are due). Here is an example:

Day:	1	2	3	4	5
Material in class covered:	Intro	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Prepwork Assigned:	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Homework Assigned:	Orientation	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Homework Due that night:	None	None	Orientation	Lesson 1	Lesson 2

Day:	6	7	8	9	10
Material in class covered:	Lesson 5	Lesson 6	Lesson 7	Lesson 8	Lesson 9
Prepwork Assigned:	Lesson 6	Lesson 7	Lesson 8	Lesson 9	Lesson 10
Homework Assigned:	Lesson 5	Lesson 6	Lesson 7	Lesson 8	Lesson 9
Homework Due that night:	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7

At any moment, you will have a prepwork assignment to complete and three outstanding homework assignments. I recommend that on a given day, you should

- Start the most recent assignment and do what you can – keep track of any questions you have.
- Ask me any questions you have from the previous assignment, work through more of the assignment and track any questions.
- Ask me any questions you have from the earliest assignment, then complete remaining problems from the assignment.
- Watch the prepwork video for the next class.

For example, suppose we just finished class on Day 6 (see the above example). Then you should

- Ask me any questions you have from the Lesson 3 and 4 homework (in office hours or by email).
- Immediately look at the problems from Lesson 5. Do as much as you can reasonably. Keep track of any questions you have.
- Complete the Lesson 3 homework. This is the assignment which must be completed that evening.
- Make as much progress as you can on the Lesson 4 homework (try to complete it).
- Watch the Lesson 6 video.

Attendance Assignments

Beyond your normal assignments and attendance, there are three tasks which you must complete. These count toward your attendance grade.

Sending Emails

When you are contacting your professors, you should compose proper emails:

- **Use a meaningful subject.** When you compose an email message, try to be somewhat specific in the subject. We receive many emails and it makes it easier on us if we can search effectively for the email for which we are looking.
- **Compose a bonafide letter.** When sending an email, you should address the recipient, like "Dear So-and-So," or "Hello So-and-so." You should also sign the message with your name and some closing like "Sincerely, Mike." If you are exchanging a back-and-forth with someone, it is acceptable to simply sign your name, or sign your name after a dash.
- **Make your message stand-alone.** If you are writing an email to someone, try to include all relevant material to the message in the text of your email. For example, if you want ask about meeting times, include the times when you are available. Also, do not depend on someone reading the subject of the email to understand the content of your email.
- **Check your grammar and punctuation.** It is very unprofessional to write an email with poor capitalization, punctuation, and spelling. Before you send an email, read over your message to ensure it has as few mistakes as possible. Having a typo every once in a while is not a problem, but if there are many, it can be very distracting (and irritating) to the reader.

Assignment #1: By Tuesday night, I would like you to send me an email. I would like you to answer the following questions:

1. What is the last math class that you completed and when did you take it?
2. What is your intended major at Marshall?
3. What math classes do you need to take to complete your degree? To answer this, you may need to use the undergraduate catalog for your incoming year. You can find copies of the catalogs at

   `http://www.marshall.edu/catalog/undergraduate-catalogs/`

4. What do you hope to achieve by taking MTH 132?
5. Have you taken a class which was taught in this manner?
6. Have you taken a class with homework completed on the computer?

When you compose this, be sure to following the guidelines listed above. Also, use complete sentences and do not send me a numbered list. Write out your email in paragraph form. This will count as one (1) attendance point.

Coming to Office Hours

Each of your professors hold office hours. These are times set aside specifically for you! You can simply drop by the office during those times and talk about whatever you want. That time is for you! We can discuss homework problem, the class, your grades ... literally anything about the class. Office hours are the most underutilized service that professors provide – make sure to use them!

Assignment #2: During the first week, after you send your email, find my office during my office hours and ask a question. Any question. If you cannot make my office hours, then either talk to me during class or email me about setting up a time for you to come by. If you come to my office and ask me a question (and wait for the answer), then you will receive one (1) attendance point.

Seeking Assistance

I am not always available in my office or able to quickly respond to email. There are other (free) resources for you to use. One is the Math Tutor Lab. Its location and open hours are listed on the syllabus. The lab opens during the second week of class.

Assignment #3: During the second week, go to the lab and ask a question about the classwork or homework. Afterward, ask the lab tutor to sign your work. If you show me this in class or in my office, you will receive one (1) attendance point.