

## Marshall University Syllabus

|  |   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
|--|---|--|---------------------|---|--------------------|-----------------------------------|-------------------|-----------------------------------|-------------------|----------------------------|-----------|----------------------|--|
| Course Title / Number                            | MTH 132: Precalculus with Scientific Applications (CRN 3231)  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Semester/Year                                    | Fall 2014   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Days/Time  | MTWRF 8AM – 8:50AM  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Location   | Smith Hall 511  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Instructor                                       | Dr. Michael Schroeder   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Office   | 742F Smith Hall   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Phone  | (304) 696-6643  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| E-Mail   | <a href="mailto:schroederm@marshall.edu">schroederm@marshall.edu</a>  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Office/Hours                                     | MWF 9AM (Smith 742F) & TR 1PM (Smith 742F)  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| University Policies                              | <p>By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to</p> <p style="text-align: center;"><a href="http://www.marshall.edu/academic-affairs">www.marshall.edu/academic-affairs</a></p> <p>and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to</p> <p style="text-align: center;"><a href="http://www.marshall.edu/academic-affairs/?page_id=802">http://www.marshall.edu/academic-affairs/?page_id=802</a></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Academic Rights and Responsibilities of Students</td> <td style="width: 50%;">Academic Dishonesty</td> </tr> <tr> <td>Excused Absence Policy for Undergraduates</td> <td>Affirmative Action</td> </tr> <tr> <td>Academic Probation and Suspension</td> <td>Inclement Weather</td> </tr> <tr> <td>Computing Services Acceptable Use</td> <td>Sexual Harassment</td> </tr> <tr> <td>Students with Disabilities</td> <td>Dead Week</td> </tr> <tr> <td>Academic Forgiveness</td> <td></td> </tr> </table> | Academic Rights and Responsibilities of Students | Academic Dishonesty | Excused Absence Policy for Undergraduates | Affirmative Action | Academic Probation and Suspension | Inclement Weather | Computing Services Acceptable Use | Sexual Harassment | Students with Disabilities | Dead Week | Academic Forgiveness |  |
| Academic Rights and Responsibilities of Students | Academic Dishonesty   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Excused Absence Policy for Undergraduates        | Affirmative Action  |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Academic Probation and Suspension                | Inclement Weather   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Computing Services Acceptable Use                | Sexual Harassment   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Students with Disabilities                       | Dead Week   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |
| Academic Forgiveness                             |   |  |                     |   |                    |                                   |                   |                                   |                   |                            |           |                      |  |

### 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.

| <b>Course Student Learning Outcomes</b>  | <b>How students will practice each outcome in this Course</b> | <b>How student achievement of each outcome will be assessed in this Course</b> |
|--|---|--|
| 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. Larson, Ron. *Algebra and Trigonometry*. (ISBN: 9781133959748)

## 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/S14-Math-132-Schroeder/>

Homework due dates are posted in WeBWorK.

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 90 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. An excused absence as determined by the Office of Student Affairs (location at MSC2W38) will warrant a makeup exam.

## 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                        | 100         |
| Classwork                       | 60          |
| Class Participation             | 90          |
| 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 3-4 homework assignments due each week. Their due dates are posted in WeBWorK.

There are six (6) midterms given throughout the semester. Their dates will be announced at least one (1) week beforehand.

The final exam will be given on Thursday, December 11, 2014 at 8AM.

# MTH 132: Precalculus with Scientific Applications

## Specific Class Information

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|                      |                 |                        |                                 |
|----------------------|-----------------|------------------------|---------------------------------|
| <b>Semester:</b>     | Fall 2014       | <b>Instructor:</b>     | Dr. Michael Schroeder           |
| <b>CRN:</b>          | 3231 (101)      | <b>Email:</b>          | schroederm@marshall.edu         |
| <b>Meeting Days:</b> | MTWRF           | <b>Office (Phone):</b> | Smith Hall 742E, (304) 696-6643 |
| <b>Meeting Time:</b> | 8:00AM – 8:50AM | <b>Office Hours:</b>   | MWF 9AM to 10AM, TR 1PM to 2PM  |
| <b>Classroom:</b>    | Smith Hall 511  | <b>Tutoring Lab:</b>   | Smith Music 115                 |
|                      |                 | <b>Lab Hours:</b>      | M-R 9AM to 5PM, F 9AM to noon   |

- Required Text:** Larson, Ron. *Algebra and Trigonometry*. (ISBN: 9781133959748)
- 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.  
A folder with brads is **required** for submitting class activities.  
A 1.5" to 2" 3-ring binder is **strongly recommended** for keeping track of notes.

## Learning Outcomes, Methods, and Assessment

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

### Desired MTH 132 Learner Outcomes/Objectives

Successful students will learn ...

- ▶ how to manipulate algebraic expressions and solve algebraic equations;
- ▶ solving algebraic inequalities and using those results to graph polynomial and rational functions;
- ▶ the graphs of basic polynomial, exponential, logarithmic, trigonometric, and inverse functions and how to manipulate them;
- ▶ the six basic trigonometric functions and their application;
- ▶ an introduction to vectors and their applications;
- ▶ solving systems of equations, manipulating matrices, and how these two are related;
- ▶ sequences and series and their applications;
- ▶ solving “real-world” problems by translating the problem into algebra.

### Practice and Assessment Methods

The student will have low-stakes quizzes, homework, projects, and other activities to serve as practice. The midterm and final exams will serve as the assessment tool.

## Course Description

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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

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### Attendance

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

### 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 posted on-line. Your homework assignments can be found here:

<http://webwork.marshall.edu/webwork2/S14-Math-132-Schroeder/>

### Classwork and Other Assessed Work

Lectures are posted online. You will be watching the lectures and taking notes before each class. Completion of these notes will be checked at the beginning of class. You will work in groups on problems each day in class. You will present problems at the board, and this work will be collected on each exam date and graded. Your classwork will be worth 10 points each exam, given for organization and completion. Everything else will be graded using a zero-sum game / ticket system and worth 90 points.

### 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 Thursday, December 11, 2014 at 8AM.

### Grade Scale

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

| Graded Work                     | Point Value |
|---------------------------------|-------------|
| Homework                        | 100         |
| Classwork                       | 60          |
| Tickets                         | 90          |
| 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](http://www.marshall.edu/academic-affairs/?page_id=802)

### About this Syllabus

This syllabus is subject to change at my discretion.