



SYLLABUS

MATH 168 950 Precalculus
Fall 2019

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Consortium of Adventist Colleges and Universities

Interactive Online Format

This course follows an interactive online format and has Wednesday/Sunday deadlines. You are expected to login regularly during the course to participate in the online discussions. Please plan accordingly. The last day to withdraw with a full refund is 15 days after this course begins. **(Please review the Dates & Deadlines widget on the right side of your course in LearningHub for the last day to withdraw for a full refund.)**

Instructor Contact

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Other Assistance

Username and password assistance	helpdesk@andrews.edu	(269) 471-6016
Enrollment and withdrawal questions	sderegister@andrews.edu	(269) 471-6323
Technical assistance with online courses	dlit@andrews.edu	(269) 471-3960
Exam requests and online proctoring	sdeexams@andrews.edu	(269) 471-6566
Distance Student Services - any other questions	sdestudents@andrews.edu	(269) 471-6566

Part 1: Course Information

Course Descriptions

Linear, quadratic, and absolute value equations and inequalities with applications; radical equations; polynomial, rational, exponential, logarithmic, inverse, trigonometric functions; higher order equations; exponential and logarithmic equations; the unit circle, trigonometric identities and equations; Law of Sines and Cosines; vectors in the plane, polar coordinates and graphs; complex numbers and De Moivre's Theorem; conic sections.

Prerequisite

SAT Math \geq 510 or ACT Math \geq 22 or Andrews Math Placement Exam \geq P3 or MATH 165 or MATH 166.

Course Learning Outcomes

- To develop a demonstrable understanding of the topics outlined in the course description.
- To successfully engage in mathematical reasoning, problem solving, and expression.
- To appreciate how God reveals the beauty and order of the universe through the language of Mathematics.

Required Textbook and Course Material

Textbook: College Algebra with Trigonometry (9th edition), by Barnett, Ziegler, Byleen, Sobecki. McGraw Hill (2011). ISBN 9780077350109.

NOTE: Purchase textbooks through any online bookstore, such as amazon.com, which can deliver within 2 days. If you need to use financial aid to purchase textbooks, email sdestudents@andrews.edu, cutting and pasting the textbook information from syllabi, including course title and section, your full name and student ID#.

Credit Hours

This course is offered for 4 credits; therefore, it is expected that you would spend 12 hours per week during the 16 weeks of the course.

Under the 15 week schedule, it is suggested that you divide your weekly study time as follows:

- Textbook Reading: 2 hours
- Online Lectures: 3 hours
- Journal Posts: 30 minutes
- WeBWorK Assignments: 5 hours 30 minutes
- Solution-Write Up Assignments: 1 hour

Part 2: Course Methods**Course/Technical Requirements**

- Modern computer system including:
 - High speed internet connection (DSL, Cable Modem, LAN)
 - Modern web browser (Google Chrome 19+, Firefox 3.0+, IE 9+, etc) with flash plugin for viewing videos
 - Sound card and speakers/headphones for listening to videos
 - Adobe Acrobat Reader (free from <http://www.adobe.com/>)
- Simple scientific calculator including trigonometric, exponential, and logarithmic functions. (note: you may not use a calculator capable of symbolic mathematics on the final exam).

LearningHub Access

This course is delivered online through LearningHub at <http://learninghub.andrews.edu>

Your username and password are your Andrews username and password. You need to activate your username and password to access LearningHub.

Please do this online here:

<https://vault.andrews.edu/vault/pages/activation/information.jsp> if you haven't already. If you need assistance, call or email us: (296) 471-6016 or helpdesk@andrews.edu.

If you need technical assistance at any time during the course, or to report a problem with LearningHub, please email dlit@andrews.edu or call (269) 471-3960.

Part 3: Course Requirements

Important Note: This online class is **not** self-paced. You can arrange your schedule flexibly during each week, but you **MUST** participate each week. You are expected to “show up” to class by interacting in the discussion forums a minimum of two times per week. In addition, assignments are due regularly each week. Adequate Internet access during the duration of the course is critical for your participation. To be successful, plan to spend time daily on the course.

Please Be Advised: The schedule is provided in advance so you may read ahead of schedule. Your dedication, professionalism, and excellence in study skills habits are necessary. If you have any course content questions, please contact your professor. If you have technical questions, contact dlit@andrews.edu.

Assessment

Non-Graded Activities

Even though these activities do not count directly towards your grade, they are important steps in the learning process.

- **Textbook Readings**
Before starting the lessons or attempting the assignments for a given section, you must read the associated textbook section. Mathematics textbooks should be read with pencil and paper so that you can work your way through the examples as you read.
- **Lessons**
The lessons are equivalent to a lecture in a face-to-face course. They allow your instructor to highlight the most important parts of each section, give useful hints or shortcuts, and provide you with examples in addition to those given in the text. You should read through the lessons and watch the video examples before starting on the associated WeBWorK or write-up assignment.

Graded Course Activities

These assignments give you the opportunity to demonstrate mastery of the course material. They are divided into several categories, each with a specific purpose and weight.

- **WeBWorK Assignments (20% of your grade)**
Mathematics is not a spectator sport! Reading your textbook and watching video examples is typically not enough for you to master the material. As an athlete must spend hours practicing in order to excel in his or her sport, so you must practice your precalculus skills if you wish to do well on exams.

The online homework system WeBWorK will help you do just that by checking your answers and giving you instantaneous feedback. After reading the material for each lesson, print out the associated WeBWorK assignment and work through the problems on paper. When you are comfortable with your answers (after possibly seeking help), return to WeBWorK and submit them. Don't worry if you get them wrong the first time. In most cases you will have an unlimited number of attempts on each problem. However, it is not to your advantage to guess at the answer either. If WeBWorK marks one of your

answers wrong, go back and check your work or seek assistance using WeBWorK's Email Instructor button.

Solution Write-Up Assignments (10% of your grade)

While WeBWorK can check your final answer, it does not check your solution process. In order to do well on the exams, you must not only be able to find the right answer, but express your solution using correct mathematical notation. Each week you will be asked to write-up solutions to problems from your textbook. You will then scan or take a picture of your work and upload it to Moodle.

- **Discussion Posts (5% of your grade)**

Several times during the term you will be asked to respond to a discussion question. These questions promote the integration of faith and learning by asking you to reflect on the connections between mathematics and spiritual issues. Journal questions are read only by your instructor. The following rubric will be used to evaluate your responses.

	Excellent (5)	Average (3)	Below Average (1)	Unacceptable (0)
Response is:	well thought-out, addressing the question carefully and completely.	reasonable, but does not address all aspects of the question, addresses them carelessly.	minimal, showing little thought and missing many question aspects completely.	off topic or completely missing.

- **Midterm Exam (30% of your grade)**

The midterm exam covers the material from chapters 1-5 of your text. The exam is administered by a proctor (see part 5 below) and will be taken with pencil and paper.

You may not use a calculator for the midterm exam. You must show all steps in your solutions. Solutions lacking neatness and/or proper evidence will be discounted at the instructor's discretion.

- **Final Exam (35% of your grade)**

The final exam is comprehensive, emphasizing the material from the second half of the course, chapters 6-8 and 10. The format of the final is similar to that of the midterm, but **you will need a simple scientific calculator with trigonometric function capabilities.** The rules for showing your work still apply.

Assessment Feedback

Feedback on assignments and exams will be provided in a timely manner, as outlined below.

- **WeBWorK Assignments**

Feedback is provided instantaneously by the WeBWorK system. If you have questions, or believe that you have entered a correct solution and it is not being accepted, please email your instructor using the Email Instructor button at the bottom of each WeBWorK page.

- **Solution Write-Up Assignments**

Your instructor will grade your write-up assignments and post your final score, along with comments on any improvements you should make to your solution writing, within one week of the date on which the assignment is due.

- **Discussion Posts**

Feedback on your journal posts will be provided within one week of your submission.

- **Exams**

Midterm and Final exams will be graded within one week of the date that your instructor receives the exam. Exam scores will be posted, but the exams themselves will not be returned. You may contact your instructor for additional feedback on your exam performance.

Exams

All tests and exams in this course are proctored through the School of Distance Education Testing Center. Your proctor will open your exam through Webworks at the start of your scheduled exam session. Please request your exam when prompted in the module(s) indicated prior to the exam. Appointments for proctoring in or online through the Testing Center are set up online at calendly.com/sde-exams/online.

Note that an exam code is never released to the student, and cannot be sent to a proctor who has the same address as the student unless the address is known to be that of a school or mission facility. All students must present photo identification at the start of each exam session.

If you cannot take your exam by the deadline date, email specific reasons and your recovery plan to your instructor before the deadline. Your exam cannot be proctored after the exam deadline without email or phone approval directly from the instructor to the Testing Center (sdeexams@andrews.edu or 269-471-6566). The Testing Center will then work with a local proctor if needed.

No exam is returned to the student. Instructor feedback on exams prior to the final exam will be provided to aid studying for future exams.

For more details on taking exams and how online proctoring works, please see www.andrews.edu/distance/students/exams.html

You may not use your textbook and notes to solve the test problems. Using your own paper, the answers need to be clearly numbered, written and work must be shown. The tests must be taken in one setting, within a 180-minute period. The tests may not be repeated, so do not attempt the tests until you have completed the homework assignments and quizzes for that chapter. No exam is returned to the student. Test grades are sent to the student as soon as the exam is graded. Feedback from the instructor for exams will provide information for studying for future exams.

The midterm exam is worth 30% of your grade. You are allowed 180 minutes to complete this exam. The Final exam is worth 35% of your grade. You are allowed 180 minutes to complete this exam.

Schedule

All due dates are Eastern Standard Time

Modules	Lessons	Readings	Assignments
Intro	These items will need to be completed before you will have access to the rest of the course	Orientation Course Overview Introductions Academic Integrity	Introduction Forum Academic Integrity Quiz Academic Integrity Statement
1 Aug 26- Sept 1	Chapter 1:1-3	1-1: Linear Equations and Applications 1-2: Linear Inequalities 1-3: Absolute Value in Equations and Inequalities	WeBWorK 1-1 WeBWorK 1-2 WeBWorK 1-3
2 Sept 2 –8	Chapter 1:4-5; 2: 1-2	1-4: Complex Numbers 1-5: Quadratic Equations and Applications 2-1 & 2-2: Cartesian Coordinates & Distance in the Plane	WeBWorK 1-4 WeBWorK 1-5 Discussion Question #1 Solution Write-Up Cpt 1 WeBWorK 2-1 & 2-2
3 Sept 9-15	Chapter 2:3; 3:1-3	2-3: Equation of a Line 3-1 & 3-2: Functions & Graphing Functions 3-3: Transforming Functions	WeBWorK 2-3 WeBWorK 3-1 & 3-2 WeBWorK 3-3
4 Sept 16-22	Chapter 3:4-6	3-4: Quadratic Functions 3-5: Operations on Functions 3-6: Inverse Functions	WeBWorK 3-4 WeBWorK 3-5 WeBWorK 3-6 Solution Write-Up Cpt 2-3
5 Sept 23-29	Chapter 4:1-3	4-1: Polynomial Functions, Division, and Models 4-2: Real Zeros and Polynomial Inequalities 4-3: Complex and Rational Zeros	Discussion Question #2 WeBWorK 4-1 WeBWorK 4-2 WeBWorK 4-3
6 Sept 30 – Oct 6	Chapter 4:4; 5:1-2	4-4: Rational Functions and Inequalities 5-1: Exponential Functions 5-2: Exponential Models	WeBWorK 4-4 Solution Write-Up Cpt 4 WeBWorK 5-1 WeBWorK 5-2
7 Oct 7-13	Chapter 5:3-5	5-3: Logarithmic Functions 5-4: Logarithmic Models 5-5: Exponential and Logarithmic Equations	WeBWorK 5-3 WeBWorK 5-4 WeBWorK 5-5 Solution Write-Up Cpt 5
8 Oct 14-20	MIDTERM EXAM (Midterm Exam needs to be completed by Thursday, October 17, 11:59 pm)		
9 Oct 21-27	Chapter 6:1-2	6-1: Angles and Their Measures 6-2: Right Triangle Trigonometry	Discussion Question #3 WeBWorK 6-1 WeBWorK 6-2
10 Oct 28 – Nov 3	Chapter 6:3-6	6-3 & 6-4: Trigonometric Functions & Their Properties 6-5: More General Trigonometric Functions 6-6: Inverse Trigonometric Functions	WeBWorK 6-3 & 6-4 WeBWorK 6-5 WeBWorK 6-6 Solution Write-Up Cpt 6
11 Nov 4-10	Chapter 7:1-3	7-1: Basic Identities and Their Use 7-2: Sum, Difference, and Cofunction Identities 7-3: Double-Angle and Half-Angle Identities	WeBWorK 7-1 WeBWorK 7-2 WeBWorK 7-3

Modules	Lessons	Readings	Assignments
12 Nov 11-17	Chapter 7:4-5; 8:1	7-4: Product-Sum and Sum-Product Identities 7-5: Trigonometric Equations 8-1: Law of Sines	WeBWorK 7-4 WeBWorK 7-5 Solution Write-Up Cpt 7 Discussion Question #4 WeBWorK 8-1
13 Nov 18-24	Chapter 8:2-4	8-2: Law of Cosines 8-3: Vectors in the Plane 8-4: Polar Coordinates and Graphs	WeBWorK 8-2 WeBWorK 8-3 WeBWorK 8-4
14 Nov 25 – Dec 1	Chapter 8:5; 10:1-2	8-5: Complex Numbers and DeMoivre's Theorem 10-1: Systems of Linear Equations 10-2: Solving Systems with Gauss-Jordan Elimination	WeBWorK 8-5 Solution Write-Up Cpt 8 WeBWorK 10-1 WeBWorK 10-2
15 Dec 2–8	Chapter 10:3-4	10-3: Matrix Operations 10-4: Solving Systems of Linear Equations Using Matrix Inverses	WeBWorK 10-3 WeBWorK 10-4 Solution Write-Up Cpt 10
16 Dec 9-11	FINAL EXAM (Needs to be due by Wednesday, December 11, 11:59 PM)		

Assignment Submission and Grading

All assignments for this course will be submitted electronically through Moodle and WeBWorK unless otherwise instructed. Assignments and exams must be completed in the order noted on the schedule.

Part 4: Grading Policy

A summary of the weights for the various graded assignment types is given below. You will need to complete every Assignment, the Midterm Exam, and the Semester Exam before a grade can be issued.

Percent	Description
20	WeBWorK
10	Solution Write-Ups
5	Discussion Posts
30	Midterm Exam
35	Final Exam
100%	Total Percent Possible

Viewing Grades in Moodle

To view your grades at any time, follow the steps listed below. Note that grades for written assignments, journal posts, and exams may take some time to be calculated and posted, as described above.

- Click into the course.
- Click on the **Grades** link in the Settings Box to the left of the main course page.

Letter Grade Assignment

Letter Grade	Percentage
A	93-100%
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%
C-	70-72%
D	60-69%
F	0-59%

Part 5: Course Policies

Withdrawal and Incomplete Policies

The current withdrawal policy can be found online at <https://www.andrews.edu/distance/students/gradplus/withdrawal.html>. The incomplete policy is found online at <http://www.andrews.edu/web/msc/moodle/public/incompletes.html>.

Late Work Policy

Late assignments will not be accepted without prior permission (obtained before the due date) from the instructor. WeBWork assignments may not be extended beyond the date that answers become visible—typically two days after the assignment due date.

Maintain Professional Conduct Both in the Classroom and Online

The classroom is a professional environment where academic debate and learning take place. Your instructor will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and beliefs of other students—both in the face-to-face classroom and online communication. Students have the right and privilege to learn in the class, free from harassment and disruption.

Academic Accommodations

Students who require accommodations may request an academic adjustment as follows:

1. Read the Andrews University Disability Accommodation information at <https://www.andrews.edu/services/sscenter/disability/>
2. Download and fill in the disability form at <http://www.andrews.edu/services/sscenter/disability/accommodationsreqform.pdf>. Preferably type answers. To save a digital copy, 1) print to file and save or 2) print and scan. Email the completed form and disability documentation (if any) to success@andrews.edu or fax it to (269) 471-8407.

3. Email sdestudents@andrews.edu to inform the School of Distance Education that a disability has been reported to Student Success.

Netiquette

In this course you will communicate with your classmates and instructor primarily in writing through the discussion forum and e-mail.

"Online manners" are generally known as "netiquette." As a general rule, you should adhere to the same classroom conduct that you would "off-line" in a face-to-face course. Some examples of proper netiquette are:

1. Avoid writing messages in all capital letters. THIS IS GENERALLY UNDERSTOOD AS SHOUTING.
2. Be careful what you put in writing. Even if you are writing an e-mail message to one person, assume that anyone could read it. Though you may send an e-mail to a single person, it is very easy to forward your message to hundreds or thousands of people.
3. Grammar and spelling matter. Online courses demand the same standard of academic communication and use of grammar as face-to-face courses.
4. Never use profanity in any area of an online course. The transcripts of online course discussion forums, e-mail, and chat sessions are savable.
5. When responding to messages, only use "Reply to All" when you really intend to reply to all.
6. Avoid unkindly public criticism of others. Publicly criticizing others in an inappropriate way is known as "flaming." Consider this course a practice forum for selecting your verbiage thoughtfully and professionally.
7. Use sarcasm cautiously. In the absence of nonverbal cues such as facial expressions and voice inflections, the context for your sarcasm may be lost, and your message may thus be misinterpreted.
8. In a face-to-face setting, our tone of voice and facial expressions may convey as much of our meaning as the words we use. In a written message, the subtext of your meaning may be confused or misinterpreted. Write clearly. Use active verbs.

[Source: University of Maryland, Communications Department]

Commit to Integrity

As a student in this course, and at the university, you are expected to maintain high degrees of professionalism, commitment to active learning, participation in this course, and integrity in your behavior in and out of this online classroom.

Commitment to Excellence

You deserve a standing ovation based on your decision to enroll in, and effectively complete this course. Along with your pledge of "commitment to Integrity" you are expected to adhere to a "commitment to excellence." Andrews University has established high academic standards that will truly enhance your writing and communication skills across the disciplines and in diverse milieu with many discourse communities in the workplace.

Honesty

Using the work of another student or allowing work to be used by another student jeopardizes not only the teacher-student relationship but also the student's academic standing. Lessons may be discussed with other students, tutors may help to guide a student's work, and textbooks, encyclopedias and other resource materials may be used for additional assistance, but the actual response must be the student's own work.

Exams must be completed in the presence of an approved supervisor without the assistance of books, notes, devices or outside help unless otherwise specified in the exam directions. The student should have no access to the exam either before or after it is taken. A student who gives information to another student to be used in a dishonest way is equally guilty of dishonesty.

Any violation of this policy will be taken before the Higher Education Academic and Curriculum Committee for appropriate punitive action.

Part 6: Bibliography

Journal questions were developed in conjunction with the following sources.

“Mathematics through the Eyes of Faith,” Rossell Howell and James Bradley, HarperOne, 2011 (ISBN 978-0062024473).

“Two Integration of Faith and Mathematics Projects for Freshmen Mathematics Majors,” Nicholas Willis, George Fox University, Journal of the Association of Christians in the Mathematical Sciences, 2012-2013 (http://www.acmsonline.org/journal/2012_2013/Willis2012.htm).