

MATH 104 – Algebra and Its Applications

Syllabus

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Course Information

Instructor Information

See the online course in Blackboard for instructor contact information and availability.

Textbook and Course Materials

Students will need to access the OpenStax College Algebra. (See source and link below.) Students must use graph paper and a TI-83 or TI-84 graphing calculator.

[OpenStax College Algebra, College Algebra](#). OpenStax CNX. May 31, 2017.

You will be using an open resource textbook for this course. However, if you need further and additional resources, contact the [Scribner Bookstore](#).

Course Description

Presents topics in algebra through traditional and applications-based methods. Topics include proportions, functions, exponents and scientific notation, linear, exponential, rational and quadratic functions and graphs, systems of equations, quadratic and linear inequalities. PREREQUISITE: Placement level C, Math 005 with a grade of C or higher, or consent. Students must have a TI-83 or TI-84 graphing calculator. Offered each semester. *This course satisfies the VWC "Q" or quantitative reasoning requirement and is a pre-requisite for Math 135 and Math 210.*

Credit Hours

4 credit hours

Prerequisites and/or Co-requisites:

Placement level C, Math 005 with a grade of C or higher, or consent

Learning Outcomes

Students who successfully complete this course should be able to:

- Address the anxiety that they may feel towards mathematics.
- Understand the usefulness of mathematical reasoning and techniques.
- Use some real world algebra skills.
- Learn more about the use of the Texas Instruments TI-84 graphing calculator for solving numerical and graphical problems.

Course Format and Design

This course is offered fully online in modular format. The course is designed to provide students with a variety of learning experiences and equip students with learning resources and activities that enable learning outcomes. We will use Blackboard as the

platform for the course. You will find the link to the Open Enrollment textbook, video links, assignments and discussions on our Blackboard course.

University Information and Policies

University Mission Statement

Prepare each student for a meaningful life and career

The mission of Virginia Wesleyan University is to engage students of diverse ages, religions, ethnic origins, and backgrounds in a rigorous liberal arts education that will prepare them to meet the challenges of life and career in a complex and rapidly changing world. In this endeavor, the university employs a wide range of approaches to teaching and learning and provides opportunities to connect the study of the liberal arts with practical learning experiences on campus, in the Hampton Roads region, and throughout the world. In accord with our United Methodist heritage, Virginia Wesleyan aspires to be a supportive community that is committed to social responsibility, ethical conduct, higher learning, and religious freedom.

Special Needs and Accommodations

Virginia Wesleyan University is committed to giving all students the opportunity of academic success. If you are a student who is requesting accommodations based on the academic impact of a disability, speak to your instructor about your accommodations letter and specific needs. If you do not have an accommodations letter for this course, you will need to visit or call for an appointment with a disability support specialist to coordinate reasonable accommodations. Visit [Virginia Wesleyan University Disability Support Services](#) on the Web.

Honor Code

As a liberal arts university, Virginia Wesleyan is committed to values of citizenship and social responsibility fundamental to a community of scholars. People who join this academic community agree to maintain academic honesty and, therefore, not to cheat, lie, falsify data, or commit plagiarism or academic theft. Refer to the [Virginia Wesleyan Honor Code](#) for definitions, rights, responsibilities, and procedures.

Student Handbook

All students are expected to uphold the university's mission statement and abide by the university's honor code, the Virginia Wesleyan Creed, and all other standards that govern the conduct and behavior of students. For more information, refer to the [student handbook](#).

Technology Requirements

Online courses require that you have access to a computer with a reliable Internet connection (high-speed access recommended). A backup plan is recommended in the event of an Internet outage.

You will need to have access to and be able to use the following:

- A Web browser (Google Chrome or Mozilla Firefox is recommended.)
- Adobe Acrobat Reader ([Get Adobe Acrobat Reader free.](#))
- Microsoft Office 365 ([Get Office 365 free.](#))
- A Virginia Wesleyan e-mail account to use when submitting assignments
- TI-83 or TI-84 graphing calculator.
- ALL Lab Assignments must be typed (not hand-written) and uploaded into Blackboard under the “Lab Assignments” content folder. You must use MS Word or save your file as .rtf (Rich Text Format), if you have Pages or other word processing software.
- Tests must first be downloaded from the Blackboard course. Once a student completes the test by hand, they must scan it and resubmit it to Blackboard within a designated window of time. A picture with a phone may be difficult to read for the instructor. If photos are not decipherable, they cannot be graded and thus are considered un-submitted. For this reason, students are encouraged to have access to a scanner or download a camera scanner app designed for phones. Students will additionally be required to download the answer sheet, type in your answers, save as a .docx or .rtf file (if you have Pages or other word processing software) and upload to the Blackboard as directed. Please see the Missed Test policy.
- For assistance with passwords and user IDs, contact the [Virginia Wesleyan Help Desk.](#)

For assistance with Blackboard, please contact [the Learning House Help Center.](#)

Instructional Technology

For information, support, and training in the academic software of the university, refer to the university’s department of [Instructional Technology.](#)

Learning Center

Contact the [Learning Center](#) for the following services:

- Academic advocacy and communication
- Academic planning and workshops
- Academic tutoring
- Computers and assistive technology
- Disability support services
- Individualized writing assistance
- Speech lab

Hofheimer Library

The Hofheimer Library supports the Virginia Wesleyan community by providing services, resources, and facilities that advance the academic program. Visit the [Hofheimer Library](#) on the Web for information, resources, services, and hours.

Nondiscrimination Statement

Virginia Wesleyan University does not discriminate against students of any race, religion, color, creed, gender, national and ethnic origin, age, marital status, covered veteran status, handicap, sexual orientation, or any other legally protected status in administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other university-administered programs and facilities.

Diversity Statement

Virginia Wesleyan University values the benefits of its diversity. We are committed to educating the campus community about issues of diversity. The campus promotes freedom of thought and opinion in the spirit of mutual respect. Our campus community is enriched through programs, activities, and interactions by celebrating our uniqueness as well as our commonalities.

This commitment to diversity links programs and services that support the distinctiveness of individuals regardless of racial and ethnic backgrounds, physical and cognitive abilities, family status, sexual orientation, gender identity, socioeconomic status, age, and religious and spiritual values.

An essential feature of this community is an environment in which all students, faculty, administrators, and staff are able to study and work free from bias and harassment. Such an environment contributes to the growth and development of each member of the community.

Course Policies

Participation

It is critical that you are an active participant in this course. I encourage you to submit problems of concern after each practice set of problems and to email me with questions or concerns that you may have and I also encourage you to develop a rapport with your fellow classmates. It is very valuable for you to communicate with your classmates on homework or possible resources. Participation is critically important when completing the Guided Discussion Forum. Your post each week must be completed on time so that your classmates will have the necessary time to respond to that initial post. Additionally, there is an "email" tool that will allow you to email your classmates.

Late Work

Assignments are due at the designated times noted in Blackboard. Late assignments will not be accepted. You are allowed to drop one Guided Discussion Response, Quiz, and

lab grade. These dropped grades are for instances in which you have a conflict and are unable to complete the assignment by the deadline. If you complete all assignments in each category, the lowest grade will be dropped in that category (guided discussion response, labs, and quizzes.)

Missed Tests (Make up Work)

You MUST complete each test by the designated deadline. If extreme circumstances do not permit you to complete the test by the deadline, you must contact the instructor within 4 hours before the scheduled deadline by email. If you wait until AFTER the test deadline date to contact the professor, you will receive a zero for that test. Unusual circumstances will be dealt with only for emergencies and on an individual basis. A signed document that validates the reason for the request to extend the deadline will be required.

Extra Credit

There is no extra credit for this course. However, students often find it beneficial to have the lowest grade for several course components dropped.

Netiquette Guide

Just like in a face-to-face course, you are expected to act in an appropriate and responsible manner toward both your instructor and your classmates. You are to be considerate and respectful of each other's ideas and you are to treat one another with common courtesy.

Strategies for Success

The key to success in this course is to not fall behind in your weekly assignments. There is at least one assignment that is due each day because of the condensed version of this course. Therefore, the work is significant both in terms of quantity and quality. Begin your Flip and reading of the textbook, and completion of the problem set at the beginning of the week and make sure that all flips, guided discussion forums, assignments, quizzes, and labs are completed and/or submitted on time. If you need help, do not hesitate to ask.

Course Grades and Assignments

Grade Allocation

Assignment	Point Values [or Percentages]
Flip Homework: Questions and Comments Posts	0%
Module Section Quizzes	20% (lowest dropped)
Guided Discussion Forum Posts	10% (lowest dropped)
2 Tests	25% each x 2 = 50%
Lab Assignments	20% (lowest dropped)
Total Possible Percent	100%

Grading Scale

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+	68–69
D	63–67
D-	60–62
F	Below 60

Assignment Descriptions

FLIP Video Homework is a short ungraded homework assignment on a video that should be watched by Monday nights that represent information on the new topics for the week. The ungraded assignments are located on Bb and may include video homework, examples from the text book or online problems. You will be assigned three flip homework assignments corresponding to each section in your weekly module to complete on Mondays. Each Flip homework assignment prepares you for the reading and examples of the upcoming section within the weekly module. Please note that these assignments are designed to help you prepare for the upcoming reading and are strictly for your notes. You will NOT be asked to submit the actual Flip homework assignment. Instead you MAY post questions or comments related to the process of completing any of the three Flips within the weekly module in the discussion area are due each Monday night by 11:59 pm EST under "**Flip Questions and Guided Discussion Forum**" content folder.

Homework: You will be assigned homework problems at the conclusion of each assigned chapter section within each module to problems in the text book. These assignments will include solutions at the end of the text book. These assignments will not be graded; however, you are encouraged to complete the problems and to ask the instructor questions if necessary by posting questions on the Problems of Concern discussion board.

Problems of Concern: To assist you in understanding the practice problems that follow each section, you have the opportunity to submit two - three problems you would like to see worked out at the end of each section to “Problems of Concern,” by the designated due date. The instructor will choose the top 3-4 problems, create a visual explanation of the solution and upload the document to your Bb course the day after the due date.

Guided Discussion Forum: We will utilize the Blackboard discussion board feature to respond to guided discussion questions using an asynchronous **online** format. The questions are located on Blackboard under the content folder, “Guided Discussion Forum.” The quality and quantity of written postings will be evaluated and graded by the instructor. For each guided discussion question, you must record your response in complete sentences and in a clear and concise manner to receive full credit. Short phrases or one sentence answers will generally not reflect full credit. Unless otherwise specified, students should post once to each question and reply to at one least other student posting for each discussion question. There will be approximately one weekly guided discussion question posted weekly throughout the semester. Guided discussion responses are due each Monday night by 11:59 pm EST.

Module Quizzes: You will be assigned a Blackboard (multiple choice quiz) assigned at the end of each section within each Module. See schedule for quizzes on Blackboard. You may use your text book and notes for these quizzes.

Tests: There will be two assigned tests. You are permitted to use your online text book, notes, homework and quizzes during the tests, but the tests will be timed so you must be familiar with the course material before you begin to make the best use of your limited time and to complete each test successfully. Tests must first be downloaded from the Blackboard course. Once a student completes the test by hand, they must scan it and resubmit it to Blackboard within a designated window of time. You will only be able to upload ONE document for the test and ONE document for the answer sheet. For this reason, the camera on a phone will not be sufficient. Students **MUST** have access to a scanner or download a camera scanner app designed for phones. Please see the Missed Test policy.

Labs: There will be approximately one lab assigned at the conclusion of each module. The designated labs, topics and due dates are located on the course schedule. The labs will involve a relevant world topic.

Course Schedule

Refer to the [academic calendar](#) for important university dates.

The instructor reserves the right to make necessary changes, additions, deletions, and revisions to the course schedule as needed.

Module	Readings	Assignments Due
<p style="text-align: center;">1</p> <p>Order of operations, Exponents and Scientific Notation, and Radicals and Rational Expressions</p>	<p>Text book chapter sections 1.1,1.2, 1.3</p>	<p>-Discussion Forum Question Module 1 -Flip Assignments 1.1, 1.2, 1.3 and Question/Comments 1.1-Complete problems for practice on page 15: 1-27, odd, 39-53, odd, and Try-It #9 and #10 on page 10. 1.2-Complete problems for practice on page 29: 5-45, odd. 1.3- Complete problems for practice on page 39: 5-23, odd; 35, 37, 41-45, odd. -Quizzes 1.1, 1.2, and 1.3 -National Debt Lab</p>
<p style="text-align: center;">2</p> <p>Polynomials, Factoring, Rational Expressions</p>	<p>Text book chapter sections 1.4, 1.5, 1.6</p>	<p>-Discussion Forum Question Module 2 -Flip Assignments 1.4, 1.5, 1.6 and Question/Comments 1.4- Complete problems for practice on page 48: 5-53, odd. 1.5- Complete problems for practice on page 56: 5-35, odd. 1.6- Complete problems for practice on page 64: 5-13, odd and page 65 # 51. -Quizzes 1.4, 1.5, 1.6 -No Lab for this module.</p>
<p style="text-align: center;">3</p> <p>Rectangular Coordinate System and graphs, Linear Equations, Models,</p>	<p>Text book chapter sections 2.1, 2.2, 2.3</p>	<p>-Discussion Forum Question Module 3 -Flip Assignments 2.1, 2.2, 2.3 and Question/Comments 2.1-Complete problems for practice beginning on page 84: 5-51, odd, 63. 2.2-Complete problems for practice on page 100: 7-45, odd, 55. 2.3-Complete problems for practice beginning on page 108: 1-7, odd; 9-16, all; 24-27, all, 49, 51. Solutions to even: #10) $5 + .10m$; #12) Plan A; #14) $120+35P$, #16) Family Plan; #24) $75 + .10x$; #26) 500 miles. -Quizzes 2.1, 2.2, 2.3 -Weather Lab</p>
<p style="text-align: center;">4</p> <p>Quadratic Equations, Linear Inequalities, Functions and Function notation,</p>	<p>Text book chapter sections 2.5, 2.7, 3.1</p>	<p>-Discussion Forum Question Module 4 -Flip Assignments 2.5, 2.7, 3.1 2.5-Complete problems for practice beginning on page 129: #7-23; 39, 41.</p>

Module	Readings	Assignments Due
		2.7-Complete problems for practice on page 149: #7-13, 25-27. 3.1-Complete problems for practice beginning on page 176-179: 7, 27, 29, 35, 37, 41-75, odd. -Quizzes 2.5, 2.7, 3.1 -Sidewalk Lab (Two weeks for completion)
Test #1	Modules 1-4	Test #1 open Monday, Week 5, at 6am and will close Wednesday, Week 5 at 6 pm.
5 Domain and Range, Rates of Change, Composition of Functions,	Text book chapter sections 3.2, 3.4	-Discussion Forum Question Module 5 -Flip Assignments 3.2, 3.4 3.2- Complete problems for practice beginning on page 193-194: #7-37, odd. 3.4- Complete problems for practice beginning on page 218-220: 11-17, 51-65, 73, 75, 77, odd -Quizzes 3.2, 3.4 -There is no lab for this module.
6 Linear Functions, Modeling with Linear Functions, Quadratic Functions	Text book chapter sections 4.1, 4.2, 5.1	-Discussion Forum Question Module 6 -Flip Assignments 4.1, 4.2, 5.1 4.1-Complete problems for practice beginning on page 304-306: #7-63, odd. 4.2- Complete problems for practice on page 317-318: #9 – 23, odd. 5.1-Complete problems for practice beginning on page 357: 7-19 odd, 35 - 39 odd. For 7-19, find only the vertex. Do not rewrite in standard form. For 15-19 and 35-39, do not find the axis of symmetry. You will not be responsible for questions related to finding the “axis of symmetry.” -Quizzes 4.1, 4.2, 5.1 -Garden Lab
7 Rational Functions, Exponential Functions, Graphs of Exponential Functions	Text book chapter sections 5.6, 6.1, 6.2	-Discussion Forum Question Module 7 -Flip Assignments 5.6, 6.2 (No Flip for 6.1) 5.6- Complete problems for practice beginning on page 431 - 433, #7 – 19, odd, 39 - 45, odd. Use your Graphing

Module	Readings	Assignments Due
		Calculator – both Table and Graph keys to aid you in graphing. 6.1- Complete problems for practice on page 476 – 478: #5 – 17, odd; 45 – 55, odd. 6.2- Complete problems for practice beginning on page 488 - 490, #9 - 21, odd; 47, 49. - Quizzes 5.6, 6.1, 6.2 -Car Lab
8 Systems of Linear Equations: Two Variables	Text book chapter sections 7.1	-Discussion Forum Question Module 8 -Flip Assignments 7.1 7.1- Complete problems for practice beginning on page 589 - 590, #7 – 9, odd; 41 - 49, odd; 57, 59. Solutions have been uploaded under Problems of Concern -There is no quiz for this section/module. -There is no lab for this module.
Test #2	Modules 5-8	Test #2 open Monday, Week 8, at 6am and will close Wednesday, Week 5 at 6 pm.

Collaborative Learning

Collaborative learning, through engagement of other students, is a key ingredient of participatory learning. Students can expect this online course to have some degree of collaborative learning. The type of collaboration will be minimal and take the form of weekly small group discussions. You are also encouraged to communicate with your peers in the course with questions on assignments. You have the ability to email your peers on our Blackboard course. All students are expected to participate in a timely, substantive, on-subject, professional, and complete manner.

Hints for Success in Your Online Course

1. Be sure you have access to proper computer equipment, Internet service, and software as listed above.
2. Designate certain times each week to work on your course. Plan ahead, avoid procrastination, even out your workload, and absorb material before moving on.
3. Have a specific achievement goal for each log-on session to help you accomplish what you need to get done and avoid distractions

4. Actively participate in discussions. Meaningful interchange will lead to better understanding of various aspects of the course and also contribute to the personality and warmth of the online class community.
5. If assigned to an online team or study group, work with your team members actively from the start. Thus, team members will benefit from the other group members' ideas and experiences and can depend on one another to complete assigned tasks.
6. Practice an informal but organized, concise, and clear writing style that aids online communication.
7. Venture beyond the classroom. The Internet medium of the online classroom gives ready access to electronic libraries and to pertinent websites that offer a significant advantage in understanding graduate-level material.
8. Your class may occasionally use short multimedia components to enrich the learning environment. Follow the instructions provided.