



VCU

Virginia Commonwealth University
VCU Scholars Compass

Open and Affordable Course Content at VCU

2023

Introduction to Contemporary Mathematics Syllabus (Spring 2023)

Heather Nunnally

Virginia Commonwealth University, hmnunnally@vcu.edu

Follow this and additional works at: <https://scholarscompass.vcu.edu/oacc>



Part of the [Curriculum and Instruction Commons](#), and the [Science and Mathematics Education Commons](#)

This work by Heather Nunnally is licensed under a Creative Commons Attribution 4.0 International License.

Downloaded from

<https://scholarscompass.vcu.edu/oacc/17>

This Syllabus is brought to you for free and open access by VCU Scholars Compass. It has been accepted for inclusion in Open and Affordable Course Content at VCU by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

Introductory to Contemporary Mathematics

MATH 131 - 021

Spring 2023 - 3 credits

Department of Mathematics and Applied Mathematics

Class Meetings

Face to Face class - Tuesday and Thursday from 12:30 - 1:45 pm

Location: Harris Hall room 2132

Instructor

Dr. Heather Nunnally

email: hmnunnally@vcu.edu

Office Hours

In person - After class and by appointment

Zoom - Mondays 1:30 - 2:30 and Wednesdays 12:30 - 1:30

By appointment. Contact me via email to schedule a time to meet via Zoom. The best way to get in touch with me is via email. I will try to respond to your email within 48 hours (usually 24 hours). If I will be unavailable for a longer stretch of time, I will let the class know in an announcement through Canvas.

Office Location

On campus: Harris Hall South 3007

Course Catalog Description Semester course; 3 lecture hours. 3 credits. Topics include optimization problems, data handling, growth and symmetry, and mathematics with applications in areas of social choice. Major emphasis is on the process of taking a real-world situation, converting the situation to an abstract modeling problem, solving the problem and applying what is learned to the original situation. Does not serve as a prerequisite for [MATH 151](#) or other advanced mathematical sciences courses.

Course Pre/Co Requisites

VCU Math Placement Test

Course Learning Objectives

By the end of the course students will be:



This work by Heather Nunnally is licensed under a Creative Commons Attribution 4.0 International License.

1. More able to think logically about situations with quantitative components;
2. More able to make use of their mathematical, graphing, and computational skills in real situations;
3. More able to independently read, study, and understand quantitative topics that are new to the students;
4. More able to explain and describe quantitative topics orally and to discuss quantitative topics with others;
5. More able to explain quantitative ideas in written form;
6. Improve their “number sense”, learn some details of a variety of situations where mathematics is used, and become engaged and have fun doing mathematics.

Use VCU Libraries to find and access library resources, spaces, technology and services that support and enhance all learning opportunities at the university. <https://www.library.vcu.edu/>

Course Structure/Campus Requirements

- This is a 15-week course that will require participation and collaboration with fellow classmates. Be prepared to complete assignments as well as participate in group discussions on topics related to mathematics.
- Follow the course schedule to be sure you are keeping up with discussions, activities and assignments.

Required Course Materials

- MyOpenMath student access - Free
- MATH 131 Workbook - available at VA Book Company for approx \$20.

Technology Requirements

- Participants need access to a personal computer (Mac or Windows) and the Internet for major amounts of time for this course.
- Browser that is compatible with Canvas. To see if your browser is compatible with Canvas, visit the Canvas [Browser Checker](#) webpage.
- Your computer will need speakers to hear sound for videos and audio files.
- You will need access to word processing software such as Microsoft Word or Google Docs. Please note that any software that you use must be able to save files as Microsoft files (example *.doc or *.docx) or PDF.
- Adobe Acrobat Reader or an equivalent PDF reader.
- A webcam and microphone on your computer. A cell phone camera and microphone may suffice depending on the quality of the cell phone. It is your responsibility to ensure your cell phone and microphone is able to allow for real time video conferencing and video and audio recording.

Please contact me if you have any issues with technology needs for the course.

Technology Skills Required

- It is expected that you are able to use and check your official VCU email address daily.
- You should be able to upload documents to Canvas.
- You should be able to use word processing software.

- You will be expected to interact with me and your peers using Canvas tools. Instruction for the use of each tool will be given when the tool is introduced.

Digital Information Literacy Skills Required for Course

- Ability to use the library to locate appropriate information and resources when necessary.
- Ability to use online search tools for academic purposes, including the ability to use search criteria, keywords, and filters.
- Ability to properly cite sources in ([MLA](#) , [APA](#) , [Chicago](#))

Technology Support

1. Clear your browser's cache.
2. Shutdown and restart your computer.
3. If your problems persist, contact the IT support center itsc@vcu.edu or 804-828-2227.

Inclusiveness Statement

I want you to know that I am grateful for your presence and input in our classrooms (whether in person or online). I appreciate and welcome you regardless of your immigration status, country of origin and/or citizenship, race, ethnicity, religious affiliation, gender/sex, gender identity, sexual orientation, age, or dis/ability. All students in this class should feel safe to express themselves candidly, to listen to and hear each other with understanding, and that issues and concerns will be dealt with directly and fairly. The online course policies were developed with the concept of Universal Design as a primary goal. The universal design of the course policies means that most students find that the course already accommodates their specific needs; however if you have a letter from SAEO please send it to me for review so that I can ensure that all of your accommodations are indeed being fulfilled. Thank you for enriching our world, sharing your vital experience, and contributing to the diversity that makes our intellectual community vibrant and evermore creative.

Course Assessments

Voting Project: You will use data from your peers to perform all four voting methods and analyze the results in a report.

Independent Project: You will choose a topic from a list we have not covered in class and research the topic we enough to teach it to a small group of peers.

Quizzes: Quizzes will be during class.

Discussions: Articles or websites related to topics we cover will be posted to a discussion board for students to react to.

Test #1: Thurs. March 2, 2023 during class.

Test #2: Tues. May 2, 2023 during class

Course Grading Policy

Grade Scale

A = 100-90%

B= 89-80%

C= 79-70%

D= 69-60%

F = Less than 60%

Assignment Values

Assignment	Percentage
Quizzes	15%
Test #1	15%
Test #2	15%
Voting Paper	10%
Independent Project	10%
Assignments (MOM and Workbook)	20%
Writing Prompts	10%
Discussions	5%

Late Assignment Policy:

Late assignments will be accepted up to the end of the chapter it is assigned under. Under NO circumstances can any work be submitted after that date - that is an absolute deadline. If you wait until the last minute to try and get your work done, and something happens - that's unfortunate because you will not be allowed to submit anything past that deadline no matter what the extenuating circumstances are - due dates are given throughout the semester and you are expected to meet those. Do not find yourself in a position where you jeopardize your grade because you waited until the last minute to try and submit work.

All assignments except quizzes may be submitted late for no point penalty through the absolute deadline (end of chapter). This generous course policy allowing students to submit most assignment types late does not negate your responsibility for demonstrating presence in the course.

The no-penalty late submissions is allowed on most assignment types because it's understood that occasionally unavoidable things happen and we want students to be able to catch back up in the class without detriment to their grade. DO NOT ABUSE THIS POLICY - if you truly need it, use it, otherwise, keep up with the work like you're supposed to. If you find that too many things are happening in your life that are preventing you from keeping up with your work, and you're having to use this policy more than once or twice, you should talk to your advisor about withdrawing from the course and taking it during a semester when things have settled down.

Feedback and Grading Response Time

Assignments and quizzes will be graded within 48 hours of submission. Midterm and Final Exam will be graded within 5 days of submission

Netiquette Guidelines

Netiquette is a set of rules for behaving properly online. Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Working as a community of learners, we can build a polite and respectful course community. The following netiquette tips will enhance the learning experience for everyone in the course:

- Do not dominate any discussion.
- Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Popular emoticons such as :) can be helpful to convey your tone but do not overdo or overuse them.
- Never make fun of someone's ability to read or write.
- Share tips with other students.
- Keep an "open-mind" and be willing to express even your academically informed opinion.
- Think and edit before you push the "Send" button.
- Do not hesitate to ask for feedback.
- Using humor is acceptable.

Be Proactive in Communication with Instructor

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help find a solution.

Institutional Policies

Accommodations for Students with Disabilities

- **Disability Statement:** If you are a student with a disability requesting reasonable accommodations in this course, please visit [Student Accessibility and Educational Opportunity](#). All requests for reasonable accommodations require registration with SAEO in advance of need. Faculty, students and DASS will work together regarding classroom accommodations. You are encouraged to discuss approved accommodations with your faculty.

Counseling Services

- Resources for online students can be found through the [Online Counseling Center](#).

Tutoring

- The [Campus Learning Center](#) offers appointment, drop-in and group tutoring in undergraduate courses across the disciplines.

Writing Center

- The [writing center](#) provides assistance at all stages of the writing process, from brainstorming to final draft.

Cheating and Plagiarism

- Plagiarism is stealing and passing off the ideas or words of another as one's own; it is using another's production without crediting the source. The best way to avoid plagiarism is to cite properly in any assignment information and concepts that are not your own originally. If a student is discovered to have plagiarized, that student will fail that particular assignment.
- Academic integrity is expected in all aspects at the university including this course. Don't expect less of yourself than you do of your students For more information: <https://students.vcu.edu/studentconduct/>

Students should visit <http://go.vcu.edu/syllabus> and review all syllabus statement information. The full university syllabus statement includes information on safety, registration, the VCU Honor Code, student conduct, withdrawal and more.

Course Policies:

Quizzes are all untimed. We all process things at different rates and that should not impact whether you complete a quiz.

Accessibility Concerns

If you encounter any accessibility issues please contact the instructor and they will try to find an alternative.

Intellectual Property and Copyright

Intellectual property and copyrighted material that is presented in this course is not for redistribution.

Course Attendance and Participation

It is expected that you will spend between 6-8 hours a week on this class completing readings, activities, and engaging with your peers. In addition, it is expected that you are logging into the course several times throughout the week to complete assignments, read class announcements and engage with your classmates.

Course Schedule – Tentative Schedule

	Week	Assignments/Due Dates
Introduction	Jan 17	Intro Writing Prompt – Due Jan 19
Module 1 – Voting	Jan 17 - Jan 31	Discussion Post: Which Voting Method is Fair? - Due Jan 19 Graded Exercises MOM - Jan 26 Examples of Election Procedures Writing Prompt – Due Jan 26 Voting Quiz – Due Jan 31 Voting Project – Due Feb 16
Module 2 – Fair Division	Jan 31 - Feb 14	Intro Discussion – Due Jan 31 Graded Exercises MOM - Due Feb 9 Fair Division Quiz – Due Feb 14
Module 3 – Growth	Feb 14 - Feb 28	Linear Growth of Trash – Feb 16 Exponential Growth of Trash – Feb 21 Graded Exercises MOM - Feb 23 Growth Writing Prompt – Feb 23 Growth Quiz – Feb 28
Test #1	March 2, 2023	On Canvas
Module 4 – Financial Math	March 14 - March 23	Simple Interest Problems – March 14 Compound Interest Problems – March 16 Installment Loan Problems – March 21 Financial Math Writing Prompt – March 23 Financial Math Quiz – March 23
Module 5 – Euler Circuits	March 23 - April 4	Discussion Post - March 23 Graded Exercises MyOpenMath - March 30 Writing Prompt Mags the Meter Maid – April 4 Euler Quiz – April 4
Module 6 – Independent Project	April 4 - April 13	Survey of Topics – March 28 Preliminary Report Writing Prompt – April 6 Topic Notes – April 11 Quiz on Your Topic – April 13 Final Presentation – April 18 Writing Prompt on Another Topic – April 20
Module 7 - Hamilton Circuits	April 18 - April 27	MOM Graded Exercises - April 25 Euler vs Hamilton WP - April 25 Hamilton Quiz - April 27
Test #2	May 2, 2023	