Math 103: The Nature of Mathematics Syllabus Fall 2020

Section 6 MWF 2:10-3:00pm online 3 credits
Section 8 MWF 12:00-12:50pm online

Unless otherwise specified in our Canvas Calendar, all of our classes will be **synchronous online classes**. Please have a webcam and have installed Zoom so you can interact fully with the class.

Instructor: Dr. Rebecca Field *E-mail:* `fieldre@jmu.edu` *Phone:* 540-746-1231

Canvas: `https://canvas.jmu.edu/courses/1744986` *Web:* `http://educ.jmu.edu/~fieldre/103.html`

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Goals of the Course

Math 103: The Nature of Mathematics is a general education course that uses topics such as geometry, computing, algebra, number theory, history of mathematics, logic, probability, statistics, modeling and problem solving intended to give students insight into what mathematics is, what it attempts to accomplish and how mathematicians think. It is designed primarily for students desiring no more than one mathematics course at JMU and whose major program has no mathematics requirement.

You are almost certainly taking this course as part of your cluster 3 gen-ed requirements, so the goals are intellectual rather than content based. The specific content (in our case, mathematics and the visual world) is really just an excuse to teach you to think and reason mathematically. It's quite a good excuse because the wide variety of mathematical technology we will cover all have a visual element, but this in no way makes them easy. For gen-ed students, understanding why things work the way they do is much more crucial to the Learning Objectives than how things work.

Prerequisites There are no prerequisites for this course!

Learning Objectives After participating in the class activities, the student will be able to: think and reason mathematically, and express themselves in manner understandable to specialists and non-specialists alike. Students should finish the class with an appreciation of why some people love mathematics even if the student is still not one of those people. In particular, students should be able to read and understand a mathematical argument (whether an explanation or a formal proof) and while not necessarily able to prove mathematical facts themselves, should be conversant in the ideas behind proofs and derivations.

Nature of Online/Hybrid Course

Although this class will take place solely online, you will need to make sure you are available during all class times as this class will be synchronous. This means that every class period (times given above) will consist of a Zoom meeting and class activities that you will need to participate in to earn points to pass the class.

Textbooks and Course Materials

Textbook There is no textbook.

Course Materials Please have a web cam. Also, be prepared to spend up to $25 during the semester on materials other than a textbook (such as colored pencils/pens, sissors, tape, etc.). All videos and handouts will be available on the course Canvas page at `https://canvas.jmu.edu/courses/1744986`.

Assignments, Grading, and Academic Integrity

Assignments All assignments will be on the course calendar on Canvas under their due date. They will become available when assigned. Some major categories of assignment will be Pre-class Reading or Videos, Classroom Activities, our Discussion Board, Exams, and Presentations.

Pre-class Reading or Videos You will sometimes be expected to either read a handout/website or watch a video before class. These will be available on Canvas and they will be marked on the class Canvas calendar.

Homework Your homework will be assigned on a case by case basis. Often it will consist of finishing a class activity or worksheet that we ran out of time for in class. Other times, it will consist of researching a topic on your own or completing a group project for a presentation to the class.

Classroom Activities These will vary by topic, but will always be worth points that you will miss if you don't attend an online (synchronous) class.

Discussion Board We will be using Piazza as a class discussion board. This tool allows students to ask and answer questions both with your name attached and anonymously. You can even ask anonymous questions on Piazza during a synchronous class if there's something you don't understand! This allows students to ask "stupid" questions and to propose answers without any risk of looking foolish, either to me, or to their classmates! Piazza accepts both type written and hand written scanned inputs and we will have many lively discussions on it. At some point, credit may be attached to participating in Piazza discussions (in this case, you can't be completely anonymous as I will need to know who to give the points to, but you can be unknown to your classmates).

Exams If it starts to look necessary (students not participating or learning) I will institute exams for this class. I hope not to have to do this!

Presentations Much of your grade this semester will be based on group presentations at the end of each topic or project.

Grading We'll have class activities for points, research projects for points, and class presentations for points. To insure full participation, students will be part of a different group for each topic.
Your final grade will be determined using statistical methods, the class average, and historical class averages. I do not use a predetermined scale. I reserve the right to decide borderline grades based on participation, effort and improvement.

Academic Integrity I encourage you to work together in groups on homework assignments outside of class, but any work you hand in must be written up independently in your own words. THE HONOR CODE (`https://www.jmu.edu/honorcode/code.shtml`) Students shall observe complete honesty in all academic matters. Violations of the Honor Code include, but are not limited to, taking or attempting to take any of the following actions: Using unauthorized materials or receiving unauthorized assistance during an examination or in connection with any work done for academic credit. Unauthorized materials may include but are not limited to notes, textbooks, previous examinations, exhibits, experiments, papers or other supplementary items. Giving false or misleading information regarding an academic matter. Copying information from another student during an examination. Rendering unauthorized assistance to another student by knowingly permitting him/her to

see or copy all or a portion of an examination or any work to be submitted for academic credit. Obtaining prior knowledge of examination materials (including by using copies of previously given examinations obtained from files maintained by various groups and organizations) in an unauthorized manner. Selling or giving unauthorized copies of any portion of an examination to another student. Using a commercially prepared paper or research project or submitting for academic credit any work completed by someone else. Falsifying or attempting to falsify class attendance records for oneself, or for someone else, or having another falsify attendance records on your behalf. Falsifying material relating to course registration or grades, either for oneself or for someone else. Falsifying reasons why a student did not attend a required class or take a scheduled examination. Taking an examination in the place of another student. Making unauthorized changes in any reported grade or on an official academic report form. Falsifying scientific or other data submitted for academic credit. Collaborating in an unauthorized manner with one or more other students on an examination or any work submitted for academic credit.
I take the honor code very seriously, and so should you. Any instances of suspected cheating or academic dishonesty will be referred to the JMU Honor Board for investigation.

Instruction Method, Instructor Responsibilities, Student Responsibilities with Attendance Expectations, Instructor Evaluation, and Technology & Support

Instruction Method/Class Format

What we do during class will vary by class and by topic. We spend class working on activities, both in groups and on your own for which you will get credit. Some of the options will be: working in groups on an online whiteboard, talking about the essential content for topics that were introduced in your pre-class reading/video, practicing using techniques from the reading/videos, and connecting the topic to mathematics as a whole.

Online Asynchronous Instruction This will consist of pre-class activities (already discussed), substitutes for class activities (e.g. a canvas module, an individual worksheet for a specific topic, or a Piazza discussion), homework (discussed above), and projects. Each of our topics comes with a class project that you will work on in groups and present to the rest of the class.

Instructor Responsibilities

Communication The best way to get hold of me quickly is by sending a text message. The phone number at the top of this syllabus is my personal cell phone number which I have been giving to students for 11 years. Please do not ruin it for everyone by calling or texting at unreasonable times (before noon, after 10pm) or texting in non-urgent situations (email is better if it is not urgent). I check my email approximately once a day every weekday, so do not expect an immediate response with email. I do usually know where my phone is, so I will generally text back quickly. I will also check Piazza once a day. This way I can make sure misinformation (aka wrong solutions) isn't being spread.

Feedback I ordinarily give detailed feedback on exams and will try to do that within a week of you taking it. I will stick to this schedule, but for your online exams, as part of a mastery based grading scheme, we will be reanalizing each of your exams in a subsequent assignment.

Student Responsibilities with Attendance Expectations

Attendance Attending class sessions on time is well below minimum responsibility for getting credit for passing this class. You are expected to take responsibility for active participation, asking questions, and contributing your thoughts related to the course content. You must attend all synchronous online classes and be ready and willing to participate in the class activities. **I do not give make-up assignments, so any synchronous class activity that you miss will be recorded as a zero unless you have a legitimate excuse!** If you do miss class, it is your responsibility to get notes and announcements from a classmate *and read them before the next class.* If you have a problem with a presentation or exam date, please notify me beforehand. If an emergency causes you to miss a presentation, you should contact me and explain your situation. My sympathy with your plight will be determined by how quickly you contact me.

Rules of Conduct Signing up for a class usually comes with some implicit rules of conduct that are often subtly reinforced. Since most of the subtext is lost in an online context, I will intead make

the rules explicit. 1. Use informal but professional language just like you would if you were chatting face-to-face. 2. There will be no making fun of anyone in this class. Disruptive behavior is any behavior that interfears with the learning environment for our synchronous classes. This includes, but is not limited to making it more difficult for other students to concentrate, introducing topics not pertinant to the lesson, and not responding when called upon. Students whose behavior is deemed disruptive will be asked to leave the synchronous class for that day and won't receive credit for that days assignment. If disruptive behavior continues, students will be removed from the class via the registrar's office.

Technology and Support Online courses require that you have a computer with consistent and reliable Internet access, especially during class time. You will be required to access the class Canvas site in order to access the Course Calendar which will tell you what we are doing each day. A headset with microphone is desirable for synchronous sessions conducted in Zoom through Canvas. Be sure to have DUO access to the JMU computing system, including Canvas and MyMadison. **JMU email accounts are used by me to communicate important things about this course. Students should check their student email at least once a day and use it (or a text if time is tight) for official communication.**

DUO authentication requires your cellphone or token to access Canvas.

Since this class is online, it is more technology intensive than a usual college math class. Everyone must have a reasonable plan to attend all online synchronous classes using Zoom through Canvas. However, due to their online nature, and the way of all plans, I also expect things to go wrong. JMU has IT resources willing to help you with this. Solutions to computer-related problems at JMU Computing HelpDesk: `http://www.jmu.edu/computing/helpdesk/`

Cell Phones/Calculators During class, cell phones should be kept silent and hidden unless sanctioned by a class activity (e.g. online poll or content based widget). The only app I suggest you load on your phones for this class is the Canvas Student app. You will not be allowed to use phones or calculators on any exams or quizzes.

The Science/Math Learning Center in the Student Success Center is open 10–8 MTuWTh, 10–2 F, and 5–8 pm Sat. Technically, the SMLC covers Math 103, but unfortunately, it is unlikely that they can help with the majority of our topics as they may be atypical for the class. On the other hand, I can help with all of the topics, so please consider me as a resource.

Important Dates for Adding/Dropping Courses, and University Policies

Important Dates for Adding/Dropping

September 4 is the add drop deadline to not receive a W for the course and to add a course yourself on mymadison

September 14 is the late add deadline (adding a course with departmental permission)

September 15 is the University withdrawal deadline

October 28 is the course adjustment deadline if you want to get a W for the course

University Policies

Accessibility and Inclusion JMU abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, which mandate reasonable accommodations be provided for students with documented disabilities. If you have not already done so, you will need to register with the Office of Disability Services, the designated office on campus to provide services for students with disabilities. The office is located in the Student Success Center, room 1202, and you may call (540) 568-6705 for more information.

If you have a documented disability that requires an accommodation or an academic adjustment, please let the instructor know within the first week of class.

Religious Observation Accommodations Reasonable accommodation will be made for religious observances that conflict with class meetings or assignments during the semester. Students wishing such accommodation must inform the instructor during the first week of class.

Inclement Weather James Madison University is primarily a self-contained campus with a large number of residential students requiring a variety of support services, regardless of inclement weather

conditions or emergency situations. For the safety and well-being of its students and employees, the university may close or limit its services based on inclement weather or other emergencies. Refer to the following sources for information on closings or delays: JMU Weather Line: (540) 433-5300 JMU radio station 1610AM JMU's home page Area radio and television stations JMU Office of Public Safety, who in turn is responsible for announcements on Emergency Notification System When the university is closed due to inclement weather or other emergencies, all classes are cancelled.
Mental Health Resources As a college student, there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. If you or someone you know is experiencing mental health challenges at James Madison University, please connect with the Counseling Center (CC) located within the Student Success Center on the 3rd floor. You can learn more about available CC services by visiting the website: `https://www.jmu.edu/counselingctr/` or calling the Center (540-568-6552). Their services are free and confidential. Other available support resources to consider on campus include, but are not limited to the: Office of the Dean of Students, Health Center, Learning Strategies Instruction, and Office of Disability Services.
Other University Policies Please refer to the JMU Syllabus Policy Statements page at:
`http://www.jmu.edu/syllabus/`

Temporary Online Solutions Due to the extra-ordinary nature of the epidemic, everyone will need to be able to access our course materials, including our online and outdoor synchronous materials at any time. All our meetings will be recorded, but these recordings are not, and should not be available to the public.
Video Conferencing Recordings for MATH 103 The video conferencing audio and video class meetings will be recorded for the purposes of review and so that students who are ill can catch up after they recover. These should reside in the password protected JMU Canvas Learning Management System. Students may not redistribute these audio or video recordings or comments from the course to individuals who are not students in the course without my express permission and that of any students who are in the recording.
Class Material Distribution Any tests, assignments, or other material presented or distributed to you in this course are for your exclusive use only and not to be shared with anyone or published to any entity (other than a student presently enrolled in this class), without my express written permission. Publishing, sharing, or distribution of said material without my written permission, including, but not limited to, distribution through any online site, will be a violation of my intellectual property in the materials (including lectures), and thus may be considered an Honor Code violation resulting in a failing grade for the course and/or such other action as may be deemed appropriate by the University.
The Department of Mathematics and Statistics is committed to creating learning environments that support and are improved by a diversity of thought, perspective, and experience. We affirm that the lives and experiences of Black, Indigenous, and People of Color matter. We recognize that within the study and culture of mathematics and statistics there are deep-rooted and systemic inequalities, racism, and sexism that have disproportionately affected some members of our community. We strive to recognize and reverse these inequities. We embrace all backgrounds, identities, names, and pronouns. We see you, we hear you, and we stand with you. You are welcome in our department.