Math 211: Fundamentals of Elementary Mathematics I  
Fall 2020  
CRN:14065    MTuWF 8:00-9:00

Course coordinator: Tricia Bevans

I’ve included my entire syllabus for reference but you don’t need to adopt all of the policies, assignments, and grading I’ve given here. One thing that as a group of instructors we agreed upon was that if you choose not to give a final exam students must have an overall passing average on the exams in order to pass the class. We’ve also found it can be useful to offer an optional final exam for students who do not meet the passing exam average.

Part 1: Course Information

Instructor: Tricia Bevans

Contact Information:

Our class will communicate mostly through our Canvas site. Announcements and emails are archived there and automatically forwarded to your UO email, and can even reach you by text. Check and adjust your settings under Account > Notifications. You can also reach me by email at thbevans@uoregon.edu

If you are not able to reach me by email and an issue requires urgent attention (such as during an exam upload time) call the math department office at 541-346-4705 so they can reach me.

If you contact me with a question, I’ll try to answer as quickly as possible and usually within one business day. My email forwards to my phone so if you have an urgent message I will usually see it shortly after you send it.

When should you contact me?

Please let me know how things are going for you in the course and with your experience at the university in general. In particular, if you are struggling in the course for any reason (academic issues, personal issues, family concerns) let me know as soon as possible. If you don’t feel comfortable sharing the details of what’s bothering you, that’s fine too. It’s still good to have some sense that things aren’t going as planned for you. I may be able to refer you to help elsewhere on campus. Of course if you have questions about a specific assignment including concerns about a due date let me know about that too. I am not always able to adjust assignments but I will be happy to strategize with you about how to do the best you can in the course under your circumstances.
Office Hours:

I will host “live” office hours through Zoom each week Monday, Tuesday, Wednesday, and Friday tentatively from 12pm-1pm. I’ll adjust these depending on student preference. We’ll also try a running discussion forum on our Canvas called “Class Questions and Answers” for the entire group to ask and answer. I welcome meetings outside my regular office hours, too, knowing that there is considerable uncertainty in all of our lives right now. Just email me to set a time.

Course Materials and Prerequisites:

Successful completion (C- or better) of or placement past Math 101

Course Notes for each section will be provided to you electronically via Canvas.

Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in China and the United States, Liping Ma

The ebook is now available at https://alliance-primo.hosted.exlibrisgroup.com/permalink/f/3uoa1r/CP71326018570001451

Calculator: A standard scientific calculator is recommended for use on some of the work we will do. Graphing calculators (or others with greater functionality) will not be allowed on exams. Cell phones will not be acceptable as calculators on exams.

Course Description: This course is designed to give you the foundation to be the math teacher you wish you had when you were in elementary and middle school! We’ll look at an introduction to the development of number systems and study the principles behind addition, subtraction, multiplication and division of whole numbers. The class is structured around guided discovery through reasoning and discourse about challenging problems for adult-level learners that highlight the structure behind elementary mathematics concepts. Individual perseverance, collaborative group work and inclusive whole class discussion will be major components of the class.

Technical Requirements: Log into canvas.uoregon.edu using your DuckID to access our class. All material needed for our class is posted here. If you have questions about accessing and using Canvas, visit the Canvas support page. Canvas and Technology Support also is available by phone or live chat:

541-346-4357 | livehelp.uoregon.edu
We will hold class via Zoom (accessed through Canvas or email me if you are unable to access through Canvas). Ideally you will have a computer or tablet with a camera and microphone. Part of full participation in class involves being present with camera on for most of the class and microphone muted but available for interacting with the class. You’ll also need a scanner or phone/camera to upload some assignments to Canvas. Let me know if you have concerns about any of these technology components.

If you face Internet access challenges: companies are offering free access during this challenging time. To learn more about options visit Information Services’ web page on going remote.

Course Structure, Estimated Workload, and Flexibility:

In this course you will be asked to do various mathematical tasks and participate in mathematical discussion. This will come in the form of homework and exam questions as well as group work, informal in-class presentations, and whole class discussion. I will try to avoid direct lecturing as much as possible in favor of helping you develop a thorough and deep understanding of the topics you’ll teach as an elementary or middle school teacher by working through problems.

General university policy suggests that for a four-credit course you should expect to spend 4 hours in class and 8 hours outside of class each week. I may give time in class to begin tasks but you will be required to finish and write up your work outside of class as well as complete short reading assignments I recommend working with classmates and attending office hours as part of the 8 hours outside of class. Doing work each day will make the workload manageable.

As the university community adjusts to teaching and learning remotely in the context of the COVID-19 pandemic, course requirements, deadlines, and grading percentages are subject to change. I will be mindful of the many impacts the unfolding events related to COVID-19 may be having on you. Though attendance and participation are included in your grade, I will post the class activities for each day after class so you can upload your work at another time. This alternative to attendance and class participation may be used up to five times by any student for any reason. During this unusual time, I encourage you to talk with me about what you are experiencing so we can work together to help you succeed in this course.

Because of the COVID-19 academic disruption, Fall 2020 classes have been scheduled in either 60-minute or 90-minute blocks rather than in the standard blocks. The Math Department policy is to use the extra 10 minutes to provide breaks in order to make the Zoom meetings more bearable for students. In this course we will be meeting from 8:00am to 8:50am. I do my best to vary the pace and type of activities for the class within that time so that we can all stay energized and focused until the end of class.
Part 2: Course Goals and Outcomes

General Goals: Students will:

Value persistence, creativity, and thoroughness in problem solving within elementary arithmetic concepts

Produce and prove mathematical conjectures about elementary mathematical concepts in both child-appropriate and more formal adult language

Draw connections between different arithmetic concepts

Answer hypothetical questions from elementary students and troubleshoot student errors

Explain the mathematical choices and the pedagogical rationale for those choices presented in the CCSSM Progressions documents.

Come to view themselves as proficient mathematical problem solvers

Content Outcomes: Brief descriptions of Content Outcomes are given below. More specific descriptions of content-focused outcomes for these including examples of tasks that align to them are given on Canvas at this link. These will be the basis for task questions on assignments and exams.

(Numeral Systems)
1a Recognize and use place value.

1b Perform elementary mathematics in a variety of numeral systems including systematically using exchanges within these systems.

1c Know from memory and use the definition of base-b numeral system.

(Meaning, Method and Mastery)
2a Use the terms meaning, method and mastery to analyze K-12 learning trajectories.

2b Use the terms meaning, method and mastery to analyze one's own Math 211 learning.

(Addition and Subtraction)
3a Identify and apply various meanings for addition and subtraction such as put-together/take-apart and comparison. In particular, use visual models in different ways depending on the meaning.

3b Illustrate properties of addition including the connection between addition and subtraction.

3c Perform and justify computation algorithms and strategies for addition and subtraction in a variety of numeral systems using models as well as the definition of base numeral systems and be able to distinguish between strategies and algorithms.

(Multiplication and Division)

4a Identify and apply various meanings of multiplication, in particular through equal groups, repeated addition and skip counting, rectangular arrays, and scaling on the number line. Be able to show these meanings are equivalent.

4b Use and justify properties of multiplication.

4c Identify and apply various meanings of division, including the partitive, measurement and repeated subtraction models and explain the connection of division to multiplication with these meanings.

4d Perform and justify multiplication and division computation algorithms and strategies in a variety of numeral systems using models as well as the definition of base numeral systems.

(Divisibility)

5a Identify and justify basic divisibility properties.

5b Use and justify divisibility tests.

**Part 3: Assignments and Grading**

I’ll post all assignments, announcements, etc. for the course on Canvas. If I make a change to the schedule I’ll post the change in advance on Canvas and send an announcement to the class.

You’ll be given daily assignments to complete both in class and outside of class. To indicate how well you’ve done on a given homework task you’ll be given written
feedback (by me or a paper marker) based on your work as well as a score on your assignment. You are encouraged to work with classmates on the worksheet tasks but when you write your final draft of your solutions the work should be your own understanding of the solutions. Midterm exams will provide an additional way to assess your understanding and the work on these assignments should be entirely your own regardless of the format. I will also use brief quizzes submitted via Canvas to give both of us an idea of how things are going with the material. A more detailed description of each component of your grade is given below.

Course grades will be based on the following components:

Habits, Supports and Full Active Participation:

This math sequence may be one of the most difficult you ever take, in part because you have probably not had experience developing the habits you’ll need or taken advantage of the supports that will be invaluable. This part of your grade is to support you in working on a math class in a different way, including participating actively in class.

You’ll need to complete each of the following within the first 3 weeks of the term:

- Work with two different classmates on at least two assignments (upload a screenshot of you in a Zoom room with a classmate or some other evidence of your interaction)
- Attend office hours (after beginning an assignment on your own) two times

Additionally, your grade will be based on evidence of active class participation throughout the term including

- Consistent attendance: Missing more than 4 classes without an approved excuse will result in a 0 for your participation grade. If you must miss a class (for illness or technical difficulties, for example) please email me and we’ll make arrangements for you to make up the class
- Sharing reasoning (including incorrect or incomplete reasoning) with peers through presentations and in class discussions

Worksheets:

Monday, Tuesday, and Wednesday we’ll do activities in class that are followed by questions you complete as homework. Homework assignments are divided into three categories: Marker questions, Instructor questions, and Presentation Questions. Each of these is explained in more detail below.

Marker questions are more straightforward applications of the ideas we’ve addressed in class that day and are graded by a paper marker. These are due the class period after they are assigned. For each homework task you’ll receive a “check” if the task meets
the minimum standard or a “check minus” if it does not. Each assignment will also have
an overall score based on a rubric for the assignment (see Canvas).

Instructor questions generally will involve more creative thinking and applying the
concepts from class in less straightforward ways. Students will need to include both
preliminary work on a task (i.e. a “rough draft”) as well as a polished write-up of the task
solution (i.e. a “final draft”) Instructor questions will be assigned with each day’s
worksheet but are due once each week on Monday night.

Any late work must be approved by the instructor.

In-class Presentations:

Each Friday students will take turns doing informal presentations in pairs based on the
“Presentation Questions” included at the end of worksheets. Students may volunteer for a
particular question they’d like to work on but must wait to sign up for a second
presentation question until all students have completed their first presentation. If no one
signs up for a presentation question by Wednesday evening, I’ll assign it to a pair of
students. I anticipate we will have time for each student to complete two presentations
during the term, but we may have to adapt.

Quizzes:

Each week (unless there is an exam) there will be a short quiz to prepare you for the types
of questions you will see on exams as well as give us both an idea of how well you are
understanding concepts. They will take no more than 10 minutes to complete on Canvas.
You’ll be given a window of time in which to complete the quiz. You should not
collaborate with other students in any way for a quiz.

Midterm Exams:

Three midterm exams for the course will assess your understanding of the material in the
course. My intent is that you will be able to complete these exams during class time, but
you will have a slightly longer window of time in case it takes longer than expected to
upload your work. You will also be expected to upload a short video explanation of
some of your work (more details will be provided with the exam). You must have a
passing exam average to pass the class.

Final Project:

The final project may include the following elements:

1) A collection of several tasks chosen from your work throughout the term
that highlight how you’ve used one of the Standards for Mathematical
Practice from the Common Core State Standards, and how the remaining
Standards for Mathematical Practice are part of your work as well.
2) Work on 2 to 3 original tasks that incorporate several course content outcomes with a discussion of which outcomes are present in your work with the task.
3) Midterm reflection questions that indicate increased understanding of tasks similar to or related to ones from the midterms.

I plan to post the final project by the end of Week 8. It will be due at the time scheduled for a final exam.

A student must earn a passing grade on the final project in order to pass the course.

**Tentative Grade Weights are as follows:**

- Habits /Supports/Participation: 5%
- Worksheets (Marker): 5%
- Worksheets (Instructor): 15%
- Presentations: 10%
- Quizzes: 5%
- Midterm Exams*: 30%
- Final Project*: 30%

*Must receive a passing grade on this portion of your grade to pass the class

**Part 4: Course Policies and Resources**

**Class Participation:**

1. *Participate and Contribute:* Students are expected to participate by sharing ideas and contributing to the collective learning environment. This entails preparing, following instructions, and engaging respectfully and thoughtfully with others. More specific participation guidelines and criteria for contributions will be provided for each specific activity.
2. **Use Proper Netiquette:** Please use good “net etiquette”: identify yourself with your real name and use a subject line that clearly relates to your contribution. Write or speak in the first person when sharing your opinions and ideas but when addressing other students or discussing their ideas, use their names (e.g. "I think red is the most important term in the poem, but I also think Kate is correct that blue is important, too"). Respect the privacy of your classmates and what they share in class. Understand that we may disagree and that exposure to other people’s opinions is part of the learning experience. Good netiquette also means using humor or sarcasm carefully, remembering that non-verbal cues (such as facial expressions) are not always possible or clear in a remote context. In addition, your language should be free of profanity, appropriate for an academic context, and exhibit interest in and courtesy for others’ contributions. Be aware that typing in all capital letters indicates shouting. Certain breaches of netiquette can be considered disruptive behavior.

3. **Interact Professionally:** Our learning environment provides an opportunity to practice being professional and rigorous in our contributions. As much as possible, use correct spelling, grammar, and style for academic and professional work. Use discussions and activities as opportunities to practice the kind and quality of work expected for assignments. Moreover, seize the chance to learn from others and develop your interpersonal skills, such as mindful listening and awareness of one’s own tendencies (e.g. Do I contribute too much? Too little?).

4. **Expect and Respect Diversity:** All classes at the University of Oregon welcome and respect diverse experiences, perspectives, and approaches. What is not welcome are behaviors or contributions that undermine, demean, or marginalize others based on race, ethnicity, gender, sex, age, sexual orientation, religion, ability, or socioeconomic status. We will value differences and communicate disagreements with respect. We may establish more specific guidelines and protocols to ensure inclusion and equity for all members of our learning community.

5. **Help Everyone Learn:** Our goal is to learn together by learning from one another. As we move forward learning during this challenging time, it is important that we work together and build on our strengths. Not everyone is savvy in remote learning, including your instructor, and this means we need to be patient with each other, identify ways we can assist others, and be open-minded to receiving help and advice from others. No one should hesitate to contact me to ask for assistance or offer suggestions that might help us learn better.

**Specific guidelines for best practices using Canvas Discussion:**

1. Use subject lines that clearly communicate the content of your post
2. Write clearly and concisely and be aware that humor or sarcasm often doesn’t always translate in an online environment.
3. Be supportive and considerate when replying to others’ posts. This means avoiding use of jargon or inappropriate language, and it means disagreeing with respect and providing clear rationale or evidence to support your different view.
4. Keep focused on the topic and reference readings and other class materials to support your points (as applicable).
5. Try to use correct spelling and grammar and proofread your submissions. After submitting, use the edit feature to make corrections and resubmit (don’t create a new or duplicate post that corrects your error).
6. Contribute and interact often!

Specific guidelines for best practices using Zoom:
1. Please test your video and audio prior to joining a live class session. You can learn more about testing your audio and video by visiting the UO Service Portal.
2. Try to be on time when the meeting starts. It can be distracting to have participants join late.
3. All of us occasionally need to hide video, but know that seeing your faces is a joy to me and, I believe, enriches our ways of relating—when you can, I value video on.
4. That said, please be mindful that others can see you and your surroundings if your video is on. Try to find a quiet setting without lots of noise or busy activities in the background. Please minimize distractions like eating or multitasking.
5. Use a microphone or speak closely to your computer microphone so that others can hear you. If you have video on, try to look at your camera, not the screen, when you are contributing.
6. Mute your audio when you are not actively contributing. When contributing, avoid making other noises such as typing or eating or having side conversations with others that might be present with you.
7. Use chat to pose questions or offer insights “on the side” while others are contributing. The chat can be read by all and should reflect a high standard of respect for our class community.
8. For help and troubleshooting with Zoom, visit the UO Service Portal.

Academic Integrity and Professionalism

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

The University Student Conduct Code defines academic misconduct, which includes unauthorized help on assignments and examinations and the use of sources without acknowledgment. Academic misconduct is prohibited at UO. I will report misconduct to the Office of Student Conduct and Community Standards—consequences can include failure of this course. I will ask you to certify that your exams/quizzes/projects are your own work. All assignments will be submitted through Canvas. These will often be timed.
I will adjust times to support students with accommodations through the Accessible Education Center. If a technological glitch disrupts your exam, don’t panic. Take a photo to document the error message you’re receiving and then email me.

I have designed exams with the expectation that while you will have access to course materials and the Internet when you take them it will likely hinder your ability to perform well if you need to stop and look things up. Additionally, I will be looking to see evidence of critical thinking, your ability to put the concepts we’re working on into action, and your ability to explain your understanding in response to the exam prompts rather than just rote memorization or performance of specific procedures. On an exam it is never appropriate to interact with a classmate in order to get or give help.

Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students’ obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at researchguides.uoregon.edu/citing-plagiarism.

Your Well-Being:

Life at college can be very complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you’re facing such challenges, you don’t need to handle them on your own--there’s help and support on campus.

As your instructor if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the details of what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do—for yourself and those you care about.

University Health Services help students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates. Find out more at health.uoregon.edu/ducknest.

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and confidential. Find out more at counseling.uoregon.edu or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).
Accessible Education:

The University of Oregon is striving to make all education accessible and inclusive. If any student is having difficulty meeting the demands of the course for whatever reason please see me as soon as possible – it is always better to talk to me before you get too far behind. I want to help each one of you succeed in this class.

Resources:

Here are some resources that you might find useful:

On Campus

University Tutoring and Academic Engagement Center 541-346-3226

University Counseling Center 541-346-3227 [24hr crisis line]

Accessible Education Services 541-346-1155

Ombuds Office 541-346-6400

Community (off-campus)

White Bird Clinic (24 hour crisis) 541-687-4000

Sexual Assault Support Services Crisis Line (SASS) 541-343-7277

Womenspace Help Line 541-485-6513

Title IX and Students who are victims of sexual violence:

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or a student that you know has experienced sexual assault, relationship violence, stalking, and/or sexual harassment is encouraged to seek help by contacting Renae DeSautel, Sexual Violence Response & Support Services Coordinator, desautel@uoregon.edu. She will keep your information confidential. In addition, the UO Ombudsperson Jennifer Reynolds (541 346-6400 or ombuds@uoregon.edu) can provide assistance. You can also contact any pastor, priest, imam, or other member of the clergy. All of these people, including all UO faculty members, have an obligation not to reveal your name or other specific information without your permission, although faculty
members do have to provide "general information" (nothing that identifies anyone) that will help us create a safer campus. As a faculty member, I can also reassign work partners, change seating charts, and make other accommodations that survivors of sexual violence may need.