Math 211: Fundamentals of Elementary Mathematics Fall 2022    CRN:12419
Instructor: Tricia Bevans
Class meets every MTWF 9:00-9:50 Weeks 1-10 in 303 University Hall
Finals Week (no classes, Make up Exam time 10:15 Monday December 5, office hours TBA)
Office: 333B Tykeson Hall
Email: thbevans@uoregon.edu (preferred method for contact)
Phone: 541-346-4790 (this may change as the university transitions to Teams calling for faculty)

Part 1: Course Information

Communicating with your Instructor: How? When? Why?

How will you receive updates for the class?
I will communicate with the entire class 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 to make sure you get these updates.

How should you contact me?
The most reliable way to reach me is by email at thbevans@uoregon.edu

You may also stop by my office at 333B Tykeson to see if I'm available to chat or answer a question. If I'm in my office I'll answer my phone (541-346-4790) but I don't recommend you leave a message. I’ll update the Canvas page with phone information if the university’s transition to Teams calling for faculty requires I change my phone number.

When should you contact me?
You can email me or send a message through Canvas at any time of the day. If you contact me with a question or concern, I’ll try to answer as quickly as possible, but may not see your email or answer it outside of normal "business hours". I usually respond to an email/message 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 even if I'm not able to respond in that moment.

I am available for you to drop in during my scheduled office hours and encourage you to stop by. Come for a quick question or stay for the entire time. If you stop by at times outside my scheduled hours I may be able to meet with you--I'll let you know if that isn't possible and we can set up another time to meet.

Why 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.

Required Materials

There are no textbooks to purchase for the class this term.

Course Notes are provided electronically on Canvas

The required text

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

is available electronically to read/download at

https://alliance-uoregon.primo.exlibrisgroup.com/permalink/01ALLIANCE_UO/1vpoqq8/alma99900690589801852

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.

Computer/Tablet: You’ll need access to a computer or tablet for some assignments and quizzes. Please make sure that your browser is up to date.

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 or https://livehelp.uoregon.edu/

Live Canvas support: 541-346-1942

Scanner or phone/camera to upload some assignments. Access to a printer is not required.

Office Hours and Tutoring

I will host regular office hours each week through week 10 in my office 333B Tykeson Hall. These are tentatively scheduled for:

Monday: 11am-11:50am
Tuesday: 1pm-1:50pm.
Wednesday: 12pm-12:50pm
Friday: 11am-11:50am

I may adjust these depending on student preference but will send a Canvas announcement with the new hours and adjust them here as well if they change. Finals Week hours will be determined in week 10.

I welcome meetings outside my regular office hours, too. Just email me to set a time. At hours when I am not on campus I may be available to meet via Zoom.

Zoom Meeting information for off-campus meetings by appointment:
Meeting ID: 949 3476 7367
Passcode: Patterns

Free tutoring for 211
Location: 4th floor Knight Library

See https://engage.uoregon.edu/tutoring/ for additional information including current hours

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.

Class Attendance, Late Work, and Estimated Out-of-Class Workload

Attendance: I have seen term after term how important attendance and active participation is for successful learning. Please come to every class not just because it is mandatory (it is) but because attendance is crucial to success.

Please reach out to me with any attendance barriers as soon as they come up so we can problem solve solutions together.

Attendance is mandatory and 2% of your final grade. This could be the difference between a C+ and a B-, for example. I will consider attendance and participation when determining final grades that are between two grades.

Attendance grading is as follows:

Miss class up to 4 times: you will earn 100% in the attendance category

Miss 5-6 times: you will earn 70% in the attendance category
Miss 7-8 times: you will earn 50% in the attendance category
Miss 9+ times: you will earn 0% in the attendance category

Note: I am not permitted to distinguish between excused and unexcused absences for this policy.

**Sick Policy**

If you are sick, please do stay home. Work on what you can on your own and then we can meet on zoom to answer any questions you may have, you can attend tutoring, or we can find other ways to help catch you up with the material. It may also be possible for me to record or live stream lectures when necessary.

Make sure you talk to me to come up with a plan if you miss several classes due to illness.

**Late Work**

Late work may be submitted but a penalty of 3% per day reduction in the grade will apply.

**Make up Exams**

Any student needing to make up an exam can do so during the final exam time scheduled for our class.

**Estimated Out of Class Workload:**

General university policy suggests that for a four-credit course you should expect to spend 4 hours in class and 8-12 hours outside of class each week. I will try to keep the workload below this threshold, but I recommend doing work each day, working with classmates, and attending office hours as part of the your time outside of class to make the workload manageable. We will begin much of the work for homework in class so the more focused you are in class the less homework you will have.

**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 as they engage in the following mathematical practices (See CCSSM Standards for Mathematical Practice)

1. Persevering in problem solving
2. Reasoning both abstractly and quantitatively
3. Constructing viable arguments and effectively critiquing the reasoning of others
4. Using appropriate models for mathematical concepts and modeling real-world contexts with appropriate mathematics
5. Using appropriate tools strategically
6. Attending to precision in mathematical language and mathematical procedures
7. Looking for and making use of structure
8. Looking for and expressing regularity in repeated reasoning

**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. 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 and assignments will all be completed or submitted on Canvas.

If I make a change to the schedule I’ll post it in advance on Canvas and send an announcement to the class.

You’ll be given assignments to complete both in class and outside of class. These will be due roughly twice per week. Due dates for assignments will be clearly indicated in the Canvas modules for each week. 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. Tentative grade weights are as follows:

Active Participation (3% of Grade)

Attendance (2% of Grade see policy above)

Worksheets: Marker Questions (12% of grade)

Worksheets: Instructor Questions (18% of grade)

Quizzes (5% of grade)

Exams (20% of grade each x3)

**Letter Grades:**

In order to pass this class (with a C- or higher) a student should have mastery of the material that will ensure success in Math 212 and 213. To that end, letter grades will be assigned with the following mathematical practices in mind.

9. Perseveres in problem solving
10. Reasons both abstractly and quantitatively
11. Constructs viable arguments and effectively critiques the reasoning of others
12. Uses appropriate models for mathematical concepts and models real-world contexts with appropriate mathematics
13. Uses appropriate tools strategically
14. Attends to precision in mathematical language and mathematical procedures
15. Looks for and makes use of structure
16. Looks for and expresses regularity in repeated reasoning

Letter grade of A indicates: Student consistently demonstrates proficient use of the mathematical practices listed above AND has achieved 90% or higher for their overall course grade.

Letter grade of B indicates: Student frequently demonstrates use of the mathematical practices listed above AND has achieved 80% or higher for their overall course grade.

Letter grade of C indicates: Student demonstrates use of the mathematical practices listed above but is inconsistent in their effort to do so and/or less proficient in these efforts AND has achieved 70% or higher for their overall course grade.
Letter grade of D indicates: Student shows infrequent use of the mathematical practices or struggles to effectively apply them AND has achieved 60% or higher for their overall course grade.

Letter grade of F indicates: Student has not demonstrated use of the mathematical practices OR has an overall course grade below 60%.

Plus and minus grades will be awarded to students in the top or bottom 2% of their grade bracket.

A more detailed description of each component of your grade can be found below:

**Active Participation:**

Your active participation grade in this class involves the following components:

**Habits and Supports:** 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 some evidence of your interaction like a selfie with the assignment in the picture)
- Attend office hours (after beginning an assignment on your own) two times

**Class preparation and Follow-up:** I’ll frequently assign relatively straightforward activities or readings with a short quiz that either follow up on an activity from class or prepare you for an upcoming class. These are either designed to give preliminary knowledge of a topic so we can use class time for more in-depth study or to help reinforce difficult material we have just learned.

**In Class Participation:** Additionally, your grade will be based on evidence of active class participation throughout the term by sharing reasoning (including incorrect or incomplete reasoning) with peers and in whole class discussions.

**Presentations:** Students will take turns doing both formal and informal presentations.

These presentations aren’t terribly formal, but you do have some time to plan for them and should do your best to work through the problem. Presentations are not graded for correctness, but I expect you to show evidence of preparation. I’ll post presentation questions with homework and on Canvas in the discussion board section so that students can sign up to prepare and present their work with a partner. If no one signs up for a presentation question by two days before the presentation day, I’ll assign it to a pair of students. Prior to submitting a presentation you and your partner must meet with your instructor (during office hours or by appointment).

**Attendance**

Grading is as follows:

Miss class up to 4 times: you will earn 100% in the attendance category
Miss 5-6 times: you will earn 70% in the attendance category
Miss 7-8 times: you will earn 50% in the attendance category
Miss 9+ times: you will earn 0% in the attendance category

Note: I am not permitted to distinguish between excused and unexcused absences for this policy.

**Worksheets: Marker Questions**

The activities we do in class are followed by questions you complete as homework. Homework assignments are divided into three categories: Marker questions, Instructor questions, and Presentation Questions.

*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 Wednesday night but I recommend you work on a few questions after each day of class**. For each homework assignment you’ll get feedback on which questions may need additional attention. Each assignment will have an overall score based on Engagement and Effort, Presentation and Completion, and Accuracy (see rubric for the assignment in Canvas).

**Worksheets: Instructor Questions**

*Instructor questions* generally will involve more creative thinking and applying the concepts from class in less straightforward ways. Students will eventually need to include both preliminary work on a task (i.e. "Exploration") as well as a polished write-up of the task solution (i.e. a “Final Write-Up”). I encourage you to begin the instructor questions early enough to attend office hours and get feedback on your work.

Instructor questions will be **due on Monday night**.

I'll include a rubric with the Instructor Question assignments on Canvas.

**Quizzes**

Throughout the term you will take short quizzes 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. You will complete these on Canvas about once per week. There will be a window of time in which to complete the quiz. Most questions will be graded automatically by Canvas. You’ll have multiple attempts for these.

**Exams**
Three exams for the course will assess your understanding of the material in the course. Each exam is worth 20% of your final course grade.

Exams will be taken during our class time. Students with accommodations for different conditions or increased testing time should be in contact with me to make sure that we get everything set up properly.

If you miss an exam you will have an opportunity to make it up during our scheduled final exam time.

You must have a passing exam average to pass the class.

**Part 4: Course Policies and Resources**

**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).

**Expected Classroom Behavior**

Our class structure involves a great deal of teacher-to-student and student-to-student interaction. Students are expected to behave respectfully toward each other and toward the instructor at all times. This includes being an active part of any group work and refraining from using cell phones during lectures unless specifically requested for the class activity.

**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.

You may also want to talk to someone in the Accessible Education Center if you are struggling to meet academic demands. You may be able to find information on strategies and support networks even if you don’t qualify for specific accommodations.

Accessible Education Services (aec.uoregon.edu) 541-346-1155

**Reporting Obligations**

I am an assisting employee. For information about my reporting obligations as an employee, please see Employee Reporting Obligations on the Office of Investigations and Civil Rights Compliance (OICRC) website.

Students experiencing sex or gender-based discrimination, harassment or violence should call the 24-7 hotline 541-346-SAFE [7244] or visit safe.uoregon.edu for help. Students experiencing all forms of prohibited discrimination or harassment may contact the Dean of Students Office at 541-346-3216 or the non-confidential Title IX Coordinator/OICRC at 541-346-3123. Additional resources are available at investigations.uoregon.edu/how-get-support. I am also a mandatory reporter of child abuse. Please find more information at Mandatory Reporting of Child Abuse and Neglect. I am NOT a confidential employee

**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 (https://dos.uoregon.edu/conduct) 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 of this can include failure of this course. I will ask you to certify that your exams/quizzes/projects are your own work.

I will adjust times and conditions to support students with accommodations through the Accessible Education Center.

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 so it is unlikely that cheating will be helpful. 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

**Inclement Weather**

“It is generally expected that class will meet unless the University is officially closed for inclement weather. If it becomes necessary to cancel class while the University remains open, this will be announced on Canvas and by email. Updates on inclement weather and closure are also communicated in other ways described here: https://hr.uoregon.edu/about-hr/campus-notifications/inclement-weather/inclement-weather-immediate-updates”

**Basic Needs**

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course is urged to contact the Dean of Students Office (346-3216, 164 Oregon Hall) for support.

This UO webpage includes resources for food, housing, healthcare, childcare, transportation, technology, finances, and legal support: https://blogs.uoregon.edu/basicneeds/food/

**Accommodation for Religious Observances**

The university makes reasonable accommodations, upon request, for students who are unable to attend a class for religious obligations or observance reasons, in accordance with the university discrimination policy which says “Any student who, because of religious beliefs, is unable to attend classes on a particular day shall be excused from attendance requirements and from any examination or other assignment on that day. The student shall make up the examination or other assignment missed because of the absence.” To request accommodations for this course for religious observance, visit the Office of the Registrar's website (https://registrar.uoregon.edu/calendars/religious-observances) and complete and submit to the instructor the “Student Religious Accommodation Request” form prior to the end of the second week of the term.