MATH 106  TTh 12-1:20  Fenton 110  Fall 2022

Instructor:  David Steinberg (course coordinator)  
Office Hours:  Mon, Tues: 3–4, Thurs 11–12 or by appointment (email me)

Pronouns:  He/him  
Office:  206A University Hall  
Email:  dcstein@uoregon.edu  
(Please include Math 106 and your discussion leader’s name in the subject line when emailing me, e.g. Math 106-Jayce.)

Discussions on Thursdays:

<table>
<thead>
<tr>
<th>Time</th>
<th>CRN</th>
<th>Room</th>
<th>Discussion leader</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500-1550</td>
<td>12332</td>
<td>240 TYKE</td>
<td>Jayce</td>
<td><a href="mailto:jaycel@uoregon.edu">jaycel@uoregon.edu</a></td>
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<tr>
<td>1600-1650</td>
<td>12333</td>
<td>106 UNIV</td>
<td>Austin</td>
<td><a href="mailto:adong@uoregon.edu">adong@uoregon.edu</a></td>
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<tr>
<td>1600-1650</td>
<td>12334</td>
<td>208 UNIV</td>
<td>Derek</td>
<td><a href="mailto:dmcbride@uoregon.edu">dmcbride@uoregon.edu</a></td>
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<td>1700-1750</td>
<td>12335</td>
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<td>Derek</td>
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<tr>
<td>1700-1750</td>
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<td>301 UNIV</td>
<td>Austin</td>
<td><a href="mailto:adong@uoregon.edu">adong@uoregon.edu</a></td>
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Anonymous Feedback: All students are encouraged to give me anonymous feedback about the course or my teaching during the term. See Canvas for the submission link.

Prerequisites: The prerequisite for this course is successful completion of Math 95 or an acceptable score on the placement test.

Calculator: A scientific calculator is allowed, but not required, for exams. You may not use a cellphone calculator during any exams. Some homework questions will require use of a calculator, but you may use your phone or the internet.

Textbook: Mathematics: A Practical Odyssey, 8th Edition. Johnson and Mowry or University Math 1 and II, Math 105/106, 3rd ed. They are the same textbook. Note that there is a copy of the book in the Knight Library or in the Mathematics Library (218 Fenton Hall), and there is free online access on Canvas.

Attendance: Attendance is crucial to your success, since the most important material, concepts, vocabulary, and examples, will be emphasized in class. Attendance is not required, but you are responsible for any information missed as a result of not attending class or not paying attention during class.

Academic Honesty is taken very seriously. The integrity of your degree depends on it. All instances of academic dishonesty will be reported to the Office of the Dean of Students.

- On homework, you are allowed (and encouraged) to work with other students, but the work you submit must be your own. In other words, figure out problems together, but write solutions separately. For those who get help from tutors, if you are shown how to do a problem, you should still write a solution that is your own. Getting solutions from online sources is also considered cheating.

- On tests, any cheating, in particular copying from others, or allowing others to copy you, will result in failure of the course.
**Course Goals:** The course is a survey of three topics that require mathematics and are relevant to our lives.

The first topic is Finance. By the end, the students should be able to:

- Distinguish between simple and compound interest
- Compute simple and compound interest
- Distinguish between simple and compound interest
- Describe what is an annuity
- Compute annuities
- Compute and distinguish between present and future values of an investment
- Compute amortized loans and payout annuities
- Use the formulas associated to interest and loan computations
- Be able to determine which formula is relevant to a question

The second topic is Exponential and Logarithmic functions. By the end, the students should be able to:

- Use properties of exponential functions to simplify a given exponential function
- Explain the relationship between exponentials and logarithms
- Use properties of logarithms to simplify or a given logarithm
- Use exponential functions to model growth or decay in a variety of applications
- Use logarithmic scales to solve problems regarding decibel levels or Richter scales

The third topic is Geometry. By the end, the students should be able to:

- Compute the area and perimeter of circles, rectangles, triangles, and regions built out of circles, rectangles, and triangles
- Use the Pythagorean theorem to compute side-lengths of a right triangle
- Use similar triangles to determine side lengths of triangles
- Use trigonometry to determine side lengths of right triangles, given one side length and then angle
- Use trigonometry to determine angles of right triangles, given two side lengths
- Produce one further iteration of a fractal procedure, given two previous iterations
- Determine the dimension of a fractal
Canvas: You can use our Canvas website to see syllabus, schedule, homework assignments, your grades and more. Please do not contact me via canvas, please email me instead. To access our class canvas site, go to: http://canvas.uoregon.edu/

Homework: Homework will be submitted every Friday on Canvas. Homework questions should be addressed during your TA’s or instructor’s office hours. Not all of the assigned problems will be graded. Each week, several problems will be chosen to be graded for accuracy. You must show your work to get credit. Marks may be docked if your homework is not neat.

Discussion: Weekly discussion sections will consist of a 20 minute quiz, and then a discussion about the solutions to the quiz. The quizzes are graded for effort only, not accuracy; in other words, if you show up and make a genuine effort on each quiz, then you will receive full marks. The purpose of the quizzes is to get you used to exam situations. The students who do well in this class are the ones that treat each quiz like a graded exam. If there is time at the end, the discussion leader may talk about homework problems, but you should not expect there to be time for this.

Grading:

Discussion Participation – 10% (if you complete your quiz and participate in class, you will receive full credit)

Homework – 15% (due every week in your discussion section, the lowest score will be dropped)

Chapter 10 Exam – 25% (October 20th in class)

Chapter 5 Exam – 25% (November 15th in class)

Chapter 8 Exam – 25% (8:00 am, Thursday December 9, online)

NOTE (on all homework, quizzes, and exams): Late homework will be penalized each day late, for up to 2 days, after which point it will not be accepted. If an exam is missed, then the average of the other two exam grades will be used in place. If two exams are missed, an incomplete grade will likely be assigned, which requires you to rewrite the exams within one year. This policy is in place to accommodate sickness and extenuating circumstances beyond your control.

Grading Breakdown: A: 90% or better, B: 80% -89%, C: 70%-79%, D: 60%-69%, F: below 60%. Plus grades will be awarded when the last digit is 8 or higher (98%-100% is an A+). Minus grades will be given if the last digit is either a 0 or 1. Your final percentage will be rounded to the nearest whole number. You must get at least 70% to receive a pass (P) grade (if you are taking this course with the Pass/No Pass option).
Math 106 Tentative Class Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Sections Covered</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.0A, 10.0B</td>
<td>Orientation &amp; quiz 1</td>
</tr>
<tr>
<td>2</td>
<td>10.1, 10.2</td>
<td>quiz 2</td>
</tr>
<tr>
<td>3</td>
<td>10.3, 5.1</td>
<td>quiz 3</td>
</tr>
<tr>
<td>4</td>
<td>review, exam 1</td>
<td>no discussion</td>
</tr>
<tr>
<td>5</td>
<td>5.2, 5.3,</td>
<td>quiz 4</td>
</tr>
<tr>
<td>6</td>
<td>5.4, 5.6</td>
<td>quiz 5</td>
</tr>
<tr>
<td>7</td>
<td>review, review</td>
<td>quiz 6</td>
</tr>
<tr>
<td>8</td>
<td>exam 2</td>
<td>no discussion</td>
</tr>
<tr>
<td>9</td>
<td>8.1, 8.2</td>
<td>quiz 7</td>
</tr>
<tr>
<td>10</td>
<td>8.9, review</td>
<td>quiz 8</td>
</tr>
<tr>
<td>11</td>
<td>exam 3</td>
<td>no discussion</td>
</tr>
</tbody>
</table>

Important Dates:

- Monday of the 2nd week – last day to drop without a ‘W’
- Wednesday of the 2nd week – last day to add a class
- Sunday at the end of the 7th week – last day to drop the course or change your grading option to P/N.
- Thursday November 17 and Friday November 18 are holidays

Tips for Success:

- attend every class
- read the section of the textbook before we discuss the material in class. Even reading the first page or two helps
- begin assignments as soon as they are posted
- spend time on this course every day: reading ahead, reviewing notes or quizzes, completing assignments, etc.

Extra Help: If you think you’ll need extra help, get a tutor right away. UO offers free tutoring services, you can read about them on their site [http://engage.uoregon.edu/tutoring](http://engage.uoregon.edu/tutoring). The math department offers free tutoring in the math library, Fenton 218.
**Expectations** I expect you to:

- submit work on time
- arrive on time, and to minimize the disturbance if you arrive late
- ask questions
- provide feedback about the course (anonymously or otherwise)
- participate in class
- be respectful and courteous towards your classmates (e.g., chatting during class distracts other students, and will not be tolerated)
- come to class prepared (e.g., reviewed content from last class, attempted the homework, etc)
- spend approximately two hours outside of class on homework, review, etc for every one hour spent in class
- take responsibility for any course content covered when you miss a class
- attend office hours or make an appointment with me if you would like help

You can expect me to:

- arrive on time to class
- be enthusiastic about the material and about mathematics in general
- be available to provide help, support, and advice
- reply to email in less than 24 hours (typically *much less* than 24 hours)
- consider and respond to all feedback about the course
- return work no more than one week after it has been submitted
- make adjustments to the classroom environment throughout the term according to the needs of the class
What follows is a general description of various University of Oregon policies, not specific to this course.

**Academic Disruption due to Campus Emergency:** In the event of a campus emergency that disrupts academic activities, course requirements, deadlines, and grading percentages are subject to change. Information about changes in this course will be communicated as soon as possible by email, and on Canvas. If we are not able to meet face-to-face, students should immediately log onto Canvas and read any announcements and/or access alternative assignments. Students are also expected to continue coursework as outlined in this syllabus or other instructions on Canvas. In the event that the instructor of this course has to quarantine, this course may be taught online during that time.

**Academic Misconduct:** The University Student Conduct Code, available at

https://conduct.uoregon.edu,

defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. 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

https://researchguides.uoregon.edu/citing-plagiarism.

**Accessible Education:** The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability-related barriers to your participation. You are also encouraged to contact the Accessible Education Center in 360 Oregon Hall at 541-346-1155 or uoaec@uoregon.edu.

**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.

**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.
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.

Mental Health and Wellness: 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).

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 5411-346-3216 or the non-confidential Title IX Coordinator/OICRC at 541-346-3123. Additional resources are available at

https://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.
Notes for instructors: (mostly borrowed from Mike Price)

• The course coordinator is David Steinberg: dcstein@uoregon.edu feel free to contact me with any questions, comments, suggestions, or concerns.

• There are a variety of syllabi online (http://math.uoregon.edu/syllabi/), which are definitely worth checking out

• The course is modular, with geometry/trigonometry and exponential models distinct from the main narrative of the course: finance. It would be reasonable to give three separate chapter exams, and if you plan it carefully, administer the third non-cumulative exam on the last day of class as opposed to during the scheduled final exam time. Do this only if the exam is non-cumulative and if the exam is identified on your syllabus as being given during week 10. It is against UO policy to administer a final exam under any guise during week 10.

• I provide students with a formula sheet for all exams. I’m not so concerned with them memorizing the formulas for volume, annuities and loans; I’d like to see them applied and interpreted successfully. (I do not recommend allowing them to bring cheat sheets, as they often just being solutions to homework problems with the hope of generalizing for the exam, which exhibits no learning.)

• Consider having homework due twice per week, it works out to almost exactly one section per turn-in that way.

• The remainder of Chapter 8: 8.3, 8.6, 8.8, and 8.10 are all optional sections. Don’t add more than three of these sections to your course content.

• This course is well-suited to including a financial project as part of the course grade. Consider devising your own, or contacting the course coordinator for information about projects used in the recent past.