OTTERBEIN UNIVERSITY

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| Course Number/Section and Title: | MATH 1220-01: Quantitative Reasoning | | |
| Semester and Year: | Fall 2019 | | |
| Course Meeting: | MWF<br>Days | 10:20-11:15am<br>Time | Roush 330<br>Location |
| Credit Hours: | 3<br>Total Credit Hours | 3<br>Lecture Credit Hours | 0<br>Lab Credit Hours (if applicable) |

Is this a Travel Course: ☐ Yes ☒ No


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|---|---|---|---|
| Instructor: | Mr. Matthew McMullen | mmcmullen@otterbein.edu<br>Email Address | |
| | Towers 138<br>Office Location/Room # | (614) 823-1279<br>Office Phone Number | faculty.otterbein.edu/mmcmullen<br>Course webpage (for homework problems) |

MW 1:40-2:40pm
TR 12-1pm
Set Office Hours and Tutoring Hours (also available by appointment).


**Course Catalog Description**

This course explores the question "Why mathematics?" from a modern-day perspective. Mathematical topics encountered on a day-to-day basis (such as percentages, financial mathematics, mathematical models, and statistics) are studied through real-life problems and situations. This course seeks to make students aware of the importance of mathematics to their daily lives and to help them become more mathematically literate members of society. (Prerequisites: C- or better in MATH 0900 or qualification through Otterbein's Mathematics Placement Exam.)

**Course Objectives** (learning outcome goals or student learning outcomes for the course)

Upon successful completion of the course, the student shall be able to:

1. Recognize the importance of mathematics to their daily life.
2. Reason with, and think critically about, quantitative information.
3. Understand how mathematics can be used to model real-world phenomena.
4. Be aware of the uses and abuses of percentages.
5. Make informed decisions about personal finance questions involving savings plans and loans, including student loans, credit cards, and mortgages.
6. Understand the difference between linear, exponential, and logistic growth.

**Program Learning Goals or Outcomes**

**Goal 1:** To assist all students in understanding the value and purpose of the study of mathematics.

**Outcomes:**

- Students engage in topics and activities that will help them to acquire mathematical habits of mind.
- Students gain awareness of the connections of mathematics to other disciplines, thereby enhancing their perceptions of the vitality and importance of mathematics in the modern world.

**Goal 2:** To help students progress in developing analytical, critical reasoning, and problem-solving skills.

**Outcomes:**

- Students strengthen mathematical and/or quantitative abilities that will be useful in the study of other disciplines, required in the workplace, and/or needed for informed citizenship.
- Students gain experience formulating problems, considering multiple approaches, reasoning logically to conclusions, and interpreting results intelligently.

**Required Texts and/or Ancillary Materials**
The textbook we will be using is *Using and Understanding Mathematics – A Quantitative Reasoning Approach*, 6th edition, by Bennett and Briggs.

**Attendance and Participation Policy**
You are expected to be present at all classes. If you have a conflict with any test, you must see me in advance. No make-up tests will be given for unexcused absences.

**Method for determining course grade**
Group work/attendance counts towards 5% of your final grade, homework towards 10%, short exams towards 60%, and the final towards 25%. It is anticipated (but subject to change) that the letter grade assignments will be made on the following scale: A 93%, A− 90%, B+ 87%, B 83%, B− 80%, C+ 77%, C 73%, C− 70%, D+ 67%, D 60%, F below 60%.

**Assignments/Tests and expectations for out-of-class work**
We will have group activities, ten homework sets, eight short exams (the two lowest scores will be dropped), and a final.

**Final Exam Date and Time**
Friday, December 13, 10:15am-12:15pm

**Academic Honesty**
All academic work should be your own. Academic dishonesty (plagiarism and cheating) may result in automatic failure of the assignment or the course itself, and you will be referred to the Academic Affairs Office for suspension or expulsion proceedings. You are plagiarizing when you:

1. Copy material from a source without using quotation marks and proper citation.
2. Follow the movement of the source, substituting words and sentences but keeping its meaning, without citing it.
3. Lift phrases or terms from a source and embed them in your own prose without using quotation marks and proper citation.
4. Borrow ideas (that are not common knowledge) from a source without proper citation.
5. Turn in a paper wholly or partially written by someone else.

The complete statement on Plagiarism, Cheating and Dishonesty can be found in the *Campus Life Handbook*, page 33, at the following web link: http://www.otterbein.edu/public/CampusLife/HealthAndSafety/StudentConduct.aspx.

**Learning Differences**
If you have a documented learning difference please contact Kera McClain Manley, the Disability Services Coordinator, to arrange for whatever assistance you need. The Disability Services is located in Room #13 on the second floor of the Library in the Academic Support Center. You are welcome to consult with me privately to discuss your specific needs. For more information, contact Kera at kmanley@otterbein.edu, 614-823-1618 or visit the Disability Services at the following web link: http://www.otterbein.edu/public/Academics/AcademicAffairsDivision/AcademicSupportCenter/DisabilityServices.aspx.

**Statement on Credit Hour Definition/Expectation for Student Work**
For each credit hour of classroom or direct faculty instruction, students are expected to engage in two hours of out-of-class work (readings, homework, studying, project preparation, etc.). A three semester credit hour course requires six hours per week of out-of-class work.

## Schedule (tentative)

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| | **Aug. 26** | **Aug. 27** | **Aug. 28** | **Aug. 29** | **Aug. 30** |
| **Week 1** | *Classes start*<br>Course intro | | 2A | | 2A/2B |
| | **Sept. 2** | **Sept. 3** | **Sept. 4** | **Sept. 5** | **Sept. 6** |
| **Week 2** | **Labor Day** | *Last day to add* | 2B<br>HW #1 due | | Activity day |
| | **Sept. 9** | **Sept. 10** | **Sept. 11** | **Sept. 12** | **Sept. 13** |
| **Week 3** | **Quiz #1**<br>HW #2 due | | 3A | | 3A/3E |
| | **Sept. 16** | **Sept. 17** | **Sept. 18** | **Sept. 19** | **Sept. 20** |
| **Week 4** | 3E | | Activity day | | **Quiz #2**<br>HW #3 due |
| | **Sept. 23** | **Sept. 24** | **Sept. 25** | **Sept. 26** | **Sept. 27** |
| **Week 5** | 4A | | 4B | | *Last drop day w/o "W"*<br>4B |
| | **Sept. 30** | **Oct. 1** | **Oct. 2** | **Oct. 3** | **Oct. 4** |
| **Week 6** | Activity day | | **Quiz #3**<br>HW #4 due | | 4C |
| | **Oct. 7** | **Oct. 8** | **Oct. 9** | **Oct. 10** | **Oct. 11** |
| **Week 7** | 4C | | Activity day | | **Quiz #4**<br>HW #5 due |
| | **Oct. 14** | **Oct. 15** | **Oct. 16** | **Oct. 17** | **Oct. 18** |
| **Week 8** | **Fall Break** | | **No Class!** | | 4D |
| | **Oct. 21** | **Oct. 22** | **Oct. 23** | **Oct. 24** | **Oct. 25** |
| **Week 9** | 4D | | 4E | | **Quiz #5**<br>HW #6 due |
| | **Oct. 28** | **Oct. 29** | **Oct. 30** | **Oct. 31** | **Nov. 1** |
| **Week 10** | *Last day to drop*<br>8A/8B | | 8B/8C | | Activity day |
| | **Nov. 4** | **Nov. 5** | **Nov. 6** | **Nov. 7** | **Nov. 8** |
| **Week 11** | **Quiz #6**<br>HW #7 due | | 9A/9B | | 9B/9C |
| | **Nov. 11** | **Nov. 12** | **Nov. 13** | **Nov. 14** | **Nov. 15** |
| **Week 12** | Activity day | | **Quiz #7**<br>HW #8 due | | 5A |
| | **Nov. 18** | **Nov. 19** | **Nov. 20** | **Nov. 21** | **Nov. 22** |
| **Week 13** | 5A/5E | | Activity day | | 6C<br>HW #9 due |
| | **Nov. 25** | **Nov. 26** | **Nov. 27** | **Nov. 28** | **Nov. 29** |
| **Week 14** | 6D | | **Thanksgiving break** | | **Thanksgiving Break** |
| | **Dec. 2** | **Dec. 3** | **Dec. 4** | **Dec. 5** | **Dec. 6** |
| **Week 15** | Activity day | | **Quiz #8**<br>HW #10 due | | *Last day of classes*<br>Review day |
| | **Dec. 9** | **Dec. 10** | **Dec. 11** | **Dec. 12** | **Dec. 13** |
| **Finals Week** | | | | | **Final Exam**<br>**10:15am-12:15pm** |