

Course Number/Section and Title:	MATH 1240-03: Statistics I		
Semester and Year:	Spring 2020		
Course Meeting:	TR	9:55-11:15am	Towers 122
	Days	Time	Location
Credit Hours:	3	3	0
	Total Credit Hours	Lecture Credit Hours	Lab Credit Hours (if applicable)
Is this a Travel Course:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

Instructor:	Matthew McMullen	mmcmullen@otterbein.edu	
	First, Last	Email Address	
	Towers 138	(614)823-1279	faculty.otterbein.edu/mmcmullen
	Office Location/Room #	Office Phone Number	Course webpage (for homework problems)
	MWF 11:30am-12:30pm		
	TR 8:50-9:50am		
	Set Office Hours and Tutoring Hours (also available by appointment).		

**Course Catalog Description**, including pre- or co-requisite course work or other required items.

A study of non-calculus based descriptive and inferential statistics, as well as the principles of probability including discrete and continuous distributions. Statistical data analysis is emphasized involving graphical data displays, confidence intervals and hypothesis testing for means and proportions, and basic correlation and regression analysis.

*(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. Create appropriate graphical descriptive displays of data.
2. Understand and apply concepts involving important sample statistics such as the mean, median, and standard deviation.
3. Understand the difference between probability and statistics.
4. Solve probability problems with binomial and normal distributions.
5. Understand the central limit theorem and solve sampling distribution problems using it.
6. Formulate and assess statistical significance issues involving means (small and large samples), proportions for one and two populations.
7. Properly differentiate between independent and dependent sample hypothesis testing.
8. Solve application problems using simple linear regression and correlation methods.

**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 main textbook we will be using is *Statistics*, by McClave and Sincich, 13th edition. As needed, I will also supply you with handouts from *Statistics – Unlocking the Power of Data*, by Lock, Lock, Lock, Lock, and Lock, 2nd edition. We will be using the statistical software Minitab (which is already on the campus computers) frequently throughout the semester.

**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**

Homework will count towards 5% of your final grade, quizzes/activities towards 20%, midterms towards 30%, projects towards 20%, and the final towards 25%. It is anticipated 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 8 activities/quizzes (the lowest two scores will be dropped), 8 homework sets, 2 midterms, 2 stats mini-projects, and a final.

**Final Exam Date and Time**

Tuesday, April 28 from 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](mailto: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 four semester credit hour course requires eight hours per week of out-of-class work.

### Schedule (tentative)

	Monday	Tuesday	Wednesday	Thursday	Friday
	Jan. 13	Jan. 14	Jan. 15	Jan. 16	Jan. 17
Week 1		<i>First day of class</i> 1.1-1.4		2.1-2.3	
	Jan. 20	Jan. 21	Jan. 22	Jan. 23	Jan. 24
Week 2		<i>Last day to add</i> 2.4 and 2.5		2.6 and 2.7 HW #1 due	
	Jan. 27	Jan. 28	Jan. 29	Jan. 30	Jan. 31
Week 3		Activity day (in lab)		1.5 and 1.6 1.3 (in Lock <sup>5</sup> ) HW #2 due	
	Feb. 3	Feb. 4	Feb. 5	Feb. 6	Feb. 7
Week 4		Activity day Activity #1 due		2.5 and 2.6 (in Lock <sup>5</sup> )	
	Feb. 10	Feb. 11	Feb. 12	Feb. 13	Feb. 14
Week 5		Activity day		Review Test #1 HW #3 due	<i>Last drop day w/o "W"</i>
	Feb. 17	Feb. 18	Feb. 19	Feb. 20	Feb. 21
Week 6		3.1 and 3.6 Project #1 due		4.4	
	Feb. 24	Feb. 25	Feb. 26	Feb. 27	Feb. 28
Week 7		5.3 HW #4 due		Activity day	
	Mar. 2	Mar. 3	Mar. 4	Mar. 5	Mar. 6
Week 8		Spring Break		Spring Break	
	Mar. 9	Mar. 10	Mar. 11	Mar. 12	Mar. 13
Week 9		FUN DAY! (6.1 and 6.2) HW #5 due		6.3 and 6.4	
	Mar. 16	Mar. 17	Mar. 18	Mar. 19	Mar. 20
Week 10		Activity day		7.1 and 7.2 HW #6 due	
	Mar. 23	Mar. 24	Mar. 25	Mar. 26	Mar. 27
Week 11	<i>Last day to drop</i>	7.3 and 7.4		Activity day	
	Mar. 30	Mar. 31	Apr. 1	Apr. 2	Apr. 3
Week 12		Review Test #2 HW #7 due		8.1-8.4	
	Apr. 6	Apr. 7	Apr. 8	Apr. 9	Apr. 10
Week 13		8.5 and 8.6		Activity day	
	Apr. 13	Apr. 14	Apr. 15	Apr. 16	Apr. 17
Week 14		9.2 and 9.3 HW #8 due		9.4	
	Apr. 20	Apr. 21	Apr. 22	Apr. 23	Apr. 24
Week 15		Activity day		<i>Last day of class</i> Review Project #2 due	
	Apr. 27	Apr. 28	Apr. 29	Apr. 30	May 1
Finals!		Final Exam 10:15am-12:15pm			