

**STAT 180 INTRODUCTORY STATISTICS**  
**Fall 2019 Community Engagement**

**Instructor:** Dr. Debra L. Hydorn  
**Office:** 132 Trinkle Hall, 654-1330, [dhydorn@umw.edu](mailto:dhydorn@umw.edu)  
**Office hours:** MWF 10 to 11 am, TR 11 am to 12 pm, and by appointment  
**Course pack** – available through Canvas (**required**)

**Goals and Objectives:**

Introduction to Statistics provides students with basic descriptive and inferential statistics skills. Upon completion of the course, students will:

- produce appropriate graphs and statistics to describe and analyze a data set
- read and interpret statistical output and graphs
- understand the different types of relationships between variables
- produce and interpret the results of a regression/correlation analysis
- understand the role that probability plays in making statistical inference
- be able to choose and carry out the appropriate statistical procedure for a given situation involving means or proportions for one or two samples
- communicate effectively about statistical concepts and the results of a data analysis

**QR Student Learning Outcomes:**

1. Students will demonstrate an ability to interpret quantitative/symbolic information.
2. Students will have the ability to convert relevant information into various mathematical/analytical forms (e.g., equations, graphs, diagrams, tables, words)
3. Students will be able to apply analytical techniques or rules to solve problems in a variety of contexts.
4. Students will gain an appreciation for how analytical techniques or rules are used to address real-world problems across multiple disciplines.

**Community Engagement Learning Outcomes:**

All CE courses must involve 15 hours of engagement with the community as well as reflection.

They must meet the following 3 outcomes:

- **Analysis of Knowledge:** Connects and extends knowledge (facts, theories, etc.) from one’s own academic study/ field/ discipline to community engagement and to one’s own participation in community life, politics, and government.
- **Identity/Commitment** Provides evidence of experience in community-engagement activities and describes what she/he has learned about her or himself as it relates to a reinforced or clarified commitment to public action.
- **Action and Reflection:** Demonstrates independent experience, accompanied by reflective insights or analysis about the aims and accomplishments of one’s actions.

**Tentative schedule:**

	<b>Week</b>	<b>Date</b>			<b>Date</b>
<b>Test 1</b>	6	Oct. 3		<b>Final Exam</b>	Sec 01 Dec. 12 8:30-11:00 am
<b>Test 2</b>	12	Nov. 14			

**Grading:** Course grades will be determined using the following criteria

	<b>Points</b>	<b>%</b>
<b>2 Tests</b>	200 (100 each)	40
<b>3 Computer Labs</b>	45 (@ 15 each)	9
<b>6 Group Quizzes</b>	90 (15 each)	18
<b>Community Service Project</b>	50	13
<b>Final</b>	<u>115</u>	<u>20</u>
<b>Total</b>	500	100

**The grading scale is:**

A: 94 – 100%	C : 71 – 74
A- : 90 – 93	C- : 68 – 70
B+: 86 – 89	D+: 64 – 67
B : 82 – 85	D : 60 – 63
B- : 79 – 81	F : < 60%
C+: 75 – 78	

**Midterm progress reports**

are based on the work completed to that point.

The grading scale will be:

S: 71% or above
U: 70% or below

**Topics:** We should cover basic descriptive statistics and graphs for qualitative and quantitative data, correlation and regression analysis, probability, the normal distribution, sampling distributions of the sample mean and the sample proportion, confidence intervals and hypothesis tests for means and for proportions. **Textbook practice problems at the end of each chapter are assigned in the class course pack. This text is on reserve at the library.** These problems will **not** be collected or reviewed in class, in general. The problems are intended to help you assess how well you understand course concepts and methods.

**Canvas:** Some assignments will be distributed in class but a copy of all assignments will be made available in Canvas. I will try to keep you informed of where we are in the notes and of changes in up-coming due dates through e-mails sent through Canvas or Banner. I will also try to keep the grade book in Canvas updated on a regular basis.

**Computer Lab Assignments:** The computer homework assignments will give you experience using some of the methods covered in lecture. These computer projects will be completed using the statistics package R. R is a free, open-source system that you can download to your own computer. It will also be available for use on the computers in the Mathematics Department Computer Lab, Trinkle B9. The lab is open Monday – Friday, 8 a.m. – 5 p.m. Students will need to use an access code to gain entry to the computer lab after hours and on the weekends. Directions for downloading and using R to complete statistical analyses will be posted in Canvas and R will be demonstrated in class and in short instructional videos. **For each assignment you must submit the R commands you used, the output you produced and your answers to the research questions for full credit. These computer homework assignments are due by 5 pm on the assigned due date.** Assignments submitted after the 5 pm deadline will be considered late and may be subject to a late penalty. Either an electronic copy or hard copy may be submitted. **No computer homework assignments will be accepted after the graded assignments have been returned in class, which is usually the next class period.**

**Quizzes:** These quizzes will consist of problems similar to those you can expect to see on exams. Quizzes will be group activities that you will start in class and then finish after class. They are open book and open notes and you may work with a partner or partners (but you need to

indicate who you worked with and each of you must turn in your own completed quiz). Quizzes are due at the beginning of the class period after they are assigned. Your **top six quiz** scores will be used to determine your course grade. Additional quiz scores (up to 15 points total) can count toward extra credit. **No make-up quizzes will be given.**

**Tests:** Tests are closed book and closed notes. You will be given formula sheets and probability tables to use when taking exams. **Any additional materials are not allowed during exams.** Practice problems for the tests with solutions will also be posted in Canvas. The format for the final will be similar to the two in-class exams. The final exam will be cumulative and will cover topics from both of the class tests.

**Calculator:** No special calculator is needed for this course. The only “essential” function needed (other than +, -, / and  $\times$ ) is the square root. You do not need to purchase a graphing calculator – if you already have one, you may use it. If you don’t have a calculator, let me know – the Mathematics Dept. has some that I can lend you for the course. No matter what calculator you have, **everyone will be expected to show all calculations** completed to receive full credit on exam and quiz questions. You are expected to **show all of your work** whether or not I remember to include that direction in the exam or quiz instructions. **If you borrow one of the Mathematics Department calculators for the semester you must agree to replace it if you lose or damage it. No cell phone calculators will be allowed during exams.**

**Honor code:** You may work with a partner to produce the R output needed for the homework assignments but it is expected that you will **write your own report** for each assignment. **There is a big difference between cooperation and collaboration – if you’re not sure if what you want to do is okay then you should ask me before you do it.** (For example, it is not okay for one student to produce the output and give it to another student. But, you may work together to produce the output. It is also okay for you to discuss the output with each other. But, it is not okay for one student to just copy what another student has written.) Obtaining copies of completed assignments from previous semesters is a violation of the honor code.

**Policies:** Regular attendance is expected. If you miss class it is your responsibility to learn what was covered that day and if any announcements or assignments were made – **e-mail me or a classmate to find out what you missed.** If you have questions concerning assignments please see me during office hours or contact me through e-mail. I will do my best to respond to e-mail questions in a timely manner. Successful performance in the course depends on regular completion of all assignments. If you anticipate missing class for religious or other activities, you must let me know and indicate any potential conflicts with exams or assignment due dates; plan on completing course assignments before your absence from class begins.

The above test/assignment schedule is subject to change depending on material covered in class. Please **mark your calendar** and make any travel arrangements during the course with these dates in mind. **Missed examinations** may be made up only if prior approval is given or in the case of a medical emergency with a note from your doctor. I must receive **written confirmation** regarding the situation and when missed work will be completed. Except in cases of serious illness or similar situations, no make-up exams will be given after I have returned the graded tests, which is usually the next class period. If you are unable to make-up the exam before they are returned then you will make it up at the final exam - the final will count for 215 points of

your course grade. **All tests are to be completed in the assigned classroom for the semester unless prior arrangements have been made with me.** The final exam cannot be made up unless approved by the Dean.

All graded work must be **pledged** and must be turned in on time to avoid any late penalty. If you are unable to turn in an assignment during the class period on the day when it is due, **I require written confirmation at that time of when the assignment will be completed; otherwise it will not be accepted.** If you are ill, an e-mail to me will serve as your written confirmation. **In most cases late assignments must be submitted by noon the day after the assignment was due. If you need more time than that then you must make arrangements with me about requesting additional time. If you miss class when an assignment is due don't assume that you can turn it in at the next class period because you weren't in class.** Late assignments will be graded at my convenience. No assignments will be accepted after the solution set has been posted in Canvas or after the last day of class.

The **Office of Disability Services** has been designated by the University as the primary office to guide, counsel, and assist students with disabilities. If you already receive services through the Office of Disability Services and require accommodations for this class, make an appointment with me as soon as possible to discuss your approved accommodation needs. Please bring your accommodation letter with you to the appointment. I will hold any information you share with me in the strictest confidence unless you give me permission to do otherwise. If you have not contacted the Office of Disability Services and need accommodations, such as note taking assistance or extended time for tests, their phone number is 540-654-1266. The office will require appropriate documentation of disability. If your disabilities accommodations include extra time on tests or a quiet room make sure to remind me about **at the class period before the test** so that we can make appropriate arrangements for you to take the test.

### **Title IX Statement**

University of Mary Washington faculty are committed to supporting students and upholding the University's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence*. Under Title IX and this Policy, discrimination based upon sex or gender is prohibited. If you experience an incident of sex or gender based discrimination, we encourage you to report it. ***While you may talk to me, understand that as a "Responsible Employee" of the University, I MUST report to UMW's Title IX Coordinator what you share.*** If you wish to speak to someone confidentially, please contact the below confidential resources. They can connect you with support services and help you explore your options. You may also seek assistance from UMW's Title IX Coordinator. Please visit <http://diversity.umw.edu/title-ix/> to view UMW's *Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence* and to find further information on support and resources.

### **Resources**

Stefanie Lucas-Waverly  
Title IX Coordinator  
Office of Title IX  
Fairfax House  
540-654-5656  
slucaswa@umw.edu

Crystal Rawls  
Deputy Title IX Coordinator for Students  
Area Coordinator  
540-654-1801

### **Confidential Resources**

*On-Campus*  
Talley Center for Counselling Services –  
Lee Hall 106

Student Health Center  
Lee Hall 112

*Off-Campus*  
Empowerhouse 540-373-9373

RCASA 540-371-1666