

## COURSE SYLLABUS, Spring 2021, 4 credit hours

### Fundamentals of Statistics (STAT 2050-01...543664) Introductory Statistics for Social Science (STAT 2070-01...543666)

**Class Time via Zoom: MWF from 10:00 to 10:50 am**

**Lab Time via Zoom: TTh from 9:50 to 10:40 am**

**Zoom ID: 953 5553 2756    Password: STAT**

**INSTRUCTOR: Mr. Neil Waite**

Office: Science & Math 128

Office Phone: 754-6141

Email: [neil.waite@nwc.edu](mailto:neil.waite@nwc.edu) (or use Moodle)

### **VIRTUAL OFFICE HOURS (Zoom ID: 961 7599 4321 Password: Office):**

I am willing to visit with any of you through a Zoom meeting. In particular, we can talk through specific problems together. Sometimes a short visit can prevent a lot of frustration and you may find that you are not as lost as you think you are. Just email me and we can arrange a time to meet. **There is a link you can use to join my office hours in our Moodle course shell.** We may also be able to visit in person depending on the Covid-19 situation. In addition, I will plan on being available (without an appointment) at the following times:

- Monday to Friday from 9:00 am to 9:45 am.
- Monday to Thursday from 2:00 pm to 2:30 pm.

### **Required and Recommended Learning Materials:**

- **Required:** MyStatLab Access Code: This code can be purchased online at [www.pearson.com/mylab](http://www.pearson.com/mylab) (\$79.99 for 18-week access to MyLab). You may also get temporary access for up to 14 days without payment.
- **Optional Text:** Statistics: Informed Decisions using Data, 5 th edition, by Michael Sullivan III; Pearson Education, Inc. ISBN: 9780321694645. (Note: An electronic version of the textbook is included with the MyStatLab access.)
- **Recommended Graphing Calculator:** The TI-83, 84, or 86 are all great calculators. Other graphing calculators may also be ok. The library has some graphing calculators (first come, first served) that may be checked out for the entire semester.
- **A course workbook will also be provided free of charge.**

### **CATALOG COURSE DESCRIPTIONS:**

Stat 2050-Covers descriptive measures, probability, discrete and continuous distributions, ideas and applications of statistical inference, hypothesis testing, and an introduction to regression and correlation. Emphasis on decision-making applications. Introduces statistical computer packages in weekly labs.

Stat 2070-Presents central ideas of descriptive statistics and statistical inference, as applied to questions in social sciences. Includes graphs, averages, sampling, estimation, hypothesis-testing and relationships between variables. Introduces associated computer skills in weekly labs.

Prerequisite: A grade of “C-” or better in Math 1000, MATH 1050, MATH 1400, or MATH 1450 or placement at math level 3 within one year prior to enrollment.

**OUTCOMES:** This course fulfills the **Quantitative Reasoning general education** requirement at Northwest College. Also, by successfully completing this course, students will have demonstrated the ability to:

1. Organize data into appropriate graphical representations.
2. Calculate and interpret measures of central tendency and variability.
3. Find and interpret the relationship between two data sets using the correlation coefficient.
4. Find the linear equation that describes the relationship between two data sets and use it to predict one variable given the value of the other variable.
5. Calculate probabilities for simple events and determine the probabilities for certain continuous events from tables using technology.
6. Provide point and interval estimations for population parameters with corresponding confidence in this estimation.
7. Demonstrate the appropriate hypothesis test to answer a question for given sets of data and explain the level of confidence in the conclusions.

**LEARNING OBJECTIVES:** I plan on covering material from the following chapters (although we will not cover all topics in each chapter):

- Chapter 1, Data Collection
- Chapter 2, Organizing and Summarizing Data
- Chapter 3, Numerically Summarizing Data
- Chapter 4, Describing the Relation Between Two Variables
- Chapter 5, Probability
- Chapter 6, Discrete Probability Distributions
- Chapter 7, The Normal Probability Distribution
- Chapter 8, Sampling Distributions
- Chapter 9, Estimating the Value of a Parameter
- Chapter 10, Hypothesis Tests Regarding a Parameter
- Chapter 11, Inferences on Two Samples
- As a means of showing mastery, students should be able to solve homework and exam problems relating to these concepts. Students will also show mastery by using the technology (EXCEL and TI-Calculator) to solve a variety of statistical problems.

**Class Workbooks:** Each student will have the opportunity to obtain a course workbook at the beginning of the course free of charge. The workbooks may be picked up by dropping by my office in SM 128 (I will have copies outside my office door so you can drop by and pick one up). Alternatively, you may print out your own copy as I will post pdf -files of the workbook on Moodle. The workbooks contain the examples that we will be working through in our classroom discussions. You do not need to return these booklets and they are intended to be written in. Most students find these workbooks helpful (and they save me a lot of extra writing and from getting sidetracked in the course). After class, I will post my copy of the workbook notes on Moodle.

**Homework (20% of your overall grade):** We will be using the Pearson product MyStatLab for the homework portion of your learning assessment. You will need to purchase an access code to use this product. You will receive 50% credit for homework that is completed late. Please plan on setting aside a set block of time during which you can work on this class (the recommend formula is 2 hours outside of class for every 1 hour in class).

**Introduction Forum:** Please take a few minutes and introduce yourself of the Introduction Forum on our course Moodle Page.

**PARTICIPATION (2% of your overall grade):** There will be a participation grade to encourage student participation. Full credit will be given to students who come to and participate in our Zoom discussions. In other words, if you ask questions and/or answer questions when asked then you will be given full credit (even if you answer incorrectly). However, if you don't respond when I ask you questions then you may not receive all or any of the participation grade. When students don't answer, it tells me that they are either not paying attention or they are not even by their computer.

**LAB ASSIGNMENTS (18% of your overall grade):** We will be using EXCEL and graphing calculators to complete weekly lab assignments. I will post a video on Moodle in which I will explain the lab. You can watch the video at any time. After you watch the video, I will then be available via Zoom (Use the normal class link) during our lab times (Tuesday and Thursday from 9:50 to 10:40 am) to answer any questions that you have about the lab.

**EXAMS (40% of your overall grade):** The exams will always be announced in advance. Please let me know, (in advance if possible via email, phone, voice mail, or in person) if you have a legitimate reason for missing a test. A late penalty (10% per school day late) may be assessed if you take a test late. I do not give test retakes. When possible, the exams may be given face-to-face on campus. If not, we may test via Zoom.

**Test Proctoring:** It will be your responsibility to let me know how you would like to have your tests proctored. There are several options:

- 1) I can proctor the test via zoom during our normal class time.
- 2) You can arrange for someone else to proctor your test (such as another teacher or a librarian). If this is the case, please let me know who you would like to proctor your test and I will contact them after you provide me with their contact information.
- 3) Schedule an appointment with me to drop by during my office hours and take the test outside my office (depending on the Covid-19 situation).

**FINAL EXAM (20% of your overall grade):** Will cover topics from throughout the entire semester and will be held on Wednesday, May 5 from 3:30 pm to 5:20 pm.

**STUDENT PORTAL:** You may access a variety of information (such as Moodle) by logging into the student portal at <http://mynwc.northwestcollege.edu/>. I will post your grades and important documents on Moodle. To help introduce you to Moodle, one of your first assignments will be to take an "online syllabus quiz. You may refer to a copy of the syllabus while taking this quiz. The syllabus quiz will be weighted so that it is worth 0.5% of your final grade. Feel free to let me know if you are having difficulties with this.

**SUMMARY OF GRADES:** It is anticipated that points will be accumulated as follows:

- Participation (2%)
- Lab Assignments (18%)
- MyLab Homework (20%)
- Unit Tests (40%)
- Final Exam (20%)
- **Total 100%**

Grades will be assigned as indicated in the table below (**x is your final percent**). At the end of the semester, I reserve the right to slightly adjust this scale. However, if I do so, it will only

raise your grade and not lower it. For example a 92% will guarantee you an A but I could change it so that a 91% is also an A rather than an A-.

<b>A</b>	$x \geq 92$	<b>B+</b>	$88 \leq x < 90$	<b>C+</b>	$78 \leq x < 80$	<b>D+</b>	$68 \leq x < 70$		
<b>A-</b>	$90 \leq x < 92$	<b>B</b>	$82 \leq x < 88$	<b>C</b>	$70 \leq x < 78$	<b>D</b>	$62 \leq x < 68$	<b>F</b>	$x < 60$
		<b>B-</b>	$80 \leq x < 82$			<b>D-</b>	$60 \leq x < 62$		

**CLASS FORMAT:** It is anticipated that we will be meeting via Zoom throughout the semester. These classes will be live interactive discussions in which I hope all will participate in. I plan to record the meetings and then post them on Moodle. If this works, you will be able to refer back to them later on.

**FREE HELP:** Free peer tutoring is available. For more information visit the tutoring center on the second floor of the Hinckley Library or online at <http://nwc.edu/tutoring/>. This link also has information about online tutoring through NetTutor

**OTHER CLASS POLICIES:**

1. **There is a high correlation between poor attendance and poor grades in my classes.** Skipping class (even virtual classes) may not save you any time. In fact, it may do just the opposite (especially if you have to retake the course).
2. Discussion and questions are encouraged during class. Please don't be afraid to say, "I don't get it," or "Why did you do that?" If you ask a question, others in the class may have the same question and will be glad that you spoke up.
3. For most people, **time and effort** are required before mastery is achieved in mathematics. The saying "If you don't have time to do something right the first time, will you have time to do it right a second time?" is applicable here.
4. Study groups are not required, but are encouraged. Feel free to work together on homework.
5. It is advisable to keep a record of your scores to prevent any errors on your grade on my part.
6. Students are expected to maintain **CIVILITY AND RESPECT** within the classroom as detailed in the NWC Student Handbook Academic Code of Conduct. Abuses of this policy may result in removal from the class.
7. **ACADEMIC INTEGRITY:** Unless specified by the instructor, you will be expected to do your own work on tests. The student handbook outlines how violations of this policy may be handled
8. **Excused absences:** Students who miss class while officially representing the college are directly responsible for seeing that all assignments, tests, and exams are made up promptly. Such authorized absences merely give the individual who missed the class an opportunity to make up the work and in no way excuse the student from work required by the instructor.

*Additional information can be obtained by clicking on the link below which will take you to the **NORTHWEST COLLEGE UNIVERSAL SYLLABUS INFORMATION**. This document contains information about NWC's ADA statement, nondiscrimination notice, diversity statement, withdrawal procedure and schedule, academic dishonesty statement, final exam schedule, student resources and contact information (student success program, tutoring center, children's learning and care center, Hinckley library, project succeed/trio, net-tutor), and emergency procedures guide <https://nwc.edu/academics/syllabi/universal-syllabus-information>*

*I reserve the right to make changes to this syllabus to correct errors or to make minor class adjustments.*

# STAT 2050/2070 Anticipated Schedule for SPRING 2021

Due to unforeseen circumstances, this schedule may (and probably will) change a little bit.

	Day	Date	TOPIC
1	Wed.	1/13	Introduction Start Chapter 1
	Thr.	1/14	<i>Lab 1 Intro.to Excel</i>
2	Fri.	1/15	Finish Chapter 1
3	Mon.	1/18	Start Chapter 2
	Tue.	1/19	<i>Lab 2 (Ch. 2) Qualitative Data</i>
4	Wed.	1/20	Finish Chapter 2
	Thr.	1/21	<i>Lab 2 (Ch. 2) Qualitative Data</i>
5	Fri.	1/22	3.1
6	Mon.	1/25	3.2
	Tue.	1/26	<i>Lab 3 (Ch. 2) Quantitative Data</i>
7	Wed.	1/27	3.3
	Thr.	1/28	<i>Lab 3 (Ch. 2) Quantitative Data</i>
8	Fri.	1/29	3.4
9	Mon.	2/1	3.5
	Tue.	2/2	<i>Lab 4 (Ch 3) Measure of Central Tendency</i>
10	Wed.	2/3	Finish Material/Review
	Thr.	2/4	<i>Lab 4 (Ch 3) Measure of Central Tendency</i>
<b>11</b>	<b>Fri.</b>	<b>2/5</b>	<b>Test 1 (Ch. 1-3)</b>
12	Mon.	2/8	4.1
	Tue.	2/9	<i>No Lab</i>
13	Wed.	2/10	4.2
	Thr.	2/11	<i>No Lab</i>
14	Fri.	2/12	4.3

	Day	Date	TOPIC
15	Mon.	2/15	4.4
	Tue.	2/16	<i>Lab 5 (Ch 4) Least Squares Regression Lines</i>
16	Wed.	2/17	5.1
	Thr.	2/18	<i>Lab 5 (Ch 4) Least Squares Regression Lines</i>
17	Fri.	2/19	<b>5.2</b>
18	Mon.	2/22	<b>5.3</b>
	Tue.	2/23	<i>Lab 6 (Ch 5) Probability</i>
19	Wed.	2/24	5.5
	Thr.	2/25	<i>Lab 6 (Ch 5) Probability</i>
20	Fri.	2/26	Finish Material
21	Mon.	3/1	Review Day
	Tue.	3/2	<i>No Lab</i>
<b>22</b>	<b>Wed.</b>	<b>3/3</b>	<b>Test 2 (Ch. 4-5)</b>
	Thr.	3/4	<i>No Lab</i>
23	Fri.	3/5	6.1
			<b>Spring Break March 6-14</b>
24	Mon.	3/15	6.2
	Tue.	3/16	<i>Lab 7 (Ch 6) Discrete Probability Distributions</i>
25	Wed.	3/17	7.1
	Thr.	3/18	<i>Lab 7 (Ch 6) Discrete Probability Distributions</i>
26	Fri.	3/19	7.2

	Day	Date	TOPIC
27	Mon.	3/22	7.3
	Tue.	3/23	<i>Lab 8 (Ch 7) Normal Distribution</i>
28	Wed.	3/24	Finish Material/Review
	Thr.	3/25	<i>Lab 8 (Ch 7) Normal Distribution</i>
<b>29</b>	<b>Fri.</b>	<b>3/26</b>	<b>Test 3 (Ch. 6-7)</b>
30	Mon.	3/29	8.1
	Tue.	3/30	<i>No Lab</i>
31	Wed.	3/31	8.2
	Thr.	4/1	<i>No Lab</i>
	Fri.	4/2	<b>Easter Break</b>
	Mon.	4/5	<b>Easter Break</b>
	Tue.	4/6	<i>Lab 9 (Ch 8) Sampling Distribution of the Sample Mean</i>
32	Wed.	4/7	9.1
	Thr.	4/8	<i>Lab 9 (Ch 8) Sampling Distribution of the Sample Mean</i>
	Fri.	4/9	9.2
34	Mon.	4/12	9.3
	Tue.	4/13	<i>Lab 10 (Ch 9) Sampling Distribution of the Sample Mean</i>
	Wed.	4/14	Finish Material/Review
	Thr.	4/15	<i>Lab 10 (Ch 9) Sampling Distribution of the Sample Mean</i>
<b>36</b>	<b>Fri.</b>	<b>4/16</b>	<b>Test 4 (Ch. 8-9)</b>
37	Mon.	4/19	10.1

	Day	Date	TOPIC
	Tue.	4/20	<i>Lab 11 (Ch 10) Hypothesis Testing</i>
38	Wed.	4/21	10.2
	Thr.	4/22	<i>Lab 11 (Ch 10) Hypothesis Testing</i>
39	Fri.	4/23	10.3
40	Mon.	4/26	11.1/11.2
	Tue.	4/27	<i>Lab 12 (Ch 11) Hypothesis Testing (Two Means)</i>
41	Wed.	4/28	11.3
	Thr.	4/29	<i>Lab 12 (Ch 11) Hypothesis Testing (Two Means)</i>
42	Fri.	4/30	Finish Material
43	Mon.	5/3	Review
	Tue.	5/4	<i>No Lab</i>
44	Wed.	5/5	<b>FINAL EXAM 3:30 to 5:20 pm Part 1 Chapters 10-11 Part 2 Chapter 1-9</b>