NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE
COURSE SYLLABUS

Course Title: Statistics II with Technology Applications **Course #** MAT*222

Course Description: 3 credits
Designed for those students who desire a more in-depth study of statistics, especially those wishing to transfer to a four-year institution. This data-driven course will cover the following topics: two variable hypothesis testing, statistical inference about means and proportions with two populations, linear regression and correlation, multiple regression, analysis of variance, inferences about population variances, goodness of fit and independence, chi-squared tests, and nonparametric methods. Statistical software, Rguroo, is integrated in this course. Prerequisite: C or better in MAT* 167

Pre-Requisite: C or better in MAT*167 or equivalent

Goals:
The student should develop an understanding of the various statistical tests that are used to analyze and interpret data.
The student should be able to differentiate which statistical test to use given the type of data presented.

Outcomes:
Upon successful completion of this course, each student must have demonstrated understanding and competency in each of the following topics and techniques:

1. Utilize appropriate methodology to test hypotheses about the means, proportions, variance and standard deviation, of one and two populations
2. Understand and use ANOVA to analyze and interpret data
3. Apply the F-test and the chi-square test to analyze population variances, goodness-of-fit and independence
4. Derive linear and multiple regression formulas and correlations; interpret and apply the information
5. Utilize various nonparametric methods to draw conclusions about data
6. Understand the value of technology to analyze data and support statistical conclusions

NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE
Spring 2021

Course: Statistics II
Course Number: MAT*222-01 (CRN 1374)
Meeting Days/Times: Online
Instructor: Prof. Wiggins
Communication:
MS Teams Chat *Preferred Method*
Email cwiggins@nwcc.edu
Office Hours: Online via Teams

Text Book: *****If you took MAT*167 last semester, then you do NOT need to purchase another code for MAT*222***
Discovering Statistics and Data 3rd Edition (access code + etext + Rguroo)
ISBN: 978-1-64277-340-8

Please NOTE: *To access Hawkes Learning please see instructions in the Blackboard Announcements for details*

Statistical Software (REQUIRED): Rguroo is a statistical software that we will be using throughout the semester.

Course Overview: See "Course Overview" document posted under "Syllabus & Course Overview" in the Blackboard menu. The Course Overview is a quick guide to assignments, exams, and projects and their due dates.

Grading Policy
The semester grade will be calculated as follows:

Intro Discussion Post	5%
Hawkes Learning	10%
Mini-Projects	35%
Exams	30%
Final Project	20%

Exams: Exams will be given as outlined on the Course Overview. *** There will be **no make-ups** for missed exams. I will drop your lowest exam grade; averaging only 3 out of the 4 taken (not including the final). Exams will be timed; you will have two hours to complete each exam. You will have two consecutive hours from the time you start the exam, this means you can NOT stop an hour into the exam and try and return later to complete the remaining hour. Please plan ahead for any internet issues that may arise on your end. Internet issues/power outages will NOT excuse you from a missed exam. No exceptions. All exams are DUE on Wednesday by 11:59pm.

PowerPoints & Recorded Lectures: PowerPoints and Recorded Lectures will be assigned each week under Course Content and will become viewable on Sunday nights.

Hawkes Learning: There will be weekly homework's in Hawkes Learning DUE by Sundays at 11:59pm.

Mini-Projects & Final Project: You will be assigned several mini-projects this semester. These mini-projects and the Final Project will be assigned in the appropriate Weekly Content Folder under Course Content in the Blackboard menu.

Rguroo: This is a statistical software that is cloud-based; meaning you do not need to download anything! The access to this software was included in the Hawkes access code purchase.

LATE SUBMISSIONS:

- **For Hawkes Learning HW's and Mini-Projects:**
  - ONE day late = 10 points off
  - TWO days late = 20 points off
  - THREE days late = 30 points off
  - More than three days late = NO CREDIT (grade of a zero)
- **Exams and Final Project:**
  - There are NO extensions nor makeups for missed exams. NO EXCEPTIONS (including internet connectivity problems). So plan ahead!

Grades: Grades will be kept up-to-date in the Blackboard gradebook.

Grading will be in accordance with the college catalog as follows:

	Percentages		
A	93 – 100	C-	70 – 72
A-	90 – 92	D+	67 – 69
B+	87 – 89	D	63 - 66
B	83 – 87	D-	60 – 62
B-	80 – 83	F	below 60
C+	77 – 79		
C	73 – 76		

Attendance: You are expected to check blackboard **at least 3** times a week.

Online Policies—Netiquette

If you were attending an on-ground class, I would make you aware of behavior expectations (cell phones are shut off, common courtesy toward your classmates, etc). Online courses can be a bit more tricky. There is a tendency to "hide" behind the computer and emails, and often, things get said in emails or discussion posts that you might otherwise not have said if you were face to face. So please, ***THINK BEFORE YOU POST***. Ask yourself if what you are about to post or email is something you would say to me or a classmate in person; *if you wouldn't say it in person, then don't post/email it!* Remember, EVERYONE can see what you post on the Discussion Board! If you have something of a more personal nature to discuss with me, feel free to message me via Blackboard Messenger.

Please also note:

Some course content as presented in Blackboard Learn is not fully supported on mobile devices at this time. While mobile devices provide convenient access to check in and read information about your courses, they should not be used to perform work such as taking tests, completing assignments, or submitting assignments.

Week	Dates	Topics Covered…	What's due…	Due Dates
1	1/22 – 1/31	Sections: 5.1 Scatterplots and Correlation 5.2 Fitting a Linear Model	Message me in MS Teams Week One Discussion Post Hawkes Learning HW (Sections 5.1 & 5.2)	Sunday 1/31 by 11:59 PM Sunday 1/31 by 11:59 PM Sunday 1/31 by 11:59 PM
2	2/1 – 2/7	Sections: 5.3 Evaluating the Fit of a Linear Model 5.5 Scatterplots for More than Two Variables	Hawkes Learning HW (Sections 5.3 & 5.5) Mini-Project: Chapter 5	Sunday 2/7 by 11:59 PM Sunday 2/7 by 11:59 PM
3	2/8 – 2/14	Sections: 8.5 Assessing Normality 10.4 Estimating the Population Standard Deviation or Variance	Hawkes Learning HW (Sections 8.5 & 10.4)	Sunday 2/14 by 11:59 PM
4	2/15 – 2/21	Exam 1: Chapters 5, 8.5, 10.4 Sections (Review): 11.1 – 11.4 Hypothesis Testing	Hawkes Learning Exam 1 Hawkes Learning HW (Sections 11.1 – 11.4)	Wednesday 2/17 by 11:59 PM Sunday 2/21 by 11:59 PM
5	2/22 – 2/28	Section: 11.5 Testing a Hypothesis about a Population Standard Deviation or Variance 12.1 Inference about Two Means: Independent Samples	Hawkes Learning HW (Sections 11.5 & 12.1)	Sunday 2/28 by 11:59 PM
6	3/1 – 3/7	Sections: 12.2 Inference about Two Means: Dependent Samples 12.3 Inference about Two Population Proportions	Hawkes Learning HW (Sections 12.2 & 12.3) Mini-Project: Chapter 12	Sunday 3/7 by 11:59 PM Sunday 3/7 by 11:59 PM

7	3/8 – 3/14	Sections: 14.1 The Multiple Regression Model 14.2 The Coefficient of Determination and Adjusted R^2 14.3 Interpreting the Coefficients of the Multiple Regression Model	Hawkes Learning HW (Sections 14.1, 14.2 & 14.3)	Sunday 3/14 by 11:59 PM
	3/15 – 3/21	**SPRING BREAK**		
8	3/22 – 3/28	Sections: 14.4 Inference Concerning the Multiple Regression Model and Its Coefficients 14.5 Inference Concerning the Model's Prediction 14.6 Multiple Regression Models with Qualitative Independent Variables	Hawkes Learning HW (Sections 14.4, 14.5 & 14.6)	Sunday 3/28 by 11:59 PM
9	3/29 – 4/4	Mini-Project: Chapter 14 Exam 2: Chapters 11.5, 12, 14	Mini-Project: Chapter 14 Hawkes Learning Exam 2	Sunday 4/4 by 11:59 PM Sunday 4/4 by 11:59 PM
10	4/5 – 4/11	Sections: 15.1 One-Way ANOVA 15.2 Two-Way ANOVA: The Randomized Block Design	Hawkes Learning HW (Sections 15.1 & 15.2) Mini-Project: Chapter 15 (Part 1 Only)	Sunday 4/11 by 11:59 PM Sunday 4/11 by 11:59 PM
11	4/12 – 4/18	Sections: 16.1 The Chi-Square Distribution 16.2 The Chi-Square Test for Goodness of Fit 16.3 The Chi-Square Test for Association	Hawkes Learning HW (Sections 16.1, 16.2 & 16.3)	Sunday 4/18 by 11:59 PM

12	4/19 – 4/25	Exam 3: Chapters 15, 16 Sections: 17.1 The Sign Test 17.2 The Wilcoxon Signed-Rank Test	Hawkes Learning Exam 3 Hawkes Learning HW (Sections 17.1 & 17.2)	Wednesday 4/21 by 11:59 PM Sunday 4/25 by 11:59 PM
13	4/26 – 5/2	Sections: 17.3 The Wilcoxon Rank-Sum Test 17.4 The Rank Correlation Test 17.5 The Runs Test for Randomness	Hawkes Learning HW (Sections 17.3, 17.4 & 17.5)	Sunday 5/2 by 11:59 PM
14	5/3 – 5/9	Section: 17.6 Kruskal-Wallis Test Exam 4: Chapter 17	Hawkes Learning HW (Section 17.6) Mini-Project: Chapter 17 Hawkes Learning Exam 4	Sunday 5/9 by 11:59 PM Sunday 5/9 by 11:59 PM Sunday 5/9 by 11:59 PM
15	5/10 – 5/16	Final Project	Final Project	Sunday 5/16 by 11:59 PM