

**COC Math 140X In-Person 16-week MW Homework Schedule / Spring 2025
Project-Based Curriculum / Teachout Textbook / Last Updated 3-4-25**

Date	Schedule	Assignments
Feb 10	Syllabus Schedule Section 1A Excel Basics	<ul style="list-style-type: none"> Go over Syllabus and HW schedule Lecture. Finish Stat Support Activity#1 – Excel Basics (copy,paste, highlighting and widening columns) Section 1A Lecture on categorical vs quantitative data and nominal vs ordinal categorical data. Textbook Problems 1A#1,2,3,4. Go over project#1. Choose project questions and population of interest. Homework: Finish Problems 1A. Read Syllabus. Choose Project questions and population.
Feb 12	Section 1B & 1C	<ul style="list-style-type: none"> Section 1B Lecture on methods of collecting data. Textbook Problems 1B#1-15 all. Section 1C Lecture on types of bias in data. Textbook Problems 1C#1-11 all. Homework: Finish 1B and 1C problems. Start collecting data and work on project#1.
Feb 17	COC Holiday	<ul style="list-style-type: none"> Happy Presidents Day
Feb 19	Section 1D	<ul style="list-style-type: none"> Excel Activity#2 typing project data, creating “Other” category and doing a “Custom Sort”. Lecture on Experimental Design. Ruler Experiment Activity and Problems 1D#1-6 Textbook Problems 1D#7-27. Homework: Finish 1D problems. Collect data for project. Work on project#1. February 23rd is the Last Day to Drop with a Refund and without a “W”.
Feb 24	Section 1E (part 1)	<ul style="list-style-type: none"> Work on project#1. Stat Support Activity: Rounding (Lecture and #1-12) Stat Support Activity: %, Proportions, Scientific Notation (%-Proportion Lecture and #1-20) (Scientific Notation Lecture and #21-32) Lecture: Frequencies, Total, Proportions, and Estimating Amounts. Textbook Problems 1E#3-10 Homework: Finish Activity Problems and 1E#3-10. Collect data for project. Work on project#1.
Feb 26	Section 1E (part 2)	<ul style="list-style-type: none"> Percent of Increase: Lecture and Textbook Problems 1E#11,13,14,15 Stat Support Activity Intro to StatKey: Lecture and Problems#1&2 Stat Support Activity Categorical Graphs: Lecture and Problems#1-4 Binomial Probability: Lecture and Textbook Problems 1E#25,26,27,28,29 Homework: Finish Activity Problems and 1E#11,13-15,25-29. Collect data for project. Work on project#1.
Mar 3	Sections 1F (part 1)	<ul style="list-style-type: none"> Stat Support Activity: Normal Quantitative Graphs. Lecture & Problems#1-3 Stat Support Activity: Mean Average. Lecture & Problems#1&2 Stat Support Activity: Standard Deviation. Lecture & Problem#1 all Homework: Finish Project#1! Finish Activity Problems and 1F#9-18

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Mar 5	Section 1F (part 2)	<ul style="list-style-type: none"> • Project#1 Due Today! Turn in printed spreadsheet with the two columns of custom sorted data you collected. Also turn in answers #1-15 from Project#1 directions. • Z-score Lecture & Problems 1F#9-15 all • Normal Data Analysis Lecture & Textbook Problems 1F#2,5,7,8 all • Empirical Rule Lecture & Textbook Problems 1F#19-21 all • Normal Probabilities Lecture & Textbook Problems 1F#23-25 all • Homework: Finish Problems 1F#2,5,7-15,19-21,23-25. Work on project#2.
Mar 10	Section 1G (part 1)	<ul style="list-style-type: none"> • Work on project#2. • Other Quantitative Shapes • Median Lecture & Activity. • Quartiles/IQR Lecture & Activity. • Box-Plot/Outliers Lecture & Activity.
Mar 12	Sections 1G (part 2) & 2A	<ul style="list-style-type: none"> • Work on project#2. • Skewed & Non-normal Data Analysis Lecture. • Textbook Problems 1G#2,3,4 • Go over project#2 • Other Quantitative Statistics Lecture and Activity#1-4. • Section 2A Statistics & Parameters Lecture. • Textbook problems 2A#1-12 all
Mar 17	Sections 2B & 2C	<ul style="list-style-type: none"> • Work on project#2. • Sampling Distribution Lecture. • Sampling Distribution Coin Activity. • Sampling Distribution Coffee Activity. • Central Limit Theorem Lecture. • Textbook problems 2C#1-7,9,10,17,18.
Mar 19	Section 2D	<ul style="list-style-type: none"> • Work on project#2. • Confidence Interval Calculation & Sentence Lecture. • Textbook Problems 2D#1-10. • Finding Statistic and Margin of Error Lecture. • Textbook Problems 2D#11-20. • Understanding "Confidence" Activity (2D#21-32).
Mar 24	Section 2E (part 1)	<ul style="list-style-type: none"> • Work on project#2. • Critical Value Z-scores StatKey Activity. • Population Proportion Confidence Interval Calculations and Conditions Lecture. • Textbook Problems 2E#1,4-7. • Critical Value T-scores StatKey Activity. • Affective Domain#1 Activity: Growth Mindset
Mar 26	Sections 2E (part 2)	<ul style="list-style-type: none"> • Finish project#2! • Population Mean Average Confidence Interval Calculations and Conditions Lecture. • Textbook Problems 2E#2,12-19. • Lecture: One-Population Mean and Proportion Bootstrap Confidence Interval Lecture. • Lecture: Bootstrap vs Sampling Distributions • Textbook Problems 2E#3,20-27.

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Mar 31	Section 2F (part 1)	<ul style="list-style-type: none"> • Project#2 Due Today! • Stat Support Difference Activity. • Lecture: Two-Population Confidence Interval Interpretations. • Textbook Problems 2F#4-12 • Lecture: Calculations for two-population proportion confidence interval. • Stat Support Activity: Calculations for two-population proportion confidence interval. • Stat Support Activity: Two-population degrees of freedom and critical value T-scores.
Apr 2	Section 2F (part 2)	<ul style="list-style-type: none"> • Work on project#3. • Lecture: Calculations for Two-population mean confidence interval from independent groups. • Stat Support Activity: Calculations for Two-population mean confidence interval from independent groups. • Lecture: Calculations for Matched Pair mean confidence intervals. • Stat Support Activity: Calculations for Matched Pair mean confidence intervals. • Lecture: Two-population confidence intervals conditions and bootstraps. • Textbook problems 2F#14,16,17,19 • Go over Project#3
Apr 7 Apr 9	Spring Break	<ul style="list-style-type: none"> • Catch up on missing work, projects, and assignments.
Apr 14	Section 3A & 3B (part 1)	<ul style="list-style-type: none"> • Work on project#3. • Lecture: Inequalities & Population Parameters. • Stat Support Activity: Inequalities & Population Parameters. • Section 3A Null & Alternative Hypothesis Lecture. • Finish textbook problems 3A#1-20 all. • Section 3B Intro to Test Statistic (Tail Rule) Lecture. • Finish textbook problems 3B#1-20 all.
Apr 16	Section 3B (part 2)	<ul style="list-style-type: none"> • Work on project#3. • Stat Support Activity: Significance Levels (<i>Also includes drawing distributions and labeling critical values & test statistics</i>) • Section 3B Lecture: Using StatKey and Significance level to Calculate Critical Values. • Textbook problems 3B#21-29 all. • Section 3B Lecture: One-Population Test Stat Sentences and Calculations. • Textbook problems 3B#30-35 all. • Affective Domain Activity#2: Grit
Apr 21	Section 3C	<ul style="list-style-type: none"> • Work on project#3. • Lecture: 3C Introduction to P-value. • Finish problems 3C#1-20 all. • Lecture: P-value in Hypothesis Test Example 3C#33 • Finish problems 3C#33-36 all. • Lecture: StatKey Theoretical Distribution P-value Calculations. Finish problems 3C#39,41,44. • Stat Support Activity: Drawing P-value, Significance Level, Test Statistic and Critical Value on same distribution (#1-10)

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Apr 23	Sections 3D & 3E	<ul style="list-style-type: none"> • Finish project#3! • Lecture: Section 3D Hypothesis Test Conclusions. • Stat Support Conclusion Activity#1-16. • Conclusion with Scientific Study Example 3D#17. • Finish textbook problems 3D#17-21. • 3E Lecture: Type 1 and Type 2 Errors. • Finish textbook problems 3E#1-15. • Affective Domain Activity: Stress
Apr 28	Section 3F	<ul style="list-style-type: none"> • Project#3 Due Today! • Lecture: Hypothesis Test Steps • Lecture Section 3F One-Population Proportion Hypothesis Test. • Stat Support Activity: One-Population Test Statistics #1-3 • Problems 3F#1,4-7,14,16. • Lecture Section 3F One-Population Mean Hypothesis Test. • Stat Support Activity: One-Population Test Statistics #4-6 • Problems 3F#2,8-11,18,20 • Lecture: Randomized Simulation (Randomization) • Go to the "Pre-Stat" page on www.matt-teachout.org and open the Stat Support Activity: Randomized Simulation. Do problems #1 & #2.
Apr 30	Section 4B	<ul style="list-style-type: none"> • Lecture Section 4B: Intro to ANOVA, Ho, Ha, Conditions • Stat Support Activity: ANOVA and F-test statistic Calculations#1-3 • Finish problems 4B#1-4,21-24 • Lecture and Problems Section 4B: Traditional ANOVA test Australia Salary example. Finish problems 4B#26,28 • Lecture and Problems Section 4B: Randomization ANOVA test Football Concussion example. Finish problems 4B#30,32 • HW: Finish Activity Problems, Finish 4B problems, and start on project#4.
May 5	Section 4C	<ul style="list-style-type: none"> • Lecture Section 4C: Intro to two-pop. proportion Z-test. (Ho, Ha, Conditions, Z-test stat) • Stat Support Activity: Two-pop. Z-test statistic Calculations#1-3 • Problems 4C#1-10 • Lecture Section 4C: Example 2-pop % Hypothesis Test • Problems 4C#26,27,28 • Lecture Section 4C: Two-pop. proportion experiments and randomization. • Problems 4C#32,33,34,35ab • HW: Finish Activity Problems, Finish 4C problems, and work on project#4.
May 7	Section 4A	<ul style="list-style-type: none"> • Lecture 4A: Intro to the Two-Population T-test statistic • Stat Support Activity: 2-population T-test statistic Calculations#1-4 • Problems 4A#1-6 • Lecture 4A: Two-Population Mean Hypothesis Test for Independent Groups and Matched Pair. • Problems 4A#28,29,30,34,35,36 • HW: Finish Stat Support Activity Problems, Finish 4A problems, and work on project#4. • NOTE: Last day to drop is this Saturday November 9th!

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May 12	Section 4D	<ul style="list-style-type: none"> Lecture Section 4D: Intro to Goodness of Fit Test and the Chi-Square Test Statistic (Example #1) Problems 4D#1-6,#21-25 Lecture Section 4D: Goodness of Fit Test (Example #30) Problems 4D#30-32 StatKey Lecture: Find df and Chi-Square test statistic. Use the Chi-Square distribution to look up critical value and P-value. (Examples #11 & #26) Problems 4D#11-16 Problems 4D#26-29. (Find df and chi-square test stat. Look up critical value and P-value. Then finish the hypothesis test.) Homework: Work on project#4. Finish problems 4D. Finish and turn in make-up work.
May 14	Sections 4E	<ul style="list-style-type: none"> Finish Project#4! Lecture 4E: Contingency Table Marginal Proportions Problems 4E#3,4,11,12,19,20,27,28 Lecture 4E: Contingency Table Joint Proportions Problems 4E#5-8,13-16,21-24,29-32 Lecture 4E: Contingency Table Conditional Proportions Problems 4E#1,2,9,10,17,18,25,26 Work on project#4. Finish Problems 4E. Finish and turn in make-up work.
May 19	Section 4F & 4G (part1)	<ul style="list-style-type: none"> Project#4 Due Today! Lecture 4F: Categorical Association Test, Ex 4F#35 4F#23,24,25,26,27,28,30,32 Lecture 4G: Explanatory & Response variables, Scatterplots, Correlation Coefficient (r), coefficient of determination (r^2). Stat Support Correlation Coefficient Activity#1-11 Finish problems 4F, 4G, and Stat Support Activities. Finish and turn in make-up work.
May 21	Section 4G (part 2) & 4H	<ul style="list-style-type: none"> Lecture: Regression lines, slope, y-intercept, definitions Stat Support Regression Line Activity#1-8 Problems 4G#1,2,3,5,6Lecture4G: Predictions, Extrapolation, Residuals, Standard Deviation of the Residual Errors (s_e) Problems 4G#4,7,8,10,11 Finish problems 4G, and Stat Support Activities. Finish and turn in make-up work. Lecture 4H: Correlation Test H_0, H_a, r, T-test stat, Critical Values, P-value Correlation Test Activity#1,2,3,6,7,14 Lecture: Residual Plots, Correlation Test Conditions Problems 4H#21-27 Finish 4G and 4H problems and turn in make-up work.
May 26	COC Holiday	<ul style="list-style-type: none"> Happy Memorial Day
May 28	Final Review Ch. 1&2	<ul style="list-style-type: none"> Section 1A-1D Review Lecture. Ch1 Review Sheet #1,2bdgh,4,5 Section 1E-1G Review Lecture. Ch1 Review Sheet #7abc,8,9,12abc,14-18 Ch2 Review Lecture. Ch2 Review Sheet#1(n,p,\hat{p},μ,\bar{x},r,s), 9(sampling distribution, standard error), 10abefgh, 11,12,15. Homework: Finish Ch1 & Ch2 Review Sheet problems. Study for Final Exam! Finish and turn in make-up work.
June 2	Final Review Ch. 3&4	<ul style="list-style-type: none"> Review Lecture Ch3&4 Ch 3 Review Sheet#3-6,7ab,11,14 Ch4 Review Sheet#1-17 all

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		<ul style="list-style-type: none">• Study for Final Exam! Finish and turn in make-up work.
June 4	Cumulative Final Exam	<ul style="list-style-type: none">• Last day to turn in make-up work!! Math 140 is over! Have a great winter break!