

**COC Math 140X In-Person 16-week MW Homework Schedule / Spring 2025  
Project-Based Curriculum / Teachout Textbook / Last Updated 3-20-25**

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

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<b>Mar 5</b>	Section 1F (part 2)	<ul style="list-style-type: none"> <li>• <b>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.</b></li> <li>• Z-score Lecture &amp; Problems 1F#9-15 all</li> <li>• Normal Data Analysis Lecture &amp; Textbook Problems 1F#2,5,7,8 all</li> <li>• Empirical Rule Lecture &amp; Textbook Problems 1F#19-21 all</li> <li>• Normal Probabilities Lecture &amp; Textbook Problems 1F#23-25 all</li> <li>• Homework: Finish Problems 1F. Work on project#2.</li> </ul>
<b>Mar 10</b>	Section 1G (part 1)	<ul style="list-style-type: none"> <li>• <a href="http://www.matt-teachout.org">www.matt-teachout.org</a>. Pre-Stat Page. Stat Support Activities</li> <li>• Other Quantitative Shapes Lecture &amp; Activity#1-7 (Bear Data)</li> <li>• Median Lecture &amp; Activity#1-4</li> <li>• Quartiles/IQR Lecture &amp; Activity#1-3</li> <li>• Box-Plot/Outliers Lecture &amp; Activity#1-3</li> <li>• Homework: Finish Activity Problems. Work on project#2.</li> </ul>
<b>Mar 12</b>	Sections 1G (part 2) & 2A	<ul style="list-style-type: none"> <li>• Skewed &amp; Non-normal Data Analysis Lecture.</li> <li>• Statistics Page: Problems 1G#2,3,4</li> <li>• Data Sets Page: "Bear Data"</li> <li>• Go over project#2</li> <li>• Pre-Stat Page. Stat Support Activities: Other Quantitative Statistics Lecture and Activity#1-4.</li> <li>• Statistics &amp; Parameters Lecture.</li> <li>• Statistics Page: Problems 2A#2-12 all</li> <li>• Homework: Finish 1G, 2A, Other Stats Activity problems, Work on Project#2</li> </ul>
<b>Mar 17</b>	Sections 2B & 2C	<ul style="list-style-type: none"> <li>• Work on project#2.</li> <li>• Sampling Distribution Lecture.</li> <li>• Coin Sampling Distribution Activity (Part 1) #1-12</li> <li>• Coin Sampling Distribution Activity (Part 2) #13-17</li> <li>• Coffee Sampling Distribution Activity (Part 1) #1-11.</li> <li>• Data Sets Page: "Sampling Distribution Data 1 Coffee"</li> <li>• Coffee Sampling Distribution Activity (Part 2) #12-16.</li> <li>• Data Sets Page: "Coffee Data"</li> <li>• Central Limit Theorem Lecture.</li> <li>• Problems 2C#1-7,9,10,17,18.</li> <li>• Homework: Finish Sampling Distribution Activities &amp; 2C Problems. Work on project#2.</li> </ul>
<b>Mar 19</b>	Section 2D	<ul style="list-style-type: none"> <li>• Confidence Interval Lecture.</li> <li>• Problems 2D#1-10.</li> <li>• Back solving for Sample Statistic and Margin of Error Lecture and Problems 2D#11-20 (parts a &amp; b only).</li> <li>• Understanding "Confidence Levels" Lecture and Problems 2D#21-32.</li> <li>• Homework: Finish Problems 2D. Work on project#2.</li> </ul>
<b>Mar 24</b>	Section 2E (part 1)	<ul style="list-style-type: none"> <li>• Critical Value Z-scores StatKey Activity#1-3</li> <li>• One-population Proportion Confidence Interval Calculations and Conditions Lecture.</li> <li>• Problems 2E#1,4-9.</li> <li>• William Gossett's Student T Distribution Lecture</li> <li>• Critical Value T-scores StatKey Activity#1-4</li> <li>• Affective Domain#1 Activity (Growth Mindset): Ted Talk and problems#1-6</li> <li>• Homework: Finish Activities &amp; 2E Problems. Work on Project#2.</li> </ul>

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<b>Mar 26</b>	Sections 2E (part 2)	<ul style="list-style-type: none"> <li>• <b>Finish project#2!</b></li> <li>• Population Mean Average Confidence Interval Calculations and Conditions Lecture.</li> <li>• Textbook Problems 2E#2,12-19.</li> <li>• Lecture: One-Population Mean and Proportion Bootstrap Confidence Interval Lecture.</li> <li>• Lecture: Bootstrap vs Sampling Distributions</li> <li>• Textbook Problems 2E#3,20-27.</li> </ul>
<b>Mar 31</b>	Section 2F (part 1)	<ul style="list-style-type: none"> <li>• <b>Project#2 Due Today!</b></li> <li>• Stat Support Difference Activity.</li> <li>• Lecture: Two-Population Confidence Interval Interpretations.</li> <li>• Textbook Problems 2F#4-12</li> <li>• Lecture: Calculations for two-population proportion confidence interval.</li> <li>• Stat Support Activity: Calculations for two-population proportion confidence interval.</li> <li>• Stat Support Activity: Two-population degrees of freedom and critical value T-scores.</li> </ul>
<b>Apr 2</b>	Section 2F (part 2)	<ul style="list-style-type: none"> <li>• Work on project#3.</li> <li>• Lecture: Calculations for Two-population mean confidence interval from independent groups.</li> <li>• Stat Support Activity: Calculations for Two-population mean confidence interval from independent groups.</li> <li>• Lecture: Calculations for Matched Pair mean confidence intervals.</li> <li>• Stat Support Activity: Calculations for Matched Pair mean confidence intervals.</li> <li>• Lecture: Two-population confidence intervals conditions and bootstraps.</li> <li>• Textbook problems 2F#14,16,17,19</li> <li>• Go over Project#3</li> </ul>
<b>Apr 7 Apr 9</b>	<b>Spring Break</b>	<ul style="list-style-type: none"> <li>• Catch up on missing work, projects, and assignments.</li> </ul>
<b>Apr 14</b>	Section 3A & 3B (part 1)	<ul style="list-style-type: none"> <li>• Work on project#3.</li> <li>• Lecture: Inequalities &amp; Population Parameters.</li> <li>• Stat Support Activity: Inequalities &amp; Population Parameters.</li> <li>• Section 3A Null &amp; Alternative Hypothesis Lecture.</li> <li>• Finish textbook problems 3A#1-20 all.</li> <li>• Section 3B Intro to Test Statistic (Tail Rule) Lecture.</li> <li>• Finish textbook problems 3B#1-20 all.</li> </ul>
<b>Apr 16</b>	Section 3B (part 2)	<ul style="list-style-type: none"> <li>• Work on project#3.</li> <li>• Stat Support Activity: Significance Levels <i>(Also includes drawing distributions and labeling critical values &amp; test statistics)</i></li> <li>• Section 3B Lecture: Using StatKey and Significance level to Calculate Critical Values.</li> <li>• Textbook problems 3B#21-29 all.</li> <li>• Section 3B Lecture: One-Population Test Stat Sentences and Calculations.</li> <li>• Textbook problems 3B#30-35 all.</li> <li>• Affective Domain Activity#2: Grit</li> </ul>

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<b>Apr 21</b>	Section 3C	<ul style="list-style-type: none"> <li>• Work on project#3.</li> <li>• Lecture: 3C Introduction to P-value.</li> <li>• Finish problems 3C#1-20 all.</li> <li>• Lecture: P-value in Hypothesis Test Example 3C#33</li> <li>• Finish problems 3C#33-36 all.</li> <li>• Lecture: StatKey Theoretical Distribution P-value Calculations. Finish problems 3C#39,41,44.</li> <li>• Stat Support Activity: Drawing P-value, Significance Level, Test Statistic and Critical Value on same distribution (#1-10)</li> </ul>
<b>Apr 23</b>	Sections 3D & 3E	<ul style="list-style-type: none"> <li>• <b>Finish project#3!</b></li> <li>• Lecture: Section 3D Hypothesis Test Conclusions.</li> <li>• Stat Support Conclusion Activity#1-16.</li> <li>• Conclusion with Scientific Study Example 3D#17.</li> <li>• Finish textbook problems 3D#17-21.</li> <li>• 3E Lecture: Type 1 and Type 2 Errors.</li> <li>• Finish textbook problems 3E#1-15.</li> <li>• Affective Domain Activity: Stress</li> </ul>
<b>Apr 28</b>	Section 3F	<ul style="list-style-type: none"> <li>• <b>Project#3 Due Today!</b></li> <li>• Lecture: Hypothesis Test Steps</li> <li>• Lecture Section 3F One-Population Proportion Hypothesis Test.</li> <li>• Stat Support Activity: One-Population Test Statistics #1-3</li> <li>• Problems 3F#1,4-7,14,16.</li> <li>• Lecture Section 3F One-Population Mean Hypothesis Test.</li> <li>• Stat Support Activity: One-Population Test Statistics #4-6</li> <li>• Problems 3F#2,8-11,18,20</li> <li>• Lecture: Randomized Simulation (Randomization)</li> <li>• Go to the "Pre-Stat" page on <a href="http://www.matt-teachout.org">www.matt-teachout.org</a> and open the Stat Support Activity: Randomized Simulation. Do problems #1 &amp; #2.</li> </ul>
<b>Apr 30</b>	Section 4B	<ul style="list-style-type: none"> <li>• Lecture Section 4B: Intro to ANOVA, Ho, Ha, Conditions</li> <li>• Stat Support Activity: ANOVA and F-test statistic Calculations#1-3</li> <li>• Finish problems 4B#1-4,21-24</li> <li>• Lecture and Problems Section 4B: Traditional ANOVA test Australia Salary example. Finish problems 4B#26,28</li> <li>• Lecture and Problems Section 4B: Randomization ANOVA test Football Concussion example. Finish problems 4B#30,32</li> <li>• HW: Finish Activity Problems, Finish 4B problems, and start on project#4.</li> </ul>
<b>May 5</b>	Section 4C	<ul style="list-style-type: none"> <li>• Lecture Section 4C: Intro to two-pop. proportion Z-test. (Ho, Ha, Conditions, Z-test stat)</li> <li>• Stat Support Activity: Two-pop. Z-test statistic Calculations#1-3</li> <li>• Problems 4C#1-10</li> <li>• Lecture Section 4C: Example 2-pop % Hypothesis Test</li> <li>• Problems 4C#26,27,28</li> <li>• Lecture Section 4C: Two-pop. proportion experiments and randomization.</li> <li>• Problems 4C#32,33,34,35ab</li> <li>• HW: Finish Activity Problems, Finish 4C problems, and work on project#4.</li> </ul>

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<b>May 7</b>	Section 4A	<ul style="list-style-type: none"> <li>• Lecture 4A: Intro to the Two-Population T-test statistic</li> <li>• Stat Support Activity: 2-population T-test statistic Calculations#1-4</li> <li>• Problems 4A#1-6</li> <li>• Lecture 4A: Two-Population Mean Hypothesis Test for Independent Groups and Matched Pair.</li> <li>• Problems 4A#28,29,30,34,35,36</li> <li>• HW: Finish Stat Support Activity Problems, Finish 4A problems, and work on project#4.</li> <li>• <b>NOTE: Last day to drop is this Saturday November 9th!</b></li> </ul>
<b>May 12</b>	Section 4D	<ul style="list-style-type: none"> <li>• Lecture Section 4D: Intro to Goodness of Fit Test and the Chi-Square Test Statistic (Example #1)</li> <li>• Problems 4D#1-6,#21-25</li> <li>• Lecture Section 4D: Goodness of Fit Test (Example #30)</li> <li>• Problems 4D#30-32</li> <li>• StatKey Lecture: Find df and Chi-Square test statistic. Use the Chi-Square distribution to look up critical value and P-value. (Examples #11 &amp; #26)</li> <li>• Problems 4D#11-16</li> <li>• Problems 4D#26-29. (Find df and chi-square test stat. Look up critical value and P-value. Then finish the hypothesis test.)</li> <li>• Homework: Work on project#4. Finish problems 4D. Finish and turn in make-up work.</li> </ul>
<b>May 14</b>	Sections 4E	<ul style="list-style-type: none"> <li>• <b>Finish Project#4!</b></li> <li>• Lecture 4E: Contingency Table Marginal Proportions</li> <li>• Problems 4E#3,4,11,12,19,20,27,28</li> <li>• Lecture 4E: Contingency Table Joint Proportions</li> <li>• Problems 4E#5-8,13-16,21-24,29-32</li> <li>• Lecture 4E: Contingency Table Conditional Proportions</li> <li>• Problems 4E#1,2,9,10,17,18,25,26</li> <li>• Work on project#4. Finish Problems 4E. Finish and turn in make-up work.</li> </ul>
<b>May 19</b>	Section 4F & 4G (part1)	<ul style="list-style-type: none"> <li>• <b>Project#4 Due Today!</b></li> <li>• Lecture 4F: Categorical Association Test, Ex 4F#35</li> <li>• 4F#23,24,25,26,27,28,30,32</li> <li>• Lecture 4G: Explanatory &amp; Response variables, Scatterplots, Correlation Coefficient (r), coefficient of determination (<math>r^2</math>).</li> <li>• Stat Support Correlation Coefficient Activity#1-11</li> <li>• Finish problems 4F, 4G, and Stat Support Activities. Finish and turn in make-up work.</li> </ul>
<b>May 21</b>	Section 4G (part 2) & 4H	<ul style="list-style-type: none"> <li>• Lecture: Regression lines, slope, y-intercept, definitions</li> <li>• Stat Support Regression Line Activity#1-8</li> <li>• Problems 4G#1,2,3,5,6Lecture4G: Predictions, Extrapolation, Residuals, Standard Deviation of the Residual Errors (<math>s_e</math>)</li> <li>• Problems 4G#4,7,8,10,11</li> <li>• Finish problems 4G, and Stat Support Activities. Finish and turn in make-up work.</li> <li>• Lecture 4H: Correlation Test Ho, Ha, r, T-test stat, Critical Values, P-value</li> <li>• Correlation Test Activity#1,2,3,6,7,14</li> <li>• Lecture: Residual Plots, Correlation Test Conditions</li> <li>• Problems 4H#21-27</li> <li>• Finish 4G and 4H problems and turn in make-up work.</li> </ul>
<b>May 26</b>	<b>COC Holiday</b>	<ul style="list-style-type: none"> <li>• <b>Happy Memorial Day</b></li> </ul>

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<b>May 28</b>	Final Review Ch. 1&2	<ul style="list-style-type: none"> <li>• Section 1A-1D Review Lecture.</li> <li>• Ch1 Review Sheet #1,2bdgh,4,5</li> <li>• Section 1E-1G Review Lecture.</li> <li>• Ch1 Review Sheet #7abc,8,9,12abc,14-18</li> <li>• Ch2 Review Lecture. Ch2 Review Sheet#1(<math>n,p,\hat{p},\mu,\bar{x},r,s</math>), 9(sampling distribution, standard error), 10abefgh, 11,12,15.</li> <li>• Homework: Finish Ch1 &amp; Ch2 Review Sheet problems. <b>Study for Final Exam! Finish and turn in make-up work.</b></li> </ul>
<b>June 2</b>	Final Review Ch. 3&4	<ul style="list-style-type: none"> <li>• Review Lecture Ch3&amp;4</li> <li>• Ch 3 Review Sheet#3-6,7ab,11,14</li> <li>• Ch4 Review Sheet#1-17 all</li> <li>• <b>Study for Final Exam! Finish and turn in make-up work.</b></li> </ul>
<b>June 4</b>	<b>Cumulative Final Exam</b>	<ul style="list-style-type: none"> <li>• <b>Last day to turn in make-up work!! Math 140 is over! Have a great winter break!</b></li> </ul>