

**COC Math 140X In-Person 16-week MW Homework Schedule / Fall 2024**  
**Project-Based Curriculum / Teachout Textbook / Last Updated September 30th**

Date	Schedule	Assignments
Aug 19	Syllabus Schedule Section 1A Excel Basics	<ul style="list-style-type: none"> <li>• 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 two types of data.</li> <li>• Textbook Problems 1A#1,2,3.</li> <li>• Go over project#1 Topics. Let Teachout know choice of project topics.</li> </ul>
Aug 21	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>• Start collecting data and work on project#1.</li> </ul>
Aug 26	Section 1D	<ul style="list-style-type: none"> <li>• Collect data for project. Work on project#1.</li> <li>• Lecture on Experimental Design.</li> <li>• Ruler Experiment Activity.</li> <li>• Textbook Problems 1D#1-6,17-27.</li> <li>• Excel Activity#2 typing project data, creating “Other” category and doing a “Custom Sort”.</li> </ul>
Aug 28	Section 1E (part 1)	<ul style="list-style-type: none"> <li>• Work on project#1.</li> <li>• Stat Support Activity: Rounding</li> <li>• Stat Support Activity: %, Proportions, Scientific Notation</li> <li>• Lecture: Estimating Amounts</li> <li>• Textbook Problems 1E#3-10</li> <li>• Calculating Proportions and Percent of Increase Lecture.</li> <li>• Textbook Problems 1E#11,13,14,15</li> <li>• <b>9/1/24 is Last Day to Drop with Refund and without a “W”.</b></li> </ul>
Sept 2	<b>Holiday</b>	<b>No Class Today. Happy Labor Day!</b>
Sept 4	Section 1E (part 2)	<ul style="list-style-type: none"> <li>• Work on project#1.</li> <li>• Putting Categorical Data into StatKey Lecture.</li> <li>• Stat Support Activity: Intro to StatKey</li> <li>• Intro to categorical graphs lecture.</li> <li>• Stat Support Activity: Categorical Graphs</li> <li>• Binomial Probability Lecture.</li> <li>• Textbook Problems 1E#25,26,27,28,29</li> </ul>
Sept 9	Sections 1F (part 1)	<ul style="list-style-type: none"> <li>• <b>Finish Project#1!</b></li> <li>• Stat Support Activity: Normally Distributed.</li> <li>• Stat Support Activity: Quantitative Shapes</li> <li>• Stat Support Activity: Mean Average.</li> <li>• Stat Support Activity: Standard Deviation.</li> <li>• Z-score Lecture.</li> </ul>
Sept 11	Section 1F (part 2)	<ul style="list-style-type: none"> <li>• <b>Project#1 Due Today!</b></li> <li>• Start project#2.</li> <li>• Z-score Textbook Problems 1F#9-18 all (<b>Collected</b>)</li> <li>• Normal Data Analysis Lecture.</li> <li>• Textbook Problems 1F#2,5,6,7,8 all (<b>Collected</b>)</li> <li>• Empirical Rule Lecture.</li> <li>• Textbook Problems 1F#19-22 all (<b>Collected</b>)</li> <li>• Normal Probabilities Lecture.</li> <li>• Textbook Problems 1F#23-25 all (<b>Collected</b>)</li> </ul>

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<b>Sept 16</b>	Section 1G (part 1)	<ul style="list-style-type: none"> <li>• Work on project#2.</li> <li>• Median Lecture &amp; Activity.</li> <li>• Quartiles/IQR Lecture &amp; Activity.</li> <li>• Box-Plot/Outliers Lecture &amp; Activity.</li> </ul>
<b>Sept 18</b>	Sections 1G (part 2) & 2A	<ul style="list-style-type: none"> <li>• Work on project#2.</li> <li>• Skewed &amp; Non-normal Data Analysis Lecture.</li> <li>• Textbook Problems 1G#2,3,4</li> <li>• Go over project#2</li> <li>• Other Quantitative Statistics Lecture and Activity#1-4.</li> <li>• Section 2A Statistics &amp; Parameters Lecture.</li> <li>• Textbook problems 2A#1-12 all</li> </ul>
<b>Sept 23</b>	Sections 2B & 2C	<ul style="list-style-type: none"> <li>• Work on project#2.</li> <li>• Sampling Distribution Lecture.</li> <li>• Sampling Distribution Coin Activity.</li> <li>• Sampling Distribution Coffee Activity.</li> <li>• Central Limit Theorem Lecture.</li> <li>• Textbook problems 2C#1-7,9,10,17,18.</li> </ul>
<b>Sept 25</b>	Section 2D	<ul style="list-style-type: none"> <li>• Work on project#2.</li> <li>• Confidence Interval Calculation &amp; Sentence Lecture.</li> <li>• Textbook Problems 2D#1-10.</li> <li>• Finding Statistic and Margin of Error Lecture.</li> <li>• Textbook Problems 2D#11-20.</li> <li>• Understanding "Confidence" Activity (2D#21-32).</li> </ul>
<b>Sept 30</b>	Section 2E (part 1)	<ul style="list-style-type: none"> <li>• Work on project#2.</li> <li>• Critical Value Z-scores StatKey Activity.</li> <li>• Population Proportion Confidence Interval Calculations and Conditions Lecture.</li> <li>• Textbook Problems 2E#1,4-7.</li> <li>• Critical Value T-scores StatKey Activity.</li> <li>• Affective Domain#1 Activity: Growth Mindset</li> </ul>
<b>Oct 2</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>• One-Population Mean and Proportion Bootstrap Confidence Interval Lecture.</li> <li>• Textbook Problems 2E#3,20-27.</li> </ul>
<b>Oct 7</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>• Two-Population Confidence Interval Interpretations.</li> <li>• Textbook Problems 2F#4-12</li> <li>• Lecture &amp; 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>

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<b>Oct 9</b>	Section 2F (part 2)	<ul style="list-style-type: none"> <li>• Work on project#3.</li> <li>• Lecture &amp; Stat Support Activity: Calculations for Two-population mean confidence interval from independent groups.</li> <li>• Lecture: Matched Pair Confidence Interval Calculations.</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#13-20</li> <li>• Go over Project#3</li> </ul>
<b>Oct 14</b>	Section 3A & 3B (part 1)	<ul style="list-style-type: none"> <li>• Work on project#3.</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>Oct 16</b>	Section 3B (part 2) & 3C (part 1)	<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>• Section 3C Stat Support Activity: Scientific Notation <i>(Also includes Scientific Notation to % conversions.)</i></li> </ul>
<b>Oct 21</b>	Section 3C (part 2)	<ul style="list-style-type: none"> <li>• <b>Finish project#3!</b></li> <li>• Lecture: 3C Introduction to P-value.</li> <li>• Finish problems 3C#1-32 all.</li> <li>• Lecture: P-value in Hypothesis Test Example 3C#33</li> <li>• Finish problems 3C#33-37 all.</li> <li>• Lecture: StatKey Theoretical Distribution P-value Calculations. Finish problems 3C#38-45.</li> <li>• Stat Support Activity: Drawing P-value, Significance Level, Test Statistic and Critical Value on same distribution (#1-10)</li> </ul>
<b>Oct 23</b>	Sections 3D & 3E	<ul style="list-style-type: none"> <li>• <b>Project#3 Due Today!</b></li> <li>• Affective Domain Activity: Mistakes</li> <li>• Lecture: Section 3D Hypothesis Test Conclusions. Stat Support Conclusion Activity#1-16.</li> <li>• Conclusion with Scientific Study Example 3D#17.</li> <li>• Finish textbook problems 3D#18-23.</li> <li>• Stat Support StatKey Activity: Randomized Simulation.</li> <li>• 3E Lecture: Type 1 and Type 2 Errors.</li> <li>• Finish textbook problems 3E#1-15.</li> </ul>

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<b>Oct 28</b>	Section 3F	<ul style="list-style-type: none"> <li>• Lecture Section 3F One-Population Proportion Hypothesis Test.</li> <li>• Finish problems 3F#1,4-7.</li> <li>• Lecture Section 3F One-Population Mean Hypothesis Test.</li> <li>• Finish problems 3F#2,8-11.</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: One-Population Test Statistics. Read notes and do problems 1-6.</li> <li>• Lecture Section 3F One-Population Mean and Proportion Hypothesis Tests with StatKey.</li> <li>• Do textbook problems 3F#12,13,18,23</li> </ul>
<b>Oct 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 example. Finish problems 4B#25,26</li> <li>• Lecture and Problems Section 4B: Randomization ANOVA test example. Finish problems 4B#29,32</li> <li>• HW: Finish Activity Problems, Finish 4B problems, and start on project#4.</li> </ul>
<b>Nov 4</b>	Section 4C	<ul style="list-style-type: none"> <li>• Go over project#4</li> <li>• Lecture Section 4C: Intro to two-pop. proportion Z-test. (Ho,Ha,test stat)</li> <li>• Stat Support Activity: Z-test statistic Calculations#1-3</li> <li>• Problems 4C#1-10</li> <li>• Lecture Section 4C: Conditions and Example Test</li> <li>• Problems 4C#22,26-30</li> <li>• Lecture Section 4C: Two-pop. proportion experiments and randomization.</li> <li>• Problems 4C#21,23,31-34,35ab</li> <li>• HW: Finish Activity Problems, Finish 4C problems, and work on project#4.</li> </ul>
<b>Nov 6</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#1-10</li> <li>• Lecture 4A: Two-Population Mean Hypothesis Test for Independent Groups. (Example 4A#31,37)</li> <li>• Problems 4A#22,23,25,29,30,34,36</li> <li>• Lecture 4A: Matched Pair Population Mean Difference Hypothesis Test. (Example 4A#28,35)</li> <li>• Problems 4A#21,24,28,32,35</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>Nov 11</b>	<b>COC Holiday</b>	<b>No Class Today. Happy Veterans Day!</b>

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<b>Nov 13</b>	Section 4D	<ul style="list-style-type: none"> <li>Lecture 4D: Intro to Chi-Square Test Statistics</li> <li>Problems 4D#1-25</li> <li>Lecture 4D: Traditional Goodness of Fit Hypothesis Tests</li> <li>Problems 4D#30-32</li> <li>Lecture 4D: Randomization Goodness of Fit Hypothesis Tests</li> <li>Problems 4D#26-29</li> <li>Homework: Work on project#4. Finish problems 4D. Finish and turn in make-up work.</li> </ul>
<b>Nov 18</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>Nov 20</b>	Section 4F	<ul style="list-style-type: none"> <li><b>Project#4 Due Today!</b></li> <li>Chi-Square Critical Values and P-values Activity 4F#1-20</li> <li>Lecture 4F: Categorical Association Test 4F#23-31</li> <li>Lecture 4F: Categorical Association Test with Randomization 4F#32-35</li> <li>Work on project#4. Finish problems 4F. Finish and turn in make-up work.</li> </ul>
<b>Nov 25</b>	Section 4G	<ul style="list-style-type: none"> <li>Lecture: Explanatory &amp; Response variables, Scatterplots, Correlation Coefficient (<math>r</math>), coefficient of determination (<math>r^2</math>).</li> <li>Stat Support Correlation Activity#1-11</li> <li>Lecture: Regression lines, slope, y-intercept</li> <li>Stat Support Regression Line Activity#1-8</li> <li>Lecture: Predictions, Extrapolation, Residuals, Standard Deviation of the Residual Errors (<math>s_e</math>)</li> <li>Problems 4G#1-8,11,13,15</li> <li>Finish and turn in make-up work.</li> <li>Homework: Finish Correlation Activity problems#1-11, Regression Line Activity Problems#1-8 and 4G#1-8,11,13,15.</li> </ul>
<b>Nov 27</b>	Section 4H	<ul style="list-style-type: none"> <li>Lecture: Correlation Test Ho &amp; Ha. Correlation Test Activity#1-5</li> <li>Lecture: <math>r</math> with critical values. Correlation Test Activity#6-13</li> <li>Lecture: StatKey T-test statistics, Critical Values &amp; P-values. Correlation Test Activity#14-21</li> <li>Lecture: Residuals, Residual Plots, Correlation Test Conditions</li> <li>Problems 4H#21-28</li> <li>Homework: Finish 4H problems and Activity problems <b>Finish and turn in make-up work.</b></li> </ul>
<b>Dec 2</b>	Final Review	<ul style="list-style-type: none"> <li><b>Study for Final Exam!</b></li> <li><b>Finish and turn in make-up work.</b></li> </ul>
<b>Dec 4</b>	<b>Cumulative Final Exam</b>	<ul style="list-style-type: none"> <li><b>Last day to turn in make-up work!!</b></li> <li><b>Math 140 is over! Have a great winter break!</b></li> </ul>