

WEEK 1

MAY 2 – MAY 6

LECTURES & TUTORIAL:

- Lecture: Monday May 2, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday May 4, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday May 6, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Introduction to the course
- Introduction to experimentation
- Experimentation fundamentals

LECTURE NOTES:

- Week_1_Lecture_Notes.pdf

COURSE NOTE READINGS:

- Preface
- Chapter 1

ASSESSMENT COMMENTS:

- Assignment 1 will be posted on Friday May 6.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 2

MAY 9 – MAY 13

LECTURES & TUTORIAL:

- Lecture: Monday May 9, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday May 11, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday May 13, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Experiments with Two Conditions
 - Comparing Two Means
 - Comparing Two Proportions
 - Sample Size Determination

LECTURE NOTES:

- Week_2_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Appendices A.1 and A.2 as necessary
- Chapter 2 (skip Subsection 2.2.5 and Section 2.3 and the discussion of Permutation/Randomization tests)

ASSESSMENT COMMENTS:

- You should be working on Assignment 1 this week.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 3

MAY 16 – MAY 20

LECTURES & TUTORIAL:

- Lecture: Monday May 16, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday May 18, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday May 20, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Permutation & Randomization test
- Experiments with More Than Two Conditions
 - Comparing Two Means
 - Comparing Two Proportions

LECTURE NOTES:

- Week_3_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Section 2.1.5 (the part about permutation and randomization tests)
- Section 2.2.5
- Chapter 3 (but not Section 3.3)
- Appendix A.3, as necessary

ASSESSMENT COMMENTS:

- Assignment 1 is due by 11:59pm (ET) on Friday May 20.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 4
MAY 23 – MAY 27

LECTURES & TUTORIAL:

- No Monday lecture due to the Victoria Day Holiday
- Lecture: Wednesday May 25, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday May 27, 1:30-2:20pm ET (RCH 101)

TOPICS:

- The multiple comparison problem
 - FWER and Bonferroni, Sidak, Holm's procedures
 - FDR and Benjamini Hochberg
 - Sample size considerations

LECTURE NOTES:

- Week_4_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Section 3.3
- Appendix A.4 as necessary (in preparation for week 5)

ASSESSMENT COMMENTS:

- Assignment 2 will be posted on Friday May 27.

OFFICE HOUR COMMENTS:

- There are no Monday office hours this week due to the Victoria Day holiday.
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join](#).

WEEK 5
MAY 30 – JUNE 3

LECTURES & TUTORIAL:

- Lecture: Monday May 30, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday June 1, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday June 3, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Blocking
 - Recap of nuisance factors
 - Randomized Complete Block Design
 - RCBD with means
 - RCBD with proportions

LECTURE NOTES:

- Week_5_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Chapter 4 intro piece and Section 4.1

ASSESSMENT COMMENTS:

- You should be working on Assignment 2 this week.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join](#).

WEEK 6
JUNE 6 – JUNE 10

LECTURES & TUTORIAL:

- Lecture: Monday June 6, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday June 8, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday June 10, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Latin Square Designs
- Experiments with multiple design factors
 - Introduction to factorial experiments

LECTURE NOTES:

- Week_6_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Section 4.3
- Section 5.1

ASSESSMENT COMMENTS:

- Assignment 2 is due by 11:59pm (ET) on Friday June 10.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join](#).

WEEK 7
JUNE 13 – JUNE 17

LECTURES & TUTORIAL:

- Lecture: Monday June 13, 1:00-2:20pm ET (RCH 101)
- No Wednesday lecture because that's when the midterm is happening
- No tutorial on Friday due to Nathaniel being away

TOPICS:

- Designing factorial experiments
- Analyzing factorial experiments
 - Main effects, interactions, and linear predictors
 - Continuous response
 - Binary response

LECTURE NOTES:

- Week_7_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Sections 5.2 and 5.3

ASSESSMENT COMMENTS:

- The Midterm is happening in-class on Wednesday June 15.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are cancelled this week due to Nathaniel being away.

WEEK 8

JUNE 20 – JUNE 24

LECTURES & TUTORIAL:

- Lecture: Monday June 20, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday June 22, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday June 24, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Introduction to 2-level designs
- Design of 2^K factorial experiments
- Analysis of 2^K factorial experiments
 - Intuition-based analysis
 - Regression-based analysis

LECTURE NOTES:

- Week_8_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Section 5.4
- Chapter 6 (but not Section 6.3)

ASSESSMENT COMMENTS:

- Assignment 3 will be posted on Monday June 20.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 9

JUNE 27 – JULY 1

LECTURES & TUTORIAL:

- Lecture: Monday June 27, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday June 29, 1:00-2:20pm ET (RCH 101)
- No tutorial on Friday due to the Canada Day holiday

TOPICS:

- Design of 2^{K-p} Fractional Factorial Experiments
 - Introduction
 - Aliasing and the defining relation
 - Resolution and minimum aberration

LECTURE NOTES:

- Week_9_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Chapter 7 (but not Section 7.2)

ASSESSMENT COMMENTS:

- You should be working on Assignment 3 this week.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are cancelled due to the Canada Day holiday.

WEEK 10
JULY 4 – JULY 8

LECTURES & TUTORIAL:

- Lecture: Monday July 4, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday July 6, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday July 8, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Analysis of 2^{K-p} Fractional Factorial Experiments

LECTURE NOTES:

- Week_10_Lecture_Notes.pdf

COURSE NOTE READINGS:

- Section 7.2

ASSESSMENT COMMENTS:

- Assignment 3 is due by 11:59pm (ET) on Monday July 4.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 11

JULY 11 – JULY 15

LECTURES & TUTORIAL:

- Lecture: Monday July 11, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday July 13, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday July 15, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Introduction to Response Surface Methodology
- Method of Steepest Ascent/Descent
- Testing for curvature

LECTURE NOTES:

- Week_11_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Sections 8.1 and 8.2

ASSESSMENT COMMENTS:

- Assignment 4 will be posted on Monday July 11.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 12

JULY 16 – JULY 22

LECTURES & TUTORIAL:

- Lecture: Monday July 16, 1:00-2:20pm ET (RCH 101)
- Lecture: Wednesday July 20, 1:00-2:20pm ET (RCH 101)
- Tutorial: Friday July 22, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Response Surface Optimization
- Central Composite Designs
- RSM with Categorical Factors

LECTURE NOTES:

- Week_12_ Lecture_Notes.pdf

COURSE NOTE READINGS:

- Sections 8.1, 8.3, and 8.4

ASSESSMENT COMMENTS:

- You should be working on Assignment 4 this week.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Friday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)

WEEK 13
JULY 25 – JULY 26

LECTURES & TUTORIAL:

- Lecture: Monday July 25, 1:00-2:20pm ET (RCH 101)
- Tutorial: Tuesday July 26, 1:30-2:20pm ET (RCH 101)

TOPICS:

- Monday's lecture is an overflow class. If we've finished all course material, I will devote its time to a Final Exam review session.

LECTURE NOTES:

- NA

COURSE NOTE READINGS:

- NA

ASSESSMENT COMMENTS:

- Assignment 4 is due by 11:59pm ET on Monday July 25.
- You should start thinking about studying for the Final Exam which is happening on TBD.

OFFICE HOUR COMMENTS:

- Monday office hours are from 11:30am – 12:30pm in my office (M3 3143)
- Tuesday office hours are from 11:30am – 12:30pm on Gather Town. [Click here to join.](#)