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Overview:

What makes the science of positive psychology "scientific"? This course introduces methods employed in psychology research. Wherever possible, we will draw on research articles from the Positive Psychology literature. Our primary goal is to equip you to be critical, informed, statistically sophisticated consumers of the research literature. At the very least, you need to be able to critically read and evaluate empirical literature, and this course will give you the skills to do this effectively. A second objective is to get you started on the conceptualization and planning of your Capstone project. Although the vast majority of you will choose not to complete an empirical scientific study, the knowledge and skills you learn in this course will be useful regardless of the direction you ultimately take.

Course Website: https://courseweb.library.upenn.edu (Blackboard)

The blackboard website is your gateway for the course materials and we will use it extensively. You will find the readings, lecture slides, distance learning (DL) assignments, recorded DL lectures, and other course-related documents. There is a discussion board available where you can post questions and comments.

Required Materials:

There are no books for this course. We will post short readings as PDF documents or weblinks on the Blackboard website. The articles should be read as part of each assignment (see below). You will do some group activities in Excel.

You will use APA 6th Edition format for your citations and references in all written work for MAPP, including homework assignments for classes and your capstone. We will review APA style during immersion week and during the first DL. To help you, we have created a handout that summarizes the key APA elements along with several templates for creating APA style documents (available on Blackboard). If you would like to learn more about APA or will continue on to a PhD program, consider buying one of the following books (note: this is **optional**):

- American Psychological Association (2010). *Publication manual of the American Psychological Association, 6th ed*. Washington, DC: APA.
- American Psychological Association (2009). *Concise Rules of APA Style, 6th edition*. Washington, DC: APA.
- American Psychological Association (2012). *APA Style Guide to Electronic References, 6th Edition*. Available from http://www.apa.org/pubs/books/4210512.aspx

Written Assignments and Grading Policy

Each of the five distance learning assignments is worth 20 points (total = 100 points), and consists of a writing component (which you must do by yourself) and a statistical component (which you can do alone or with others). For each of these assignments, content and completeness will be given greatest consideration. However, for the writing assignments, correct spelling and grammar, organization, and clarity of writing style are also important. A half-grade deduction will be taken for egregious violation of APA format for references, not putting your name on the assignment, or not using the required homework assignment templates. The statistical component will be graded for completeness.

Assignments will be available in Word document format on Blackboard under the DL folder, and should be submitted to the same location. Note that the posted assignments will have a <u>specific format</u> – ***please make sure and read all instructions carefully*** *and* follow all formatting instructions (e.g., respond to the questions in the spaces provided in templates we created rather than write full essays). These assignments are designed to help you apply what you learn and develop your overall understanding, not to overwhelm you. Your completion of assignments before midnight of each due date is greatly appreciated. If there are extenuating circumstances preventing you from completing an assignment on time, please email Peggy several days in advance to let her know.

Although you are not graded on participation, your involvement throughout the course (on-site meetings, conference calls, work with your cohort members, completing statistic and writing assignments, etc.) will be considered in resolving borderline grades.

We will use a standard scale for assigning letter grades:

A+ = 97 and higher	B+ = 87 - 89.9
A = 93 - 96.9	B = 83 - 86.9
A- = 90 - 92.9	B - = 80 - 82.9

Office hours:

<u>Angela:</u> I have found that MAPP students, who live all over the world and are busily juggling multiple responsibilities, are unable to show up at office hours the way undergraduates can. So, at each on-site, I will make sure to be present for at least one lunch break, and during that time you can either approach me with specific questions or request that I teach a special interest session (e.g., on qualitative research, on getting IRB approval, etc.).

<u>Peggy:</u> For each DL session, there will be an optional session where you can ask questions and discuss concerns. For in-person meetings, I will be available during at least one lunch at most of the on-site meetings. Also, feel free to email me with any questions or concerns or to set up a meeting or call for additional assistance.

Stats track options

One of the challenges of teaching this course is that there is considerable variance in how much students already know and what they want to know. A few of you will enter PhD programs in psychology at some point. Others are interested in the application and translation of research for the purpose of solving real-world problems, and could care less about statistics or methods. It is hard to satisfy everyone. Thus, there will be two options available for the statistics component: basic and advanced. The basic option will cover statistical methods and techniques that you should be familiar with for the rest of the program. Lectures will help you become a critical consumer of the positive psychology literature, building skills to appropriately read, write about, and critically evaluate articles and books that you will encounter through the remainder of the year. The advanced option will include a more extensive overview of statistical methods, with greater hands-on applications. Note that if you are grappling with statistics or research design issues beyond the scope of the planned curriculum, please email or talk to Peggy for support. Also, if you find that the material is not challenging enough, talk to Peggy and she can give you more advanced material to supplement your learning.

On-Site Meetings

On-Site 1: Immersion Week *(September 4 - 8)*

The first purpose of the initial on-site meeting is to give an overview of the course. We will discuss what the terms "reliability" and "validity" mean in psychological research and begin a conversation, to be continued, on measurement. A second purpose of the first meeting is to introduce you to library resources at the University of Pennsylvania. We will learn how to search the psychological literature efficiently using online search engines (e.g., PsycInfo) and review a few tricks for creating bibliographies in APA style. Finally, we will read an empirical article (posted on Blackboard) together so that you have a good model for how to do so for the rest of your MAPP assignments. This particular article will also be part of your DL1 assignment.

On-Site 2: Measurement *(October 4-6)*

We will discuss how questionnaires in psychology are constructed. I will walk you through the development of a questionnaire I created to measure grit, perseverance and passion for long-term goals. We will also touch upon the limitations of any single method or source of assessment and the virtues of multi-method, multi-source assessment. As a classroom activity, we will create a questionnaire, collect data (from ourselves!) using this questionnaire, create a histogram and see what a normal distribution really is, and also calculate by hand variance and standard deviation.

On-Site 3: Research Designs *(October 25-27)*

Every scientific study has a research design of one kind or another. We will explore the strengths and limitations of the most widely used research designs in psychology. Putting ourselves in the shoes of the investigators, we will also consider practical, financial, and ethical limitations.

We will also talk about the two kinds of error that are possible in research studies (Type I vs. Type II error) and what the terms *effect size* and *statistical power* mean.

Finally, as a follow-up to our last classroom exercise with variance, we will calculate a *covariance* and then a *correlation*, again using real data collected from ourselves.

On-Site 4: Reviewing and teaching statistics *(November 15-17)*

In your distance learning sessions, you will be introduced to the most essential topics in statistical analysis, including correlation, regression, effect size, and significance levels. Using work from the Duckworth lab as a case study, we will further apply the same statistical concepts.

There is an adage in medical schools of "watch one, do one, teach one." We will follow the same philosophy and ask you to teach your peers one important statistical lesson from an empirical study in Positive Psychology. More details will follow, but the rules are as follows: (1) Groups are self-organized and can range in size from 1 to 3 MAPP students; (2) Each group will get a total of 3 minutes to present; (3) The presentations should include one major finding from the article (and each group has to choose a different article) and an explanation of the effect size and statistical test in easy-to-understand terms; (4) use of the chalk board and/or PowerPoint slides and/or handouts is optional.

On-Site 5: Putting it all together *(December 6-8)*

We will review the topics covered thus far, taking some additional time on any topics that are still a conceptual struggle. Further, we will try to put together what we have learned and apply it to the sort of inquiry you will pursue for your Capstone and otherwise. Finally, because all of you will be doing literature reviews, we'll give you pointers on that. And, because many of you will supplement this with interviews and other qualitative research, we will review this topic.

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Writing Assignment Overview

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Below is an overview of the writing assignments. The stats schedule and assignments for both the basic and advanced tracks will be posted on the website during immersion week (I will adjust the schedule and assignments to fit the class).

Diagnostic assessment to be completed in advance of Immersion Week
> ***Due Friday, August 30***
> People come to the MAPP program with varying backgrounds in research methods and statistics. To give us a feel for where people are at and to tailor the course appropriately, we'd like you to complete a diagnostic assessment on your working knowledge of statistics. You will complete a similar assessment at the end of the semester, so you will be able to see what you learn through the course of our time together. The assessment can be completed at https://sasupenn.qualtrics.com/SE/?SID=SV_8qtZtkYfo4IvuQZ

As part of this (ungraded) assessment, you will be asked to write a paragraph on what you hope to get out of this course, in as specific or vague terms as you see appropriate. What would you like to be able to do after completing the course that you do not know how to do now (e.g., critically evaluate a scientific article you see mentioned in the *New York Times*)? Let us know, too, what you already know about research methods, including statistics. (If you have no idea what "research methods" are and don't want to find out, it would be good for us to know that as well.)

Distance 1: Becoming a Critical Consumer of Scientific Research

Due Sunday, September 29

The purpose of this assignment is to analyze a positive psychology study, first in terms of its "popular" presentation in the media and second in terms of the actual research report. This assignment foreshadows the sorts of skills that are the focus throughout the course.

In class we will have read an article entitled "Eavesdropping on Happiness." For your DL1 assignment, read this popular press article summarizing these findings: http://www.psmag.com/blogs/news-blog/conversational-well-being-quality-over-quantity-19642/

You have two options *(Choose <u>one</u>, not both)*. In either case, you will find a document template on Blackboard; please use this standard heading. Also, on page 2, as practice for APA citations, provide the full reference for both the popular media article and the scientific study (including author, year, title, journal) in APA format.

<u>Option 1:</u> In a succinct essay (fewer than 250 words, single-spaced and fitting one single-sided page), tell me if you think the journalist captured the most important findings of the study. Also, what was the basic research design (correlational vs. experimental), sample characteristics, variables measured, the reliability of these measures? Advanced students can, if they like, see if they can find the online supplemental materials and interpret the scatter plots.

<u>Option 2:</u> Find a journal article of interest and write your own popular press version of it. Submit both the original article and your summary (fewer than 250 words).

Distance 2: Evaluating Questionnaire Measures

Due Sunday, October 20

First, as part of an assignment for MAPP 600, you previously took the PANAS questionnaire, which measures positive and negative emotion, and the Satisfaction with Life Scale (SWLS), which measures your evaluation your overall satisfaction with your life on www.authentichappiness.org. In the second part of this distance learning, you will go back and take these measures again, and score it using the directions provided. Have your scores on these two questionnaires changed over time? Do you notice any meaningful pattern in the particular items that stayed the same or changed?

Second, print out a copy and ask a close friend or companion to fill both questionnaires out about you – that is, have them judge your general level of positive and negative emotion and your life satisfaction.

Third, read this validation article for the PANAS scale using the technique for reading scientific articles we reviewed in class.

> Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Finally, answer the questions in the assignment, which will include a short reflection on whether your scores have changed, responses by your friend, and an overall reflection on the exercise. Be prepared to discuss your thoughts and experiences when we reconvene at the onsite.

Distance 3: Do-it-yourself – Replicating a Research Project

Due Sunday, November 10

As part of the scientific process, studies publish their method and results, building our empirical knowledge base. However, over the past year, there has been major discussion and concern within the psychological community surrounding the robustness and replicability of research claims. Several highly-cited experiments (mainly in social psychology) seemingly cannot be replicated by other independent researchers, leading to some rather nasty arguments between the original investigators and the replicators. There's growing concern that big claims are simply chance, or something that was engineered by the investigators themselves. To guard against this, several scientists are actively replicating prior research findings. To date, studies in positive psychology have not fallen under such scrutiny, but if we are to believe the claims that we read about in a study, it's important to establish the validity of that claim, beyond a single study.

With your cohort, you will do a small-scale replication of a recent finding in positive psychology (a list of possible studies will be posted on Blackboard; more details will be provided during the first DL session). Carefully read the methods. Design and carry out the study. Then you will report back on your experience. What did you do? Were you able to follow what the original investigators did? Did you find a similar result?

Distance 4: Effect Size versus Statistical Significance

Due Sunday, December 1

First, read the following article:

> Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159.

Second, several recent Positive Psychology articles will be posted on Blackboard. Choose one to focus on.

Using the assignment form on Blackboard, you will do the following: Read the abstract and first paragraph(s) of the discussion – what is the most important finding in this article? Identify the sample size for this finding, the research design and statistics model used, and the effect size (if you can figure it out). Now, what are the practical implications of this finding? Be prepared to share your responses when we reconvene.

Distance 5: Developing a Capstone Research Proposal

Due Sunday, December 15

Choose one of the following options. This exercise does not commit you to what you propose, but is intended to advance your thinking and get you to consider in as specific detail as possible what you might do for your Capstone. You are strongly encouraged to get feedback from your cohort members or from fellow MAPP students pursuing methodologically similar projects, but is not required. Your final assignment will consist of the one page form posted on Blackboard, and a one page proposal, as noted below.

> **Option 1:** We expect that as a group, you will pursue a wide variety of Capstone formats and topics. Consider the project you hope to complete. Can you find an exemplar which you can imitate? That is, if you intend to write a book prospectus, can you find a successful book prospectus that a friend or colleague has written? The same goes for a business plan or any other form you hope your Capstone will take. Imitation (not plagiarism) is the highest form of flattery and, incidentally, a very efficient way to learn. Next, write a one page proposal for your Capstone, including the following sections: Objective, Executive Summary, Background (why this project is important), Format, Project Timeline (with action steps and dates). Append the exemplar materials as a PDF if possible.

> **Option 2:** If you have an interest in qualitative research and are seriously considering using this technique in your Capstone project, read King, L. A. (2004). Measures and Meanings: The Use of Qualitative Data in Social and Personality Psychology. In *The Sage handbook of methods in social psychology*. Thousand Oaks, CA, US:

Sage Publications (posted on Blackboard). Next, write a one page proposal for your Capstone, with the following sections: Hypothesis, Background (why this study is needed and reasonable), Sample, Method, Strategy for Analysis (what approach will you use to analyze your data? what results might you get and how would you interpret them?)

Option 3: If you are considering doing a research project that involves quantitative data collection and statistical analysis, recognize that this will be quite an endeavor requiring substantial facility with statistics. Look over the other chapters in Field's book. You can also look on the Internet or talk to us. Next, write a one page proposal for your Capstone, with the following sections: Hypothesis, Background (why this study is needed and reasonable), Sample, Method, Strategy for Analysis (what approach will you use to analyze your data? what results might you get and how would you interpret them?)

Distance Learning: The Exciting World of Statistics ☺

Peggy will lead the distance learning (DL) component. My primary goal is to equip you to be critical, informed, statistically sophisticated consumers of the research literature. However, in light of the fact that MAPP students come from diverse backgrounds and have a diverse set of goals and interests, I will offer two statistical options: **basic,** and **advanced**. In both cases, I will provide an overview of the statistical methods that are typically encountered throughout the psychological literature and give you practice applying the most common statistical techniques.

Sessions will be conducted weekly online through the AdobeConnect classroom (connection instructions will be given during immersion week), and for each DL period will involve the following:

1) In the two weeks following the onsite, we will meet online for a 60 minute session (see calendar). I will lecture on the relevant material, as noted below.

2) Through the course of the DL period, you should complete the assignments (both the statistic and writing component) and submit by the due date. For the statistics part, you can submit the assignment by yourself or as a group (up to 4 people in a group. You are welcome to work with your cohort, but as some will be in the basic group and others will be in the advanced group, you can choose who you'd like to work with). I encourage you to work together, and email me any questions that you have. I will post answers to the stats problems immediately following the due date so that you can check your work and make sure that you understand the answers.

3) In the final week of the DL period, there will be an optional online session. I will be online in the classroom, open for questions and discussion.

I realize that people live in various parts of the world, and finding a time to meet is difficult. The online sessions will be offered on specific days and times (Tuesdays, with sessions from 12-1 pm for the basic track and 5-6 pm for the advanced track – see calendar). Although it will be helpful to "attend" live (this is especially helpful, so you can ask questions along the way, and it makes it more interesting for everyone), all sessions will be recorded and available on Blackboard. If you cannot attend, please watch the recordings.

The basic track is designed for those with no real interest in statistics. I will introduce you conceptually to different terms and statistical techniques that you will encounter in your readings and work throughout the year, with hands on assignments that will help you understand what the numbers mean. The advanced track is designed for those who are quantitatively inclined (i.e., you really like numbers), those who have an interest in pursuing a graduate degree at a research program, those who are interested in completing an empirical capstone project, and those who envision using quantitative methods in the future. Each track will begin at ground zero and build, giving an overview of various topics. Unfortunately, we do not have time to go into detail on the various topics, but talk to me if you'd like to go deeper, and I will try to provide you with additional resources. If you are unsure of which track to follow, start with the advanced track and then you can shift if needed. Talk to me if you have questions or concerns.

The first part of the course will focus on descriptive statistics. Descriptive statistics describe data with words, graphs, and numbers. An important (and too often forgotten) part of statistics is getting to know your data. First, we will consider how data is described and variables are related together, including numerically describing data, visually representing data, and correlational research. In the basic track, we will spend quite a bit of time with this, as it is the main foundation for other statistics, and is a very important part of positive psychology. In the advanced track, we will move quickly through these topics.

The second part of the course will focus on inferential statistics. Most of the statistics that we use fall under the realm of inferential statistics. Here, we use what we know about a sample to *infer* about the larger population, using the concept of probability. In the basic track, I will touch on important techniques, with the focus on a conceptual understanding and giving you enough literacy so that you can understand articles that you read (i.e., so that the strange symbols in the results section aren't scary). For the advanced track, we will spend most of our time with various inferential statistical techniques. I will include conceptual background and help you directly apply various techniques. If you have a special interest in delving deeper into more advanced topics, talk to me and I will provide you with additional resources.

Stat assignments are noted below and will be posted on Blackboard. I have found that statistical concepts often are best understood through hand calculations; thus the majority of the assignments will simply require a handheld calculator. However, technology also is very valuable. I will show you how you can use Excel for many of the basics statistical calculations we will be doing (this will become a helpful shortcut that you can use in the future, but the conceptual understanding will be key for setting things up correctly). For the advanced group, I will introduce you to additional statistical programs, providing you with tools that you can take with you into your future research.

Note that your grade for the course is based on both the writing assignment and the statistics assignment. For the stats portion, you will be graded on completing the assignments, not on getting the right answers. I find with statistics courses that my learning is directly related to how much effort I give to the assignments; the assignments are designed to help you learn, but I leave it up to you how much effort you give to them.

Throughout the semester, I will post brief readings on Blackboard to complement the lectures and assignments. The readings will provide an overview of the statistical concept or method, and will serve as good references for the future.

I'm looking forward to an exciting semester together. I'm here to help. Talk to me if you are confused (or if you need a greater challenge, let me know that as well). There are no dumb questions. If you are scared of statistics, don't worry. I am confident that all of you can and will succeed in this course.

Distance Learning Session Schedule

Below is an overview of the sessions, topics we will cover, and assignments. Some readings are listed below; additional readings will be added through the semester (all will be posted on Blackboard).

Basic Track (12:00-1:00 pm)

DL1 Session 1 (Tues, Sept 10): APA overview and course set-up
> There will only be one session, as this is material everyone needs to know.

DL1 Session 2 (Tues, Sept 17): Descriptive Statistics
> Reading: Andy Field chapter 1

DL1 Assignment due Sunday, September 29th: Descriptive statistics

DL1 optional session (Tues, Oct 1): Q & A
> This will be an open session for you to bring your questions and concerns.

DL2 Session 1 (Tues, Oct 8): Graphical presentations of data
Reading: To be posted

DL2 Session 2 (Tues, Oct 15): Sampling and probability
Reading: Andy Field chapter 2 (pp. 34-53)

DL2 Assignment due Sunday, October 20th: Graphing data; probability worksheet

DL2 optional session (Tues, Oct 22): Q & A
This will be an open session for you to bring your questions and concerns.

DL3 Session 1 (Tues, Oct 29): Relations between variables: covariance and correlation
Reading: To be posted

DL3 Session 2 (Tues, Nov 5): Correlations continued; concept of regression
Reading: To be posted

DL3 Assignment due Sunday, October 20th: Correlation & regression

DL3 optional session (Tues, Nov 12): Q & A
This will be an open session for you to bring your questions and concerns.

DL4 Session 1 (Tues, Nov 19): Comparing two groups: t tests
Reading: To be posted

DL4 Session 2 (Tues, Nov 26): Comparing three or more groups: ANOVA
Reading: To be posted

DL4 Assignment due Sunday, December 1st: Comparing groups

DL4 optional session (Tues, Dec 3): Q & A
This will be an open session for you to bring your questions and concerns.

DL5 Session (Tues, Dec 10): Course wrap-up
Reading: To be posted

DL5 Assignment due Sunday, December 15th *(only written assignment, no stats assignment)*

Advanced Track (5:00 – 6:00 pm)

DL1 Session 1 (Tues, Sept 10): APA overview and course set-up
There will only be one session, as this is material everyone needs to know.

DL1 Session 2 (Tues, Sept 17): Descriptive Statistics, graphing data
Reading: Andy Field chapter 1, handouts posted online

DL1 Assignment due Sunday, September 29th: Descriptive statistics, graphing data

DL1 optional session (Tues, Oct 1): Q & A
This will be an open session for you to bring your questions and concerns.

DL2 Session 1 (Tues, Oct 8): Probability, Z scores
Reading: To be posted

DL2 Session 2 (Tues, Oct 15): Correlation and regression
Reading: Andy Field chapter 2 (pp. 34-53)

DL2 Assignment due Sunday, October 20th: Probability, correlation, regression

DL2 optional session (Tues, Oct 22): Q & A
>   This will be an open session for you to bring your questions and concerns.

DL3 Session 1 (Tues, Oct 29): t-tests part 1
>   Reading: Andy Field chapter 9

DL3 Session 2 (Tues, Nov 5): t-tests part 2
>   Reading: To be posted

DL3 Assignment due Sunday, October 20th: t-tests

DL3 optional session (Tues, Nov 12): Q & A
>   This will be an open session for you to bring your questions and concerns.

DL4 Session 1 (Tues, Nov 19): ANOVA part 1
>   Reading: To be posted

DL4 Session 2 (Tues, Nov 26): ANOVA part 2
>   Reading: To be posted

DL4 Assignment due Sunday, December 1st: ANOVA

DL4 optional session (Tues, Dec 3): Q & A
>   This will be an open session for you to bring your questions and concerns.

DL5 Session (Tues, Dec 10): Non-parametric statistics; Course wrap-up
>   Reading: To be posted

DL5 Assignment due Sunday, December 15th *(only written assignment, no stats assignment)*

Summary of Key Dates

Due Date	Event	Task
Friday, Aug 30	Pre-class assessment	Complete assessment online.
Wed-Sun, Sept 4-8	On-site #1	Wed: 12:30-2:00 pm; Thurs: 8:00 am -12:30 pm
Tues, Sept 10	DL1 session 1	Online Lecture: 12-1 pm (one session for all)
Tues, Sept 17	DL1 session 2	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Sun, Sept 29	Assignment 1 due	Succinct analysis or summary of article; stats assignment
Tues, Oct 1	DL1 optional session	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Fri-Sun, Oct 4-6	On-site #2	Sat: 8:00-10:30 am; Sun: 8:00 am -12:00 pm
Tues, Oct 8	DL2 session 1	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Tues, Oct 15	DL2 session 2	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Sun, Oct 20	Assignment 2 due	Evaluating questionnaire measures; stats assignment
Tues, Oct 22	DL2 optional session	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Fri-Sun, Oct 25-27	On-site #3/ Summit	Fri: 2:00 - 6:00 pm
Tues, Oct 29	DL3 session 1	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Tues, Nov 5	DL3 session 2	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Sun, Nov 10	Assignment 3 due	Replication Project (with cohort); stats assignment
Tues, Nov 12	DL3 optional session	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Fri-Sun, Nov 15-17	On-site #4	Fri: 10:00 am – 4:00 pm; Sat: 8:00-10:00 am
Tues, Nov 19	DL4 session 1	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Tues, Nov 26	DL4 session 2	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Sun, Dec 1	Assignment 4 due	Effect size vs. statistical significance; stats assignment
Tues, Dec 3	DL4 optional session	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Fri-Sun, Dec 6-8	Onsite #5	Fri: 10:00 am – 3:00 pm
Tues, Dec 10	DL5 final session	Online Lecture: Basic: 12-1pm; Advanced: 5-6 pm
Sun, Dec 15	Assignment 5 due	Capstone research proposal (no stats assignment)

Note: Assignments should be submitted online by 11:59 pm on the day listed. For the DL sessions, online lectures will occur weekly on Tuesdays, scheduled from **12 – 1 pm Eastern for the basic track option** and **5 – 6 pm Eastern for the advanced track option**. All lectures will be recorded and available on Blackboard following the session.