

# Tentative Topics Schedule

Fall 2022 - University of Portland

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- See Books & Online Resources List for the reading materials -

The readings are not mandatory but it is encouraged.

Lecture slides and Mini-Assignments will be available the day before class.

Modules will be available two weeks before the deadline.

The “Reading” column in the table below contains a number on which it refers to a numbered item in the Books & Online Resources List. For example “[PSDR]” refers to the first item in the list, which is our main text book titled “Probability, Statistics, and Data: A fresh approach using R”.

## Topics and Reading Materials

Day	Topic	Pre-Reading [PSDR]	Post-Reading [PSDR]	Mini- Assignment	Deadline
8/30	Orientation & Calculus Review	Syllabus	-	[pdf] [Rmd] [tex]	8/31
9/1	Basics of Probability Theory Part 1	Ch. 2 (Preamble), Ch. 2.1	-	[pdf] [Rmd] [tex]	9/1
9/6	Basics of Probability Theory Part 2	Ch. 2.1 Cont. & Ch. 2.4	Ch. 2.2	[pdf] [Rmd] [tex]	9/6
9/8	Independence & Conditional Probability	Ch. 2.3 (Preamble) & Ch. 2.3.1	-	[pdf] [Rmd] [tex]	9/8
	Introduction to R & R Markdown	Ch. 1	-	-	-
-	<b>Module 1 Due</b>	-	-	[pdf] [zip]	<b>9/13</b>
9/13	Bayes Theorem	Ch. 2.3.3	-	[pdf] [Rmd] [tex]	9/13
9/15	Random Variables & Probability Functions	-	-	[pdf] [Rmd] [tex]	9/15
9/20	Discrete Random Variables (DRVs)	Ch. 3 (Preamble)	-	[pdf] [Rmd] [tex]	9/20
9/22	Probability Mass Functions	Ch. 3.1	-	[pdf] [Rmd] [tex]	9/22
9/27	Expected Values for DRVs	Ch. 3.2	-	[pdf] [Rmd] [tex]	9/27
9/29	-	-	-	-	9/29
10/4	Moment Generating Functions for DRVs	Ch. 3.4	-	[pdf] [Rmd] [tex]	10/4

Day	Topic	Pre-Reading [PSDR]	Post-Reading [PSDR]	Mini-Assignment	Deadline
10/6	Variance for DRVs	Ch. 3.5	-	[pdf] [Rmd] [tex]	10/6
10/11	Covariance and Correlation for DRVs	Ch. 3.5 Cont.	Ch. 3.6	[pdf] [Rmd] [tex]	10/11
10/13	-	-	-	-	10/13
-	<i>Fall Vacation</i>	-	-	-	-
10/25	Continuous Random Variables (CRVs)}	-	-	[pdf] [Rmd] [tex]	10/25
10/27	Joint & Marginal Distributions for CRVs	-	-	[pdf] [Rmd] [tex]	10/27
11/1	Covariance & Correlation for CRVs	-	-	[pdf] [Rmd] [tex]	11/1
11/3	Conditioning & Independence for CRVs	-	-	[pdf] [Rmd] [tex]	11/3
11/8	Law of Total Probability for CRVs	-	-	[pdf] [Rmd] [tex]	11/8
11/10	-	-	-	-	11/10
11/15	Moment Generating Functions for CRVs	-	-	[pdf] [Rmd] [tex]	11/15
11/17	Exponential & Normal Random Variables Theory & Applications	-	-	[pdf] [Rmd] [tex]	11/17
11/22	Simulations of Random Variables Using R	-	-	[zip]	11/22
-	<i>Thanksgiving Vacation</i>	-	-	-	-
11/29	The Law of Large Numbers	-	-	[zip]	11/29
12/1	The Central Limit Theorem	-	-	[zip]	12/1
12/6	Maximum Likelihood Estimation	-	-	[pdf] [Rmd] [tex]	12/6
12/8	-	-	-	-	12/8
-	Module 2 Due	-	-	[zip]	12/15

## Books & Online Resources Lists

### Books & Online Resources Lists

#### Main Textbook

[PSDR] Speegle, D., & Clair, B. (2021). Probability, Statistics, and Data: A Fresh Approach Using R. Chapman and Hall/CRC.

#### Supplementary Textbook

[IPSR] Pishro-Nik, H. (2016). Introduction to probability, statistics, and random processes.