

Biostatistics
BIOM 559
July 6, 2020– February 26, 2021
Master of Science in Clinical Research

Week of	Monday	Wednesday	Friday
Jul 6-10	Lecture (2:45 – 3.45 pm) Introduction to Biostatistics (Pages 1 – 18)	Lecture (2:45 – 3.45 pm) Descriptive Statistics (I) (Pages 19 – 37)	Lecture (2:45 – 3.45 pm) Descriptive Statistics (II) (Pages 19 – 37)
Jul 13-17	Lab (2:45 – 3.45 pm) Stata – Data management	Lecture (2:45 – 3.45 pm) Basic Probability Concepts (I) (Pages 65 – 91)	Lecture (2:45 – 3.45 pm) Basic Probability Concepts (II) (Pages 65 – 91)
Jul 20-24	Lab In-class quiz/exercise	Lecture Basic Probability Concepts (III) (Pages 78 – 91)	Lab
Jul 27-31	Lecture Concepts of probability distribution, probability of discrete variable (Pages 92 – 99)	Lecture Binomial distribution (Pages 99 – 108)	Lab
Aug 3-7	Lecture Binomial distribution (cont.), Poisson distribution (Pages 99 – 113)	Lecture Continuous Probability Distributions, Normal Distribution (Pages 113 – 122)	Lab
Aug 10-14	Lecture Normal distribution (Pages 113 – 122)	Lecture Normal distribution (Pages 122-127)	Lab
Aug 17-21	Lecture Sampling Distribution, distribution of sample mean, Central Limit Theorem (Pages 134 - 144)	Lecture Distribution of the difference between two sample means, Distribution of sample proportion (Pages 145 – 153)	Lab
Aug 24-28	Lecture Distribution of the difference between two sample proportions (Pages 154 – 157)	Lab	Exam

Biostatistics
BIOM 559
July 6, 2020– February 26, 2021
Master of Science in Clinical Research

Week of	Monday	Wednesday	Friday
Aug 31 - Sep 4	Lecture Estimation – Intro, C.I. for mean	Lecture Estimation – t-distribution	Lab
Sep 7-11	No Class – Labor Day	Lecture Estimation – C.I. for diff of means	Lecture Estimation – C.I. for proportion & diff of proportions
Sep 14-18	Lecture Estimation – sample sizes for estimation (mean, proportion)	Lab	Lecture Estimation – C.I. for Variance, Chi-square distribution
Sep 21-25	Lecture Estimation – C.I. for variance ratio, F-distribution	Lab	Lecture Hypothesis Testing (HT) – Intro
Sep 28-Oct 2	Lecture HT – Single mean	Lecture HT – Diff between 2 means	Lab
Oct 5-9	Lecture HT – Paired comparison	Lecture HT – proportion (single, diff of 2 props)	Lab
Oct 12-16	Lecture HT – Variance (single, ratio of 2)	Lecture HT – Type II error and power	Lab
Oct 19-23	Lecture HT – Sample size calculation	Lab	Exam
Oct 26-30	Lecture ANOVA –Intro, one-way	Lecture ANOVA – one-way	Lab
Nov 2-6	Lecture ANOVA – multiple comparison	Lecture ANOVA –Rand. Complete Block	Lab
Nov 9-13	Lecture ANOVA – Repeated measures	Lecture ANOVA –Two factor repeated measure	Lab
Nov 16-20	Lecture ANOVA – Factorial experiment	Lecture ANOVA – Factorial experiment	Lab
Nov 23-27	Lecture Simple Linear Regression (SLR) – intro, Model	Lecture SLR – Least square, Sample regression equation	No Class – Labor Day
Nov 30- Dec 4	Lecture SLR – Evaluation of regression eq.	Lecture SLR – Evaluation of regression eq.	Lab
Dec 7-11	Lecture SLR – Evaluation of regression eq.	Lecture SLR – Prediction, Correlation	Lab
Dec 14-18	Lecture SLR – Correlation	Lab	<u>Exam</u>

Biostatistics
BIOM 559
July 6, 2020– February 26, 2021
Master of Science in Clinical Research

Week of	Monday	Wednesday	Friday
Jan 4-8	Lecture Multiple Linear Regression (MLR) – intro, model, least square	Lecture MLR – Evaluation regression equation ()	Lab
Jan 11-15	Lecture MLR –Using the multiple regression equation	Lecture MLR – Multiple correlation model	Lab
Jan 18-22	Lecture Additional regression techniques (ART) – intro, qualitative independent variables	Lecture ART – Variable selection	Lab
Jan 25-29	Lecture ART – Logistic regression (I)	Lecture ART – Logistic regression (II)	Lab
Feb 1-5	Lecture Analysis of frequencies (AOF) – Chi-square dist. Test of goodness-of-fit	Lecture AOF – test of independence	Lab
Feb 8-12	Lecture AOF –test of homogeneity, Fisher exact test	Lecture AOF – Relative risk, odds ratio and Mantel-Haenszel statistic (I)	Lab
Feb 15-19	Lecture AOF – Relative risk, odds ratio and Mantel-Haenszel statistic (II)	Lecture Survival Analysis (I)	Lab
Feb 22-26	Lecture Survival Analysis (II)	Lab	<u>Exam</u>