MA221: Statistics I (Section A)

Baker University — Spring 2024

Each section is from the text *Statistics: Unlocking the Power of Data* (Third Edition) by Lock[5].

Exam 1: Categorical Variables and Random Sampling

date	day	section	topic(s)
1/29	M	§1.1: The Structure of Data	○ categorical variables ○ quantitative variables ○ explanatory variables ○ response variables
1/31	W	§1.2: Sampling from a Population	○ population vs. sample ○ sampling bias ○ simple random samples ○ methods of sampling
2/2	F	§1.3: Experiments and Observat'l Studies	○ association vs. causation ○ confounding variables ○ experiment vs. observation

date	day	section	topic(s)
2/5	M	§2.1: Categorical Variables	○ summary statistics ○ visualizing data
2/7	W	§2.1: Categorical Variables	Workshop 1
2/9	F	Exam 1 Review	

date	day	section	topic(s)
2/12	M	**Exam 1**	○ §1.1: The Structure of Data ○ §1.2: Sampling from a Population ○ §1.3: Experiments and Observational Studies ○ §2.1: Categorical Variables

Exam 2: Quantitative Variables and Linear Regression

date	day	section	topic(s)
2/14	W	§2.2: One Quantitative Variable (Shape and Center)	○ skewness ○ symmetry ○ mean ○ median ○ outliers
2/16	F	§2.2: One Quantitative Variable (Shape and Center)	Workshop 2

date	day	section	topic(s)
2/19	M	§2.3: One Quantitative Variable (Measures of Spread)	∘ st'd deviation ∘ range ∘ quartiles
2/21	W	§2.3: One Quantitative Variable (Measures of Spread)	Workshop 3
2/23	F	§2.4: Boxplots and Quant'tive / Cat'l Relationships	Workshop 4

date	day	section	topic(s)
2/26	M	§2.5: Scatterplot and Correlation	Workshop 5
2/28	W	§2.6: Linear Regression	∘ least squares regression ∘ predicated values ∘ residuals ∘ slope and intercepts
3/1	F	§2.6: Linear Regression	Workshop 6

date	day	section	topic(s)
3/4	M	Exam 2 Review	
3/6	W	**Exam 2**	∘ §2.2: One Quantitative Variable (Shape and Center) ∘ §2.3: One Quantitative Variable (Measures of Spread) ∘ §2.4: Boxplots and Quant'tive / Cat'l Relationships ∘ §2.5: Scatterplot and Correlation ∘ §2.6: Linear Regression

Exam 3: Confidence Intervals and Sampling Distributions

date	day	section	topic(s)
3/8	F	§3.1: Sampling Distributions	∘ statistics vs. parameters ∘ random sampling ∘ sample size ∘ standard error

date	day	section	topic(s)
3/11	M	§3.2: Confidence Intervals	∘ interval estimate ∘ margin of error ∘ misinterpretations
3/13	W	§3.2: Confidence Intervals	Workshop 7
3/15	F	§3.3: Bootstrap Confidence Intervals	∘ bootstrap sample ∘ bootstrap distribution ∘ bootstrap confidence intervals ∘ standard error

date	day	section	topic(s)
3/25	M	§3.4: Bootstrap Confidence Intervals (Percentiles)	∘ sample size ∘ interval width
3/27	W	§3.4: Bootstrap Confidence Intervals (Percentiles)	Workshop 8

date	day	section	topic(s)
4/1	M	§5.2: Confidence Intervals (Normal Dist'n)	∘ standardized test statistic ∘ standardization ∘ computing p-values
4/3	W	§5.2: Confidence Intervals (Normal Dist'n)	Workshop 9
4/5	F	Exam 3 Review	

date	day	section	topic(s)
4/8	M	**Exam 3**	∘ §3.1: Sampling Distributions ∘ §3.2: Confidence Intervals ∘ §3.3: Bootstrap Confidence Intervals ∘ §3.4: Bootstrap Confidence Intervals Using Percentiles ∘ §5.2: Confidence Intervals Using the Normal Distribution

Exam 4: Hypothesis Testing and Statistical Inference

date	day	section	topic(s)
4/10	W	§4.1: Hypothesis Testing	∘ statistical test ∘ statistic vs. parameter ∘ null hypothesis ∘ alternative hypothesis ∘ interpretation
4/12	F	§4.1: Hypothesis Testing	Workshop 10

date	day	section	topic(s)
4/15	M	§4.2: Measuring Evidence with p-Values	∘ randomization distribution ∘ randomization tests ∘ calculation of p-values
4/17	W	*Scholars Symposium*	
4/19	F	§4.2: Measuring Evidence with p-Values	Workshop 11

date	day	section	topic(s)
4/22	M	§4.3: Determining Statistical Significance	∘ interpreting p-values ∘ significance level ∘ formal decisions
4/24	W	§4.3: Determining Statistical Significance	Workshop 12
4/26	F	§4.4: A Closer Look at Testing	Workshop 13

date	day	section	topic(s)
4/29	M	§4.5: Making Connections	Workshop 14
5/1	W	§5.1: Hypothesis Tests (Normal Dist'n)	Workshop 15
5/3	F	Exam 4 Review	

date	day	section	topic(s)
5/6	M	**Exam 4**	

date	day	section	topic(s)
5/8	W	Final Exam Review	
5/10	F	Final Exam Review	Final Exam Practice Test

Our **final exam** will be held Friday, May 17 from 8:30 AM to 11:30 AM in Collins Library 104.