Guide to material covered in the Lecture Worksheets:

- ***Descriptive statistics:***
  - **Calculation of descriptive statistics** — **Descriptive Statistics** — ***Biostatistics* 020**
  - **Graphical display of data** — **Summary and Graphic Display of Data** — ***Biostatistics* 030**
- ***Probability & Probability Distributions:***
  - **Guide to probability** — **Standard & Conditional Probability** — ***Biostatistics* 050**
  - **Probability distributions** — **Probability Distributions** — ***Biostatistics* 070**
  - **Normal distribution** — **The Normal Distribution** — ***Biostatistics* 080**
  - **Assessing Normality** — **Assessing Data Normality** — ***Biostatistics* 090**
- ***Sampling and Statistical Inference:***
  - **General strategies in sampling** — **General Strategies for Sampling a Population** — ***Biostatistics* 040**
  - **Repeated sampling** — **Distribution of Means and Confidence Intervals** — ***Biostatistics* 100**
  - **Logic of statistical inference** — **Formal Logic of Statistical Inference** — ***Biostatistics* 110**
- ***Tests For Continuous data:***
  - **Single Sample**
    - **Testing sample mean** — **One Sample t-Test** — ***Biostatistics* 120**
    - **Testing sample variance** — **One Sample χ^2 Test of Variance** — ***Biostatistics* 140**
  - **Two Samples**
    - **Testing differences in sample means**
      - **Samples with *equal* variances** — **Two Sample t-Test for populations with Equal Variances** — ***Biostatistics* 160**
      - **Samples with *unequal* variances** — **Two sample t-Test for populations with Unequal Variances** — ***Biostatistics* 180**
        - ***Nonparametric analog*** — **Wilcoxon Rank Sum / Mann-Whitney Test** — ***Biostatistics* 220**
    - **Testing differences in sample variances** — **F-test for equal variances / Levine Test** — ***Biostatistics* 170**
  - **Two Samples with *paired* data**
    - **Testing sample mean difference** — **Paired t-Test** — ***Biostatistics* 150**
      - ***Nonparametric analog*** — **Sign Test** — ***Biostatistics* 200**
      - ***Nonparametric analog*** — **Wilcoxon Signed-Rank Test** — ***Biostatistics* 220**
  - **Two or more samples**
    - **One classification factor**
      - **Omnibus testing sample means**
        - ***With homoscedasticity*** — **One-Way ANOVA for fixed effects** — ***Biostatistics* 230**
        - ***Without homoscedasticity*** — **Welch's F-test for ANOVA** — ***Biostatistics* 240**
          - ***Nonparametric analog*** — **Kruskal-Wallis Test** — ***Biostatistics* 270**
      - **Pairwise testing of means** — **Multiple Pairwise Comparison Procedures in One-Way ANOVA** — ***Biostatistics* 250**
      - **Linear contrast testing of means** — **Linear Contrasts in One-Way ANOVA** — ***Biostatistics* 260**

- Testing for variance homoscedasticity — Bartlett's Test for Homogeneity of Variance — *Biostatistics* 280

▪ Two or more classification factors
- Omnibus testing sample means
  - ♦ Crossed factors — Two-Way ANOVA for fixed effects — *Biostatistics* 280
  - ♦ Repeated measures — Two-Way ANOVA without replication — *Biostatistics* 300
    - ○ *Nonparametric analog* — Friedman Two-Way ANOVA by Ranks — *Biostatistics* 330
    - ○ *Nonparametric analog* — Cochran's Q Test for Nominal (0,1) Data — *Biostatistics* 340
  - ♦ Nested factors — Nested Two-Way ANOVA — *Biostatistics* 320

➢ Two or more continuous or discrete variables

▪ One dependent and one independent variable
- Description of relationship
  - ♦ Constructing Regression Fit — Simple Linear Regression — *Biostatistics* 350
  - ♦ Association and correlation — Association and Correlation in "Simple" Regression — *Biostatistics* 370
- Omnibus test of fit — ANOVA F/t-Tests for Regression fit — *Biostatistics* 360

▪ One dependent and multiple independent variables
- Description of relationship
  - ♦ Multiple regression fit — Multiple Regression — *Biostatistics* 380
  - ♦ Relationship to ANOVA — General Linear Models and "dummy" Coding — *Biostatistics* 390
- Testing — Linear Modeling and "extra" Sum of Squares — *Biostatistics* 400
  - ♦ Choosing variables — Choosing an Optimal Linear model — *Biostatistics* 401
  - ♦ Model comparison — General F-test for Model Comparisons — *Biostatistics* 402

❖ *Tests For Count data:*

➢ Tests for Goodness of Fit

▪ Classic χ^2 testing of categories — χ^2 Test for Goodness of Fit — *Biostatistics* 410

▪ Log-liklihood testing of categories — G Test for Goodness of Fit — *Biostatistics* 420

▪ Testing in categories in sequence — Kolmogorov-Smirnov Test for Goodness of Fit in Sequence — *Biostatistics* 430

➢ Contingency Testing

▪ 2X2 Tables
- χ^2 & G tests of association — 2X2 Contingency Tests of Association — *Biostatistics* 440
- Exact Test with fixed margins — Fisher's Exact Test of Association — *Biostatistics* 460

▪ RXC Tables
- χ^2 & G tests of association — RXC Contingency Tests of Association — *Biostatistics* 450

▪ Contingency tables for paired data
- Test of Concordance — McNemar's Test for Paired Data — *Biostatistics* 470