**STAT 469/669: Intorduction to Biostatistics, 3 credits**

**Spring Semester 2017**

**Minard 302: 9:30-10:45 T and Th**

**Instructor**: Seung Won Hyun, Ph.D.

**Office:** Morrill 221B

**Phone:** 231-8178

**E-mail:** [Seung.W.Hyun@ndsu.edu](mailto:Seung.W.Hyun@ndsu.edu)

**Prereq:**

* **Stat 330**

**Office Hours:** M 10:00-11:30 and W 2:00-3:30 or by appointment.

**Required Textbooks:**

*Principles of Biostatistics (2000) by Marcello Pagano and Kimberlee Gauvreau (2nd Ed)*

**CourseInfo Blackboard:** <https://bb.ndsu.nodak.edu>

All the class materials will be posted on Blackboard.

Click on “Login”, type in your USERNAME AND PASSWORD. If you have problems, contact the **ITS HelpDesk** (23)1-8685.

**Course Description:**

Basic principles of probability theory; Group comparisons; Nonparametric methods; Sample size estimation; Contingency tables; Simple and multiple regression; Logistic regression; Survival Analysis.

**Course Objectives:**

Biostatistics do play an important role in many decision-making processes in the biological and health sciences. The goal in this course is to give students modern statistical research methods to extract information from biological data and facts. At the end of the course, you should be able to do the following: 1. Understand basic principles of probability theory and probability distributions; 2. Choose an appropriate method for comparing two or more groups and interpret the results 3. Understand and interpret relative risks and odds ratios from contingency tables; 4. Understand how regression analysis (simple and multiple regression and logistic regression) can be applied to biological and health sciences and interpret the results; 5. Introduce time to event data and how to analyze them.

**Grading:** ***Total=440 pts***

|  |  |
| --- | --- |
| **Attendance\*** | **40 pts** |
| **Homework\*\*** | **0 pts** |
| **Quiz\*\*\*** | **90 pts(15pts\*6)** |
| **Exam #1** | **100 pts** |
| **Exam #2** | **100 pts** |
| **Exam #3** | **100 pts** |

|  |  |  |
| --- | --- | --- |
| **Stat 469** | **Stat 669** | **Grade** |
| **85 – 100%** | **90 – 100%** | **A** |
| **70 – 84%** | **80 – 89%** | **B** |
| **60 – 69%** | **70 – 79%** | **C** |
| **50 – 59%** | **60 – 69%** | **D** |
| **Below 50%** | **Below 60%** | **F** |

* ***\*These will count as 2 points each-22 or 23 will be given throughput the semester-NO MORE THAN 50 POINTS CAN BE EARNED!!!)***
* ***\*\*Homework will be given every two weeks but will not be collected. Homework assignments will be posted on Blackboard.***
* ***\*\*\*6 quizzes will be given randomly during our class times. The quiz problems are closely related to homework problems. You may be given 15 min to complete the quiz. The quiz is closed book and open notes, but no collaboration or chatting is allowed during the quiz.***
* ***There are no make-ups on quizzes and exams.***
* ***Make-ups for Exams and quizzes will be given only in case of emergency. Prior notification to instructor is needed.***

**EXAM DATES:**

Exam #1: **Thurs Feb 16**

Exam #2: **Thurs Mar 30**

Exam #3: **Thurs May 4**

**Note: Exam dates are subject to change.**

**SPECIAL NEEDS:** Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor as soon as possible.

**APPROVED ACADEMIC HONESTY STATEMENT:** All work in this course must be completed in a manner consistent with NDSU University Senate Policy, section 335: Code of Academic Responsibility and Conduct (<http://www.ndsu.edu/fileadmin/policy/335.pdf>).

**TENTATIVE SCHEDULE:**

**Chapter 1&6: Introduction and Probability (Week 1~2)**

**Chapter 7: Probability Distributions (Week 3)**

**Chapter 12: Analysis of Variance (Week 4~5)**

**Chapter 13: Nonparametric Methods (Week 6~7)**

**Chapter 15&16&17: Contingency Tables (Week 8~10)**

**Chapter 18&19: Simple Linear and Multiple Regression (Week 11~13)**

**Chapter 20: Logistic Regression (Week 14~15)**

**Chapter 21: Survival Analysis (Week 16)**