Introduction to Medical Statistics（Ⅰ）

Place: classroom 101, Public Health Building

Time: Tuesday (9:10~12:00)

Course Number: 801 21100; 842 u3210

Outline: This course is designed as a first course for those who are interested in statistics, biostatistics, and medical statistics. All material will be at the introductory level. I will start with various methods used to describe and summarize data. Several examples in real applications will be illustrated. Followings will be concept and definition of probability. Various probability distributions, their relationship, and its use in Statistics will be discussed. I will then focus on estimation and hypotheses testing for statistical inference. Students will practice the analysis with real data.

Topics covered weekly:

Date	Topic
2/28	Holiday
3/7	How to describe data; Descriptive statistics
3/14	Basic elements of Probability
3/21	Computer Lab 1, Probability, distribution, and history
3/28	Probability; Normal distribution
4/4	First exam
4/11	Computer Lab 2, Point estimation
4/18	Point estimation; Sampling distribution of the mean
4/25	Computer Lab 3, confidence interval
5/2	Hypotheses testing, significance, power, sample size
5/9	Computer Lab 4, Testing hypotheses
5/16	Second exam
5/23	Computer Lab 5, Comparing two population means; ANOVA and multiple comparison
5/30	Inference for binary data, contingency table
6/6	Computer Lab 6, Linear correlation and regression
6/13	More about regression & Collaborations between biostatistics and biomedical research
6/20	Final exam

Textbook: Pagano and Gauvreau (2000). Principles of Biostatistics. 2nd edition, Duxbury Press.

Grades: Homework 30%; exam 2×20%; final 30%.

References:

1. Rosner, B. (2000), Fundamentals of Biostatistics, fifth edition. Duxbury Press.
2. Glantz, S.A. (1997). Primer of Biostatistics. 4th Edition McGraw-Hill Inc., Taipei.
3. 統計，讓數字說話！(1998) D.S. Moore 著，鄭惟厚譯，天下文化出版。
4. 統計，改變了世界。(2001) D. Salsburg 著，葉偉文譯，天下文化出版。