

AMS 7: Statistical Methods for the Biological, Environmental and Health Sciences

Tentative syllabus and reading list

| Lecture Number | Date | Topic | Readings (Chapters in T&T) |
|----------------|--------|--|-------------------------------|
| 1 | 25 Sep | Introduction; populations and samples | 1 |
| 2 | 30 Sep | Data types; graphical descriptive methods (histograms, bar charts) | 1, 2 |
| 3 | 2 Oct | Numerical descriptive methods: measures of center (mean, median, mode) and spread (standard deviation, variance) | 2 |
| 4 | 7 Oct | Using the normal distribution descriptively; controlled experiments | 5, 1 |
| 5 | 9 Oct | Observational studies | 1 |
| 6 | 14 Oct | Probability; conditional probability | 3 |
| 7 | 16 Oct | Probability models for sums | 5 |
| 8 | 21 Oct | Probability models for means | 5 |
| 9 | 23 Oct | Statistical models for means; interval estimation (continuous outcomes) | 6 |
| 10 | 28 Oct | Interval estimation (dichotomous outcomes) | 6 |
| 11 | 30 Oct | Sample size determination; hypothesis testing | 7 |
| 12 | 4 Nov | Pitfalls of hypothesis testing; power | 7 |
| 13 | 6 Nov | Two-sample problems (continuous outcomes) | 8 |
| — | 11 Nov | holiday | |
| 14 | 13 Nov | Two-sample problems (discrete outcomes); simple correlation | 8, 9 |
| 15 | 18 Nov | Simple linear regression | 9 |
| 16 | 20 Nov | Regression prediction | 9 |
| 17 | 25 Nov | One-way analysis of variance (ANOVA) | 11 |
| — | 27 Nov | holiday | |
| 18 | 2 Dec | ANOVA; categorical data analysis | 11 |
| 19 | 4 Dec | Categorical data analysis | 10 |

If the final exam is an in-class exam, it will take place on **Mon 8 Dec 2008 from 8–11am** in a room to be announced; if it's a take-home exam, it will be handed out on 4 Dec 2008 in class and due one week later.

Please note, as mentioned in class, that no discussion sections or labs will take place on the following days: 11 Nov and 24–28 Nov 2008 (lecture will occur as usual on Tue 25 Nov 2008).