

YEAR 1 BIostatISTICS MEC REVIEW  
1/20/2009

Dartmouth Medical School

# Course Description

- Spring Semester of First year
- 14 Hours of Lecture
- 7 Small Group Sessions (1 per lecture)
  - ▣ 2 hours/session
  - ▣ 6 groups; ~ 12 students per group; 2 faculty per group
  - ▣ Problem sets covering the material in the preceding lecture
  - ▣ 7<sup>th</sup> review session is optional (course review)

# Course Objectives

*“As a practicing physician, you will need to stay current with advances in medical treatment, technology, and prevention strategies. You will have to interpret the results of the latest medical research and apply your interpretation to treating your patients and keeping them healthy. As a medical student, the first step in this process is learning about the methods used in modern medical research. This is the focus of DMS Biostatistics and Epidemiology.*

*Our overall objective is to introduce you to the scientific method as it relates to studies conducted in humans, where relationships and effects are often obscured by random variation. Our emphasis is on the interpretation of the various study designs used today and the analysis methods used to evaluate the resulting quantitative data. When you complete this course, you will be able to better read a published medical study by identifying the research design used, quantitatively evaluating the effects seen in the data, and interpreting the study results with respect to its advantages and limitations.”*

# Core Competency Focus

## □ Knowledge

- established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences, and the application of this knowledge to patient care.

## □ Interpersonal & Communication Skills

- effective information exchange and teaming with patients, their families, and other health professionals

## □ Professionalism

- commitment to carrying out professional responsibilities (reliability/responsibility, self-improvement, self-awareness/knowledge of limits), adherence to ethical principles (honesty/integrity, compassion/empathy), and sensitivity to a diverse patient population (respect for others, altruism/advocacy) .

## □ Personal Continuous Learning/Improvement

- ability to understand epidemiological and statistical trends in a healthcare system that is evolving and moving – and will continue moving in the future towards a more systems based and evidence-based approach to medicine

## □ Practicing in A Complex Health-Care System

- investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care, and a commitment to lifelong learning and self-

# Resources

## □ 4 Recommended Textbooks (all on reserve in Dana)

- *Basic & Clinical Biostatistics (4<sup>th</sup> edition) by B. Dawson-Saunders and R.G. Trapp; Medical Epidemiology (4<sup>th</sup> edition) by R.S. Greenberg et al.; A Study Guide to Epidemiology and Biostatistics (4<sup>th</sup> edition) by R.F. Morton and J.R. Hebel; and Primer of Epidemiology (5<sup>th</sup> edition) by G.D. Friedman.*

## □ Class Notes

- Given to each student in a binder that contains all class notes and all problem sets
- All the information students are required to know for the course

## □ PowerPoint Presentations

- Posted prior to class and available for all students

# Assessment/Examinations

- Quizzes 40% of final grade
  - 2 quizzes (20% each)
  - MC
  
- Final Examination 60% of final grade
  - Mix of MC and long answer
  
  - Pass =  $\geq 70\%$
  - Honors =  $\geq 90\%$

# Teaching



- 3 professors
  - Dr. Beach
  - Dr. Baron
  - Dr. Peacock (visiting Professor for Statistics portion of course)
  
- 12 Small Group Leaders

# Student Evaluations, 2007-2008

- Five point scale

- 1 Poor
- 2 Fair
- 3 Good
- 4 Very good
- 5 Excellent

- Mean (excludes responses of “Don’t know” or “n/a”)

- Please note low response numbers:

37 students, ~50% of class

# Student Evaluations ( $n=37^*$ )

	2008	$\Delta 2007$	yr 1 mean
Overall satisfaction	4.00	+ .37	3.45
Lectures	2.94	+ .01	3.16
Notes	4.65	+ .23	3.49
<u>Text</u>	<u>3.20</u>	<u>- .47</u>	<u>3.32</u>
Scheduling/clarity	4.35	+ .18	3.78
<u>Clarity of quiz/exam</u>	<u>3.65</u>	<u>+ .05</u>	<u>3.19</u>
Intellectual challenge	3.38	+ .21	3.75
Small Group	4.00	- .12	3.70

# Student Evaluations

- Pace and density: 31 / 35 about right 89%
  - 86% in 2007
- Lecturers: range 3.85-4.14 (yr1:3.67)
- Small group leaders: range 2.75 to 4.86 (yr1:3.88)
  - 1 small group leader was 3 or less
  - 7 small group leaders were 4.00 or above

# Narrative Comments

- Highlights:

- Overall Organization
- Lectures/Notes
- Small Groups

- Suggestions:

- Condense Lectures
- Mid-Trimester Final
- Allow Students to “Test Out”

# Narrative Comments: Highlights

## □ Overall Organization:

- “The organization of the notes and expectations of the course were very clear. I think a big part of why so many students do so well is that everything is so well organized.”

## □ Notes/Lectures:

- “The lecturers were all talented, and the course notes were exhaustive.”

## □ Small Groups (and associated problem sets):

- “Problem sets did a great job of hitting home key concepts from lectures. Small groups were a great resource to ask questions and reinforce understanding.”

## □ Few Suggested Changes:

- “I honestly don't believe you have to change anything about this course.”

# Narrative Comments: Suggestions

## □ Lecture Length

- “Condense two hour lectures to an hour or an hour and a half.”

## □ Mid-Trimester Final

- “Instead of starting this course halfway through the term and finishing with the others, it would be much better to start this course at the beginning of the term and finish at the mid-way point of the term.”

## □ Ability Levels

- “Divide the small groups based on prior stats experience so that people are at the same level/pace in a group.”
- “I think that this course should offer a chance to test out at the beginning of the course. This is the 3rd time that I have taken statistics, and it didn't really add that much to my knowledge. I think it is very useful for people who haven't been exposed to these concepts before but it is unnecessary for a lot of us.”

# Areas for Focus/Discussion

## □ Mid-Trimester Final

- How do we break up assessments so that students study for knowledge retention?

## □ Ability Levels

- How do we honor students who come in with significant knowledge in a course area?