

# **INSTRUCTIONS FOR COMPLETION OF THE UAMS GRADUATE SCHOOL COURSE APPROVAL FORM**

1. Please save this PDF to your computer for editing.
2. The form has been designed with fields for your responses, and these are indicated in blue and gray shading. Please complete all fields. Use the "tab" key to move between fields. A 'beep' will sound if you attempt to enter a response that contains more characters than is permitted. **IF YOU NEED HELP IN ANY OF THE FIELDS, PRESS THE F1 KEY AND A HELP WINDOW WILL OPEN.**
3. Print the document, and then obtain the appropriate signatures before submitting the form to the Graduate Office.



## SYLLABUS

**COURSE NUMBER:** BIOM \_\_\_\_\_

**COURSE TITLE:** Medical Decision-making

**COURSE DESCRIPTION:**

This graduate course covers medical decision making with a focus on traditional approaches and methods.

**PRE-REQUISITES:** none

**GENERAL INFORMATION:**

**CREDITS:** 1 credit hour

**SEMESTER:** Fall, Spring

**LOCATION:** Campus and Online (hybrid)

**FACULTY:** Meredith Zozus

**SPECIAL ASSISTANCE:** Students who believe they may need accommodations in this class based on mental or physical impairments must contact the Students with a disability that need accommodations should contact the Associate Dean for Academic Affairs at (501) 686-5730 to schedule an appointment to discuss your needs. Please make arrangements as soon as possible so accommodations can be made in a timely manner.

**COURSE OBJECTIVES:**

Upon successful completion of this course, the student is able to:

1. Describe cognitive aspects of human decision making.
2. Identify common biases in human decision-making.
3. Apply decision science methods to medical decision-making scenarios.

**MAJOR TOPICS:**

Cognitive aspects of human decision-making  
Bias in human decision-making

Differential diagnosis  
Probability theory  
Bayes' Theorem  
Test characteristics  
Expected value decision-making; utility and preference assessment  
Cost effectiveness and cost benefit analysis  
Bayesian network models  
Markov-models

### **ASSIGNMENTS:**

Listed below for each week.

#### **Part 1: Medical Decision-making**

Week 1: Cognitive aspects of human decision-making.

*Assignment:* Describe three common methods by which humans make decisions.

*Reading:* Sox and Higgins Chapter 1, provided articles

Cindy Dietrich, Decision Making: Factors that Influence Decision Making, Heuristics Used, and Decision Outcomes. 2010, Vol. 2 No. 02, pg. 1-3.

Week 2: Bias human decision-making.

*Assignment:* Identify types of bias at play in clinical decision-making scenarios.

*Reading:*

Croskerry P., Achieving quality in clinical decision making: cognitive strategies and detection of bias. Acad Emerg Med. 2002 Nov;9(11):1184-204.

Croskerry P, Singhal G, Mamede S., Cognitive debiasing 1: origins of bias and theory of debiasing. BMJ Qual Saf. 2013 Oct;22 Suppl 2:ii58-ii64.

Croskerry P., From mindless to mindful practice--cognitive bias and clinical decision making. N Engl J Med. 2013 Jun 27;368(26):2445-8.

Week 3: Differential diagnosis

*Assignment:* Apply the differential diagnosis to a given scenario.

*Reading:* Sox and Higgins Chapter 2

Week 4: Quantifying uncertainty, probability theory

*Assignment:* Assigned problems at the end of the chapter.

*Reading:* Sox and Higgins Chapter 3

*Reading:* Sox and Higgins Chapter 8

Week 13: Selection and interpretation of diagnostic tests

*Assignment:* Work the assigned problems.

*Reading:* Sox and Higgins Chapter 9

Week 14: Cost effectiveness analysis and cost-benefit analysis.

*Assignment:* Work the assigned problems.

*Reading:* Sox and Higgins Chapter 10

Week 15: Using advanced decision analysis methods in practice

*Assignment:* none

*Reading:* Sox and Higgins Chapter 11

**TEXTBOOKS:**

Harold C. Sox, Michael C. Higgins, Douglas K. Owens, Medical Decision Making 2<sup>nd</sup> Edition. John Wiley & Sons, 2013.

**EVALUATION:**

This is a graded course. Grades will be assigned based on their course average according to the following scale: A (93-100), B (85-92), C(75-84), D(65-74), Fail (lower than 64).

The course average will be comprised of course assignments and the final exam.

Assignments.....	70%
Final exam.....	30%

6. Program Approvals:

Fred Prior, PhD, Department of Biomedical Informatics  
(Print or type) Chairperson, Academic Department or Area

Fred Prior 10/26/16  
(Signature) Chairperson, Academic Department or Area Date

[Signature] 11/17/2016  
College Dean (Dean McGehee for College of Medicine) Date

7. Graduate School Approvals

Eric C. Peterson 11/17/2016  
Chairperson, Graduate Council Date

[Signature] 11/17/2016  
Dean of the Graduate School Date