

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**HSA 7936, section 1521 Costs & Financing Health Services (3 credit hours)**  
Fall: 2017  
Delivery Format: On-Campus  
Course Website available in Canvas

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Preferred Course Communications: Email; Message in Canvas

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## **PURPOSE AND OUTCOME**

### **Course Overview**

This course is intended to provide an introduction to economic evaluation methods and theoretical foundation of methods including cost-effectiveness analysis. You will be introduced to various methods for economic evaluation, how to value and analyze health outcomes, analyzing costs, modeling economic evaluation and health care outcomes using patient-level data, overview of basic decision-analytic modeling, and presenting cost-effectiveness results.

### **Course Objectives and/or Goals**

This course is designed to instruct students on the following:

- 1) Understand the key concepts and goals of medical decision analysis, health care costs, and economic evaluation
- 2) Know how to review and critique economic evaluation studies
- 3) Understand how to define, measure, and value health care costs and health care qualitative as well as quantitative outcomes
- 4) Understand why and when decision-analytic modeling should be used in clinical evaluation, and be able to critically judge the conclusions derived from a decision-analytic models

### **Instructional Methods**

- Lecture

**Disclaimer:** \*\*\*This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.\*\*\*

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## **DESCRIPTION OF COURSE CONTENT**

### **Course Materials and Technology**

#### **Required Materials:**

- *Applied Methods of Cost-effectiveness Analysis in Health Care.* Alastair M. Gray, Philip M. Clarke, Jane L. Wolstenholme, Sarah Wordsworth; Oxford University Press
- Course reading distributed by instructor

**Optional Materials:**

- *Drummond M. Methods for the economic evaluation of health care programmes. 3rd ed. Oxford ; New York: Oxford University Press; 2005.*

For technical support for this class, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

**Topical Outline/Course Schedule**

| Date                     | Topic   | Reading     | Assignment           |
|--------------------------|---|-------------|----------------------|
| Aug 21                   | Classes Begin - Welcome and introduction to the class   |             |                      |
| Aug 23                   | Economic evaluation overview  | AMCEA Ch. 2 | AMCEA Ch. 2 exercise |
| Aug 28                   | <i>Methods for economic evaluation, the cost-effectiveness plane, thinking incremental not average, dominance and extended dominance, net monetary benefits, maximum acceptable incremental cost-effectiveness ratio (willingness-to-pay threshold), whose perspective (individual, healthcare payer, or societal)?</i>   |             |                      |
| Aug 30                   | Measuring, valuing, and analyzing health outcomes   | AMCEA Ch. 5 | AMCEA Ch. 5 exercise |
| Sep 6                    | <i>Non-preference-based measures of health status; quality-adjusted life years (QALYs)—theoretical foundation; utilities and methods to estimate utilities (the rating scale (RS) method, the standard gamble (SG) method, time trade-off (TTO) method, whose preference?; multi-attribute utility system; alternatives: disability-adjusted life years (DALYs)</i> |             |                      |
| Sep 11                   | <b>Student proposal discussion (initial brainstorming)</b>  |             |                      |
| Sep 13                   | Defining, measuring, and valuing costs<br><br><i>Costing in economic evaluation, costing perspectives, constructing a cost dataset, adjustments to cost data, presenting cost results</i>   | AMCEA Ch. 6 |                      |
| <b>Sep 18 (no class)</b> |   |             |                      |

|  |   |  |                             |
|--|---|--|-----------------------------|
| Sep 20                                 | Analyzing costs   | AMCEA Ch. 7  | AMCEA Chapter 7 exercises 1 |
| Sep 25                                 | <i>Describing and analyzing cost data; Cost data distributions—normal and skewed distributions, skewed cost data, median cost, data transformation, bootstrapping (non-parametric method), generalized linear models; missing data and methods (complete case analysis, available case analysis, imputation, multiple imputation) to analyze missing data; censored cost data and methods to deal with censored cost data</i> |  |                             |
| Sep 27                                 |   |  |                             |
| Oct 2                                  | Life table  | AMCEA Ch. 3  |                             |
| Oct 4                                  | <i>Life table methods, survival curves and hazards function, calculation of changes in life expectancy, extrapolating life expectancy</i>   |  |                             |
| Oct 9                                  | <b>Proposal outline due and in-class discussion</b>   |  |                             |
| Oct 11                                 | <b>Reviewing and critiquing EE studies (in-class assignment)</b>  |  |                             |
| Oct 16                                 | Economic evaluation using patient-level data (Net monetary benefit regression)  | Slides, material, and class exercised will be shared |                             |
| Oct 18                                 |   |  |                             |
| <b>Oct 23, 25 SMDM week (no class)</b> |   |  |                             |
| Oct 30                                 | Economic evaluation using patient-level data  | AMCEA Ch. 4  |                             |
| Nov 1                                  | <i>Overview of survival analysis, quantifying outcomes using survival analysis, parametric models, and modeling and extrapolating outcomes</i>  |  |                             |
| Nov 6                                  | Introduction to decision analytic modeling and decision trees   | AMCEA Ch. 8  |                             |
| Nov 8                                  | <i>Use of flat tree vs decision analytic models; stages and methodological approach of developing decision-analytic models; decision analytic models—tree structure, order of events, estimating transition probabilities, payoffs, analyzing a decision tree, model evaluation, estimation of expected values</i>  |  |                             |
| Nov 13                                 |   |  |                             |
| Nov 15                                 | Introduction to Markov modeling   | AMCEA Ch. 9  |                             |
| Nov 20                                 | <i>Theoretical background; determining health states, transition probabilities, cycle length, Markovian assumptions, determining the rewards discounting</i>  |  |                             |

|        |  |                        |  |
|--------|--|------------------------|--|
| Nov 27 | <b>Proposal development (in-class discussion)</b>  |                        |  |
| Nov 29 | Uncertainty associated with economic evaluations;<br>presenting results of economic evaluation studies   | AMCEA Ch. 10<br>and 11 |  |
| Dec 4  |  |                        |  |
| Dec 6  | Overview of advancement methods in economic evaluation<br><i>Micro-simulation, value of information analysis, natural history models, chronic/infectious diseases modeling, model calibration and model validation</i> |                        |  |
| Dec 11 | <b>Final proposal due</b>  |                        |  |
| Dec 13 | <b>Final presentations</b>   |                        |  |

## ACADEMIC REQUIREMENTS AND GRADING

### Assignments

All assignments should be submitted on time as per instructions on e-learning.

### Grading

Assignments and assessments are opportunities for you to demonstrate understanding of the principles and procedures covered in class. Grades will be based on the following criteria:

| Requirement   | % of final grade |
|---|------------------|
| Exercises/assignments                                     | 20% (5% each)    |
| Reviewing and critiquing EE studies (in-class assignment) | 20%              |
| Final Project (develop an EE proposal; NIH R03 format)    | 40%              |
| Final presentation  | 20%              |

Point system used (i.e., how do course points translate into letter grades).

|                      |            |         |        |         |         |         |         |         |         |         |         |          |
|----------------------|------------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| <b>Points earned</b> | 95 or more | 90 - 94 | 87- 89 | 83 - 86 | 80 - 82 | 77 - 79 | 73 - 76 | 70 - 72 | 67 - 69 | 63 - 66 | 60 - 62 | Below 60 |
| <b>Letter Grade</b>  | A          | A-      | B+     | B       | B-      | C+      | C       | C-      | D+      | D       | D-      | E        |

Please be aware that a C- is not an acceptable grade for graduate students. A grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A. In addition, the Bachelor of Health Science Program does not use C- grades.

You must include the letter grade to grade point conversion table below. Letter grade to grade point conversions are fixed by UF and cannot be changed.

|                     |     |      |      |     |      |      |     |      |      |     |      |     |     |     |     |     |
|---------------------|-----|------|------|-----|------|------|-----|------|------|-----|------|-----|-----|-----|-----|-----|
| <b>Letter Grade</b> | A   | A-   | B+   | B   | B-   | C+   | C   | C-   | D+   | D   | D-   | E   | WF  | I   | NG  | S-U |
| <b>Grade Points</b> | 4.0 | 3.67 | 3.33 | 3.0 | 2.67 | 2.33 | 2.0 | 1.67 | 1.33 | 1.0 | 0.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at:  
<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### **Policy Related to Late and Make up Work**

Students are expected to complete all assignments by appropriate dates. 10% penalty for late submission, additional 10% penalty for every 24 hours.

Make-up options will be offered to students only under extenuating circumstances and through communication with the instructor. The instructor reserves the right to determine appropriate make-up options for each student.

### **Policy Related to Required Class Attendance**

Students are expected to read the assigned text, complete all out of class assignments, be an active member of their group, and to actively participate in class discussions. Personal issues with respect to class participation or fulfillment of course requirements will be handled on an individual basis and must be communicated with the instructor with reasonable advance notice.

All faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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## **STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT**

### **Expectations Regarding Course Behavior**

Students are expected to:

- Attend all classes
- Complete reading assignments prior to class
- Participate in class discussions
- Be an active member of your group
- Exhibit professional behavior
- Limit use of electronic devices strictly to activities in support of learning environment.

### **Communication Guidelines**

Students will be expected to communicate via the Canvas messaging system.

### **Academic Integrity**

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### **Online Faculty Course Evaluation Process**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you then give to me as the instructor of the course to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:  
 Alachua County Crisis Center  
 (352) 264-6789  
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

### **Inclusive Learning Environment**

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every

individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: [www.multicultural.ufl.edu](http://www.multicultural.ufl.edu)