

# Online POP Course Syllabus

## PHA6806: Pharmacoconomic Modeling

3 credit hours

**Note:** The final syllabus posted in the Course Canvas site is the most current and supersedes this syllabus.

### Class Meeting Times

Sunday, 5:00-7:00 pm Eastern

### Class Meeting Location

Class meetings are held in Zoom, which can be accessed via the course Canvas site. If you are having trouble accessing the course Canvas site, please contact Distance Education Support Services at [DESS@ahc.ufl.edu](mailto:DESS@ahc.ufl.edu).

### Instructor

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Phone/Text: 803-777-2653

Office Hours: By appointment

Office Location: via Zoom or phone

### Course Description

This course will provide students with an understanding of the principles and practical methods to conduct pharmacoeconomic modeling. The “hands-on” nature of this course will allow students to develop and implement a model-based cost-effectiveness analysis of pharmaceutical products.

### Course Objectives

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

1. Discuss pharmacoconomics and outcomes research.
2. Describe the steps involved in designing a pharmacoeconomic model.
3. Create a pharmacoeconomic cost-effectiveness model using Microsoft Excel.
4. Extract effectiveness data from the literature to populate a pharmacoeconomic model.



# Online POP Course Syllabus

5. Extract cost data from the literature to populate a pharmacoeconomic model.
6. Conduct base-case and sensitivity analyses for pharmacoeconomic analysis.
7. Interpret and summarize the results of a pharmacoeconomic cost-effectiveness analysis.

## Relationship to Program Outcomes

This course pertains to the following program outcomes:

1. Identifies, describes, and explains concepts, theories, and methodologies in applied pharmacoeconomics.
2. Evaluate a problem that is related to applied pharmacoeconomics.

## Required Textbooks and/or Software

**Textbook:** Drummond, M. F., Sculpher, M. J., Claxton, K., Stoddart, G. L., & Torrance, G. W. (2015). Methods for the Economic Evaluation of Health Care Programmes. (4th ed.) Oxford: Oxford University Press.

**Software:** Microsoft Excel

## Recommended Materials

None

## Course Pre-Requisites

**PHA6283** Commercial Applications of Pharmacoeconomic Principles, and

**PHA6935** Quantitative Methods of Evidence-based Pharmacy – a waiver of this pre-requisite may be granted according to alternative similar coursework, please contact the program to request.

## Structure and Organization

This course is considered the culminating course in the applied pharmacoeconomics curriculum, applying and integrating previous foundational coursework. The course is delivered through UF's e-Learning system, Canvas, and in weekly synchronous class meetings using Zoom. Each week, students will be given an assignment that will be part of the pharmacoeconomic model development. At the end of the course students will have developed a cost-effectiveness model and a corresponding abstract and poster.

## Course Schedule

Date	Topic	Assignment	Deadline
Week 1	Cost-effectiveness Analysis and Decision Tree	None	N/A

# Online POP Course Syllabus

Week 2	Cost-effectiveness Analysis and Markov model	Assignment 1	End of Week 3
Week 3	Cost-effectiveness Analysis and Sensitivity Analysis	Assignment 2	End of Week 4
Week 4	Cost-effectiveness Analysis – Cohort-based and Monte Carlo-based simulations	Assignment 3	End of Week 5
Week 5	Budget Impact Analysis	Assignment 4	End of Week 6
Week 6	Cost-of-illness analysis	None	N/A
Week 7	Real-world Data for Cost-Effectiveness Analysis	Abstract, Poster	End of Week 7

## Evaluation Methods

Developing expertise in pharmacoeconomic modeling requires that you “get your hands dirty” by “doing it yourself”. During the course, individual assignments will be based on lecture materials, readings from journal articles and other assigned course materials. Assignments will include problem solving exercises using Microsoft Excel and article critiques. Overall, students’ performance will be based on class participation/engagement, assignments, and a final project.

**Assignments (65%):** 4 assignments will be given on key applications to support understanding of the concepts introduced to students. Students are expected to complete assignments individually as homework and be prepared to discuss and defend their work in class the following week. Please submit assignments on time to avoid grade deductions.

**Final Research Project (35%):** Students in this course are required to complete a project in the area of pharmacoeconomic modeling. The final project has two components: an abstract and a poster of your project. Abstract and a deck of slides should be consistent with the International Society of Pharmacoeconomics and Outcomes Research (ISPOR) requirements.

## Assessments

	Content	Deadline	% of final grade
<b>Assignment 1</b>	Decision Tree	End of Week 3	20%
<b>Assignment 2</b>	Probabilities and Outcomes Identification	End of Week 4	20%
<b>Assignment 3</b>	ICER Calculation and Sensitivity Analysis	End of Week 5	20%
<b>Assignment 4</b>	) Article Critiques (Based on Critiquing Research Articles Chapter in “Essentials of Pharmacoeconomics”)	End of Week 6	15%
<b>Final Report</b>	Abstract and Poster	End of Week 7	25%

# Online POP Course Syllabus

## Attendance Policy for this Course

Students are strongly encouraged to attend the synchronous class meetings although it is optional.

## Attendance Policy for UF Graduate Students

Students may not attend classes unless they are registered officially or approved to audit with evidence of having paid audit fees. After the end of drop/add, the Office of the University Registrar provides official class rolls/addenda to instructors. Students who do not attend at least one of the first 2 class meetings of a course or laboratory in which they are registered and who have not contacted the academic unit to indicate their intent may be dropped from the course. Students must not assume that they will automatically be dropped if they fail to attend the first few days of class. The academic unit will notify students dropped from courses or laboratories by posting a notice in the academic unit office. Students may request reinstatement on a space-available basis if documented evidence is presented. The University recognizes the right of the individual professor to make attendance mandatory. After due warning, professors may prohibit further attendance and then assign a failing grade for excessive absences. Students who have registration changes, at any time during the semester, should verify their registrations before the last day of class of the term. Retroactive drop/add or other registration changes will not be permitted. See the [UF graduate academic regulations](#) for more information.

## Late Assignment Policy

Late assignments will not be accepted. Assignments turned in past the deadline will be given a zero (0). If you want to request an extension, contact the instructor at least 48 hours prior to the due date. Requests will be handled on a case-by-case basis.

## Grading Policy

The only passing grades for graduate students are A, A-, B+, B, B-, C+, C, and S. Grades of B-, C+ or C count toward a graduate degree if an equal number of credits in courses numbered 5000 or higher have been earned with grades of B+, A- and A, respectively. Grade points are not given for S and U grades; S and U grades are not used to calculate grade point averages. All letter-graded courses eligible to count toward the graduate degree, except 1000- and 2000-level courses, are used to calculate the cumulative grade-point average. Letter grades of C-, D+, D, D- or E are not considered passing at the graduate level, although the grade points associated with these letter grades are included in grade point average calculations. See the [UF graduate academic regulations](#) for more information.

A >92.500%

A- 89.500–92.499%



# Online POP Course Syllabus

B+ 86.500–89.499%

B 82.500–86.499%

B- 79.500–82.499%

C+ 76.500–79.499%

C 72.500–76.499%

C- 69.500–72.499%

D+ 66.500–69.499%

D 62.500–66.499%

D- 59.500–62.499%

E <59.499%

## Course Technology Support

Your instructor is not able to handle technological issues or answer questions related to computer issues.

- **Assistance accessing course Canvas page:** Contact Distance Education Support Services at [DESS@ahc.ufl.edu](mailto:DESS@ahc.ufl.edu)
- **IT Support:** Contact UF Computing Help Desk at 352-392-HELP (4357) or [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu) or submit an [online request form](#). If a technical problem causes you to miss an assignment, you must report the problem to the Help Desk and then email your instructor your Help Desk ticket number to the instructor in order to receive an extension.

## Students Requiring Academic Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course technologies meet online learning accessibility standards for sight and hearing-impaired learners. Likewise, course materials are developed in accordance with accessibility standards. Course documents and webpages are formatted for screen-reader accessibility with the use of headings, styles, or alternative text

# Online POP Course Syllabus

tagging for images. Accessibility design tools in Microsoft Office products and in Canvas are used to evaluate and update accessibility issues detected in the instructional materials. Synchronous class sessions in Zoom are recorded. These recordings are posted to the course site to accommodate students unable to attend.

- [Canvas Accessibility](#)
- [Zoom Accessibility](#)

## Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner](#). Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [ufl.bluera.com/ufl/](http://ufl.bluera.com/ufl/).

## University Honesty Policy and Academic Integrity

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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." [The Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Regarding academic integrity, students in the program are strongly encouraged to be mindful of what constitutes plagiarism. Written assignments that contain the research or other original published work of someone else must be properly quoted, cited, paraphrased, or referenced appropriately. A software (TurnItIn) that is integrated with Canvas Assignments may be utilized to help students determine if a written submission meets the criteria for a properly referenced research paper. Please ask for help, utilize resource materials and take advantage of opportunities like creating a draft of your paper to test, ensuring you have addressed any errors prior to the final submission.

Please watch these short videos about this topic:

- [Understanding and Avoiding Plagiarism: Types of Plagiarism](#)
- [Avoiding Plagiarism](#)

# Online POP Course Syllabus

## Software Use and Course Technology

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Educational technology in the program is primarily the Canvas Learning Management System (LMS) and Zoom web conferencing software. These tools firmly support learning objectives and course goals. Writing with communication tools, reading articles from digital collections, and viewing video presentations in high-quality, accessible formats are essential to facilitate meaningful learning experiences. These experiences expand knowledge and influence professional work habits and skills such as information-gathering techniques and evidence-based practice. Synchronous class sessions in Zoom provide learners with opportunities to gain confidence and practice how they interact and collaborate in online meetings.

- [Canvas Student Guide](#)
- [Zoom Resources](#)

A minimum number of other technical skills are required for success in the online courses. These include accessing course webpages to read text and listen to recorded videos, using word processing tools (MS Word, PowerPoint), downloading/uploading content, submitting online assignments and using a variety of communication tools (Canvas Inbox, Discussions, Zoom Conferences).

## Course Communication

Canvas (Inbox tool) will be used as the primary communication tool between the instructor and students. Check daily for new announcements or notifications about course updates. UF email will also be used occasionally for mass communication to the class, so please check your email at least once a day as well. All emails sent out to the entire class will also be posted as an Announcement on Canvas.

General questions about course content (e.g., assignments or lectures) or policies should be posted to the course discussion board. We expect students to help each other track down answers as best as possible. Read through all the other posts in the discussion board first before posting to make sure your question has not been addressed/answered already. Please include a clear subject title for your topics to make it clear what your post pertains to.

Emotions can easily be misinterpreted on a discussion board/emails, so make sure your message is clear before sending it since there are no physical gestures or voice inflections that accompany posts/emails. Any

# Online POP Course Syllabus

posts/emails deemed inappropriate by the faculty will be dealt with on a case-by-case basis with either the faculty directly or they will be sent on to the Associate Dean for Professional Affairs.

For personal issues/questions, please email your instructor. Be sure to include in your subject line the course listing and then a quick subject (e.g., PHA6806 – Your Name -). This will allow instructors to quickly identify emails related to the course amongst the many emails that are received each day. Emails not correctly addressed may get lost in the shuffle and unintentionally deleted or ignored so be sure to follow the guidelines exactly.

## Student Privacy

There are federal laws protecting your privacy in terms of grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

Recordings of weekly class sessions in Zoom are created for the purpose of course teaching and learning, as well as for use as a resource for students who miss a class session.

The use of video (or web camera) feature in Zoom is not a requirement, but rather is voluntary for meeting participants. For both the audio and video features in Zoom, you will have the option to Start or Stop these functions.

Students who participate with their camera engaged or who utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

- [Zoom Software Privacy Statement](#)
- [Canvas \(by Instructure\) Privacy Policies](#)

## Security

Online activity in Canvas requires an active UF GatorLink account to log in, as well as enrollment in courses. The Zoom Conference meetings for weekly classes are accessed within Canvas. These meetings have a pass code applied as an additional security setting. Students in the class do not need to enter the passcode, however anyone not enrolled in the course cannot join the meeting without it.



# Online POP Course Syllabus

## Library Resources

For remote access to UF library resources such as e-journals or other digital collections, use the [UF VPN or proxy server to connect](#).

## Additional University Resources

- **U Matter, We Care:** If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student.
- [\*\*Counseling and Wellness Center\*\*](#)
- **Sexual Assault Recovery Services (SARS):** Student Health Care Center, 392-1161.
- **University Police Department** at 392-1111 (or 9-1-1 for emergencies), or [police.ufl.edu](http://police.ufl.edu)
- [\*\*E-learning technical support:\*\*](#) 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
- [\*\*Teaching Center:\*\*](#) Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
- [\*\*Writing Studio:\*\*](#) 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
- [\*\*On-Line Students Complaints\*\*](#)