PHA 5933 Clinical Applications of Genomic Medicine

Fall B 2014 1 Semester Credit Hour

Course Purpose:

Genomic medicine is the study of genetic variation associated with disease, death, and drug response. This course will focus on how genomic medicine can be used in patient care, including family history, disease risk prediction, treatment decisions, return of genetic results, and interpretation of direct-to-consumer genetic testing. Students will work with a theoretical genotype dataset for the genomic medicine case presentations. This course will use a combination of interprofessional lectures, and case-based discussions about the clinical applications of genomic medicine and interpreting the medical literature in this area. The goal of this course is to provide health professional students with the knowledge and skills to use genomic information in their future clinical practice in an interprofessional learning environment.

Course Faculty and Office Hours

Course Coordinator:
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Co-Coordinator:
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Office Hours
By appointment only.

Place and Time of Class Sessions

This course is made up of a combination of online (asynchronous) activities, such as viewing recorded lectures and/or assignments, completing required readings, and preparing for in-class discussions, and live synchronous course meetings that occur once each week.

Live Class Sessions: Class is held Wednesday from 5:30pm to 6:20pm, via the live webinar platform. Students will be required to log in to the live, synchronous, webinar platform from their personal laptops. Students will be required to speak to the class and instructors on the webinar; as such please be aware of your environment and background noise. It is strongly preferred that students participate in the class webinar environment from home or an otherwise quiet environment.

Online, pre-class course material:
Each week instructions will be made available in the weekly Resources folder on the Sakai website for pre-class assignments, readings, and/or activities. These must be completed prior to the in-class discussion for students to be able to participate fully in the live class session (and receive full participation credit).

How This Course Relates to the Learning Outcomes You Will Achieve in the Pharm.D. Program:

This course prepares the Pharm.D. student to accomplish the following abilities and the related Student Learning Outcomes (SLOs) upon graduation:

- **2.1. Patient-centered care (Caregiver)** - Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize patient needs, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

- **3.1. Problem Solving (Problem Solver) –** Identify and assess problems; explore and prioritize potential strategies; and design, implement, and evaluate the most viable solution.

- **3.4. Interprofessional collaboration (Collaborator) –** Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

Course Objectives

Upon completion of this course, the student will:

1. Interpret and apply genomic medicine literature to patient care.
2. Apply detailed family history information to clinical decision-making and disease risk prediction.
3. Apply theoretical genetic information to clinical decision-making and disease risk prediction for the following types of diseases:
    a. Complex Diseases: Cardiovascular Disease Risk
    b. Somatic Genomics: Genomic Medicine in Breast Cancer
4. Demonstrate best practices for returning genetic test results to a patient, including legal and ethical concerns and communication strategies.
5. Explain circumstances in which a patient should be referred to a genetic counselor or other specialist.
6. Demonstrate the contributions and roles of other health care professionals in the clinical application of genomic information to patient care.

Pre-Requisite Knowledge and Skills

For student pharmacists, successful completion of 1PD and 2PD coursework is required to take this course.

Course Structure & Outline

Course Structure. The course consists of weekly web-based lectures, readings, and/or assignments, and weekly live, web-based interactions with instructors and students (via live webinar platform, 1 hour per week).

Students will be periodically assigned to present and discuss content during live sessions (e.g. answers to cases or questions). These assignments will occur in such a way as to give an equal number of opportunities for individual students to present and participate.

This course will be offered during the **second 8 weeks** of the Fall semester, and may be taken alone, or in conjunction with Clinical Applications of Genomic Medicine (offered during the first 8 weeks of the Fall semester).

Course Outline/Activities. The outline of course activities is listed in **Appendix A**.

Textbooks

There is no required text. The instructor will provide any required reading.

Active Learning Requirements

For all learning experiences in this course, including lectures, reading assignments, cases and discussions, students are expected to actively engage in the learning process, striving to comprehend the meaning and relevance of all transmitted concepts and facts. Students should strive to discover deficiencies in their understanding, and attempt to resolve those deficiencies by any of several means, including through their own research (a recommended first step) and through consultation with fellow students and course instructors.

1. Lectures: Lectures will require completion of integrated quizzes, questions, reflection, feedback, and/or other assignments to ensure that students are actively engaging in the material and integrating it with their existing knowledge base.
2. Cases and Discussions: Attending and participating in cases and discussions are active learning processes in this course. Students are expected to actively participate in discussions and case-based learning, and communicate the concepts and ideas that they have learned in the lectures and are applying in this class.
3. Reading Assignments: Reading assignments will require completion of integrated quizzes, questions, reflection, feedback, and/or other assignments to ensure students are actively engaging in the reading assignments, and understand the objectives and concepts that are in the reading assignments.

Feedback to Students

Feedback will be provided through written comments and grading on patient cases, assignments, quizzes, and online and live class participation assessments.

Student Evaluation & Grading

Evaluation Methods

Each student's grade will be based on their individual performance; assessment will also be done individually by each faculty member participating in the course.

There will be two exams (Weeks 4 and 8) during the course and 2 quizzes, which will be administered online. Quizzes will cover assigned materials (e.g., lecture, reading) and topics discussed during the in-class session that week; exams will cover materials over the previous 4 weeks of the course.

The course grade will be determined as follows:

Attendance (see attendance policy)	15%
Exams (2 exams at weeks 4 and 8)	25%
Weekly Quizzes or Assignments	25%
Class participation	20%
Final Project	15%
Total	100%

Grading Scale

95-100 = A	90-94 = A-
86-89 = B+	83-85 = B
80-82 = B-	76-79 = C+
73-75 = C	70-72 = C-
66-69 = D+	63-68 = D
60-62 = D-	<60 = E

Quizzes and Assignments:
Students will complete a short assignment, patient case, or quiz each week. Due dates and instructions for these will be posted in the weekly Resources folder on the course website. In general, each week will be associated with either a patient case, assignment, or quiz to make up this portion of the grade.

Participation:
Students' participation grade will be derived from a number of interactive course activities, which include but are not limited to the following:

- Survey(s) or alternate assignments: Students will be given the option to complete a pre- and post-course survey as part of a study being conducted in conjunction with the course. Students preferring not to complete the survey will be required to complete an alternate assignment for this portion of the participation grade, which will be posted to Sakai. Additional details about this portion of the course will be provided during the first live class session, at which time students will also have the opportunity to ask any questions.
- Participation in live, web-based sessions
- Other activities to be assigned throughout the course

Class Attendance Policy

Attendance for live, web-based sessions is required. Students will learn more from this course by attending these sessions and participating in the discussions. A student may have one unexcused absence with no penalty in the course. If a student has two to four unexcused absences, he/she will receive a reduction in the attendance portion of the grade: two unexcused absences = 20% reduction in attendance grate; three unexcused absences = 30% reduction in attendance grade; and four unexcused absences = 50% reduction in the attendance grade. If a student has five or more unexcused absences, he/she will receive zero points for attendance, resulting in a 15% reduction in the final grade.

Requests for excused absences should be directed to the course coordinator by email as early as possible in the course and will be handled on an individual basis. Examples of excused absences include: illness, death in the family, religious holiday. These should be made BEFORE the session that will be missed, if possible. Attendance will be monitored at live, web-based sessions via participation and log-in confirmation on the webinar platform.

Exam Policy

The exams will be take-home test and will be based on readings and in-class discussion for the course. Each exam will be comprised of 20 questions and students will have 30 minutes to complete the exam.

Make-up Exam Policy

Students who miss an exam due to unforeseeable circumstances, such as illness, family emergency, or death in the family should personally report this to the course coordinator PRIOR to the administration of the exam. Appropriate and verifiable documentation of the need to miss the exam will be required. Please note that circumstances other than these will be evaluated on an individual basis but notification PRIOR to the exam is still required. A make-up exam (essay format) will be provided to the student at a reasonable time, as established by the course coordinator. Only in extreme circumstances will the make-up quiz be administered more than two weeks after the scheduled exam.

Policy on Old Assignments and Exams

Students are not provided old assignments or quizzes.

Assignment Deadlines

Assignment deadlines will be provided each week in the Resources section of the Sakai website. In some cases, assignments should be completed prior to the Wednesday in-class discussion while in others the assignments are due at the end of the week.

Pre-Course and Post-Course Survey and Alternative Assignment

The participation grades for weeks 1 and 8 require completion of a pre-course and post-course survey or submission of an alternative assignment.

- *Pre-course Survey*: By the end of week 1, students will receive an email from the study coordinator, which will include instructions on how to complete the pre-course survey. Students will have 1 week to complete the survey. If a student does not wish to participate in the survey, the student may complete the alternative assignment.
- *Pre-course Survey Alternative Assignment*: 1-2 paragraph reflection on the potential impact of genomic medicine on patient care and the health care system. Students will also have 1 week to complete the alternative assignment, this should be turned into the study coordinator to preserve anonymity.
- *Post-course Survey*: At the beginning of week 8, students will receive another email from the study coordinator with instructions on how to complete the post-course survey. Students will again have 7 days to complete the survey.
- *Post-course Survey Alternative Assignment*: 1-2 paragraph reflection on potential impact of genomic medicine on patient care and the health care system, taking into account the content that was covered over the course. Again, students will have 1 week to complete the alternative assignment, and should turn in the alternative assignment to the study coordinator.

General College of Pharmacy Course Policies

The College of Pharmacy has a website that lists course policies that are common to all courses. This website covers the following:

1. University Grading Policies
2. Academic Integrity Policy
3. How to request learning accommodations
4. Faculty and course evaluations
5. Student expectations in class
6. Discussion board policy
7. Email communications
8. Religious holidays
9. Counseling & student health
10. How to access services for student success
11. Faculty Lectures/Presentations Download Policy

Please see the following URL for this information:
http://www.cop.ufl.edu/wp-content/uploads/dept/studaff/policies/General%20COP%20Course%20Policies.pdf

Complaints

Should you have any complaints with your experience in this course please contact your course coordinator. If unresolved, contact the COP Senior Associate Dean-Professional Affairs. For unresolved issues, see:
http://www.distancelearning.ufl.edu/student-complaints to submit a complaint.

Other Course Information

Appendix A: Directions for contacting faculty and instructors
Appendix B: Schedule of course activities/topics

Appendix A: Directions for Contacting Faculty & Course Faculty List

Directions for Contacting Course Faculty

Questions regarding the readings, course content, and lecture content should be brought up during the live, web-based sessions or on the online course discussion board.

Questions regarding the course in general or other personal matters should be sent to Dr. Weitzel and Dr. McDonough.

Course Coordinator

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Instructors

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Caitrin McDonough, PhD, cmcdonough@cop.ufl.edu
Other instructors to be determined

Appendix B. Schedule of Course Activities/Topics

Wk	Date	Instructor(s)	Lecture Topic	Live Web-Based Interaction
1	10/20-10/26	McDonough and Weitzel	Introduction to Genomic Medicine & Types of Genomic Studies	Class orientation, explanation of pre-course survey Discussion: Introduction to Genomic Medicine (Pre-course survey or alternate assignment)
2	10/27-11/2	McDonough and Weitzel	Principles of Genetics and Genomics in Clinical Practice	Discussion: Genomics in clinical medicine (**QUIZ 1** covering weeks 1 and 2 material open 10/30-11/2)
3	11/3-11/9	McDonough and Weitzel	Direct-to-consumer genomic testing	Discussion: Direct-to-consumer genomic testing (Direct-to-consumer genomic testing assignment due 11/9)
4	11/10-11/16	Weitzel	Genomic Medicine Implementation	Discussion: Factors influencing genomic medicine implementation (no assignment or quiz this week - Exam)
Exam 1 (weeks 1-4 material) will be open from 11/13 to 11/16				
5	11/17-11/23	McDonough and Weitzel	Genomic Testing: Complex Diseases Part 1	Discussion: Patient cases on genomic medicine in cardiovascular disease risk assessment Double class this week (**QUIZ 2** covering Weeks 5-6 open 11/20-11/24)
6	11/24-11/30 Happy Thanksgiving! 	McDonough and Weitzel	Genomic Testing: Complex Disease Part 2	(No live class– Double class Week 5)
7	12/1-12/7	Orlando and Weitzel	Family History	Discussion: Clinical use of family history (Family health history assignment due 12/7) Final Project Assigned
8	12/8-12/14 	TBD	Genetic Counseling	(No live class due to final project and exam) Post-course survey/assignment due 12/14 Final Project Due 12/14
Exam 2 (Weeks 5-8 material) will be open from 12/11 to 12/14				