Texas A&M University - Corpus Christi
College of Nursing and Health Sciences
NURS 6302
Genomics in Health Care Syllabus
Spring, 2017

FACULTY: Christina Murphey, RN, PhD
OFFICE: Island Hall, #350J
OFFICE HOURS: TBD
TELEPHONE: 361.825.2244
EMAIL: christina.murphey@tamucc.edu
FAX: 361.825.2484
CREDITS: 3 semester hours

GENERAL INFORMATION:
This course is required for doctoral students enrolled in the Texas A&M University-Corpus Christi College of Nursing and Health Sciences Doctor of Nursing Practice program.

COURSE PURPOSE:
The purpose of NURS 6302 – Genomics in Health care is to enhance the student’s competence in the application of genetic and genomic principles in the practice of advanced nursing. These principles are considered essential to the delivery of complex health care and to designing healthcare systems that assure medically necessary and clinically appropriate care is available to all patients.

COURSE DESCRIPTION:
Focus is on the relationship between genes, environment, and health. Emphasis will be placed on concepts of prevention and treatment effectiveness within cultural care contexts. Ethical and legal considerations will also be addressed.

PRE-REQUISITES: None

COURSE OBJECTIVES:
Within the context of the AACN DNP Essentials, at the end of this course, the student will be able to:
1. Assess the current knowledge base necessary to use genetics and genomics in advanced nursing practice and leadership in modern global health care delivery. (Essential I and II)
2. Critique factors that modulate gene function epigenetically and ecogenetically that influence individual and population health across the lifespan. (Essential I, II, III)
4. Interpret current legislation and ethical principles that guide and regulate appropriate use of genetic and genomic information among providers of care to individuals and populations. (Essential IV, V, VI)

Dr. Murphey
Course Syllabus
NURS 6302-Genomics in Health Care
REQUIRED TEXTS AND RESOURCES:
Required Text:

Required Readings Available through Electronic Reserves:


Dr. Murphey
Course Syllabus
NURS 6302-Genomics in Health Care
LEARNING EXPERIENCES AND TEACHING METHODS:
A variety of distance learning strategies are used in this Web-based course. Guided independent reading assignments, discussion, written exercises, and self-assessment quizzes are incorporated into the Bb courseware package. Students should be guided in the identification of personal learning needs by the course objectives and lessons. Students should exhibit self-direction and demonstrate that learning has occurred by the successful completion of coursework which may include field experiences. Students are responsible for documenting time in field experiences they may complete in this course in the DNP portfolio.

GUIDELINES FOR FORM AND STYLE OF WRITTEN ASSIGNMENTS:
Students are expected to follow instructions associated with the assignments for this course. Students who are confused about an assignment should contact the appropriate faculty member(s) in a timely manner to insure satisfactory completion of the assignment on the date it is due. Unless otherwise instructed, students should use the APA Publication Manual, 6th Edition as a reference for formatting and organizing written assignments.

COURSE REQUIREMENTS:
1. Evidence of preparation for weekly class discussion is determined by participation. Because every student's presentation grade will be based in part on the ability to engage classmates in discussion, it is imperative that students prepare for each class. Your classmates will depend on you.
2. This course is web-based and the principles of distance learning apply for all students. The online week runs from Monday-Friday. That means that all students should have completed background assignments to prepare for the weekly activities.
3. Students are expected to have access to a computer that can support Bb applications.
4. All email communication should occur through the Bb structure. Students should review messages/discussions at least every 48 hours.
5. All assignments are due at 11:55 pm on the date indicated in the course schedule. Students should review the schedule throughout the semester to insure that class assignments are completed correctly and by the due date. Please print a copy of your syllabus and the course schedule as a reference.
6. The nature of the content of this course may promote extensive debate during class discussion. Since students are assumed to be prepared for the discussions, everyone's contributions will be considered knowledgeable contributions. Contributions should be made in a respectful manner and the discussion should be an orderly sharing of ideas. NO disrespect to classmates will be tolerated.

Dr. Murphey
Course Syllabus
NURS 6302-Genomics in Health Care
7. Professional information disclosed through course discussions is confidential and should not be shared with others outside the context of this course.
8. Students are expected to complete a course evaluation at the end of the course.

**COURSE GRADE COMPONENTS:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Studies</td>
<td>100</td>
<td>10%</td>
</tr>
<tr>
<td>Pharmacogenomics Assignment</td>
<td>100</td>
<td>10%</td>
</tr>
<tr>
<td>Family Pedigree</td>
<td>100</td>
<td>25%</td>
</tr>
<tr>
<td>Group Presentation</td>
<td>100</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>100</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>100</td>
<td>15%</td>
</tr>
<tr>
<td>Doctor of Nursing Practice Experience Portfolio- Implications of Target Population Genomics</td>
<td>No credit earned – program requirement</td>
<td></td>
</tr>
<tr>
<td>Review Modules</td>
<td>No credit earned – recommended preparation for course</td>
<td></td>
</tr>
</tbody>
</table>

**Total**

N/A 100%

The grading scale for the College of Nursing and Health Sciences is:

- **A** = 90 – 100
- **B** = 83 – 89
- **C** = 75 – 82
- **D** = 67 – 74
- **F** = below 67
**CLASS SCHEDULE**

The material in this syllabus and dates identified in the class schedule are subject to change. Students will be notified of changes in a timely manner.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s) and Activities</th>
<th>Readings, Assignments and Due Dates</th>
</tr>
</thead>
</table>
| **Week 1** | Course Overview and Orientation  
Genetic website search  
HGP information search | Cummings: pp. 13-16  
ANA/ISONG Essential Nursing Competencies in Genetics  
Begin Review Module |
| **Week 2** | - Family History and Pedigree Construction and Analysis | Cummings: Chapter 5; pp. 59-64  
Bennett, *Standard Pedigree Nomenclature*  
Guttmacher, Collins, & Carmona, *The Family History*  
**Case Study #1 Due** |
| **Week 3** | - The Team Approach to Genetic Services  
- The Nurse’s Role in Genetic Screening, Testing, and Counseling  
- Methods Used in Genetic Testing  
- Prevention of Birth Defects  
- Prenatal Screening and Diagnostic Procedures  
- The Nurse’s Role in Caring for Families Affected by Birth Defects | Cummings: Chapter 16; (16.4); pp. 33-39, 124-142  
Hasley, Williams, & Donahue, *Ethical Issues in Genetic Testing*  
Lashley, *Impact on the Family* (pp. 163-171)  
**Case Study #2 Due** |
| **Week 4** | - Newborn Screening for Metabolic Disease  
- Newborn/Pediatric Assessment for Genetic Disorders  
- Genetic Disorders of Childhood Onset | Cummings: Chapter 16; pp. 219-228  
**Group membership, presentation topic and date posted** |
| **Week 5** | **EXAM 1** |  

Dr. Murphey  
Course Syllabus  
NURS 6302-Genomics in Health Care
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s) and Activities</th>
<th>Readings, Assignments and Due Dates</th>
</tr>
</thead>
</table>
| Week 6     | - Genetic Disorders of Adult Onset  
             - The Genetic Basis of Cancer                                                      | Cummings: pp. 74, 87, 317, 401, 405-407; NF-1, Chapter 12, pp. 266-289  
             •  *Case Study #3* Due  
             •  *Family Pedigree* Due                                                                 |
| Week 7     | - The Genetic Basis of Behavior  
             - Pharmacogenomics  
             Personalized Medicine                                                        | Cummings: Chapter 18; pp. 232-236, 340  
        *Prows & Prows, Medication Selection by Genotype*                                     |
| Week 8     | Presentation Consults/Faculty Recommendations                                              | •  *Case Study #4* Due                                                                                   |
| Week 9     | Student Presentations                                                                    | •  *Case Study #5* Due                                                                                   |
| Week 10    | Student Presentations                                                                    | •  *Case Study #6* Due                                                                                   |
| Week 11    | Student Presentations                                                                    | •  Pharmacogenomics Assignment Due                                                                      |
| Week 12    | Implications of genomics for targeted population health                                   | Independent student reading  
             Discussion Opens                                                                                         |
| Week 13    | Implications of genomics for targeted population health                                   | Discussion Closed                                                                                         |
| Week 14    | EXAM 2                                                                                  |                                                                                                         |
| Week 15    | Faculty Consultation on Population Health Genomics Course Wrap-up                        | *Faculty and Course Evaluation*                                                                         |
WEEK 1

Course Overview and Orientation Guidelines for Blackboard (Bb) Skill Demonstration

Many students struggle to comply with course requirements because they cannot navigate the Bb courseware. The purpose of this exercise is to familiarize students with Bb and its various tools. To complete this activity, you must complete at least one of several tutorials available through e-learning on Bb.

For this assignment:
Select at least one of the tutorials available for student orientation to Bb. If you are experienced with Bb use this exercise to learn something new about the many features. If this course is the first you have taken through Bb, focus your time on learning the basics about discussion, email, gradebooks, and content modules. After completing the tutorial, every student should create a brief discussion post that informs the class about what tutorial you used.
You should also identify two support options available to you as a student enrolled in this web-based course.
You will not receive a grade for this exercise but no assignments will be graded until this exercise is completed.

Guidelines for Student Introduction
For this assignment you must:
Introduce yourself and identify your current position in a class discussion post.
Describe your expectations for this course.
You will not receive a grade for this exercise but no assignments will be graded until this exercise is completed.

Complete Review Modules
Review modules are designed to help students review basic entry-level principles and concepts from prerequisite biology/genetics courses at their own pace. Basic principles of covered in the review modules may be tested on course quizzes (see class schedule). These modules are intended to support student success in this course so learning activities contained in the modules will not be graded. Students are strongly advised to complete the review activities as preparation for the more complex material covered in the course. Instructions for completing the review module(s) will be posted in the course Bb shell under Modules.

Guidelines for Case Studies - 100 points each for 10% of the course grade
The purpose of the case studies is to simulate clinical experiences where students will be required to apply the principles examined in the weekly content. Students are required to complete six case studies, five of which will be used to calculate the case study component of the course grade. The lowest case study grade will be dropped. The case study details will be provided to students in the Assignment component of Bb. Each case study will be worth 100 points (2% each assignment) and will account for 10% of the total grade. Each case study is to be completed individually by students and submitted for grading through Bb.

General Grading Criteria for Case Studies (refer to Case Study details for case-specific grading criteria)
WEEK 2

Case Study #1 due
Guidelines for Family History and Pedigree Analysis- 100 points/ 25% of the course grade
The purpose of this assignment is to provide students the opportunity to practice family history interview skills and the documentation of the interview findings. Students must complete the documentation using graph paper. Electronic and/or software print outs will not be accepted; the family pedigree must be hand drawn. *Graph paper is required for this project. Detailed instructions for completing the pedigree with helpful hints can be found under Assignments in the Bb shell.

Grading Criteria for Family History and Pedigree

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Potential Point Deduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>No arrow depicting index/proband</td>
<td>-2 to -5</td>
</tr>
<tr>
<td>Race/ethnicity not indicated at top/both sides of family</td>
<td>-2 to -4</td>
</tr>
<tr>
<td>No line through deceased</td>
<td>-2</td>
</tr>
<tr>
<td>Wrong lines</td>
<td>-2 to -5</td>
</tr>
<tr>
<td>Missing d. on deceased</td>
<td>-1</td>
</tr>
<tr>
<td>Oldest on left</td>
<td>-1</td>
</tr>
<tr>
<td>Male partner/father not on left</td>
<td>-2</td>
</tr>
<tr>
<td>No cause of death listed</td>
<td>-4</td>
</tr>
<tr>
<td>No shortened line for abortion/miscarriage</td>
<td>-1</td>
</tr>
<tr>
<td>Colored in healthy/confusing</td>
<td>-3</td>
</tr>
<tr>
<td>Roman numerals missing or wrong</td>
<td>-2</td>
</tr>
<tr>
<td>Pedigree number missing or wrong</td>
<td>-2</td>
</tr>
<tr>
<td>Not aligned</td>
<td>-3 to -9</td>
</tr>
<tr>
<td>Does not specify type of disorder (DM, CA, etc.)</td>
<td>-2</td>
</tr>
<tr>
<td>Lumps disorders (CA, DM, etc.)</td>
<td>-3</td>
</tr>
<tr>
<td>Name/initials missing</td>
<td>-2</td>
</tr>
<tr>
<td>Age missing</td>
<td>-4</td>
</tr>
<tr>
<td>Parents not in center</td>
<td>-2</td>
</tr>
<tr>
<td>Disorder on pedigree not in legend/key</td>
<td>-2 first/-1 thereafter</td>
</tr>
<tr>
<td>Write diseases on pedigree</td>
<td>-2</td>
</tr>
<tr>
<td>Did not draw the other parent for a 1/2 sibling</td>
<td>-2</td>
</tr>
<tr>
<td>Pregnancy not indicated</td>
<td>-1</td>
</tr>
</tbody>
</table>
**WEEK 3**

Case Study II Due
Review overview for Case Studies in Week 1. Read detailed instructions for Case Study II available in the course Bb shell under Assignments.

**WEEK 4**

**Guidelines for Student Presentations: 100 points for 25% of the course grade**
This assignment provides students the opportunity to examine relevant concepts and principles in detail through collaboration with classmate. For the class presentation, students will work in groups of 3-4 members (depending on class size). The class presentation is a group project; all group members will receive the same grade. Group membership, topic, and due date will be assigned by the course faculty. This information will be posted in the Bb Discussion Board in Week 4. Each group of students will have a discussion area to support interaction. ALL work should be completed in the discussion forum unless approved by the course faculty. The information will be presented to classmates in a WebEx synchronous class session using a PowerPoint format. Students must inform the course faculty about any conflict that will affect participation in this assignment at the time groups are formed. See assignment details in the respective folder under Assignments.

**WEEK 5**

EXAM 1: Guidelines for Examinations in the Graduate Nursing Department Graduate students enrolled in the Texas A&M University-Corpus Christi College of Nursing and Health Sciences are required to take graded examinations at secure locations under the supervision of a proctor. Exam questions are generated from class readings, lectures, activities, study guides, self-study modules, assignments and discussions. Exams consist of NCLEX-style questions and may include multiple choice, fill-in-the-blank, matching and T/F. Students will have the opportunity to review their examinations for up to one week after the exam and at a scheduled time following posting of the results, or by appointment.

**WEEK 6**

Case study #3
Family Pedigree Due

**WEEK 7**

No assignments due.
Refer to course schedule for required readings.

---

| Group #s wrong, no grandparents and/or sibs listed | -4 |
| No legend and/or key on pedigree | -3 |
| Historian, date, etc. not listed | -2 |
| Hypothesize about inheritance pattern | -2 |
| Other missing data, overall sloppy, confusing, difficult to read/interpret, cramped-more graph paper needed, too many smudges, etc. | -1 to -10 |

Dr. Murphey
Course Syllabus
NURS 6302-Genomics in Health Care
WEEK 8
Meetings with Faculty
Case Study #4 Due

WEEK 9
Student Presentation Groups 1 & 2
Case Study #5 Due

WEEK 10
Student Presentation Groups 3 & 4
Case Study #6 Due

WEEK 11
Guidelines for Pharmacogenomics Assignment

WEEK 12
Independent student reading
Discussion Opens

WEEK 13
Independent student reading
Discussion Closed

WEEK 14
EXAM 2
Guidelines for Examinations in the Graduate Nursing Department
Graduate students enrolled in the Texas A&M University-Corpus Christi College of Nursing and Health Sciences are required to take graded examinations at secure locations under the supervision of a proctor. Exam questions are generated from class readings, lectures, activities, study guides, self-study modules, assignments and discussions. Exams consist of NCLEX-style questions and may include multiple choice, fill-in-the-blank, matching and T/F. Students will have the opportunity to review their examinations for up to one week after the exam and at a scheduled time following posting of the results, or by appointment.

WEEK 15
Faculty Consultation on Population Health Genomics
Course Wrap-up
Faculty and Course Evaluations

COURSE POLICIES
Evaluation Input from Students:
The faculty of the College of Nursing and Health Sciences places great value on evaluative input from students. Evaluation of courses, instructors and clinical facilities provides the College with important data which is used to strengthen the program. Data is analyzed as to trends and themes and is important to curriculum and sequencing decisions. All evaluations for courses posted are online. The online mechanism allows us the opportunity to tabulate and store information in order to analyze trends within the curriculum. Please be assured that this information is secured and not released until after grades are submitted. No names are available to faculty. In order to garner some reliability and validity, the College must have representative data from the student population. That representation, based on the literature, has been set at 70%. The College is anticipating that students will thoughtfully participate in the evaluation process which will assist

Dr. Murphey
Course Syllabus
NURS 6302-Genomics in Health Care
the faculty with the growth of the program. A link to evaluations will be available on Bb toward the end of the semester. Thank you in advance for your assistance with the evaluation process.

**Academic Integrity and Honesty:**

It is expected that University students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior. University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to a penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, forgery, or plagiarism. (Plagiarism is intentionally, knowingly, or carelessly presenting the work of another as one’s own). Please see the following sites for additional information:

- University Student Handbook and Code of Conduct: [http://www.tamucc.edu/~students](http://www.tamucc.edu/~students)
- University catalog related to academic integrity and honesty: [http://catalog.tamucc.edu/](http://catalog.tamucc.edu/)

**Students with Disabilities:**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services Office at 361.825.5816 or visit the office in CCH 116. If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disabilities Services office for assistance at (361) 825-5816

**Title IX:**

As part of the Texas A & M Corpus Christi University policy, pregnant students are urged to contact the Title IX office for facilitation of academic issues impacted by pregnancy, delivery and subsequent complications. Contact information: Mr. Samuel Ramirez, Title IX Coordinator or Ms. Rosie Ruiz, Deputy Title IX Coordinator (825-5826).

**Active Military Duty:**

Active duty military personnel, military spouses, and veterans with special circumstances (eg: deployment, drill requirements, disabilities) are welcome and encouraged to communicate these, in advance if possible, to the course and clinical instructor.

**Grade Appeals Process:**

The College of Nursing and Health Sciences (CONHS) adheres to the University’s student grade appeal procedures described in Section 13.02.99.C2.01 (revised May, 2013) and follows those guidelines. See [http://academicaffairs.tamucc.edu/Rules_Procedures/](http://academicaffairs.tamucc.edu/Rules_Procedures/) for the University procedure and see [http://conhs.tamucc.edu/shb/](http://conhs.tamucc.edu/shb/) for the CONHS process identified in the Student Handbook.

Dr. Murphey
Course Syllabus
NURS 6302-Genomics in Health Care
Support Services: Students are encouraged to seek faculty assistance in accessing University Services, including tutoring, health services, personal counseling, degree counseling, financial aid, learning resources, job/work placement, career guidance, and computer/technical support/instruction. If a student is interested in other support services provided by the University, the student is encouraged by the College of Nursing and Health Sciences and the University to seek these services.