



## **NURS 4384.01 NURSING GENETICS AND GENOMICS**

### **COURSE SYLLABUS: FALL 2024**

#### **INSTRUCTOR INFORMATION**

Faculty: Monica Tenhunen, DNP, RN, GNP-BC  
Office Location: online  
Office Hours: contact via email  
Office Phone: 903-886-5315  
Office Fax: 903-886-5729  
University Email Address: monica.tenhunen@tamuc.edu

Preferred Form of Communication: **Email**  
Communication Response Time: Two (2) business days

#### **COURSE INFORMATION**

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

Beery, T. A., Workman, M. L., & Eggert, J. A. (2018). *Genetics and genomics in nursing and health care* (2<sup>nd</sup> ed.). F.A. Davis

Online resources and articles as directed

Software Required: None

Optional Texts and/or Materials: None

*The syllabus/schedule are subject to change.*

## **Course Description**

Study of health promotion and maintenance for individuals and families within the context of human diversity and the implications for best practices associated with genomic information, including ethics and genetic counseling. Focuses on the genomic determinants of health.

## **Student Learning Outcomes**

By the end of the course, the student will be able to:

1. Interpret basic genetic and genomic terms, diagnostic testing, patterns of inheritance, and personalized medicine treatments.
2. Identify the risks, incidence, features and treatments of genetic and genomic health problems across the lifespan, including mental illnesses.
3. Apply knowledge of testing, familial patterns, genetic disorders and treatments to design a care plan for a client with genetic risks or illness.
4. Create an education program modeling effective patient communication using credible genetic and genomic information sources, patient information, and referrals based on cultural, religions, age, knowledge, and literacy levels.
5. Evaluate the risks, future uses, ethical dilemmas, and possible pitfalls of genetic advances regarding testing including false negative/positive results and diagnosis of untreatable conditions.

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

Using the learning management system, and using Microsoft Word, Microsoft Excel and PowerPoint.

### **Instructional Methods**

### **Formative/Summative Assessments:**

This course includes both formative activities and assignments (practice) and summative (graded) assessments. The formative activities and

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assignments are designed to guide your learning and are not included in the course grade. Formative activities and assignments are recommended but not required for course completion. Formative activities and assignments provide practice and the opportunity for instructor feedback prior to completing the graded summative assessments. The summative assessments allow you to demonstrate competency and are required as part of the course grade.

This is an online course without lecture requiring students to complete online activities and independent study to be successful. Course objectives may be met through individual study using suggested resources, active involvement in course activities, formal, and informal exchange of ideas with classmates and colleagues regarding specific topics as well as utilizing critical thinking skills. Teaching methods include seminar, discussion, independent study of texts and library resources, computer-assisted instruction, audio-visual aids, and the assignments listed. While the professor will provide guidance and consultation, the student is responsible for identification of learning needs, self-direction, seeking consultation and demonstration of course objectives.

### **Student Responsibilities or Tips for Success in the Course**

- Logging into the course website daily during the week
- **Checking emails at least daily**
- Updating semester calendar with communicated changes
- At least three hours of weekly study
- Review of examinations.

### **GRADING**

The pacing guide dates for all course (class) assignments are noted on the Course Calendar. Assignments are to be submitted in D2L unless otherwise noted. Calendar dates are a guide to keep the student moving through the course and are noted as pacing dates in the modules. All work must be submitted with satisfactory score by the end of course date.

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Final grades in this course will be based on the following scale:

A = 90%-100% (Exceeds Expectations)

B = 75%-89% (Meets Expectations)

F = Below 75 (Needs Improvement and will retake the course)

**Note: A minimum grade of 75 is required to pass the course.**

### Formative Assessments

Module 1	None
Module 2	None
Module 3	1) Family Health History-Genogram Assignment
Module 4	1) Diabetes Case Study
Module 5	None
Module 6	1) Pharmacogenomics Case Study
Module 7	1) Issues

### Summative Assessments

Module 1	1) Genetics and Genomics Reflection Short Paper (SLO #1-#5)	10%
Module 2	1) Examination #1 (SLO #1-#5)	20%
Module 3	1) Communication Reflection Assignment with completed Genogram (SLO #1-#5)	10%
Module 4	1) Examination #2 (SLO #1-#5)	25%
Module 6	None	

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Module 7	1) Examination #3 (SLO #1-#5) 2) Genetics and Genomics Post-Course Reflection (SLO #1-#5)	25% 10%
	Total	100%

**ALL SUMMATIVE ASSESSMENTS DUE BY 2359, 12/12/2024**

**Submissions:**

The course outline/schedule is included to guide the student to complete all tasks during the course. You may submit assignments early. Students who do not complete assignments and do not demonstrate competency will receive a needs improvement grade for the course and be required to retake the course. Competency for all exams is defined as 75%. Competency for written assessments and performance assessments is 80%.

**Paper Submissions:**

All documents submitted online are to be in .docx, .rtf, or .pdf format. No other formats will be accepted (JPEG, GIF, etc.). Assignments need to be submitted in a maximum of one document per assignment. Failure to follow these guidelines will result in a grade of “0” on the assignment.

**Assignments and Assessments:**

The pacing guide dates for all course (class) assignments are noted on the Course Outline. Assignments are to be submitted in D2L unless otherwise noted. Calendar dates are a guide to keep the student moving through the course. All work must be submitted with satisfactory score by the end of course date.

**Assessments**

**Assessments and Purpose of Each:** There is a variety of assignments for this class to accommodate different learning styles.

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## **Formative Assessments**

### **1. Family Health History-Genogram (Module 3)**

The purpose of this assessment is to apply your knowledge into practice with a patient. This assignment will allow you to reflect on your experience in communicating with the patient.

### **2. Diabetes Case Study (Module 4)**

The purpose of this assessment is to complete a case study on a patient with a genetic related disorder. This assessment will assist you in applying concepts into practice.

### **3. Pharmacogenomics Case Study (Module 6)**

The purpose of this assessment is to complete a case study on a patient with pharmacogenetics issue and reflect on how your practice will be influenced by genomic care. This assessment will demonstrate your knowledge and using concepts in practice to meet the course competencies.

### **4. Issues (Module 7)**

The purpose of this assessment is to complete an identification of issues related to a variety of genetic/genomic situations. This assessment will assist you in applying concepts into practice.

## **Summative Assessments**

***ALL SUMMATIVE ASSESSMENTS DUE BY 2359, 12/12/24***

### **1. Examinations 70% total, 20%/25%/25% module 2, 4, & 7**

There are three examinations in this class in the modules identified. The exams will include terminology from the applicable chapters in the textbook. The questions will be in multiple formats: multiple choice, multiple answer, matching, short answer, etc.

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The purpose of these assessments is to review and learn information on the indicated content areas. By taking an examination, you will be demonstrating your knowledge and use of the concepts in practice to meet the course competencies (Learning outcomes #1-#5).

**2. Reflection Papers 30% total (10% each) module 1, 3 & 7**

The purpose of these assessments is for you to reflect and discuss the indicated topic area. By completing these papers, you will be demonstrating your knowledge and use of the concepts in practice to meet the course competencies (Learning outcomes #1-#5).

## **COURSE SPECIFIC PROCEDURES/POLICIES**

### **Nursing Student Guide**

Specific information for the nursing student regarding the nursing program and current policies and procedures can be found in the BSN Student Guide located

here: <http://www.tamuc.edu/academics/colleges/educationHumanServices/departments/nursing/Current%20Students/BSNstudentguidebook/default.aspx>

Students must adhere to standards of professional and academic conduct. Academic misconduct involves any activity that tends to compromise the academic integrity of the University, or subvert the educational process, including, but not limited to, cheating, plagiarism, falsifying academic records, misrepresenting facts and any act designed to give unfair academic advantage to the student or the attempt to commit such an act. Students are responsible for their own academic honesty and for reporting violations of academic honesty by others (Nursing Student Conduct Code--See the BSN Student Guide).

### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

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## **Interaction with Instructor Statement**

It is expected that you will check your D2L course and email at least **DAILY** for communication from the instructor. Communication between faculty and students is important and taken seriously. Preferred communication methods are through email through the Texas A&M University-Commerce email system, accessible within the D2L course. All students will be treated with collegial respect and are expected to communicate likewise in a professional manner. Students should check their university email accounts daily for course updates and communication with the instructor. It is expected that assignments will be graded and returned to the student within two (2) weeks of submission.

## **Class Attendance**

Class attendance for online courses is defined as completing module activities and is expected. As an adult learner and responsible professional, the student is responsible for reading and completing assignments. It should not be expected that all material will be covered by the instructor.

## **TECHNOLOGY REQUIREMENTS**

### **LMS**

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

Zoom Video Conferencing Tool

[https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom\\_Account.aspx?source=universalmenu](https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu)

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## **ACCESS AND NAVIGATION**

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

## **COMMUNICATION AND SUPPORT**

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

## **University Specific Procedures/Policies**

### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

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Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

### **TAMUC Attendance**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

### **Academic Integrity**

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism). Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

**Undergraduate Students Academic Integrity Policy and Form**

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

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## [Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

## **Graduate Students Academic Integrity Policy and Form**

### [Graduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

## **Students with Disabilities-- ADA Statement**

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 have a disability requiring an accommodation, please contact:

### **Office of Student Disability Resources and Services**

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

### **Nondiscrimination Notice**

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin,

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disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

### **Campus Concealed Carry Statement**

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

### **Mental Health and Well-Being**

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.



The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. For more information

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regarding Counseling Center events and confidential services, please visit [www.tamuc.edu/counsel](http://www.tamuc.edu/counsel)

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## NURS 4384 Genetics and Genomics Fall 2024 Course Outline

Module	Course Content	Resources	Assessments (Formative/No Grade)	Assessments (Summative/ Graded)	Pacing Date
<b>Start Here</b>	<ul style="list-style-type: none"> <li>• <b>Welcome video</b></li> <li>• <b>Syllabus</b></li> <li>• <b>Course orientation</b></li> <li>• <b>Competency review</b></li> </ul>	Syllabus Competencies			<b>October 31, 2024</b>
<b>1 Basic Concepts</b>	<ul style="list-style-type: none"> <li>• DNA Structure and Function</li> <li>• Protein Synthesis</li> <li>• Genetic Influences on Cell Division, Cell Differentiation, and Gametogenesis</li> </ul>	Chapters 1-3 Text and PowerPoint Slides		<b><i>Genetics and Genomics Reflection Short Paper</i></b>	<b><i>November 3, 2024</i></b>

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<b>Module</b>	<b>Course Content</b>	<b>Resources</b>	<b>Assessments (Formative/No Grade)</b>	<b>Assessments (Summative/ Graded)</b>	<b>Pacing Date</b>
<b>2 Gene Expression 1</b>	<ul style="list-style-type: none"> <li>• Patterns of Inheritance</li> <li>• Epigenetic Influences on Gene Expression</li> <li>• Autosomal Inheritance and Disorders</li> </ul>	Chapters 4-6 Text and PowerPoint Slides		<b><i>Examination #1 (Chapters 1-6)</i></b>	<b><i>November 10, 2024</i></b>
<b>3 Gene Expression 2</b>	<ul style="list-style-type: none"> <li>• Sex Chromosome and Mitochondrial Inheritance and Disorders</li> <li>• Family History and Pedigree Construction</li> <li>• Congenital Anomalies, Basic Dysmorphology , and Genetic Assessment</li> </ul>	Chapters 7-9 Text and PowerPoint Slides	<b><i>Family Health History-Genogram Assignment</i></b>	<b><i>Communication Reflection Assignment with completed Genogram</i></b>	<b><i>November 17, 2024</i></b>

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<b>Module</b>	<b>Course Content</b>	<b>Resources</b>	<b>Assessments (Formative/No Grade)</b>	<b>Assessments (Summative/ Graded)</b>	<b>Pacing Date</b>
<b>4 Life Span</b>	<ul style="list-style-type: none"> <li>• Enzyme and Collagen Disorders</li> <li>• Common Childhood-Onset Genetic Disorders</li> <li>• Common Adult-Onset Genetic Disorders</li> </ul>	Chapters 9-12 Text and PowerPoint Slides	<b><i>Diabetes Case Study</i></b>	<b><i>Examination #2 (Chapter 7-12)</i></b>	<b><i>November 24, 2024</i></b>
<b>5 Health Conditions</b>	<ul style="list-style-type: none"> <li>• Cardiovascular Disorders</li> <li>• The Genetics of Cancer</li> <li>• Genetic Contributions to Psychiatric and Behavioral Disorders</li> </ul>	Chapters 13-15 Text and PowerPoint Slides			<b><i>December 1, 2024</i></b>

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<b>Module</b>	<b>Course Content</b>	<b>Resources</b>	<b>Assessments (Formative/No Grade)</b>	<b>Assessments (Summative/ Graded)</b>	<b>Pacing Date</b>
<b>6 Disease Management</b>	<ul style="list-style-type: none"> <li>• Genetic and Genomic Testing</li> <li>• Assessing Genomic Variation on Drug Response</li> <li>• Health Professionals and Genomic Care</li> </ul>	Chapters 16-18 Text and PowerPoint Slides	<b><i>Pharmacogenomics Case Study</i></b>		<b><i>December 8, 2024</i></b>
<b>7 Issues</b>	<ul style="list-style-type: none"> <li>• Financial, Ethical, Legal, and Social Considerations</li> <li>• Genetic and Genomic Variation</li> </ul>	Chapter 19-20 Text and PowerPoint Slides	<b><i>Issues Assignment</i></b>	<b><i>Examination #3 (Chapters 13-20)</i></b>  <b><i>Genetics and Genomics Post-Course Reflection</i></b>	<b><i>Thursday, December 12, 2024</i></b>  <b><i>ALL SUMMATIVE ASSESSMENTS DUE BY 2359, 12/12/24</i></b>

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