

SAM HOUSTON STATE UNIVERSITY  
College of Health Sciences  
School of Nursing  
NURS 4384: Genetics and Genomics in Nursing

**Course description:** This course is designed to provide nursing students with basic information about genetics and genomics essential in providing care to individuals, families and communities. Students will learn basic competencies in genetics and genomics and gain understanding of applying these to nursing practice. The course prepares the students by strengthening basic principles while exploring new advances and discussing the benefits and risks of genetic testing and treatment. Group activities, discussions, pedigree construction, and building a position statement will provide opportunities for students to integrate theory into nursing practice.

**Semester/Year:** Spring 2018

**Class meeting times:** Online **Class meeting place:** Online

**Faculty:**

Name: Angela Jarrell, PhD, RN

Cell Phone: 281-541-6129, calling and/or texting allowed between 9:00am – 5:00pm only

Email: [afs014@shsu.edu](mailto:afs014@shsu.edu)

Office Hours: Scheduled or by appointment

**Course Credit:** Three (3) semester credit hours

**Pre-requisites/Co-requisites:** None

**Course Objectives: (Link each to Program Objectives, Texas DECS and AACN BSN Essentials)**

Objective/s	Activities/ Assignments	Measurement	Standards Alignment
1. Interpret basic genetic and genomic terms, diagnostic testing, patterns of inheritance, and personalized medicine treatments.	Discussions, Assigned Readings, Quiz, Case Study	Discussion Rubric: <i>Protein Synthesis</i> <i>Patterns of Inheritance</i> Quiz: 1 Cardiac case study	PSO: 1 TX DECs: II-A, II-C, IV-C BSN Essentials: I, III
2. Identify the risks, incidence, features and treatments of genetic and genomic health problems across the lifespan, including mental illnesses.	Discussions, Assigned Readings, Texas Newborn Screen Project, Pedigree Assignment	Discussion Rubric: <i>Patterns of Inheritance</i> Group Project	PSO: 2, 6 TX DECs: II-A, II-B, II-C, IV-C BSN Essentials: III, VII
3. Apply knowledge of testing, familial patterns, genetic disorders and treatments to design a care plan for a client with genetic risks or illness.	Discussions, Assigned Readings, Texas Newborn Screen	Discussion Rubric: <i>Patterns of Inheritance</i> Research Summary: <i>Pharmacogenomics</i> Group Project	PSO: 9 TX DECs: II-A, II-B, II-C, II-D, II-G, IV-C BSN Essentials: IX
4. Create an education program modeling effective patient communication using credible genetic and genomic information sources, patient information, and referrals based on cultural,	Discussions, Assigned Readings, Pedigree Assignment	Discussion Rubric: <i>Personalized Medicine</i> Cardiac case study	PSO: 2, 4; TX DECs: I-A, II-A, II-D, IV-A BSN Essentials: VIII

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.	Discussions, Ethics Position Paper	Discussion Rubric: <i>The Dancing Disease</i> <i>Course Summary</i>	PSO: 3 TX DEC's: II-A, II-B, II-C, II-D, II-G, IV-C BSN Essentials: V

**IDEA Objectives:** In this course, our focus will be on these major objectives (as assessed by the IDEA course evaluation system).

- Gaining a basic understanding of the subject.
- Learning to apply course material (to improve thinking, problem solving, and decisions)

### Instructional Strategies:

Teaching/learning strategies will include assigned readings from the course textbook and articles from professional journals, viewing of PPT presentations, webcasts/podcasts, reviewing internet websites, posting to the discussion board, written assignments and/or quizzes, online Blackboard discussion, group learning activities such as designing patient teaching materials.

### Learning Activities:

Discussions, papers, presentations, quizzes or other activities as specified by the course coordinator.

### Evaluation Methods:

Quiz	10%
Pedigree Assignment	10%
Discussion Board (2.5% each)	15%
Position Statement	10%
Case Study	10%
Texas Newborn Group Project	15%
<u>Research Summary Paper</u>	<u>30%</u>
Total	100%

### School of Nursing Grading Scale:

	Percentage	
A	89.5-100	Passing
B	79.5-89.4	
C	74.5-79.4	
D	69.5-74.4	Not Passing
F	69.4 and below	

### Calculation of Course Grade:

- In order to progress in nursing, students are expected to pass all nursing courses with at least a "C".
- Didactic and clinical/laboratory components of nursing course shall be taken concurrently.
- All clinical and classroom assignments must be satisfactorily completed in order to pass the course.

## **First Alert Program**

Students who are in academic jeopardy (e.g., demonstrate poor academic performance, poor clinical performance, have frequent or unexcused absences) will be referred to the First Alert team in Academic Support Services. First Alert is a referral system that enables Sam Houston State University faculty and staff to refer students whose in- or out-of-class performance demonstrates a need for academic support to the academic mentors at the SAM Center. Additional information on the First Alert Program can be accessed from <http://www.shsu.edu/centers/sam-center/mentoring/firstalert>.

### **Required Text(s):**

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6<sup>th</sup> ed.). Washington DC: Author

Beery, T.A., and Workman, M.L. (2012). *Genetic and Genomics in Nursing and Health Care*. Philadelphia, PA: F.A. Davis Company.

### **Optional Text(s):**

None

### **Course Calendar with Content Outline:**

Module Date(s)	Content Assignment	Learning Activity Due*
<b><u>Introduction Module</u></b> Jan. 18	<ul style="list-style-type: none"><li>• Introduction and overview of the course and the field of genetics and genomics.</li></ul>	<ul style="list-style-type: none"><li>• Familiarize yourself with the Blackboard sites and your textbook.</li><li>• “Introduce Yourself” due <b>Jan. 23<sup>rd</sup></b></li></ul>
<b><u>Module 1:</u></b> Jan. 24 – Feb. 6 <sup>th</sup>	<ul style="list-style-type: none"><li>• Beery &amp; Workman Chpt. 1, 2, &amp; 3</li><li>• Lecture</li><li>• One (1) Video on BB</li></ul>	<ul style="list-style-type: none"><li>• “Protein Synthesis” initial post due <b>Jan. 30<sup>th</sup></b>, responses by <b>Feb. 6<sup>th</sup></b></li><li>• Quiz due by <b>Feb. 6<sup>th</sup></b></li></ul>
<b><u>Module 2</u></b> Feb. 7 <sup>th</sup> – Feb. 27 <sup>th</sup>	<ul style="list-style-type: none"><li>• Beery &amp; Workman Chpt. 4, 5, 6 &amp; 7</li><li>• Lecture</li><li>• Five (5) Videos on BB</li></ul>	<ul style="list-style-type: none"><li>• “Patterns of Inheritance” initial post due <b>Feb. 13<sup>th</sup></b>, responses by <b>Feb. 20<sup>th</sup></b></li><li>• Pedigree Assignment due <b>Feb. 27<sup>th</sup></b></li></ul>
<b><u>Module 3</u></b> Feb. 28 <sup>th</sup> – March 13 <sup>th</sup>	<ul style="list-style-type: none"><li>• Beery &amp; Workmann Chpt. 8, 9 &amp; 10</li><li>• Lecture</li></ul>	<ul style="list-style-type: none"><li>• “Newborn Screening” initial post due <b>March 6<sup>th</sup></b>, responses by <b>March 13<sup>th</sup></b></li><li>• Texas Newborn Screen Group Project due <b>March 13<sup>th</sup></b></li></ul>
Spring Break March 12 <sup>th</sup> – 16 <sup>th</sup> , 2018		
<b><u>Module 4</u></b> March 21 <sup>st</sup> – April 3 <sup>rd</sup>	<ul style="list-style-type: none"><li>• Beery &amp; Workmann Chpt. 11, 12 &amp; 13</li><li>• Lecture</li></ul>	<ul style="list-style-type: none"><li>• “Behavioral Genetics” initial post due <b>March 27<sup>th</sup></b>, responses by <b>April 3<sup>rd</sup></b></li><li>• Cardiac Case Study due by <b>April 3<sup>rd</sup></b></li></ul>
<b><u>Module 5</u></b> April 4 <sup>th</sup> – April 24 <sup>th</sup>	<ul style="list-style-type: none"><li>• Beery &amp; Workmann Chpt. 14, 15 &amp; 16</li><li>• Lecture</li><li>• Supplemental reading on BB</li><li>• One (1) Video on BB</li></ul>	<ul style="list-style-type: none"><li>• “Personalized Medicine” initial post due <b>April 10<sup>th</sup></b>, responses by <b>April 17<sup>th</sup></b></li><li>• Research Summary – Pharmacogenomics due by <b>April 24<sup>th</sup></b></li></ul>

<b>Module 6</b> April 25 <sup>th</sup> – May 9 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Beery &amp; Workmann Chpt. 17 &amp; 18 &amp; The Dancing Disease on BB</li> <li>• Lecture</li> </ul>	<ul style="list-style-type: none"> <li>• “Dancing Disease” initial post by <b>May 1<sup>st</sup></b>, responses by <b>May 8<sup>th</sup></b></li> <li>• Course Wrap-Up Discussion post by <b>May 8<sup>th</sup></b></li> <li>• Position Statement Paper due <b>May 8<sup>th</sup></b></li> </ul>
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\*Tentative and subject to change. No assignment will be due earlier than currently scheduled. All assignments due by midnight on date listed.

### **Assignment Instructions & Grading Rubrics/Evaluation**

Specific assignment instructions and grading rubrics are available in Blackboard.

### **Course Policies/Expectations**

***Classroom Conduct and Civility:*** The instructor will conduct this class in an atmosphere of mutual respect. The instructor encourages active participation in online discussions. We may have strongly differing opinions on the various topics of class discussions. Conflicting ideas are encouraged and welcome. The orderly questioning of the ideas of others, including the instructor, is similarly welcome. Faculty will manage the discussions so that the exchange of ideas can proceed in an orderly fashion. You should expect that if your conduct during discussions seriously disrupts the atmosphere of mutual respect, you will not be permitted to participate further.

***Faculty/Student Communication:*** Course faculty often communicate important course updates using the SHSU email system. Students are expected to check their SHSU email account regularly (every 24-48 hours) and reply, as appropriate, to faculty, using their SHSU email account. Students may text faculty when the faculty member has indicated that this as an acceptable means of communication. Students should include their name in the text message. In addition, students are to abide by texting guidelines set forth by the faculty member (ie: no phone calls/texts after 9pm or on the weekend). Refer to the *Faculty/Student Communication Policy* in the Student Handbook for further guidance.

***Group Assignments:*** Group dynamics and the group process are important learning outcomes for the School of Nursing graduates. Many opportunities for learning these skills are integrated into the curriculum. Characteristics of successful groups are:

1. Members identify goals and objectives.
2. Members set deadlines for completion of tasks.
3. Members distribute equitable assignments and complete them in a timely fashion.
4. Members report back at scheduled meeting times.
5. If problems arise in a group, members attempt to resolve the problems internally.
6. If unable to resolve group dynamic problems, consult course faculty for direction in problem resolution.

***Late Work:*** All assignments will be assigned a due date which is considered the last day it will be accepted. Any assignment submitted after the assigned deadline will generally receive a “0”. There may be circumstances in which the instructor allows a student to hand in an assignment after the due date with a reduction in grade.

## School of Nursing Policies

### Absence Policy

Participation in weekly online activities is an important part of the student learning experience in the Sam Houston State University (SHSU) School of Nursing (SON). Non-participation or late participation in online activities is obstructive to this process and will be considered an absence. Presence at clinical rotations is required for satisfactory completion of clinical courses.

There are two kinds of absences recognized by SHSU SON: an absence given with prior notice and a no-call/no-show absence. An *absence given with prior notice* is one in which the professor or clinical instructor was directly spoken with by phone call or in person before the scheduled class/clinical start time. A *no-call/no-show absence* is an absence in which the student does not attend the class or clinical rotation and has not directly spoken with the instructor/professor before the scheduled class/clinical start time.

**Examination Policies:** When possible, test grades will be posted within 48 hours of the exam. Written exams and written assignments must be completed as scheduled. If a student is unable to complete a written (clinical or class) assignment, arrangements must be made with the instructor(s) in advance.

See [\*Absence from Scheduled Examinations Policy\*](#) in the *SON RN-BSN Student Handbook for guidelines*.

## University Policies

**Academic Honesty/Plagiarism:** Students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

The use of unauthorized material, communication with fellow students during an examination, use of unauthorized technology during an exam, attempting to benefit from the work of another student and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. Cheating on examinations, plagiarism, improper acknowledgment of sources in essays, the use of a single essay or paper in more than one course without permission, and falsification of records or documentation are considered serious offenses and shall be grounds for disciplinary action. Students will receive a zero on the test or assignment in question and will be reported to the Director of the School of Nursing and to the Dean of the College of Health Sciences. For more information, please refer to SHSU Academic Policy Statement #810213, *Procedures in Cases of Academic Dishonesty*.

<http://www.shsu.edu/dotAsset/728eec25-f780-4dcf-932c-03d68cade002.pdf>

Allegations of **student misconduct**, as defined in paragraph 5.2, Chapter VI of the *Rules and Regulations*, Board of Regents, The Texas State University System, and Sam Houston State University *Student Guidelines*, published by the Dean of Students' Office, will be referred to the Dean of Students' Office for necessary action.

Dean of Students: <http://www.shsu.edu/dept/dean-of-students/>.

### **Student Absences on Religious Holy Days (AP 861001)**

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Section 51.911 (a) (2) defines a religious holy day as: "a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20...." A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.

<http://www.shsu.edu/dotAsset/0953c7d0-7c04-4b29-a3fc-3bf0738e87d8.pdf>

### **Academic Grievance Procedures for Students (AP 900823)**

Academic grievances include disputes over course grades, unauthorized class absences/tardiness, suspension for academic deficiency, instructor's alleged unprofessional conduct related to academic matters, graduate comprehensive and oral exams, theses and dissertations, and withdrawal or suspension of privileges related to degree-required clinical rotation, internships, or other clinical service delivery in professional degree programs.

If the dispute is determined to be based upon professional judgment, the aggrieved student is entitled to have, as appropriate and in turn, the department/school chair, College Academic Review Panel, academic dean, Dean of Graduate Studies (for graduate student issues), and Provost and Vice President for Academic Affairs form an opinion about the dispute and so advise the individual(s) involved.

<http://www.shsu.edu/dotAsset/0bb1346f-b8d6-4486-9290-dba24123d0d8.pdf>

*Students are expected to abide by and will be held accountable to all SHSU policies contained with the SHSU Student Guidelines available at <http://www.shsu.edu/students/guide/>. Please refer to this handbook for further information in regards to the following policies.*

#### FERPA

Disruptive conduct under Dean of Students-General Conduct And Campus Regulations  
Withdrawal/resignation

### **STUDENTS WITH DISABILITIES POLICY:**

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then we encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how we can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy related to rights and responsibilities, see: <http://www.shsu.edu/dotAsset/187f9029-a4c6-4fb4-aea9-2d501f2a60f3.pdf>