# Course Description

This course introduces the concepts and principles of genetics, genomics, and epigenomics and their relevance to health and nursing care. Genetic influences from conception to throughout the lifespan are considered from a nursing perspective. Ethical, legal, and socioeconomic issues associated with genetics are examined.

# Course Outcomes

* **CLO1**: Demonstrate an understanding of the relationship of genetics, genomics, and epigenomics to the health status of clients and families. (PO1)
* **CLO2**: Discuss ethical, legal, social, and technologic issues related to genetic screening, testing, counseling, and therapy. (PO2, PO7, PO12)
* **CLO3**: Examine the influence of genetic and genomic technologies on the prevention and management of health problems across the lifespan. (PO1, PO7)
* **CLO4**: Evaluate the genetic and genomic influences and risks on individuals, families and communities based upon family history and pedigree/genogram analysis. (PO5, PO6)
* **CLO5:** Utilize knowledge of genetics and genomics in planning care for clients and families with common genetically mediated health problems. (PO5, PO10)
* **CLO6:** Compare and contrast the roles of various health professionals in the delivery of personalized genetic health care. (PO4)
* **CLO7:** Interpret Standards of Practice for Genetic/Genomic Nursing with emphasis on health teaching, health promotion, and the advocacy role of the nurse. (PO3)
* **CLO8:** Demonstrate a comprehensive understanding of safe, compassionate, coordinated, and evidence-based genetic/genomic nursing care. (PO5, PO7)

**BSN Program Outcomes**

* **PLO1:** Articulate an educational organization's mission, goals, and guiding principles that distinguish the organization from others. (ULO1, 4)
* **PLO2:** Understand the foundational base of organizational theory, and demonstrate the ability to bridge theory and practice. (ULO1, 2, 4)
* **PLO3:** Given scenarios of conflict, choose ethical courses of action consistent with Gospel values. (ULO3, 5)
* **PLO4:** Synthesize and analyze data to reveal relations and causality, and convert raw data into actionable information. (ULO2, 4)
* **PLO5:** View problems and challenges through the lens of a scientist, seeking evidence-based conclusions. (ULO1, 2, 4)
* **PLO6:** Practice and model steward leadership in transforming organizations to better serve all constituents. (ULO3, 4, 5)
* **PLO7:** Demonstrate facility in the application of technology to solve problems, analyze and synthesize data, and manage information. (ULO1, 2, 4)

**Gwynedd Mercy University Learning Outcomes (GMLO)**

* **GMLO1**:Communication Skills: listening, speaking, reading, writing, and observation.
* **GMLO2**: Professional Competency: the skills and knowledge necessary for students to be satisfactory entry-level professionals in their chosen fields.
* **GMLO3**: Moral and Ethical Judgment: the awareness of the historical, philosophical, and religious foundations of ethical decision-making.
* **GMLO4**: Problem Solving: the ability to recognize problems and apply systematic methods or processes to develop and activate solutions to problems.
* **GMLO5**: Critical Thinking: the ability to consider and evaluate effectively a process that includes inquiry and logical deduction. Students understand different situations and make thoughtful and accurate assessments.
* **GMLO6**: Leadership in Society: service to society and the awareness of the individual's role in society and the impact of one’s actions.
* **GMLO7**: Critical and Competent Use of Technology: the individual’s ability to locate, select, create, process, evaluate, and distribute information.

**Student Expectations**

Students are expected to:

* Ask probing and insightful questions related to course content.
* Make meaningful and relevant connections and application to their own learning process.
* Be productive and contributing members of class discussions.

# Required Course Materials

Beery, T. A., & Workman, M. L. (2012). *Genetics and genomics in nursing and health care*. Philadelphia, PA: F.A. Davis.

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# Suggested Point Values

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Assessment** | **Point Value** | **Due** |
| **Week 1** | |  |  |
|  | Participation | 2 | <insert due date> |
|  | Discussion Question | 2 |  |
| **Week 2** | |  |  |
|  | Participation | 2 | <insert due date> |
|  | Discussion Question | 2 |  |
|  | Small Group Case Study Assignment: Genetic Penetrance of Cancer Genes | 5 |  |
|  | Basic Genetic Concepts and Punnett Square Quiz | 10 |  |
| **Week 3** | |  |  |
|  | Participation | 2 | <insert due date> |
|  | Patterns of Inheritance Blog | 3 |  |
|  | Discussion Question | 2 |  |
|  | Family History and Pedigree including Interpretive Summary | 15 |  |
|  | Four Types of Congenital Anomalies Graphic Organizer | 3 |  |
|  | Small Group Assignment: Nursing Implications of Genetic Screening Outcomes | 4 |  |
| **Week 4** | |  |  |
|  | Participation | 2 | <insert due date> |
|  | Genetic Disorder Paper | 8 |  |
|  | Genetic Disorders Fact Sheet Forum | 1 |  |
|  | Discussion Question | 2 |  |
| **Week 5** | |  |  |
|  | Participation | 2 | <insert due date> |
|  | Discussion Question | 2 |  |
|  | Genetics in the Future Presentation | 6 |  |
|  | Final Exam | 25 |  |
| **Total Points** | | **100** |  |

# Course Schedule

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| --- | --- | --- |
| **Week** | **Start** | **End** |
| One | <insert start date> | <insert end date> |
| Two |  |  |
| Three |  |  |
| Four |  |  |
| Five |  |  |
| Six |  |  |
| Seven |  |  |

# Weekly Learning Modules

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| Week One: Basic Concepts of Genetics and Genomics | |  | |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Define basic genetic terminology associated with the structure and function of DNA. | | CLO1 | |
| * 1. Describe processes involved in DNA replication. | | CLO1 | |
| * 1. Compare and contrast location, process, and purposes of transcription and translation in protein synthesis. | | CLO1 | |
| * 1. Differentiate among germline, point, and frameshift mutations and their effects. | | CLO1 | |
| * 1. Discuss the influence of epigenomic factors in facilitating or blocking gene expression. | | CLO1, CLO3, CLO4 | |
| * 1. Compare and contrast the terms genotype and phenotype. | | CLO1 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Ch. 1, 2, & 3 of *Genetics and Genomics in Nursing and Health Care*. | |  |  |
| **Lecture**  **Watch** the “Basic Concepts Essential to the Study of Genomics – Part 1” lecture (48:53).  **Post** questions and comments about the content of the lecture in the Week One General Q&A discussion forum on Blackboard. | | All Week One Objectives | Review lecture and post response =  **1 hour,**  **30 minutes** |
| **Lecture**  **Watch** the “Basic Concepts Essential to the Study of Genomics – Part 2” lecture (35:52).  **Post** questions and comments about the content of the lecture in the Week One General Q&A discussion forum on Blackboard. | | All Week One Objectives | Review lecture and post response =  **1 hour** |
| **Lecture**  **Watch** the “Milestones in Genetics” lecture (30:50).  **Post** questions and comments about the content of the lecture in the Week One General Q&A discussion forum on Blackboard. | | 1.1, 1.2 | Review lecture and post response =  **1 hour** |
| **Lecture**  **Watch** the “Gardening with Gregor Mendel: Laws of Inheritance” lecture (33:10).  **Post** questions and comments about the content of the lecture in the Week One General Q&A discussion forum on Blackboard. | | All Week One Objectives | Review lecture and post response =  **1 hour** |
| **Total** |  |  | **4 hours,**  **30 minutes** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question**  **Watch** the NOVA SCIENCENOW: Epigenetics “Tale of Two Mice” video (30 minutes).  **Write** a response to the following discussion question in the Discussion forum:   * How does the content of the video support the concept that aspects of our genome reflect our personal habits and the environment and they are somewhat under our control?   Note: Initial answers to the discussion question must be substantive and in the range of 250-400 words. Any references used should be properly cited following APA formatting guidelines. Initial discussion question responses are due by 11:59 p.m. (Eastern Time) on Thursday.  **Write** a substantive response to a minimum of three different students. All responses must be posted by 11:59 p.m. (Eastern Time) on Sunday. | | 1.5 | 1 posting and responding to 3 students = **1 hour,**  **30 minutes** |
| **Family History and Pedigree including Interpretive Summary**  **Resource:** Genetic Family History Guide  **Review** the assignment details outlined in the Genetic Family History Guide.  **Begin** the process of gathering family health history information in preparation for completing the assignment.  Note: This assignment is due in Week Three. | | 3.2 |  |
| **Total** |  |  | **1 hour,**  **30 minutes** |
| **Notes** |  | | |

**Notes**

Faculty Notes here.

**Content Outline**

Please use this Content Outline to guide students through the course material.

I. Topic A

a. Subtopic

b. Subtopic

II. Topic B

a. Subtopic

b. Subtopic

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| --- | --- | --- | --- |
| Week Two: Gene Expression | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Determine the probable genotypic reproductive outcomes of homozygous and heterozygous parents as related to transmission of autosomal dominant and recessive traits to offspring. | | CLO1, CLO5 | |
| * 1. Discuss the effects of penetrance and anticipation on gene expression. | | CLO1 | |
| * 1. Compare and contrast the consequences of balanced and unbalanced genetic translocations. | | CLO4, CLO8 | |
| * 1. Describe the effects of carrier status on phenotypic expression of disease. | | CLO2, CLO5 | |
| * 1. Discuss examples of health problems caused by aneuploidy and their effects. | | CLO1, CLO4 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Ch. 4 & 5 of *Genetics and Genomics in Nursing and Health Care*. | |  |  |
| **Lecture**  **Watch** the “Gene Expression” lecture (45:27).  **Post** questions and comments about the content of the lecture in the Week Two General Q&A discussion forum on Blackboard. | | All Week Two Objectives | Review lecture and post response =  **1 hour,**  **30 minutes** |
| **Lecture**  **Watch** the “The Human Genome Project” lecture (35:11).  **Post** questions and comments about the content of the lecture in the Week Two General Q&A discussion forum on Blackboard. | | All Week Two Objectives | Review lecture and post response =  **1 hour** |
| **Total** |  |  | **2 hours,**  **30 minutes** |
| ***Supplemental Learning Resources and Activities****: These resources and activities provide further exploration of content, supplemental information, and skill building. Students may complete items in this section on their own or as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Lecture**  **Watch** the “Genetic Applications in Behavioral Health” lecture (30:27).  **Post** questions and comments about the content of the lecture in the Week Two General Q&A discussion forum on Blackboard. | |  | Review lecture and post response =  **1 hour** |
| **Total** |  |  |  |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question**  **Write** a response to the following discussion question in the Discussion forum:   * What are the implications of aneuploidy related to Turner Syndrome?   Note: Initial answers to the discussion question must be substantive and in the range of 250-400 words. Any references used should be properly cited following APA formatting guidelines. Initial discussion question responses are due by 11:59 p.m. (Eastern Time) on Thursday.  **Write** a substantive response to a minimum of three different students. All responses must be posted by 11:59 p.m. (Eastern Time) on Sunday. | | 2.5 | 1 posting and responding to 3 students = **1 hour** |
| **Small Group Case Study Assignment: Genetic Penetrance of Cancer Genes**  **Resource:** Genetic Penetrance of Cancer Genes Case Study  **Read** the case study in the Genetic Penetrance of Cancer Genes Case Study worksheet.  **Discuss** with your small group the case study and respond to the questions in the worksheet.  *Note*. Each group can utilize the small group discussion forums set up in Blackboard or you may elect to discuss the case study via email.  **Complete** the worksheet when your group arrives at a consensus on answers to the questions.  **Submit** as a group a copy of the worksheet to the instructor via Blackboard. | | 2.2 | Small group assignment =  **2 hours** |
| **Basic Genetic Concepts and Punnett Square Quiz**  **Complete** the quiz covering the topics covered in the textbook readings and lectures from the first two weeks of the course. | | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.3, 2.4 | Review the feedback =  **30 minutes** |
| **Total** |  |  | **3 hours,**  **30 minutes** |
| **Notes** |  | | |

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| Week Three: Genetic History Taking and Analysis; Common Genetic Prenatal and Newborn Disorders; Ethical Issues in Genetics | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Differentiate among Mendelian and non-Mendelian patterns of inheritance. | | CLO1 | |
| * 1. Demonstrate beginning competence in genetic history taking and pedigree analysis. | | CLO4 | |
| * 1. Compare and contrast the four types of congenital anomalies resulting from genetic syndromes and genetic sequences. | | CLO1 | |
| * 1. Describe the genetic defects, patterns of inheritance, pathophysiology, and management of the genetic disorders diagnosed by mandatory newborn screenings. | | CLO8 | |
| * 1. Analyze factors contributing to false positive and false negative results of antenatal and newborn screenings. | | CLO5 | |
| * 1. Describe how various methods of genetic testing lead to ethical dilemmas. | | CLO2 | |
| * 1. Discuss the scope and impact of GINA, the Genetic Information and Non-discrimination Act. | | CLO2, CLO7 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Ch. 6, 7, 8, 13, 14, & 17 of *Genetics and Genomics in Nursing and Health Care*. | |  |  |
| **Lecture**  **Watch** the “Selected Genetics Applications Relevant to Nursing Practice: Newborn Screening” lecture (18:52).  **Post** questions and comments about the content of the lecture in the Week Three General Q&A discussion forum on Blackboard. | | 3.1, 3.2, 3.3, 3.4, 3.5 | Review lecture and post response =  **1 hour** |
| **Lecture**  **Watch** the “Genetic Testing” lecture (44:52).  **Post** questions and comments about the content of the lecture in the Week Three General Q&A discussion forum on Blackboard. | | 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 | Review lecture and post response =  **1 hour,**  **30 minutes** |
| **Lecture**  **Watch** the “Ethical, Legal, and Social Implications of Genetic Testing” lecture (46:38).  **Post** questions and comments about the content of the lecture in the Week Three General Q&A discussion forum on Blackboard. | | 3.6, 3.7 | Review lecture and post response =  **1 hour,**  **30 minutes** |
| **Total** |  |  | **4 hours** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Patterns of Inheritance Blog**  **Select** from the following examples of health problems resulting from non-Mendelian inheritance:   * Beckwith-Wiedemann Syndrome * Praeder- Willi Syndrome * Angleman Syndrome * Autism * Bipolar Disorder * Schizophrenia * Autogenic Seizure Disorder * Albright Osteodystrophy * Psoriasis * Psoriatic Arthritis * Pyloric Stenosis * Adenomatous Colon Polyps   **Write** a 500- to 800-word blog post where you summarize the differences between Mendelian and non-Mendelian patterns of inheritance. Cite examples of health problems resulting from non-Mendelian inheritance.  Initial entries are due no later than Thursday at 11:59 p.m.  **Read** the blogs of all other students.  **Comment** on at least three other students’ blog posts. The response blog post is due by 11:59 p.m. (Eastern Time) on Sunday. | | 3.1 | Blog-  Shares work and posts response =  **1 hour** |
| **Discussion Question**  **Resource:** Ethical Issues in Genetics Case Study: Human Lymphocytic Antigen (HLA) Donor Child  **Read** the Ethical Issues in Genetics Case Study: Human Lymphocytic Antigen (HLA) Donor Child handout.  **Write** a response to the following discussion question in the HLA Donor Child discussion forum:   * Are the risks to which Thomas will be subjected acceptable ones? * When Thomas is old enough to understand, how might he react to the recognition that he was in a sense created to be a donor child? * How might Vincent’s health problems impact the sibling relationship between the two boys?   Note: Initial answers to the discussion question must be substantive and in the range of 250-400 words. Any references used should be properly cited following APA formatting guidelines. Initial discussion question responses are due by 11:59 p.m. (Eastern Time) on Thursday.  **Write** a substantive response to a minimum of three different students. All responses must be posted by 11:59 p.m. (Eastern Time) on Sunday. | | 3.6, 3.7 | 1 posting and responding to 3 students = **1 hour** |
| **Family History and Pedigree including Interpretive Summary**  **Resource:** Genetic Family History Guide  **Complete** the Family Health History on the *My Family Health Portrait* website (<https://familyhistory.hhs.gov/fhh-web/home.action>),  **Save** your family pedigree or genogram as a PDF file. *Note*. Detailed instructions on how to save the file are included in the Genetic Family History Guide.  **Write** an interpretive summary of the family pedigree. Include the following in your summary:   * What health problems were identified as present in multiple generations of your family? * What changes in health practices could delay or limit the expression of these conditions in present or future generations? * Were any genetic red flags noted?   **Submit** the family pedigree PDF file and the interpretive summary to the instructor via Blackboard. | | 3.2 | Develop the pedigree and analysis; review the instructor feedback =  **5 hours** |
| **Four Types of Congenital Anomalies Graphic Organizer**  **Resource:** Classification of Congenital Anomalies Graphic Organizer  **Complete** the graphic organizer worksheet.  **Submit** the worksheet to the instructor via Blackboard. | | 3.3 | Review instructor feedback =  **30 minutes** |
| **Small Group Assignment: Nursing Implications of Genetic Screening Outcomes**  **Resource:** Summary of Fact Sheets for Newborn Screening  **Review** the American Academy of Pediatrics Summary of Fact Sheets for Newborn Screening.  **Select** one of the genetic conditions for which infants are screened from the summaries contained on the fact sheets.  **Develop** a care plan for the infant and caregivers utilizing the nursing process. Include the following in the care plan:   * Address at least three nursing problems * A minimum of three peer-reviewed references   **Submit** the group’s completed care plan to the instructor via Blackboard. | | 3.4, 3.5 | Small group assignment =  **4 hours** |
| **Total** |  |  | **11 hours,**  **30 minutes** |
| **Notes** |  | | |

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| Week Four: Common Genetic Disorders of Childhood and Adulthood; Pharmacogenetics and Ethnopharmacology | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Describe types of genetic etiologies associated with common genetic disorders of children and adults. | | CLO8 | |
| * 1. Describe the role of gene-environment interactions in the development of disease. | | CLO1 | |
| * 1. Synthesize the contributions of proto-oncogenes, oncogenes, and epigenomic factors contributing to the etiology of cancer. | | CLO5 | |
| * 1. Discuss the safety and efficacy of gene therapy in treating genetic disorders. | | CLO2, CLO3, CLO6 | |
| * 1. Compare and contrast pharmacogenetics and ethnopharmacology. | | CLO1 | |
| * 1. Identify genetic and environmental factors impacting response to drug therapy. | | CLO4 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Ch. 9, 10, 11, 12, & 15 of *Genetics and Genomics in Nursing and Health Care*. | |  |  |
| **Lecture**  **Watch** the “Genetic Applications in Cardiovascular Nursing” lecture (xx:xx).  **Post** questions and comments about the content of the lecture in the Week Four General Q&A discussion forum on Blackboard. | | 4.3 | Review lecture and post response =  **1 hour, 30 minutes** |
| **Lecture**  **Watch** the “Genetic Applications in Oncology Nursing” lecture (xx:xx).  **Post** questions and comments about the content of the lecture in the Week Four General Q&A discussion forum on Blackboard. | | 4.3 | Review lecture and post response =  **1 hour, 30 minutes** |
| **Lecture**  **Watch** the “Pharmcogenetics and Ethnopharmacology” lecture (xx:xx).  **Post** questions and comments about the content of the lecture in the Week Four General Q&A discussion forum on Blackboard. | | 4.3 | Review lecture and post response =  **2 hours** |
| **Lecture**  **Watch** the “Gene Therapy” lecture (xx:xx).  **Post** questions and comments about the content of the lecture in the Week Five General Q&A discussion forum on Blackboard. | | 4.4 | Review lecture and post response =  **1 hour** |
| **Total** |  |  | **6 hours** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Genetic Disorder Paper**  **Select** a genetic disorder from the following list. If you would like to focus on a disorder or clinical syndrome not mentioned on the syllabus, please confer with the instructor.   * Achondroplasia * Acute Lymphocytic Leukemia * Bipolar Disorder * Chronic Myeloid Leukemia * Cystic Fibrosis * Factor V Leiden * Familial Adenomatous Polyposis * Familial Prostate Cancer * Familial Hypercholesterolemia * Long Q-T Syndrome * Malignant Hyperthermia * Marfan Sydrome * Muscular Dystrophy * Osteogenesis Imperfecta * Progeria * Scoliosis   **Write** a 4-5 page paper describing the genetic etiology and environmental interactions associated with the development of the selected disease. The paper should include the following components:   * Explain how the disorder is acquired through inheritance, genetic error, or mutation. In the case of polygenomic conditions, describe the contributing factors and their interaction. If pertinent, identify risk factors associated with occurrence of the disorder. Specify the implications of the disorder in terms of limitation of life expectancy, impact on growth and development, and chronicity if appropriate. * Present any epigenomic factors that have been identified in relation to the disorder you are presenting. * Discuss the pathophysiology involved and/or classic symptoms or distinguishing features. * Indicate whether genetic testing is available for this disorder. Indicate the type of testing. What information would the test convey? Include any ethical concerns associated with such testing. * Indicate whether the genetic disorder is the focus of current research. * Explore the availability of support groups.   **Submit** the Genetic Disorder Paper to the instructor via Blackboard. | | 4.1, 4.2 | Review instructor feedback =  **30 minutes** |
| **Genetic Disorders Fact Sheet Forum**  **Develop** a one-page fact sheet that summarizes your Genetic Disorder Paper.  **Post** the fact sheet on the selected disorder to the Genetic Disorders Fact Sheet discussion forum.  **Review** the fact sheets posted by all other students.  **Write** a substantive response to a minimum of three different students’ fact sheets. | | 4.1, 4.2 | 1 posting and responding to 3 students = **1 hour** |
| **Discussion Question**  **Watch** the Gene Therapy -- The time is now: Nick Leschly at TEDxBoston video (15:27) available on YouTube: <https://www.youtube.com/watch?v=Ez560GnkSrE>  **Write** a response to the following discussion question in the Discussion forum:   * What are your views about the likelihood that gene therapy will become the treatment modality for major diseases?   Note: Initial answers to the discussion question must be substantive and in the range of 250-400 words. Any references used should be properly cited following APA formatting guidelines. Initial discussion question responses are due by 11:59 p.m. (Eastern Time) on Thursday.  **Write** a substantive response to a minimum of three different students. All responses must be posted by 11:59 p.m. (Eastern Time) on Sunday. | | 4.4 | 1 posting and responding to 3 students = **1 hour,**  **30 minutes** |
| **Total** |  |  | **3 hours,**  **30 minutes** |
| **Notes** |  | | |

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| Week Five: Roles of the Nurse in Genetic Healthcare; Professional Issues and Trends in Genetics; Genetic Applications in Forensic Science | |  |  |
| ***Learning Objectives*** | | ***Alignment*** | |
| * 1. Describe essential competencies required of nurses practicing in genetics. | | CLO7 | |
| * 1. Synthesize the nurse’s advocacy role in providing accurate genetic information to clients and families coping with genetic issues. | | CLO5, CLO8 | |
| * 1. Describe the nurse’s collaborative role in providing care for clients and families with genetically mediated health problems. | | CLO6 | |
| * 1. Develop a beginning understanding of standards of practice for nurses practicing in health care genetics. | | CLO7 | |
| * 1. Identify the mission and goals of the International Society of Nurses in Genetics (ISONG). | | CLO7 | |
| * 1. Describe genetic applications beyond the healthcare environment. | | CLO2 | |
| ***Required Learning Resources and Activities****: Students must complete any resources activities listed in this section as selected by the instructor.* | | ***Alignment*** | ***Pages/AIE/***  ***Generic*** |
| **Read** Ch. 16 & 18 of *Genetics and Genomics in Nursing and Health Care*. | |  |  |
| **Lecture**  **Watch** the “Forensic Applications in Genetics” lecture (xx:xx).  **Post** questions and comments about the content of the lecture in the Week Five General Q&A discussion forum on Blackboard. | | 5.6 | Review lecture and post response =  **1 hour,**  **30 minutes** |
| **Lecture**  **Watch** the “International Society of Nurses in Genetics (ISONG)” lecture (xx:xx).  **Post** questions and comments about the content of the lecture in the Week Five General Q&A discussion forum on Blackboard. | | 5.1, 5.4, 5.5 | Review lecture and post response =  **1 hour,**  **30 minutes** |
| **Total** |  |  | **3 hours** |
| ***Assignment****: Students must complete the weekly assignment(s).* | | ***Alignment*** | ***Points/AIE/***  ***Generic*** |
| **Discussion Question**  **Write** a response to the following discussion question in the Discussion forum:   * Mary and Steve have a 9 year old daughter, Kerry, who is newly diagnosed with familial hypercholesterolemia. This disorders results from autosomal dominant inheritance.   + What are the learning needs of this family?   + How could a genetic pedigree be helpful to the family as a whole?   + Are there benefits in having siblings and other family members screened?   + What about Mary and Steve? * Both are in their mid-30s and healthy. They ask the nurse whether cholesterol lowering medications for adults are safe for Kerry.   + Are there any support groups that the nurse could recommend?   Note: Initial answers to the discussion question must be substantive and in the range of 250-400 words. Any references used should be properly cited following APA formatting guidelines. Initial discussion question responses are due by 11:59 p.m. (Eastern Time) on Thursday.  **Write** a substantive response to a minimum of three different students. All responses must be posted by 11:59 p.m. (Eastern Time) on Sunday. | | 5.2, 5.3 | 1 posting and responding to 3 students = **1 hour** |
| **Genetics in the Future Presentation**  **Select** one of the following topics related to genetic applications:   * DNA Barcoding * Gene Chips * Home Genetic Testing * Life Extension by lengthening telomeres * Gene "doping"   **Research** the selected topic on genetic applications.  **Create** a 5-slide PowerPoint presentation on your selected topic on genetic applications.  **Include** detailed speakers notes which would replicate the narration you would provide if you were presenting this in a classroom.  **Post** the presentation to the Genetics in the Future Presentation discussion forum.  **Review** the presentations of all other students.  **Write** a substantive response to a minimum of three different students’ presentations. | | 5.6 | Review student presentations and comment on three students =  **4 hours** |
| **Final Exam**  **Complete** the final exam covering topics from the textbook readings and lecture videos. | | 1.1, 1.2, 1.6, 2.2, 2.5, 3.4, 3.5, 3.6, 3.7, 4.3, 4.4, 4.5, 4.6, 5.1, 5.2, 5.3, 5.4, 5.5 | Review instructor feedback =  **30 minutes** |
| **Total** |  |  | **5 hours, 30 minutes** |
| **Notes** |  | | |

# Breakdown of Academic Instructional Equivalencies

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| **Week 1** |  |  |
| Required |  | 6 hours |
| Supplemental |  |  |
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| **Week 2** |  |  |
| Required |  | 6 hours |
| Supplemental |  | 1 hour |
|  |  |  |
| **Week 3** |  |  |
| Required |  | 15 hours, 30 minutes |
| Supplemental |  |  |
|  |  |  |
| **Week 4** |  |  |
| Required |  | 9 hours, 30 minutes |
| Supplemental |  |  |
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| **Week5** |  |  |
| Required |  | 9 hours, 30 minutes |
| Supplemental |  |  |
|  |  |  |
|  |  |  |
| **Total Required Hours** |  | 46 hours, 30 minutes |
| **Total Supplemental Hours** |  | 1 hour |
| **Total Hours** |  |  |