# Course Description:
This course will prepare the PA student for human genetics and medical genomics, including Mendelian and complex diseases, chromosomal abnormalities, heritability, genetic variations and methods for investigating associations with diseases, gene-environment interactions, population genetics, cancer genetics, and epigenetics. Prerequisite: PAS 1821, 1824, 3038C, 3075. (4 hour lecture)

## Course Competency

### Competency 1: The student will Compare and contrast the specific pharmacology of the major classes of drugs, and identify important distinctions among members of each drug class in relation to the organ systems they affect and the diseases for which they are used therapeutically by:

1. Analyzing the mechanism by which drugs work and apply to clinical scenarios
2. Listing the various drug classes and disease processes they treat

### Competency 2: The student will recognize the risk v. benefit for therapeutic interventions in clinical practice by:

1. Recognizing the role of molecular genetics and pharmacogenomic principles in pharmacotherapeutics and drug development
2. Using the medical literature to evaluate drugs in the context of evidence-based medical practice
3. Applying principles of pharmacology to initiate pharmacological treatment interventions based on clinical case scenarios

### Competency 3: The student will apply principles of pharmacology to prescribe appropriate pharmacologic treatments during clinical cases scenarios by:

1. Calculating correct dose using pharmacokinetic and pharmacodynamic principles
2. Determining correct frequency based on clinical picture
3. Applying critical thinking skills when prescribing multiple medications to patients
4. Examining polypharmacy practices and avoiding drug-drug interactions

## Learning Outcomes

- 2. Numbers / Data
- 3. Critical thinking
- 7. Ethical Issues
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- 4. Information Literacy
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