



## **Clinical Applications of Genetics Elective**

**Academic Year 2024-2025**

**Course Director:** Dr. Simon Williams

**Course Co-Director:** Dr. Ericka Hendrix

**Description:** Through lectures, discussions, workshops, and lab tours students will gain an understanding of medical genetics and learn skills needed to successfully practice genetic counseling in clinical settings as well as ethical decision making, case preparation, the interview, family history, risk assessment, and patient education. The elective's goal is to provide an overview of medical genetics from pathological, psychological, pharmacological, social, legal, ethical, and environmental perspectives.

**Prerequisite:** Enrollment in MSI/MSII/GMES/MP Curriculums and other programs at TTUHSC

**Maximum Enrollment:** 30 students

**Semester Offered:** Fall 2024 through Spring 2025

**Goals and Objectives:** Students will gain exposure to medical genetics, without having to pursue a separate degree. Initially students will explore genetic technologies, clinical application, genetic consulting and ethics. Following these fundamental concepts, subsequent sessions will cover broader aspects of genetics that are important for medical professions such as epigenetics, pharmacogenomics, race and genetics, social genetics, and genetic technologies. The earlier portion of the elective will focus on practical applications through lab tours and encounters with standardized patients, enabling students to learn interrelational communication. Students will have a chance to appreciate the role of the private sector in genetic diagnostic technologies. Finally, the latter portion will play an essential role in shaping a valuable perspective on genetics for future physicians.

**Course Requirements and Grading:**

The course will be graded Pass/Fail. Attendance at 8 out of the 12 (Dr. Tonk's session will count as two) sessions including the final session is required for a passing grade. Participation in the imagination project is also required.

**Application:** Interested students should complete the application on the Electives application site.

### Elective Schedule 2024-2025 (subject to change)

#	Session Topic	Speaker	Date	Location, Time
Introduction and Genetics Technology				
0	Informational Session	Elective Leadership	TBD	TBD
1	Introduction & Imagination Project	Dr. Simon Williams	TBD	TBD
2	Advances Molecular Methods and Interpretation	Katie Bennett, Ph.D., MB (ASCP) CM, NRCC-CC – Associate Professor in Molecular Pathology, Laboratory Director for Chromatox Diagnostics	TBD	TBD
3	Clinical Application of Molecular/ Genetics Technology	Ericka Hendrix, Program Director and Associate Professor -Molecular Pathology Program at Texas Tech University Health Sciences Center	TBD	TBD
Social and Ethical Aspects of Genetics				

4	Ethical, Legal and Social Implications of Genetic and Genomic Research	Ericka Hendrix, Program Director and Associate Professor -Molecular Pathology Program at Texas Tech University Health Sciences Center	TBD	TBD
5	The Twisted Relationship between Genetics and Race	Dr. Simon Williams	TBD	TBD
Clinical Application of Genetics				

6	Behavioral Genetics	Dr. Simon Williams	TBD	TBD
7	Genetic Counseling	Gina Sanchez, MS, CGC	TBD	TBD
8	Pharmacogenomics	Dr. Grace Kuo, Dean TTUHSC School of Pharmacy	TBD	TBD
9	Running a Medical Genetics Laboratory	Dr. Vijay S. Tonk, Department of Pediatrics	TBD	TBD
10	Bioterrorism – should we be worried?	Simon Williams	TBD	TBD

11	Project presentation possibly asynchronous, prerecorded	Judges TBD	TBD	TBD
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**Academic Integrity:** All students are expected to subscribe to an honor system which is implicit in accepting admission to the Health Sciences Center. Each student shall be responsible for his/her conduct from the time of the application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment. Students are expected to abide by all of the rules for academic integrity, as specified in the [TTUHSC Student Handbook](#).

**Students with Disabilities:** Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact the course instructor (or program director) to make the necessary referral. Students must present appropriate verification from Student Disability Services in a confidential meeting with the instructor. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact the Office of Student Disability Services located in Lubbock - 2C412, by telephone at 806-743-1926, or by email [disabilityservices@ttuhsc.edu](mailto:disabilityservices@ttuhsc.edu).