GENETIC COUNSELING (GENC)

GENC 5002. Human Population Genetics. 2 Clock Hours.
Prerequisites: Acceptance in an MS in Genetic Counseling Program or Permission of Instructor. This course will provide the student with an understanding of population genetics and risk analysis. It will cover the quantitative methods of analyzing genetic data in theoretical and practical terms.
Course Type: Lecture

GENC 5011. Topics in Genetic Counseling. 1 Clock Hour.
Prerequisites: Admission to the Masters of Science in Genetic Counseling Program or consent of instructor. An introduction to the profession of Genetic Counseling covering a selection of topics. It will provide information on a range of topics necessary for an understanding of Genetic Counseling. The information will be provided via lecture and demonstration.
Course Type: Lecture

GENC 5021. An Introduction to Clinical Skills. 1 Clock Hour.
Prerequisites: Admission to the MSGC Program or consent of instructor Provides a framework for development of clinical skills in genetic counseling. Major components include the recording the family history, recognizing dysmorphic features, developing a differential diagnosis, and the genetics physical examination.
Course Type: Lecture

GENC 5024. Psychosocial Aspects of Genetic Counseling. 4 Clock Hours.
Prerequisites: Acceptance in the Master of Science in Genetic Counseling program or consent of the instructor. This course provides an overview of child and family development in the context of inherited, chronic disease in order to interview, assess, and counsel an individual and/or family with a genetic disorder. Role play utilized to provide practical application of theoretical information.
Course Type: Lecture

GENC 5031. Prenatal Diagnosis and Screening. 1 Clock Hour.
Prerequisites: Admission to the MSGC program or consent of instructor Provides an introduction to prenatal diagnosis and screening from a genetic counseling viewpoint and will prepare students to counsel patients in the prenatal clinical rotation. Major components include an understanding of the normal and abnormal pregnancy, genetics issues, diagnosis vs. screening and the related testing methods, teratology, pregnancy loss and infertility, and what can and cannot be seen on ultrasound examination.
Course Type: Lecture

GENC 5044. Genetic Basis of Inherited Disease. 4 Clock Hours.
The course described the chromosomal basis of human disease, and stresses the molecular and biochemical mechanisms underlying inherited disorders. Diagnostic laboratory methods will be an important aspect of the course. There is a 25% laboratory/clinical correlation component.
Course Type: Lecture

GENC 5091. Introduction to Clinical Research. 1 Clock Hour.
Prerequisites: Admission into the Masters in Genetic Counseling Program or consent of instructor This course serves as an introduction to clinical research design and will provide the student with the basic information and skills needed to complete literature searches, formulate research questions, apply ethical principles to and satisfy all regulatory requirements for the conduct of clinical research.
Course Type: Lecture

GENC 5102. Genomics, Enviornment, and Lifestyle. 2 Clock Hours.
Prerequisites: Admission into the Master of Science in Genetic Counseling or consent of instructor. Provides an overview of the intersection of environment, lifestyle and genomics across the life span, in the context of the US public health system.
Course Type: Lecture

GENC 5121. Professional Issues for Genetic Counselors. 1 Credit Hour.
Prerequisites: Acceptance in an MS in Genetic Counseling Program of Permission of Instructor. A discussion of the professional issues faced by Genetic Counselors. The course will cover a selection of topics. The information will be provided via lecture and group discussion.
Course Type: Lecture

GENC 5122. Molecular and Cytogenetics Laboratory. 2 Clock Hours.
Prerequisites: MSGC Program or consent of course instructor. This course enables students to develop understanding of laboratory processes required from chromosome analysis, molecular cytogenetics testing, and array comparative genomic hybridization (CGH). Including general laboratory methods, sample requirements, DNA isolation, set-up, timing, harvesting, and slide preparation for routine cytogenetics, and analysis.
Course Type: Laboratory

GENC 5191. Research Development. 1 Clock Hour.
Prerequisites: GENC 5091 Provides students with the guidance to develop, plan, and design their research projects. Students completing this course will be able to meet the programmatic requirements of completing a research thesis in Genetic Counseling.
Course Type: Lecture

GENC 5202. Cancer Genetics. 2 Clock Hours.
Prerequisites: Acceptance in an MS in Genetic Counseling Program or Permission of Instructor. This course will cover the molecular and cytogenetic basis of cancer, cancer nomenclature, epidemiology, etiology, carcinogenesis, family cancer syndromes, and familial cancers. It will address risk assessment, molecular testing, and screening and risk management recommendations. Discussions will include ethical, legal, social, and psychosocial implications of diagnosis.
Course Type: Lecture

GENC 5203. Medical Genetics Clinic Practicum. 3 Clock Hours.
Provides the student with practical experience performing supervised genetic counseling for patients referred for a variety of health concerns.
Course Type: Clinical

GENC 5212. Systems Disorders for Genetic Counselors. 2 Clock Hours.
Prerequisites: Acceptance in an MS in Genetic Counseling Program or Permission of Instructor. This course will provide the student with an understanding of genetic disorders as they present with malformations in multiple body systems. It will cover the etiology and diagnosis of disorders from the viewpoint of specialists outside the specialty of genetics. Students will develop an understanding of the variation in presentation of birth defects and genetic conditions.
Course Type: Lecture

GENC 5213. Amniocentesis Clinic Practicum. 3 Clock Hours.
Provides the student with practical experience performing genetic counseling for patients referred for prenatal diagnosis.
Course Type: Clinical

GENC 5221. Cytogenetics and Molecular Cytogenetics. 1 Clock Hour.
Prerequisites: Acceptance in MS Genetic Counseling program or genetic fellowship or Permission of Instructor. The course will provide a comprehensive introduction to Cytogenetics, Molecular Cytogenetics, and clinical laboratory techniques in the genetics laboratory. The course will introduce topics of chromosomal structure and function, chromosome abnormalities and clinical presentations, chromosomal basis of cancer, and cytogenetic laboratory techniques. The laboratory techniques will provide a basis of understanding that will prepare the students for their practical rotations in the genetics laboratory.
Course Type: Lecture

GENC 5222. Molecular Basis of Genetic Disease. 2 Clock Hours.
Prerequisites: Acceptance in MS Genetic Counseling program or genetic fellowship or Permission of Instructor. This course will be delivered via a web-based platform. It will consist of six units covering basic genetics, DNA technology, genetic abnormalities, the Human Genome Project, clinical aspects of molecular genetics, and specific topics relevant to the practice of genetic counseling. Each unit will consist of required reading with links to additional information available on the internet, assignments, and discussion threads. (F)
Course Type: Lecture

GENC 5233. Inborn Errors of Metabolism. 3 Clock Hours.
Prerequisites: Admission into the Master in Genetic Counseling Program or consent of instructor. The course describes the biochemical basis underlying inherited metabolic disease. Students are provided with experience in the laboratory to understand the testing methods used for diagnosis and follow up of metabolic disorders.
Course Type: Lecture

GENC 5351. Genetic Counseling in the Clinical Laboratory Rotation. 1 Clock Hour.
Prerequisites: Acceptance in MS Genetic Counseling program or genetic fellowship or permission of instructor. Provide the student with practical experience in genetic counseling under supervision. Students will perform duties typical for genetic counselors functioning in a clinical laboratory setting.
Course Type: Clinical

GENC 5352. Cancer Genetics Clinical Rotation. 2 Clock Hours.
Prerequisites: Acceptance in MS Genetic Counseling program or Genetic Fellowship and completion of GENC 5202 or permission of instructor. Provides the student with practical experience in genetic counseling under supervision for patients seen due to concerns of possible or known familial cancer predisposition condition.
Course Type: Clinical

GENC 5361. Multi-disciplinary Clinical Rotation. 1 Clock Hour.
Prerequisites: Acceptance in MS Genetic Counseling program or genetic fellowship of permission of instructor. Provides the student with practical experience in genetic counseling under supervision with increasing responsibilities for patients seen in multidisciplinary clinics.
Course Type: Clinical

GENC 5371. Advanced Prenatal Clinical Rotation. 1 Clock Hour.
Prerequisites: Acceptance in the MSGC Program or Genetic Fellowship or permission of instructor. Provides the student with practical experience in genetic counseling under supervision with increasing responsibilities for patients seen in prenatal diagnostic clinics. The patient indications are expected to be of a more complex nature than those seen during the introductory prenatal diagnostic clinical rotation.
Course Type: Clinical

GENC 5381. Advanced Genetic counseling Clinical Rotation. 1 Clock Hour.
Prerequisites: Acceptance in the MSGC Program or Genetic Fellowship or permission of instructor. Provides the student with practical experience in genetic counseling under supervision. Students will choose from a variety of advanced clinical opportunities. They may choose to craft a unique clinical experience with the supervision of a GC mentor to provide increased depth in a specific area of interest.
Course Type: Clinical

GENC 5401. Genetic Basis of Adult Onset and Common Complex Disorders. 1 Clock Hour.
Prerequisites: Acceptance in the Masters of Science in Genetic Counseling Program or consent of instructor This course will provide the student with an understanding of the genetic component of adult onset and common complex disorders. It will cover the etiology and diagnosis of disorders that have both genetic and environmental components. Many of this group of conditions can be observed as reoccurring in families more frequently than would be expected by chance as well as being sporadic in nature.
Course Type: Lecture

GENC 5980. Research for Master's Thesis. 1-3 Clock Hours.
May be repeated; maximum credit 6 hours. Research for Master's Thesis
Course Type: Independent Study

GENC 6002. Pharmacogenomics: The Foundation of Personalized Medicine. 2 Clock Hours.
Prerequisites: Acceptance to MSGC Program Cross Listed: PHSC 6002/ OCNS 6002 Prepares students to understand the influence of genetic variations among individuals and their contribution to differences in drug response. In this course, students will learn basic principles of genetics and pharmacology and how genetic, environmental, lifestyle and nutritional factors affect drug response.
Course Type: Lecture