

Course Descriptions

GENC 7101: Research Design and Methodologies

This course focuses on study design and proposal development relevant to clinical genetics and genetic counseling encompassing biomedical, translational, behavioral and/or clinical studies in genomic medicine. It discusses concepts such as identifying a research topic, asking a research question, designing a study, writing a research proposal with background, aims, and methods, and an overview of different study designs. Topics such as IRB submission and feasibility issues will be addressed. Students will implement aspects of this course in the development and execution of a research project that will be completed over the one-year program.

GENC 7102: Research Bioethics

In this course, students will learn the foundational principles of scientific, operational and ethical conduct of research, and ultimately be able to apply all principles to their own work. Topics covered by this course include the historical evolution of human subject protections, moral basis of research bioethics, regulatory frameworks, informed consent, confidentiality, secondary uses of data and stored tissue, and practical application of biomedical research ethics. Students are expected to complete reading assignments and discussions. By the end of the course, students will understand scientific conduct, ethical considerations of human subject's research, good clinical practices (GCP), good laboratory practices (GLP), conflict of interest, and budgetary concepts.

GENC 7103: Manuscript & Grant Writing

This comprehensive course will focus on the fundamentals of writing and submitting grant proposals and preparing a manuscript for publication. Topics will include data analytics and visualization of results for publication. Grant writing training will include the mechanics of proposal writing and aspects of "grantmanship" as students identify appropriate sources of grant funding, use narrative tools to create informative, persuasive and engaging proposals, create of Aims to outline the goals of the grant, and support Aims with well thought out research design. Manuscript writing training will include literature review to identify gaps in knowledge and how their research project will add to the field, the various sections of a manuscript, scientific writing, how to identify the appropriate journal for submission, guidance for authorship, and details about article submission, the peer review process, revisions, and response to reviewers and editors. Students will be prepared to submit the results of their thesis project at the completion of the ART-GC program.

GENC 7104: Biomedical Informatics for Genetic Counselors

In this course, students will develop a broad understanding of the field of biomedical informatics. The field of Biomedical Informatics (BMI) considers a variety of approaches and methods drawn from the computational, quantitative, and qualitative sciences. This course provides an introduction to many research topic areas for the field with emphasis on the multidisciplinary nature of biomedical informatics.