

GENETIC COUNSELING (MS)

Overview

We offer a 21 month (5 semester) program of graduate study leading to the Master of Science (M.S.) degree. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC) for the training of master's level genetic counselors.

The comprehensive curriculum combines in-depth didactic coursework in the scientific, clinical, psychosocial and professional practice aspects of genetic counseling with extensive, hands-on clinical experience in pediatric, prenatal, adult and specialty genetics clinics.

Clinical training is provided through:

- Children's Hospital Colorado
- University of Colorado Hospital in the Anschutz Centers for Advanced Medicine and University of Colorado Cancer Center
- Telehealth Genetics Clinics serving patients throughout Colorado
- And other area genetic counseling centers

All students participate in clinical case conferences, genetics seminars, journal club, and clinical research activities.

The program's graduates are in very high demand and typically receive employment offers prior to graduation. They work throughout the U.S. and Canada, and in all areas of genetic counseling practice. Their performance on the American Board of Genetic Counseling (ABGC) board certification examination is excellent, with a first-time passing rate of 100% for the past 5 years (2016-present). The program's attrition rate during the same period is zero.

Admissions Requirements

1) Fulfillment of the academic requirements for regular admission to the Graduate School:

- A baccalaureate degree or its equivalent from a college or university of recognized standing in the biological sciences, psychology, social work, nursing or a related field.
- MINIMUM undergraduate grade point average of 3.0 on a 4.0 scale.

2) Completion of the online application form and submission of supporting materials. Access the online application website at: <https://graduateschool.ucdenver.edu/admissions/apply>

3) FOUR letters of recommendation are required. Recommendations should be requested from individuals who know the applicant in an academic or professional context and can directly attest to the applicant's academic performance, professional abilities, and potential for success as a graduate student and genetic counselor. Preferably, at least two of the recommendations should be from academic sources (course professors, major/academic advisor, research mentor, thesis advisor), while others should be from supervisors in volunteer/advocacy or professional contexts. Recommendations from family members and personal/family friends are strongly discouraged.

Please remind recommenders that providing specific narrative discussion about the candidate's performance and qualifications is extremely helpful, in addition to the ratings requested on the recommendation form.

Please allow your recommenders adequate time to write and submit your recommendations. Recommendations submitted after our January

1 deadline will not be accepted. All recommendations are subject to verification of authenticity.

- The application site provides instructions for sending requests to your recommenders and for sending follow-up reminders to them, if needed, prior to the application deadline. This online system enables the recommender to complete a secure, online recommendation and submit it directly to the online system. Please plan ahead! If you wait until too close to the deadline to request your recommendations, your recommenders may not have adequate time to submit their materials prior to the deadline and your application cannot be reviewed. It is the responsibility of the applicant to ensure that these materials have been submitted prior to the deadline.
- An official set of recommendation letters submitted directly from a school career center is acceptable.
- Recommendations that have been in the possession of the applicant cannot be accepted.

4) ONE official copy of each transcript must be sent directly from all colleges and universities attended (degree and non-degree), regardless of the number of courses taken. Electronic submission of official transcripts by the registrar's office is also acceptable; please email electronic transcripts to Kenton.Owsley@cuanschutz.edu. If the applicant has completed a study abroad program, transcripts from the host institution overseas should also be requested, even if courses are reported on the main undergraduate transcript. Transcripts marked "issued to student" will only be accepted if they are in their original sealed (unopened) envelopes as issued by the registrar. All transcripts are subject to verification of authenticity.

International students must meet ALL of the requirements above and those required by International Admissions.

Degree Requirements

Course	Title	Hours
Year 1		
Fall		
GENC 6101	Psychosocial Aspects of Genetic Counseling I	2
GENC 6105	Basic Interviewing Skills	1
GENC 6110	Topics in Medical Genetics I	3
GENC 6120	Clinical Cytogenetics and Molecular Genetics	3
GENC 6121	Laboratory in Clinical Cytogenetics and Molecular Genetics	2
GENC 6170	Introduction to Clinical Research for Genetic Counseling Students	1
		Hours
		12
Spring		
GENC 6102	Psychosocial Aspects of Genetic Counseling II	2
GENC 6111	Topics in Medical Genetics II	2
GENC 6122	Seminar in Clinical Cytogenetics and Molecular Genetics	1
GENC 6130	Cancer Genetics and Genetic Counseling	2

GENC 6140 or GENC 6150	Human Inborn Errors of Metabolism or Congenital Malformations and Disorders of the Newborn	2
	Hours	9
Summer		
GENC 6940	Capstone in Genetic Counseling	1-2
	Hours	1-2
Year 2		
Fall		
GENC 6201	Advanced Psychosocial Genetic Counseling	2
GENC 6210	Professional Issues in Genetic Counseling I	2
GENC 6250	Risk Calculation in Genetic Counseling	1
GENC 6940	Capstone in Genetic Counseling	1-2
	Hours	6-7
Spring		
GENC 6211	Professional Issues in Genetic Counseling II	2
GENC 6140 or GENC 6150	Human Inborn Errors of Metabolism or Congenital Malformations and Disorders of the Newborn	2
GENC 6940	Capstone in Genetic Counseling	1-2
	Hours	5-6
	Total Hours	33-36

Code	Title	Hours
Required Clinicals		
<i>(all students start Spring of year 1, continuing through Spring of year 2)</i>		
GENC 6910	Applied General Genetics Clinic	3
GENC 6911	Applied Prenatal Genetics Clinic	3
GENC 6912	Applied Metabolic Genetics Clinic	3
GENC 6913	Applied Regional & Specialties Genetics Clinics	1-2
GENC 6914	Applied Hereditary Cancer Clinic	1-3
GENC 6915	Applied Adult Medical Genetics Clinic	1

Learning Objectives

The Genetic Counseling M.S. Program trains graduate students to become competent and effective health professionals. The Accreditation Council for Genetic Counseling (ACGC) accredits genetic counseling graduate programs in North America. ACGC defines the following Practice-Based Competencies (PBCs) that an entry level genetic counselor must demonstrate.

The PBCs are categorized into the following four domains: (1) Genetics Expertise and Analysis; (2) Interpersonal, Psychosocial and Counseling Skills; (3) Education; and (4) Professional Development and Practice. Some competencies may pertain to more than one domain. These domains represent practice areas that define activities of a genetic counselor. The examples below each competency illustrate more specific outcomes that would exemplify achievement of the competency.

Practice-Based Competencies for Genetic Counselors (ACGC, 2013)

Domain I: Genetics Expertise and Analysis

1. Demonstrate and utilize a depth and breadth of understanding and knowledge of genetics and genomics core concepts and principles.

2. Integrate knowledge of psychosocial aspects of conditions with a genetic component to promote client well-being.
3. Construct relevant, targeted and comprehensive personal and family histories and pedigrees.
4. Identify, assess, facilitate, and integrate genetic testing options in genetic counseling practice.
5. Assess individuals' and their relatives' probability of conditions with a genetic component or carrier status based on their pedigree, test result(s), and other pertinent information.
6. Demonstrate the skills necessary to successfully manage a genetic counseling case.
7. Critically assess genetic/genomic, medical and social science literature and information.

Domain II: Interpersonal, Psychosocial and Counseling Skills

1. Establish a mutually agreed upon genetic counseling agenda with the client.
2. Employ active listening and interviewing skills to identify, assess, and empathically respond to stated and emerging concerns.
3. Use a range of genetic counseling skills and models to facilitate informed decision-making and adaptation to genetic risks or conditions.
4. Promote client-centered, informed, non-coercive and value-based decisionmaking.
5. Understand how to adapt genetic counseling skills for varied service delivery models.
6. Apply genetic counseling skills in a culturally responsive and respectful manner to all clients.

Domain III: Education

1. Effectively educate clients about a wide range of genetics and genomics information based on their needs, their characteristics and the circumstances of the encounter
2. Write concise and understandable clinical and scientific information for audiences of varying educational backgrounds.
3. Effectively give a presentation on genetics, genomics and genetic counseling issues.

Domain IV: Professional Development & Practice

1. Act in accordance with the ethical, legal and philosophical principles and values of the genetic counseling profession and the policies of one's institution or organization.
2. Demonstrate understanding of the research process.
3. Advocate for individuals, families, communities and the genetic counseling profession.
4. Demonstrate a self-reflective, evidenced-based and current approach to genetic counseling practice.
5. Understand the methods, roles and responsibilities of the process of clinical supervision of trainees.
6. Establish and maintain professional interdisciplinary relationships in both team and one-on-one settings, and recognize one's role in the larger healthcare system.

Courses

GENC 6101 - Psychosocial Aspects of Genetic Counseling I (2 Credits)

This is the first course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal, pediatric and adult clinical settings. Coreq: GENC 6105, GENC 6110. Restrictions: Matriculated students in Genetic Counseling MS Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6102 - Psychosocial Aspects of Genetic Counseling II (2 Credits)

This is the second course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal pediatric and adult clinical settings. Prereq: GENC 6101. Co-Req: GENC 6105, GENC 6110. Restrictions: matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6105 - Basic Interviewing Skills (1 Credit)

This course covers fundamental theories and principles of effective patient/client interviewing in genetic counseling practice. Lectures are combined with hands-on role plays and interviews so that students may gain applied experience and receive feedback to foster skills development throughout course. Coreq: GENC 6101, GENC 6110. Restriction: Matriculated student in Genetic Counseling M.S. Program
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6110 - Topics in Medical Genetics I (3 Credits)

First course in a two-part course sequence regarding principles of clinical genetics and genetic counseling and development of clinical skills used in various medical genetics settings. Fall semester focuses on principles important in pediatric and general genetics settings. Restriction: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6111 - Topics in Medical Genetics II (2 Credits)

Second course in two-course sequence regarding principles of clinical genetics and genetic counseling used in various medical genetics settings, and development of critical skills. Spring semester focuses on prenatal and adult genetics clinic settings. Prereq: GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6120 - Clinical Cytogenetics and Molecular Genetics (3 Credits)

This course provides integrated instruction regarding human cytogenetic and molecular genetic principles, techniques, and diagnostic testing approaches used in clinical evaluation and risk assessment for genetic disorders/predispositions in prenatal and postnatal patient populations. Coreq: GENC 6121. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6121 - Laboratory in Clinical Cytogenetics and Molecular Genetics (2 Credits)

Course provides introduction to specific methodologies and interpretation of studies used in diagnostic cytogenetics and molecular genetics laboratories. Principles discussed in the co-requisite clinical cytogenetics and molecular genetics course will be applied through demonstrations, hands-on experiments, discussion of illustrative cases. Coreq: GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6122 - Seminar in Clinical Cytogenetics and Molecular Genetics (1 Credit)

Course requires students to apply theories/principles of cytogenetics and molecular genetics to analysis of cases that present in daily operations of diagnostic laboratories and formal critique of current research literature. Additionally, students present formal seminar integrating cytogenetic/molecular genetic principles. Prereq: GENC 6120, GENC 6121. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6125 - Embryogenetics (1 Credit)

Providing practical knowledge for genetic counseling this course on human embryology is focused on major developmental stages and organ systems with an emphasis on molecular genetic pathways and associated syndromes that arise due to their disruption. Requisite: Matriculated student in M.S. Genetic Counseling Program (GENC).
Grading Basis: Letter Grade
Typically Offered: Fall.

GENC 6130 - Cancer Genetics and Genetic Counseling (2 Credits)

Course in providing genetic counseling services to clients with or at risk for hereditary cancer predisposition. Topics include clinical oncology, epidemiology, molecular biology of cancer, risk assessment, genetic testing, ethical/legal issues, clinical research considerations, psychosocial impact/support, specific genetic counseling approaches. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6140 - Human Inborn Errors of Metabolism (2 Credits)

Course provides systematic review of major metabolic disorders, including their clinical phenotypes, diagnosis, and management. Physiological and laboratory testing principles important to understanding these disorders will be reviewed. Psychosocial impact of metabolic disorders and genetic counseling approaches will be discussed. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6150 - Congenital Malformations and Disorders of the Newborn (1 Credit)

This survey course covers common major malformations and non-metabolic genetic disorders identified by newborn screening programs. Clinical phenotypes, diagnosis, management and etiology are addressed. Psychosocial impact of these conditions and genetic counseling approaches will be discussed. Prereq: GENC 6110. Co-Req: GENC 6111. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6170 - Introduction to Clinical Research for Genetic Counseling Students (1 Credit)

An introduction to clinical research including an overview of ethical principles, study methods and designs, practical execution, data analysis and presentation of results. Possible roles of a genetic counselor in the conduct of clinical research will be a course focus. Restrictions: Matriculated student in MS Genetic Counseling Program. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6201 - Advanced Psychosocial Genetic Counseling (2 Credits)

This course examines advanced genetic counseling techniques as they relate to psychosocial theories, specific client characteristics and the client/counselor dynamic. Critical discussion of core topics and readings and case analysis will be used for instruction. Prereq: GENC 6101 and GENC 6102. Restrictions: Matriculated second year student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6210 - Professional Issues in Genetic Counseling I (2 Credits)

First course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Fall semester course focuses on professional standards, professional ethics, legal principles and health systems and policy issues relevant to genetic counselors. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Second year student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6211 - Professional Issues in Genetic Counseling II (2 Credits)

Second course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Spring semester course focuses on disability issues, cultural competency, public health genetics, research methods in genetic counseling, and professional roles. Prereq: GENC 6210. Restrictions: Second year student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6250 - Risk Calculation in Genetic Counseling (1 Credit)

This course covers pedigree analysis and risk calculation principles used by genetic counselors in clinical practice. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6610 - Topic in Med Genetic 1 (3 Credits)

Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

GENC 6910 - Applied General Genetics Clinic (3 Credits)

This is a clinical rotation for Genetic Counseling M.S. students through a general genetics clinic serving a variety of referral indications. Students will learn and practice case management, history taking, risk assessment, counseling and client advocacy skills. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

GENC 6911 - Applied Prenatal Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a prenatal diagnosis and genetics clinic. Students will learn/practice history taking, risk assessment, patient education and genetic counseling, case management, as well as observe prenatal diagnosis and Art procedures. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 9.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

GENC 6912 - Applied Metabolic Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a genetics clinic for inborn errors of metabolism. Students will work with patients referred for diagnostic evaluation, medical/nutritional management of specific conditions, and follow-up of positive newborn metabolic screening results. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 9.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

GENC 6913 - Applied Regional & Specialties Genetics Clinics (1-2 Credits)

This is a clinical rotation for genetic counseling students through regional outreach genetics clinics and specialty/multidisciplinary clinics serving patients with various genetic conditions. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 9.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

GENC 6914 - Applied Hereditary Cancer Clinic (1-3 Credits)

This is a clinical rotation for genetic counseling students through a hereditary cancer clinic for individuals seeking genetic counseling and testing for genetic cancer predisposition syndromes. Prereq: GENC 6110, PEDS 6601, PEDS 6602. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 3.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

GENC 6915 - Applied Adult Medical Genetics Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through a medical genetics clinic and clinical research settings providing diagnosis, management, risk assessment and genetic counseling for adults. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6919 - Applied Medical Genetics Clinic - Clinical Elective (1-3 Credits)

This is an elective clinical rotation for genetic counseling students desiring to arrange training in outside of core required clinical rotations or an additional, advanced rotation. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6920 - Applied Medical Genetics-Laboratory Genetic Counseling Elective (1 Credit)

An elective rotation for students desiring an advanced, applied training experience with genetic counselors based in a genetics diagnostic laboratory. Restrictions: Matriculated student in GENC program who has completed required prerequisite courses listed; Permission of instructor.

Prereq: GENC 6120; GENC 6121; GENC 6122

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6940 - Capstone in Genetic Counseling (1-2 Credits)

Students will develop a proposal and complete an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling. GENC matriculated student with 2 semesters required coursework completed. Permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6950 - Master's Thesis (1-6 Credits)

Masters thesis research to be arranged with prior approval of the Graduate Program in Genetic Counseling. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

The M.S. Genetic Counseling Program is participating in the Genetic Counseling Admissions Match through National Matching Services (NMS). All student positions will be filled via the Match. The GC Admissions Match has been established to enhance the process of placing applicants into positions in masters-level genetic counseling programs that are accredited by the Accreditation Council for Genetic Counseling (ACGC). The Match uses a process that takes into account both applicants' and programs' preferences. All applicants must first register for the Match with NMS before applying to participating genetic counseling graduate programs. At the conclusion of all program

interviews, both applicants and programs will submit ranked lists of preferred placements to NMS according to deadlines posted on the NMS website. The binding results of the Match will be released to both applicants and programs simultaneously.

For additional policy information, please refer to the Graduate School Policies page (<http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/graduate-school/#policiestext>).

Contact Us

Carol Walton, MS, CGC

Program Director

Carol.Walton@cuanschutz.edu

Kenton Owsley, MA

Program Administrator

Kenton.Owsley@cuanschutz.edu