Genetic Counseling

Degree Offered:	M.S.
Program Director:	Jessica Denton
Phone:	(205) 934-6940
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Website:	www.uab.edu/msgc

Accreditation

The Genetic Counseling Program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC). The program received full accreditation in 2013 and was approved again in 2018 for an additional eight years. Fully accredited programs must complete a rigorous process to demonstrate that the program is capable of meeting the criteria for a genetic counseling training program as established by ACGC. Programs that successfully complete this process are awarded full accreditation. All graduates of an accredited program are eligible for the board examination offered by the American Board of Genetic Counseling, Inc. (ABGC) and state licensure.

Admission Requirements

- Baccalaureate degree from a regionally accredited college/university
- A minimum cumulative undergraduate grade point average of at least 3.0 (A = 4.0)
- A minimum grade of C in each prerequisite course listed below
- CV: This should include academic qualifications, a description and timeline of any paid or volunteer work experience in crisis counseling or peer counseling setting, advocacy work (working with individuals with genetic conditions or disabilities, other special populations), paid or volunteer experience as a genetic counseling assistant (GCA), technical work in laboratories, research, or teaching experience, and any other relevant information, such as job shadowing.
- Response to essay question prompts
- Job shadowing is strongly encouraged
- Interview with UAB faculty
- Three letters of recommendation
- Satisfactory screening on health data questionnaire by the UAB Medical Center Student Health Service
- Complete a criminal background check and drug screen at program admission and again prior to clinical placement as required by school policy
- Registration with National Matching Services
- The following course prerequisites:
  - Biology (one full-year course sequence)
  - Biochemistry (one upper-level semester course)
  - Genetics (one semester course to include Mendelian and molecular genetics)
  - General Psychology (one semester)
  - Statistics (one semester)

Additional Information

Deadline for Entry Term(s):	January 7
Deadline for All Application Materials to be in the Graduate School Office:	January 15
Number of Evaluation Forms Required:	Three
Entrance Tests:	TOEFL and TWE also required for international applicants whose native language is not English.

Essential Functions

In order to successfully complete the degree requirements for the curriculum for the Master of Science (M.S.) in Genetic Counseling Program, students must complete the academic and clinical practice requirements of the program in preparation to practice as an entry-level genetic counselor. As defined by the program's accrediting body, the Accreditation Council for Genetic Counseling, an entry-level genetic counselor must develop proficiency in 25 practice-based competencies within the following 7 domains: Genetics and Genomics Expertise, Risk Assessment, Counseling, Communication, Research, and Professional Identity.

Graduate training is a rigorous and intense training process that places specific requirements and demands on enrolled students. The essential functions below extend beyond academic requirements for admission and are standards that all enrolled students must possess in order to successfully complete graduate training. All genetic counseling students must meet the following requirements:

- Communicate effectively and sensitively with patients and members of the health care team.
- Possess the mental capacity for critical thinking including the ability to assimilate, analyze, synthesize, and integrate concepts and to problem-solve in a timely fashion.
- Possess the emotional health and psychological stability required for full utilization of his/her intellectual abilities, exercise good judgement, prompt completion of all responsibilities and the development of mature, sensitive and effective relationships with patients and other members of the health care team.
- Adapt to changing environments and function effectively under stress.
- Students must be able to demonstrate proficiency of all ACGC Practice Based Competencies.

ACGC Practice Based Competencies are available in the UAB GCP Student Handbook and online at http://www.gceducation.org .

Contact Information

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Graduate Program in Genetic Counseling
UAB School of Health Professions
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Website: www.uab.edu/msgc

Master of Science in Genetic Counseling

Requirements		Hours
CDS 505	Professional Skills Development	1
CDS 605	Survival Spanish for Health Professionals	1
CDS 610	Research Design and Statistics	3
ANSC 656	Human Embryology	2
ECG 638	Practicum I: Clinical Skills and Techniques	3
GC 501	Genetics in Medicine	3
GC 504	Prenatal Genetics, Embryology and Teratology	3
GC 505	Principles of Cancer and Adult Genetics and Counseling	3
GC 506	Theory and Practice of Genetic Counseling	3
GC 510	Introduction to Genetic Counseling	3
GC 600	Advanced Clinical Skills in Genetic Counseling - SL	2
GC 602	Advanced Topics in Genetic Counseling	2
GC 650	Clinical Laboratory Rotation	2
GC 651	Clinical Rotation I	4
GC 652	Clinical Rotation II	2
GC 653	Clinical Rotation III	2
GC 654	Clinical Rotation IV	2
GC 655	Clinical Rotation V	2
GC 725	Advanced Medical Genetics and Genomics	3
Non-Thesis Research (take three times)		**4**
GC 698	Non Thesis Research	
Journal Club (take four times)		**4**
GC 560	Genetic Counseling Journal Club	
Total Hours		**54**

Proposed Plan of Study

First Year

First Term	Hours	Second Term	Hours	Summer Term	Hours
CDS 505	1	ANSC 656	2	GC 650	2
CDS 610	3	GC 504	3	GC 651	4
GC 501	3	GC 505	3	GC 698	1
GC 510	3	GC 506	3		
GC 560	1	GC 560	1		
GC 725	3	ECG 638	3		
	14		**15**		**7**

Second Year

First Term	Hours	Second Term	Hours
GC 560	1	GC 560	1
GC 600	2	GC 602	2
GC 652	2	GC 654	2
GC 653	2	GC 655	2
GC 698	1	GC 698	2
CDS 605	1		
	9		**9**

Total credit hours: 54

Industry Genomics and Genetics Graduate Certificate

Degree Offered:	Graduate Certificate in Industry Genetics and Genomics
Program Coordinator:	Alicia Gomes, MS, LCGC
Phone:	205-934-7299
Email:	ASKCDS@uab.edu
Website:	https://www.uab.edu/shp/cds/industry-genetics-and-genomics-certificate

Program Information

The Industry Genetics and Genomics Graduate Certificate is designed to provide advanced skills and education that will prepare graduates for employment in genomic industries that focus on variant data and its interpretation. Advances in the application of genetics and genomics technology in clinical care to support the paradigm shift to personalized medicine has created a need for health care providers and genomics industry professionals to integrate genetics and genomic data with medicine. The certificate is intended to meet the educational needs for the current workforce in medical genetics and clinical laboratories for advanced analytical interpretation and applications related to genomics related topics.

The Industry Genetics and Genomics Certificate is designed to enable students to meet the following learning objectives upon completion of the certificate:

- Integration of advanced knowledge in the clinical applications of genetics and genomic technology to support the workforce demand in the genetics and genomics laboratory industry,
- Effectively utilize of genetics and genomics data in clinical care,
- Assess genomics technologies and determine appropriate use in the clinical genomics industry,
- Effectively integrate genomic and clinical knowledge with the legal, regulatory, marketing, and financial aspects of the clinical genomics industry,
- Effectively apply professional guidelines for genetic variant classification for clinical applications,
- Communicate effectively with clinical genomics laboratory personnel and work in teams within the clinical genomics laboratory, serve as a resource to clinicians to improve the utilization of genomics technology in clinical care, and
- Apply genomic industry standards within a clinical laboratory setting through direct application.

Admission Requirements

- Baccalaureate degree from a regionally accredited institution.
- Applicants must meet all requirements of the UAB Graduate School.
- A minimum overall GPA of 3.0 from prior coursework or degree program.
- Pre-requisite coursework: an undergraduate course in genetics

Requirement	Fulfilled By:
Entry Term:	Summer, Fall
Application Deadline:	April 1, August 1
Entrance Tests:	For international applicants from non-English speaking countries, scores for the Test of English as a Foreign Language (TOEFL) and the Test of Written English (TWE)

Graduate Certificate in Industry Genetics & Genomics Program Requirements

Requirements		Hours
IGC 620	Applied Advanced Medical Genetics and Genomics	3
or IGC 624	Genetics and Genomics Diagnostics Regulation	
IGC 621	Clinical Genomic Testing Technologies and Methodologies	3
IGC 622	Clinical Tools for Genomic Variant Curation and Analysis	3
IGC 623	Genomic Variant Interpretation Using Clinical Application	3
IGC 625	Implementation of Variant Interpretation Practices in the Genetics and Genomics Industry	3
Total Hours		**15**

Contact Information

Industry Genetics and Genomics Graduate Certificate
UAB School of Health Professions
1716 9th Avenue South, SHPB 444
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E-mail: AskCDS@uab.edu
Website: https://www.uab.edu/shp/cds/industry-genetics-and-genomics-certificate

GC-Genetic Counseling Courses

GC 501. Genetics in Medicine. 3 Hours.
Overview of the clinical evaluation and assessment of an individual with a congenital anomaly, intellectual disability and/or genetic condition; includes introduction to etiology of common genetic conditions, pediatric genetic counseling, and testing and treatment options for genetic disorders.

GC 504. Prenatal Genetics, Embryology and Teratology. 3 Hours.
Basic concepts of embryology, teratology and physiology as related to human development and genetic disease and their applications in prenatal genetic counseling.

GC 505. Principles of Cancer and Adult Genetics and Counseling. 3 Hours.
Genetic mechanisms of cancer syndromes, cancer predisposition, and adult onset disorders; psychosocial issues related to these conditions that influence the genetic counseling process.

GC 506. Theory and Practice of Genetic Counseling. 3 Hours.
Development of advanced genetic counseling skills for application in clinical settings.

GC 510. Introduction to Genetic Counseling. 3 Hours.
Introduction to the field of genetic counseling and the basic principles of the profession.

GC 535. Medical Genetics Across the Lifespan. 1 Hour.
Applications in patient care of medical genetics and genomics; genetic family and medical history collection; indications for referral to medical genetics; appropriate use and interpretation of genetic testing; ethical issues in medical genetics.

GC 545. Genetics and Genomics Applications in Health Care. 2 Hours.
Introduction for non-clinicians to the basic principles of medical genetics and the applications of genetics and genomics in healthcare.

GC 560. Genetic Counseling Journal Club. 1 Hour.
Review, presentation and discussion of relevant literature in medical genetics and genetic counseling.

GC 575. Special Topics in Genetic Counseling. 1-4 Hour.
Exploration of current issues in Genetic Counseling.

GC 600. Advanced Clinical Skills in Genetic Counseling - SL. 2 Hours.
Advanced genetic counseling clinical skills utilized in reflective practice, industry, and psychosocial counseling. Students will have opportunities to understand and participate in the lived experiences of people with disabilities through clinical and non-clinical professional duties as a genetic counselor. Attention will be placed on personal and group reflection of these experiences, including service learning and simulations.

GC 602. Advanced Topics in Genetic Counseling. 2 Hours.
Exploration of advanced topics in genetic counseling related to clinical practice and non-clinical professional duties as a genetic counselor.

GC 650. Clinical Laboratory Rotation. 2 Hours.
Exposure to genetic testing protocols, laboratory genetic counseling, and specimen processing and reporting through rotation in biochemical, molecular, and cytogenetic laboratories.

GC 651. Clinical Rotation I. 4 Hours.
Initial clinical rotation to establish basic skill sets in genetic counseling. Supervised and direct patient contact in prenatal, pediatric, adult, cancer, and specialty clinics will allow students to acquire cases for American Board of Genetic Counseling (ABGC) certification.

GC 652. Clinical Rotation II. 2 Hours.
Students utilize intermediate clinical skills in assigned clinical setting. Students interact with an array of genetic specialists. Supervised and direct patient contact in prenatal, pediatric, adult, cancer and specialty clinics will allow students to acquire cases for ABGC certification.

GC 653. Clinical Rotation III. 2 Hours.
Students will apply progressive genetic counseling skills in a clinical setting. Students will interact with an array of genetic specialists. Supervised and direct patient contact in prenatal, pediatric, adult, cancer and specialty clinics will allow students to acquire cases for ABGC certification.

GC 654. Clinical Rotation IV. 2 Hours.
Students will apply progressive genetic counseling skills in a clinical setting. Students will interact with an array of genetic specialists. Supervised and direct patient contact in prenatal, pediatric, adult, cancer and specialty clinics will allow students to acquire cases for ABGC certification.

GC 655. Clinical Rotation V. 2 Hours.
Students will apply progressive genetic counseling skills in a clinical setting. Students will interact with an array of genetic specialists. Supervised and direct patient contact in prenatal, pediatric, adult, cancer and specialty clinics will allow students to acquire cases for ABGC certification.

GC 698. Non Thesis Research. 1-3 Hour.
Graduate level research project under the supervision of clinical faculty.

GC 725. Advanced Medical Genetics and Genomics. 3 Hours.
Medical application of advances in genetics and genomics; chromosome structure and function and major types of chromosomal abnormalities, cancer genetics and cytogenetics; current strategies for detection of mutations associated with genetic disorders, genetic risk assessment and population genetics; genomic approaches to diagnosis and risk stratification.

IGC-Industry Genetics Genomics Courses

IGC 620. Applied Advanced Medical Genetics and Genomics. 3 Hours.
Medical applications of advances in genetics and genomics with a review of current strategy for detection of mutations associated with genetic disorders. Provides a basic understanding of genetic risk assessment and population genetics, genomics approaches to diagnosis and risk stratification.

IGC 621. Clinical Genomic Testing Technologies and Methodologies. 3 Hours.
Critically compare and contrast genetic and genomic testing methodologies and platforms and the benefits and limitations of their use in diverse clinical scenarios.

IGC 622. Clinical Tools for Genomic Variant Curration and Analysis. 3 Hours.
A comprehensive review of the key principles of bioinformatics used in the curation of genetic variants for clinical medicine. This course will explore the software and data used in bioinformatics pipelines to curate and analyze variants.

IGC 623. Genomic Variant Interpretation Using Clinical Application. 3 Hours.
Explore the evolution of current interpretation guidelines used in clinical diagnostic laboratories for genetic variant interpretation. Learn to critically examine functional, computational, and statistical data and how the data may influence variant interpretation.

IGC 624. Genetics and Genomics Diagnostics Regulation. 3 Hours.
An introduction to the nuances of regulation, certification and ethical practices in the genetics and genomics industry.

IGC 625. Implementation of Variant Interpretation Practices in the Genetics and Genomics Industry. 3 Hours.
Active engagement in variant analysis and interpretation through direct application of variant analysis and interpretation skills in an assigned setting.