

## **Master of Science in Human Genetics and Genetic Counseling Curriculum for 2016-17**

### **First year, Autumn (Full Time >11 units)**

DBIO 201 Development and Disease Mechanisms, 2 units (Kim, Kingsley)  
MED 255C Responsible Conduct of Research, 1 unit (SCBE Staff)  
GENE 271 Human Molecular Genetics, 4 units (Hanson-Kahn)  
GENE 272 Introduction to Medical Genetics, 2 units (Ormond and Hudgins)  
GENE 273 Introduction to Clinical Genetics Testing, 1 unit (Hanson-Kahn)  
GENE 275 Role Play and Genetic Counseling Observations, 2 units (Ormond/Campion)  
GENE 284 Medical Genetics Seminar, 2 units (Staff)  
GENE 285A Genetic Counseling Seminar, 2 units (Campion)

#### **Total units:**

**16 + 2 units of online courses (prospectively 278, 279, 280, 281) = 18 units total**

### **First year, Winter (Full Time >11 units)**

GENE 274A A Case Based Approach to Clinical Genetics I, 2 units (Hudgins/Hanson-Kahn)  
GENE 276, Clinical Rotations, 5 units (Hanson-Kahn/Ormond)  
GENE 282 Research Seminar, 1 unit (Ormond)  
GENE 299 Directed readings, 1 unit (Ormond) – in relationship to research course  
GENE 284 Medical Genetics Seminar, 2 units (Staff)  
GENE 285B Genetic Counseling Seminar, 2 units (Campion)  
*Optional elective, up to 5 units (Faculty outside of the department)*  
*GENE 278 or 279 or 280 or 281 or 287 (select one; tutorial for rotation), 1-4 unit (online courses)*

#### **Total units:**

**13 + 5 [online courses, and/or research electives] to total 18 units**

(Note: if students register for >18 units, extra tuition fees may apply)

### **First year, Spring (Full Time >11 units)**

HumBio 174 Foundations in Biomedical Ethics, 3 units (Magnus)  
GENE 274B A Case Based Approach to Clinical Genetics II, 2 units (Hudgins/Hanson-Kahn)  
GENE 276, Clinical Rotations, 5 units (Hanson-Kahn)  
GENE 282 Research Seminar, 1 unit (Ormond)  
GENE 284 Medical Genetics Seminar, 2 units (Staff)  
GENE 285C Genetic Counseling Seminar, 2 units (Ormond)  
*Optional elective, up to 3 units (Faculty outside of the department)*  
*GENE 278 or 279 or 280 or 281 or 287 (select one; tutorial for rotation), 1-4 unit (online courses)*

**Total units – 15 + 3 [online courses, directed readings 299 or research electives] to total 18 units**

(Note: if students register for >18 units, extra tuition fees may apply)

### **First year, Summer**

Students will complete clinical rotations on a full time (~40 hour/week) basis, and work on their research projects. Students will not sign up for any academic credits during this time.

**Second year, Autumn (Full time 8-10 units)**

GENE 284 Medical Genetics Seminar, 2 units (Staff)

GENE 286A Advanced Genetic Counseling conference, 2 units (Ormond ,Hanson-Kahn and Campion)

Use some combination of the GENE 283 (Research), any remaining online courses and electives to make up the remaining 5-6 units:

*Note: students will also complete research projects and clinical rotations during this quarter, but will not register for them.*

**Total units 4 + 6 [research, online courses, electives] = exactly 10 (without extra fees)**

**Second year, Winter (Full time 8-10 units)**

GENE 284 Medical Genetics Seminar, 2 units (Staff)

GENE 286B Advanced Genetic Counseling conference, 2 units (Ormond, Hanson-Kahn and Campion)

Use some combination of the GENE 283 (Research), any remaining online courses and electives to make up the remaining 6 units:

*Note: students will also complete research projects and clinical rotations during this quarter, but will not register for them.*

**Total units 4 + 6 [research, online courses, electives] = exactly 10 (without extra fees)**

**Second year, Spring (Full time 8-10 units)**

GENE 284 Medical Genetics Seminar, 2 units (Hanson-Kahn)

GENE 286C Advanced Genetic Counseling conference, 2 units (Ormond, Hanson-Kahn and Campion)

Use some combination of the GENE 283 (Research), any remaining online courses and electives to make up the remaining 5-6 units:

*Note: students will also complete research projects and clinical rotations during this quarter, but will not register for them.*

**Total units 4 + 6 [research, online courses, electives] = exactly 10 (without extra fees)**

**Total Units: 84**

***Note: GENE 278, 279, 280, 281 and 287 are online courses in prenatal, pediatrics, metabolic, cancer, and cardio- genetics that will be taken concurrently with the relevant clinical rotations.***

Cardiogenetics can be considered an elective for those students not assigned a cardiogenetics rotation.

Given the rigorous curriculum listed, students should expect that classes and clinical rotations will fill their days during regular business hours (typically 8:30-5pm, with some exceptions of required classes going until 6pm). Infrequently, required events will be scheduled on weekends or into the evenings, generally with significant advance notice.

**\*\*Students should take one elective or more during their second year. As described elsewhere, at least one general elective and one research elective is required to complete the program**

## **Community Health and Prevention Research (CHPR) track**

As of 2016, genetic counseling students may also consider completing a track in Community Health and Prevention Research (CHPR), which includes the following six courses:

1. CHPR 225 Role of causal inference, study design and outcomes in community research, 3 units
2. CHPR 201 Introduction to the science of healthy living, 1 unit
3. CHPR 228 Theoretical foundations and design of behavioral intervention trials, 3 units
4. CHPR 240 Prevention research and public health, 3 units
5. CHPR 260 Prevention across medical disciplines, 3 units
6. HRP 258 Introduction to probability and statistics for clinical research, 3 units

Students doing the CHPR track will not register for other electives, as the CHPR courses will count towards meeting their research and other elective requirements.

Benefits of completing the MS Genetic Counseling with CHPR track:

1. Students will bolster their biopsychosocial counseling training by learning and applying key human behavior change research, theories/frameworks, and best practices from the fields of community health, psychology, and preventive medicine.
2. Students will gain and hone quantitative methodologic skills including research study design, study implementation, and data analysis related to community health and preventative medicine
3. Students will strengthen their understanding of genetics/epigenetics by studying the major preventable causes of mortality and morbidity (i.e., modifiable risk factors) and national lifestyle recommendations & behavior change guidelines to prevent chronic diseases.
4. Students will study the theory and practice of health promotion and chronic disease prevention in diverse practice settings
5. Students will examine how specific prevention applications in diverse practice settings (spanning the social-ecological spectrum) can optimize health and promote health equity across the life course at the individual, family, community, and population level
6. Students will have opportunities to integrate core CHPR learnings into their final Genetic Counseling research project and clinical rotations