# PHD IN GENETICS & EPIGENETICS

The Genetics & Epigenetics (G&E) Program is a research-oriented PhD and MS program at The University of Texas MD Anderson Cancer Center UTHealth Houston Graduate School of Biomedical Sciences. The research in G&E labs is broadly focused on the fundamental genetic, epigenetic, and genomic mechanisms that control cell growth and differentiation, and that cause cancer and other human diseases. From basic science investigations to translational studies, G&E students and faculty are actively engaged in the pursuit of new scientific knowledge that could one day lead to clinical advances.

The Program aims to train students who are knowledgeable, critical, and productive independent scientists. We achieve this through cutting-edge research projects, classes, seminars, retreat, laboratory collaborations, social gatherings and career development activities.

G&E labs are located throughout the Texas Medical Center, including MD Anderson and UTHealth Houston (McGovern Medical School, School of Public Health, School of Dentistry, and School of Biomedical Informatics).

Genetics & Epigenetics (G&E) PhD and Masters students are required to fulfill GSBS and Program-specific course requirements as listed below, in addition to the GSBS PhD degree (https://gsbs.uth.edu/academics/phd-course-requirements/) and MS degree (https://gsbs.uth.edu/academics/ms-program-course-requirements/) requirements. Requirements for students doing a secondary area of concentration in G&E are also listed. PhD students must pass the G&E candidacy exam to advance to candidacy. In addition, all students affiliated with G&E are expected to attend the annual G&E Retreat and present the findings of their research project. Students are also highly encouraged to participate in program activities throughout the year to enhance their education and support the development of their professional network.

## G&E Course Requirements

**PhD Students:**

In addition to the general GSBS course requirements (https://gsbs.uth.edu/academics/phd-course-requirements/), the G&E Program requires the following courses:

| Code | Title | Hours |
|---|---|---|
| GS04 1253 | Principles in Genetics and Epigenetics | 3 |
| GS04 1811 | G & E Scientific Writing (or equivalent *) | 1 |
| GS04 1821 | G&E Scientific Presentations | 1 |
| One or more elective course(s) or course modules (at least 3 credits) | | |

Any GSBS course(s) can be chosen for the elective. Students should work with the G&E program director, their research mentor and/or Advisory Committee to use this elective to customize their studies to support their educational objectives.

* Students may take the GSBS *Scientific Writing* course or most Program-specific scientific writing courses to fulfill this requirement.

**MD/PhD Students:**

The same as for PhD student listed above with one (1) exception: MD/PhD students are not required to take the three (3) elective course credits required for PhD students.

**PhD Students with a Secondary Area of Concentration in G&E:**

| Code | Title | Hours |
|---|---|---|
| GS04 1253 | Principles in Genetics and Epigenetics | 3 |
| At least one second ARC Program faculty member, other than their research advsior, must serve on the student's Advisory Committee | | |
| At least one second ARC Program faculty member must serve on the student's Exam Committee | | |

In addition, they are expected to attend the annual G&E Program retreat and actively participate in some other G&E activities each year.

**MS Students:**

| Code | Title | Hours |
|---|---|---|
| GS04 1253 | Principles in Genetics and Epigenetics | 3 |

Not required but suggested:

| Code | Title | Hours |
|---|---|---|
| GS04 1821 | G&E Scientific Presentations (or equivalent) | 1 |
| GS04 1811 | G & E Scientific Writing (or equivalent) | 1 |

**Suggested Elective Courses Taught By G&E Faculty:**

| Code | Title | Hours |
|---|---|---|
| GS04 1273 | Advanced Microscopy: Live Imaging and Technologies | 3 |
| GS04 1792 | Pragmatic Bioinformatics for Bench Scientists | 2 |
| GS01 1143 | Introduction to Bioinformatics | 3 |
| GS04 1073 | Developmental Biology | 3 |
| GS04 1263 | Cancer Epidemiology | 3 |
| GS12 1442 | Principles of Experimental Mouse Pathology | 2 |
| GS04 1081 | Stem Cells in Biomedicine | 1 |