

November 15, 2018

Department of Molecular and Cell Biology
Ph.D. program in Genetics and Genomics

The requirements outlined below are effective for the matriculating class of Fall 2018 for the Doctor of Philosophy. Students who matriculated prior to Fall 2018 have the option to use these newly implemented requirements **or** requirements previously applied to graduate students in the Genetics and Genomics AOC ([found here](#)).

General requirements for Ph.D. students enrolled in the Genetics and Genomics AOC within MCB (note that the Graduate School requirements are in bold):

- 1) **Organize your committee (five faculty) and submit your plan of study by the time you have completed no more than 18 academic credits (typically by the fall of your second year).** The Genetics and Genomics AOC head has to approve the plan of study.
- 2) You must take your qualifying exam by the end of your third year.
- 3) **You must have a total of 30 MCB credits (15 minimum credits of didactic classwork-as outlined in Courses requirements and timeline) and 15 minimum credits of research and/or special topics). You must register for a minimum of 6 credits each semester to remain in good standing; MCB 6897 and GRAD 6950 may be used for this purpose. You need a minimum of 15 credits of GRAD 6950 before submitting your final dissertation.**
- 4) No class may be repeated towards the 15 minimum didactic credits.

General exam information: <https://genetics.uconn.edu/dissertation-proposal/>

[Course requirements and timeline:](#)

Foundational courses highly recommended are highlighted in bold.

1st semester (Fall), pick one didactic course:

MCB 5445 Genome Dynamics and Epigenetics (3 credits)

MCB 5452 Problems in Genetics of Eukaryotes (3 credits)

MCB 5621 Molecular Biology and Genetics of Prokaryotes (3 credits)

MCB 5217 Biosynthesis of Nucleic Acids and Proteins (3 credits)

In addition to one course from the above list, you must register for:

MCB 5899-001 Graduate seminar (1 credit)

MCB 5899-002 (Introduction to Faculty Research (1 credit))

MCB 6000 Rotations in MCB (1 credit)

Prior to registering for courses for your second semester (typically Spring), you must discuss planned coursework with the AOC head and/or your faculty advisor.

2nd semester (spring), pick one didactic course:*

MCB 5426 Genetic Engineering and Functional Genomics (3 credits)

MCB 5454 Molecular Aspects of Genetics (2 credits)

Didactic coursework choice alternatives:

For students needing more basic background in genetics and functional genomics you may instead take one of these courses following discussion with your advisor and/or AOC head:

MCB 5896-063 Gene Expression (3 credits)

MCB 5896-037 Concepts of Genetic Analysis (3 credits)

In addition to one course selected from above, you may register for:

1-2 of the following courses:

GRAD 5910 Responsible Conduct of Research in Genomics and Life Sciences (1 credit)

MCB 5801 Scientific Writing and Project Development (2 credits)

MCB 5499 Current Topics in Genetics (1 credit)

3 credits of research MCB 6997 (this can be served with your newly chosen faculty advisor or with the advisor overseeing a fourth, semester-long rotation if you opted for an extra rotation).

3rd semester onward*:

Choose from didactic courses not previously taken from the above lists and from the following:

Fall Semester

MCB 5430 Analysis of Eukaryotic Functional Genomic Data (3 credits)

MCB 5243 Molecular Analysis of Development (3 credits)

Spring Semester

MCB 5896-027 Footprints of Natural Selection in the Genome (3 credits)

EEB 4100 Big Data science for Biologists (3 credits)

Optional courses for students with a research focus on molecular evolution/microbial genetics:

MCB 5471 Current Topics in Molecular Evolution (1 credit)

MCB 3637 Practical Methods in Microbial Genomics (3 credits)

EEB 6486 Systematics Seminar (1 credit)

* The following Intensive didactic courses are recommended for students with a research focus on molecular evolution/population genetics (note that these are not offered every year):

MCB 5472 Computer Methods in Molecular Evolution (3 credits)

EEB 5348 Population Genetics (3 credits)

EEB 5349 Phylogenetics (3 credits)