

## COMMITTEE ON GENETICS, GENOMICS & SYSTEMS BIOLOGY - COMPUTATIONAL BIOLOGY TRACK: SUGGESTED SPECIALIZATIONS

	AUTUMN QUARTER		WINTER QUARTER		SPRING QUARTER	
		Course #		Course #		Course #
<b>POPULATION GENETICS &amp; EVOLUTION</b>	<b>Statistical Theory and Methods</b> Human Genetics I Genetic Analysis of Model Organisms Fundamentals of Cell and Molecular Biology Applied Linear Statistical Methods Introduction to Scientific Computing for Biologists.	<b>STAT 24200</b> HGEN 47000 MGCB 31400 BIOS 20186  STAT 34300 ECEV 32000	<b>Fundamentals of Computational Biology: Models and Inference</b> Principles of Population Genetics I Evolution of Biological Molecules Fundamentals of Genetics Statistical Theory and Methods II Theoretical Ecology	HGEN 48600  ECEV 35600 ECEV 31100 BIOS 20187 STAT 24500 ECEV 42900	<b>Fundamentals of Computational Biology: Algorithms and Applications</b> Human Variation & Disease Pattern Recognition Bayesian Analysis and Principles of Statistics	HGEN 48800  HGEN 46900 STAT 24610 STAT 30210
<b>STATISTICAL GENETICS</b>	<b>Statistical Theory and Methods</b> Human Genetics I Genetic Analysis of Model Organisms Fundamentals of Cell and Molecular Biology Applied Linear Statistical Methods Introduction to Scientific Computing for Biologists.	<b>STAT 24200</b> HGEN 47000 MGCB 31400 BIOS 20186  STAT 34300 ECEV 32000	<b>Fundamentals of Computational Biology: Models and Inference</b> Introductory Statistical Genetics Principles of Population Genetics I Fundamentals of Genetics Statistical Theory and Methods II Multivariate Statistical Analysis: Applications and Techniques	HGEN 48600  HGEN 47100 ECEV 35600 BIOS 20187 STAT 24500 STAT 32950	<b>Fundamentals of Computational Biology: Algorithms and Applications</b> Human Variation & Disease Genomics and Systems Biology Statistical Genetics Pattern Recognition Bayesian Analysis and Principles of Statistics Machine Learning	HGEN 48800  HGEN 46900 HGEN 47300 STAT 35500 STAT 24610 STAT 30210  STAT 37710
<b>COMPUTATIONAL GENOMICS</b>	<b>Statistical Theory and Methods</b> Human Genetics I Genetic Analysis of Model Organisms Fundamentals of Cell and Molecular Biology Applied Linear Statistical Methods Computational Systems Biology	<b>STAT 24200</b> HGEN 47000 MGCB 31400 BIOS 20186  STAT 34300 CMSC 37720	<b>Fundamentals of Computational Biology: Models and Inference</b> Introductory Statistical Genetics Principles of Population Genetics I Fundamentals of Genetics Statistical Theory and Methods II Multivariate Statistical Analysis: Applications and Techniques	HGEN 48600  HGEN 47100 ECEV 35600 BIOS 20187 STAT 24500 STAT 32950	<b>Fundamentals of Computational Biology: Algorithms and Applications</b> Quantitative Analysis of Biological Dynamics Human Variation & Disease Genomics and Systems Biology Pattern Recognition Bayesian Analysis and Principles of Statistics Gene Regulation Machine Learning	HGEN 48800  MGCB 32000  HGEN 46900 HGEN 47300 STAT 24610 STAT 30210  MGCB 35401 STAT 37710
<b>COMPUTATIONAL CELL BIOLOGY</b>	<b>Statistical Theory and Methods</b> Genetic Analysis of Model Organisms Fundamentals of Cell and Molecular Biology Applied Linear Statistical Methods Computational Systems Biology	<b>STAT 24200</b> MGCB 31400 BIOS 20186  STAT 34300 CMSC 37720	<b>Fundamentals of Computational Biology: Models and Inference</b> Evolution of Biological Molecules Fundamentals of Genetics Statistical Theory and Methods II	HGEN 48600  ECEV 31100 BIOS 20187 STAT 24500	<b>Fundamentals of Computational Biology: Algorithms and Applications</b> Quantitative Analysis of Biological Dynamics Biophysics of Biomolecules Genomics and Systems Biology Pattern Recognition Bayesian Analysis and Principles of Statistics Gene Regulation	HGEN 48800  MGCB 32000  BCMB 32200 HGEN 47300 STAT 24610 STAT 30210  MGCB 35401

THE ABOVE COURSE TRACK IS SUGGESTED. THE COMMITTEE ON GENETICS ENCOURAGES ALL STUDENTS TO EXPLORE OTHER AREAS OF INTEREST AS WELL.

TO SATISFY THE COURSE REQUIREMENTS FOR THE COMMITTEE ON GENETICS, STUDENTS ARE TO TAKE:  
 4 REQUIRED COURSES, 4 ELECTIVES, AND 2 GRADED LAB ROTATIONS FOR ½ CREDIT EACH, TOTALING 9 GRADED COURSES.  
 ROTATIONS ARE DONE IN THE WINTER OR SPRING (10 WEEKS) AND SUMMER (5 WEEKS). AN OPTIONAL THIRD ROTATIONS (5 WEEKS) MAY BE DONE IN THE SUMMER

### REQUIRED RED BOLDED COURSES FOR THE DEGREE ARE AS FOLLOWS:

<b>Statistical Theory and Methods</b>	<b>STAT 24200 (Autumn)</b>
<b>Fundamentals of Computational Biology: Models and Inference</b>	<b>HGEN 48600 (Spring)</b>
<b>Fundamentals of Computational Biology: Algorithms and Applications</b>	<b>HGEN 48800 (Winter)</b>

### SUGGESTED ELECTIVES FROM WHICH TO CHOOSE

CHOOSE THREE OF THE FOLLOWING BLUE ITALICIZED COURSES BELOW TO SATISFY THE FINAL COURSE REQUIREMENT FOR THE DEGREE (Please copy the Core Electives here).