GMB Course Requirements
(applicable to students entering summer 2016 and later)

All students must be enrolled in a minimum of 9 credit hours per semester to be a full-time student. For 1st and 2nd year students, a reasonable course load is 11-14 credit hours per semester. Consult your DGS or PD to choose electives.

All students are required to take the following core courses: GMB 501, GMB 502, IBS 561, IBS 515, IBS522r, and IBS 500r.

The table below lists out the sequence in which students should complete these core courses.

In addition, students must also successfully complete the following requirements by the end of Year 2, but have some flexibility in when they choose to complete them:

IBS 500r (Intro to Data Analytics, 1 Credit) is required for all students entering summer 2016 and later. It is also a pre-requisite for IBS 574 (Comp Bio & Bioinformatics, 4 hrs), which is *not* required, but highly recommended. IBS 500r is only offered in the fall semester.

Students must also take **one** of the following courses before the end of Y2, which are only offered in the fall semester (note: many students take more than one of these):

- IBS 504 (Prok Mol Genetics, 6 hrs)
- IBS 560 (Model Genetic Systems, 4 hrs)
- IBS 746 (Grad Human Genetics, 4 hrs)

Students entering summer 2022 and later are also required to take one additional elective course, either from the above list or from the other IBS or BIOS course offerings below (must be 4 hours, and may also be achieved by taking two of the recommended 2-hour courses below). An elective outside this list requires the approval of the advisor AND the DGS.

A list of additional recommended electives in the basic and quantitative sciences is provided below, though students may use OPUS (https://saprod.emory.edu/psp/saprod/?cmd=login) to identify other courses that meet their needs. All students are encouraged to consult with their advisor when selecting electives, and with the DGS or curriculum director if selecting electives outside of this list.

Fall	Spring
Basic science:	
IBS 523: Cancer Biology I (4 hrs)	IBS 506R: Basic Mech.Of Neurological Disease (4 hrs)
IBS 542: Concepts of Immunology (4 hrs)	IBS 548: Biology of the Eye (4 hrs)
Quantitative science:	
EPI 556: Applied Genomic Epidemiology (2 hrs)	IBS 538/BIOS 505 – Statistics for Experimental Biology
BIOS 555: High Throughput Data Analysis (2 hrs)	IBS 574: Computational Biology and Bioinformatics (4 hrs)
IBS 741: Computational Systems Biology (2 hrs)	IBS 593: Population and Quantitative Genetics (4 hrs; offered alternate years)

Many other BIOS classes are available that provide training in probability theory and statistical inference. For these, it is recommended that you consult with the Curriculum Director to identify appropriate choices based on your previous coursework and research needs.

First Year: Fall Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1
GMB 501	Foundations of Genetics & Molecular Biology I	6
IBS 500r	Intro to Data Analytics	1
GMB 597r	Lab Rotations	
^JPE 600	LGS Ethics Class	0

First Year: Spring Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1
IBS 570r	Intro Grad Seminar	2
GMB 502	Foundations of Genetics & Molecular Biology II	4
	GMB 597r Lab Rotations	
GMB 706	Ethical Conduct	1
IBS 561	Euk Chrom function	4

Second Year: Fall Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 515	Topics Mol Genetics	2
IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (8+)
^TATT 600	TA Training	1

Second Year: Spring Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 522r	Grant Writing & Pro Dev	4
IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (8+)
GMB 706	Ethical Conduct	1
^TATT 605	Teaching Assistantship	2

Third Year: Fall Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (8+)

Third Year: Spring Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (8+)

Fourth Year: Fall Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1
GMB 700r	Dissertation Research	VC (8+)

Fourth Year: Spring Semester Core Courses		
Course Number	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1
GMB 700r	Dissertation Research	VC (8+)

^ LGS will register you for these courses
VC = Variable credits (system defaults to 1 hour)

Suggested Course Schedules if you want to focus on wet lab experiments:

First Year: Fall Semester Core Courses

Course Number	Course Title	Credits
IBS 500r	Intro Data Analytics	1
IBS 546r	Presenting Genetics	1
GMB 501	Foundations of Genetics & Molecular Biology I	6
GMB 597r	Lab Rotations	VC (3+)
^JPE 600	LGS Ethics Class	0
And one of the following:		
IBS 504	Prok Mol Genetics	6
IBS 560	Model Genetic Systems	4
IBS 746	Grad Human Genetics	4

First Year: Spring Semester Core Courses

Course Number	Course Title	Credits
IBS 574	Comp Bio & Bioinform	4
IBS 546r	Presenting Genetics	1
IBS 570r	Intro Grad Seminar	2
GMB 502	Foundations of Genetics & Molecular Biology II	4
GMB 706	Ethical Conduct	1
IBS 561	Euk Chrom function	4

Second Year: Fall Semester Core Courses

Course Number	Course Title	Credits
IBS 515	Topics Mol Genetics	2
IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (3+)
^TATT 600	TA Training	1
And one of the following:		
IBS 504	Prok Mol Genetics	
IBS 560	Model Genetic Systems	
IBS 746	Grad Human Genetics	

Second Year: Spring Semester Core Courses

Course Number	Course Title	Credits
IBS 522r	Grant Writing & Pro Dev	4
IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (3+)
GMB 706	Ethical Conduct	1
^TATT 605	Teaching Assistantship	2

Same wet lab focus as above, but if you do <u>not</u> have sufficient background:

Year 1 Fall Semester			Year 1 Spring Semester		
Course Number	**Course Title**	**Credits**	**Course Number**	**Course Title**	**Credits**
IBS 546r	Presenting Genetics	1	IBS 546r	Presenting Genetics	1
IBS 500r	Intro Data Analytics	1	IBS 570r	Intro Grad Seminar	2
GMB 597r	Lab Rotations	VC (3+)	GMB 597r	Lab Rotations	VC (3+)
^JPE 600	LGS Ethics Class	0	GMB 706	Ethical Conduct	1
			IBS 561	Euk Chrom function	4
			*BIOS 505	Stats for Experimental Bio	4
And one of the following:					
IBS 504	Prok Mol Genetics	6			
IBS 560	Model Genetic Systems	4			
IBS 746	Grad Human Genetics	4			

Year 2 Fall Semester			Year 2: Spring Semester		
IBS 515	Topics Mol Genetics	2	IBS 522r	Grant Writing & Pro Dev	4
IBS 546r	Presenting Genetics	1	IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (3+)	GMB 699r	Adv Graduate Research	VC (3+)
^TATT 600	TA Training	1	GMB 706	Ethical Conduct	1
	Intro Data Analytics	3	^TATT 605	Teaching Assistantship	2
			IBS 574	Comp Bio & Bioinform	4
And one of the following:					
IBS 504	Prok Mol Genetics				
IBS 560	Model Genetic Systems				
IBS 746	Grad Human Genetics				

*Students interested in BIOS courses must receive prior approval from the course instructor and Melissa Sherrer (msherre@emory.edu) from the Rollins School of Public Health Biostatistics Department.

If you want to focus on dry lab quantitative experimentation or if you already have a strong quantitative background:

Year 1 Fall Semester			**Year 1 Spring Semester**		
Course Number	**Course Title**	**Credits**	**Course Number**	**Course Title**	**Credits**
IBS 500R	Intro to Data Analytics	1			
			IBS 546r	Presenting Genetics	1
IBS 546r	Presenting Genetics	1	IBS 570r	Intro Grad Seminar	2
			GMB 597r	Lab Rotations	VC (3+)
GMB 597r	Lab Rotations	VC (3+)	GMB 706	Ethical Conduct	1
^JPE 600	LGS Ethics Class	0	*BIOS 511	Statistical Inference	4
*BIOS 510	Intro to Probability Theory	4	IBS 574	Comp Bio & Bioinform	4
Year 2 Fall Semester			**Year 2: Spring Semester**		
IBS 515	Topics Mol Genetics	2	IBS 522r	Grant Writing & Pro Dev	4
IBS 546r	Presenting Genetics	1	IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (3+)	GMB 699r	Adv Graduate Research	VC (3+)
^TATT 600	TA Training	1	GMB 706	Ethical Conduct	1
			^TATT 605	Teaching Assistantship	2
			IBS 561	Euk Chrom function	4
Elective (choose 1):					
IBS 504	Prok Mol Genetics				
IBS 560	Model Genetic Systems				
IBS 746	Grad Human Genetics				

If you want to focus on dry lab quantitative experimentation, but do <u>not</u> have a strong quantitative background:

Year 1 Fall Semester			**Year 1 Spring Semester**		
Course Number	**Course Title**	**Credits**	**Course Number**	**Course Title**	**Credits**
IBS 500R	Intro Data Analytics	1			
			IBS 546r	Presenting Genetics	1
IBS 546r	Presenting Genetics	1	IBS 570r	Intro Grad Seminar	2
			GMB 597r	Lab Rotations	VC (3+)
GMB 597r	Lab Rotations	VC (3+)	GMB 706	Ethical Conduct	1
^JPE 600	LGS Ethics Class	0	IBS 561	Euk Chrom function	4
			IBS 574	Comp Bio & Bioinform	4
Year 2 Fall Semester			**Year 2: Spring Semester**		
IBS 515	Topics Mol Genetics	2	IBS 522r	Grant Writing & Pro Dev	4
IBS 546r	Presenting Genetics	1	IBS 546r	Presenting Genetics	1
GMB 699r	Adv Graduate Research	VC (3+)	GMB 699r	Adv Graduate Research	VC (3+)
^TATT 600	TA Training	1	GMB 706	Ethical Conduct	1
*BIOS 510	Intro to Probability Theory	4	^TATT 605	Teaching Assistantship	2
			*BIOS 511	Statistical Inference	4
And one of the following:					
IBS 504	Prok Mol Genetics				
IBS 560	Model Genetic Systems				
IBS 746	Grad Human Genetics				

^ LGS will register you for these courses

VC = Variable credits (system defaults to 1 hour)

*Students interested in BIOS courses must receive prior approval from the course instructor and Melissa Sherrer (msherre@emory.edu) from the Rollins School of Public Health Biostatistics Department.