

CURRICULUM WORKSHEET FOR THE MAJOR IN GENETICS

Last Name: _____ First Name: _____

RUID: _____ Email: _____ Class: _____

Requirement	Course Number	Cr.	Sem & Year	Grade
<input type="checkbox"/> General Biology I ^{*, 1, 2}	01:119:115	4		
<input type="checkbox"/> General Biology II ^{*, 1, 2}	01:119:116	4		
<input type="checkbox"/> Gen. Biology Lab ^{*, 1, 2}	01:119:117	2		
<input type="checkbox"/> General Chemistry I ^{*, 1}	01:160:161 <i>or</i> 01:160:163 (Honors)	4		
<input type="checkbox"/> General Chemistry II ^{*, 1}	01:160:162 <i>or</i> 01:160:164 (Honors)	4		
<input type="checkbox"/> Intro to Experi ¹	01:160:171	1		
<input type="checkbox"/> Calculus I ^{*, 1}	01:640:135 (Calc. I) <i>or</i> 01:640:151 (Calc. I Math/Phys)	4		
<input type="checkbox"/> Calc. II or Statistics ^{*, 1, 3}	01:640:138 (Calc. II) <i>or</i> 01:640:152 (Calc. II) (4 cr) <i>or</i> 01:960:401 (Stats Bio Res) (3 cr)	4 or 3		
<input type="checkbox"/> Organic Chemistry I ¹	01:160:307 <i>or</i> 01:160:315 (Honors)	4		
<input type="checkbox"/> Organic Chemistry II ¹	01:160:308 <i>or</i> 01:160:316 (Honors)	4		
<input type="checkbox"/> Organic Chemistry Lab ¹	01:160:311	2		
<input type="checkbox"/> General Physics I ^{1, 4}	01:750:203	3		
<input type="checkbox"/> General Physics II ^{1, 4}	01:750:204	3		
<input type="checkbox"/> Gen. Physics Lab I ^{1, 4}	01:750:205	1		
<input type="checkbox"/> Gen. Physics Lab II ^{1, 4}	01:750:206	1		
<input type="checkbox"/> Genetic Analysis I ^b	01:470:384	4		
<input type="checkbox"/> Genetic Analysis II ^b	01:470:385	4		
<input type="checkbox"/> Lab Course Req. ^b	01:447:315 (Intro to Res Gen) <i>or</i> 01:447:302 (Quant Bio) <i>or</i> 01:694:214 (Intro Mol Bio Res) <i>or</i> 01:694:215 (Honors Mol Bio Res)	3		
<input type="checkbox"/> Mol Bio & Biochem. ^f	01:694:301 <i>or</i> 01:694:407	3		
<input type="checkbox"/> Comm. in Genetics ^{8, 9}	01:447:430 <i>or</i> 01:447:414 & 01:447:415 (Honors, Thesis Writ.)	3 1.5, 1.5		
<input type="checkbox"/> Research & Scholar. ¹⁰	01:447:406, 407, 408, 409, 410, 488, 489, 490. Course:	3-6		
<input type="checkbox"/> Research & Scholar. ¹⁰	01:447:406, 407, 408, 409, 410, 488, 489, 490. Course:	3-6		
<input type="checkbox"/> Research & Scholar. ¹⁰	01:447:406, 407, 408, 409, 410, 488, 489, 490. Course:	3-6		
<input type="checkbox"/> Research & Scholar. ¹⁰	01:447:406, 407, 408, 409, 410, 488, 489, 490. Course:	3-6		
<input type="checkbox"/> Research & Scholar. ¹⁰	01:447:406, 407, 408, 409, 410, 488, 489, 490. Course:	3-6		
<input type="checkbox"/> Research & Scholar. ¹⁰	01:447:406, 407, 408, 409, 410, 488, 489, 490. Course:	3-6		
<input type="checkbox"/> Genetics Elective ^{11, 12, 13}	See attached table. Course:	3		
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The listed courses are strongly recommended for the major. Any substitutions require the permission of the departmental Vice Chair. A grade of "C" or better is required for graduation for all courses credited towards the major. Genetics major core requirements (i.e., 447:384-385, 447:315, 447:302, 694:301, 694:407, 447:430, 447:414-415), electives, and research courses cannot be satisfied by transfer courses.

Students must take a total of 18 credits of (1) Research & Scholarship and (2) Electives, with a minimum of 6 credits of each.

Guide to Notes:

* Prerequisite courses required to declare the Genetics major

1. Appropriate AP credits or transfer courses approved by OUGI may be substituted.
2. Students who previously received credit for the General Bio series 01:119:101-102 will have satisfied the General Biology and Laboratory requirement (i.e., 01:119:115-117).
3. Several substitutions for the mathematics requirement are possible but not recommended. All require the permission of the departmental Vice Chair:
 - a. 01:640:136 (Calc II, 4 cr) may be substituted for 01:640:138.
 - b. 01:640:192 (Honors Calc II, 4 cr) may be substituted for 01:640:152.
 - c. 01:960:379 (Basic Prob Stat, 3 cr) may be substituted for 01:960:401.
4. Several substitutions for General Physics are possible but not recommended. All require the permission of the departmental Vice Chair:
 - a. 01:750:193-194 (Physics for Sciences, 4,4 cr) may be substituted for 01:750:203-204 (3,3 cr) and 01:750:205-206 (1,1 cr). The 01:750:193-194 two-semester course is combination of lecture and lab.
 - b. 01:750:271-272 (Honors Physics 3,3 cr) may be substituted for 01:750:203-204 (3,3 cr).
 - c. 01:750:275-276 (Classical Physics Lab, 1,1 cr) may be substituted for 01:750:205-206 (1,1 cr).
5. 01:447:380 (Genetics) may not be substituted for either 01:447:384 or 01:447:385 (Genetic Analysis I & II).
6. 01:694:214 and 01:694:215 are only offered to first-year students with AP Biology credit and AP General Chemistry credits (or taking General Chemistry concurrently).
7. 11:115:403-404 (General Biochem, 3,3 cr.) may be substituted but are not recommended. Requires the permission of the departmental Vice Chair
8. 01:447:430 must be taken after completing at least one semester of independent research.
9. Students doing an Honors thesis in Genetics will take the 01:447:414-415 series in their Senior year (concurrent with Honors in Genetics 01:447:408-409) instead of 01:447:430.
10. Research & Scholarship courses are listed more than once because they can be taken more than once.
 - a. Genetics major research and scholarship must be mentored by a Rutgers faculty member to count towards the requirement.
 - b. Research & scholarship courses must be taken with a single advisor over two semesters or more.
 - c. No more than 6 credits of 01:447:489-490 may count towards the Genetics major.
 - d. 01:447:410 can be combined with one of the other research courses listed above. This course can be taken only once.
 - e. 01:447:488 can be taken only once and is combined with one of the other research courses listed above to satisfy the research requirement.
 - f. A minimum of 6 credits of 01:447:408-409 and a total of 12 credits of combined research (01:447:406-407, 01:447:408-409, 01:447:410, or 01:447:488) is required to graduate with departmental Honors.
11. At least 50% of the courses taken to satisfy the Genetics Elective must be taken within the Genetics Major (i.e., 447 courses).
12. 01:447:302 cannot simultaneously satisfy the Genetics Core Lab Course Requirement and an elective. Students who wish to use 01:447:302 to satisfy an elective must also take 01:447:315 to satisfy the Genetics Core Lab Course Requirement.
13. Students may not receive credit for both 01:447:245 and 01:447:495.

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ELECTIVES

6 to 12 credits minimum; *students must take a total of 18 credits of (1) Research & Independent Scholarship and (2) Electives combined.*

<i>Elective Course</i>	<i>Course Number</i>	<i>Cr.</i>	<i>Typically Offered</i>
Analysis of Sci Literature	01:447:216 (Honors)	3	Spring
Quant Biology & Bioinformatics ¹²	01:447:302	3	Spring
Genome Evolution	01:447:352	3	Spring
Soc., Leg., Ethic. Issues Genetics	01:447:354	3	Fall
Evolutionary Medicine	01:447:356	3	Spring
Developmental Genetics	01:447:370	3	Spring
Genomes	01:447:451	3	Fall
Genetics of Compulsive Behavior	01:447:460	3	Spring
Mutant Isolation & Analysis	01:447:465	3	Fall
Special Topics in Genetics, Fall	01:447:478	3	Fall
Special Topics in Genetics, Spring	01:447:479	3	Spring
Topics in Human Genetics	01:447:481	3	Fall
Behavioral & Neural Genetics	01:447:484	3	Spring
Evolutionary Genetics	01:447:486	3	Fall
Cancer ¹³	01:447:495	3	Fall
Molecular Pathways & Sig Trans ¹¹	01:694:411	3	Fall
Chromatin and Epigenomics ¹¹	01:694:413	3	Fall
Mol Bio of Gene Reg & Develop. ¹¹	01:694:492	3	Spring
Methods & Applications Mol. Bio. ¹¹	11:126:427	4	Fall
Microbial Genetics & Genomics ¹¹	11:680:480	3	Spring
Nucleotide Sequence Analysis ¹¹	11:126:483	3	Both
Bioinformatics ¹¹	11:126:485	3	Spring
Advanced Tech. in Biosciences ¹¹	11:126:444	3	Spring