DISCLAIMER: THIS CHECKLIST IS ADVISORY ONLY.
CONSULT DEGREE WORKS OR THE UNDERGRADUATE CATALOG FOR THE MOST ACCURATE INFORMATION ON DEGREE REQUIREMENTS

CHECKLIST for B.S. in GENETICS:GENOMICS option

updated 7/26/17

University Discovery Requirements[1] *Course*	*Semester*	*Credits*	*Grade*
Writing **ENGL 401 First-Year Writing**[2]		4	
Quant. Reasoning **MATH 424B Calculus**		4	
Biological Science **BIOL 411 Biology**		4	
Physical Science **PHYS 401 Physics**		4	
Environ., Technol. & Society			
Fine & Performing Arts			
Historical Perspectives			
Humanities			
Social Science			
World Cultures			
Capstone[3]			

University Writing Intensive Requirements *Course*	*Semester*	*Credits*	*Grade*
ENGL 401 First-Year Writing		4	
Course in major[4]			
600/700-level course[4]			
Elective course			

Foundation Courses *Course*	*Semester*	*Credits*	*Grade*
CHEM 403 General Chemistry I		4	
CHEM 404 General Chemistry II		4	
CHEM 545/546 Organic Chemistry/Lab[2]		3 /2	
MATH 424B Calculus for Life Sciences		4	
BIOL 528 Applied Biostatistics I		4	
PHYS 401 Introduction to Physics I		4	
PHYS 402 Introduction to Physics II		4	

Biological Science Foundation Courses *Course*	*Semester*	*Credits*	*Grade*
BIOL 411 Intro Biology:Molecular & Cellular		4	
BIOL 412 Intro Biology:Evolution, Biodivers & Ecol		4	
GEN 604 Principles of Genetics		4	
BMS 503/504 General Microbiology/Laboratory		3/2	
BMCB 605 Eukaryotic Cell &Developmental Biology		4	
BMCB 658/659 General Biochemistry/Laboratory		3 /2	

Genetics Core Courses *Course*	*Semester*	*Credits*	*Grade*
GEN 401 Professional Perspectives in Genetics		1	
GEN 606 Genetics Lab		4	
GEN 704 or 771		5 or 4	
GEN 711 Genomics & Bioinformatics		4	

Major Elective Courses *Course*	*Semester*	*Credits*	*Grade*
GEN 712 Intro Programming for Bioinformatics		4	
GEN 721 Comparative Genomics		4	
GEN 705 OR 713 OR 715 OR 772			
GEN 705 OR 713 OR 715 OR 772			
Bioscience Elective			

A total of 128 credits is needed for graduation. A grade of C-minus or better required in all COLSA courses.

[1] Inquiry requirement is met by BIOL 411

[2] Students applying to health profession schools need a full year of English, a full year of Organic Chemistry, and a full year of Introductory Biology. ENGL 502 or 503 should be taken in addition to ENGL 401; CHEM 651/653 and CHEM 652/654 should be taken in place of CHEM 545/546. See http://www.unh.edu/premed-advising/curric.htm

[3] Capstone experiences for seniors include approved coursework, research projects (GEN 795, 799 or INCO 790; 4-credit minimum), 790 teaching experience (4-credit minimum and including a classroom presentation or instruction), internship, etc. See genetics.unh.edu for details

[4] The same course may be used to fulfill the requirements for a writing intensive course in the major and for a 600/700 level course but every student must have 4 writing-intensive courses

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Major elective courses for Genetics[5]

June 2017

Laboratory Techniques		
BMCB 753	*Cell Culture*	
BMCB 754	*Lab. Biochem. Mol. Biol. Nucleic Acids*	WI
GEN 704 [6]	*Genetics of Prokaryotic Microbes*	WI, C
GEN 717	*Molecular Microbiology*	WI, C
GEN 774	*Techniques Plant Gen Engineer & Biotech*	
GEN 795 [7]	*Investigations (4-credit minimum)*	C
GEN 795W [7]	*Investigations (4-credit minimum)*	
GEN 799 [7]	*Senior Thesis (4-credit minimum)*	WI, C
GEN 799H [7]	*Honors Senior Thesis*	WI, C
INCO 790 [7]	*Advanced Research Experience (4-credit minimum)*	C

Bio science Electives		
GEN 704	*Genetics of Prokaryotic Microbes* [6]	C
GEN 705	*Population & Quantitative Genetics*	C
GEN 706	*Human Genetics*	
GEN 712	*Introduction to Programming for Bioinformatics*	
GEN 713	*Microbial Ecology and Evolution*	WI
GEN 715	*Molecular Evolution*	C
GEN 717	*Molecular Microbiology*	WI, C
GEN 721	*Comparative Genomics*	
GEN 771	*Molecular Genetics*	
GEN 772	*Evolutionary Genetics of Plants*	WI
GEN 774	*Techniques Plant Gen Engineer & Biotech*	
GEN 795 [7]	*Investigations* (4 credit minimum)	
GEN 795W [7]	*Investigations (4-credit minimum)*	WI
GEN 799 [7]	*Senior Thesis* (4-credit minimum)	WI
GEN 799H [7]	*Honors Senior Thesis*	WI
ANSC 602	*Animal Rights and Societal Issues*	WI
ANSC 701	*Physiology of Reproduction*	
BIOL 702	*Techniques in Plant Physiology & Biochemistry*	
BIOL 704	*Plant Microbe Interactions*	
BIOL 711	*Applied Biostatistics II*	
BIOL 752	*Mycology*	
BMCB 750	*Physical Biochemistry*	
BMCB 753	*Cell Culture*	
BMCB 754	*Molecular Biology Research Methods*	WI
BMCB 760	*Pharmacology*	
BMCB 763	*Biochemistry of Cancer*	
BMCB 783	*Proteomics for Biological Discoveries*	
BMCB 794	*Protein Structure and Function*	
BMS 650	*Molecular Diagnostics*	
BMS 702	*Endocrinology*	
BMS 705	*Immunology*	
BMS 706	*Virology*	
BMS 718	*Mammalian Physiology*	WI
INCO 790	*Advanced Research Experience (4-credit minimum)*	
NR 706	*Soil Ecology*	
ZOOL 625/626	*Principles of Animal Physiology / Lab*	WI
ZOOL 690	*Evolution*	WI
ZOOL 777	*Neurobiology and Behavior*	

[5] **WI = writing intensive; C = capstone**

[6] Students who take GEN 704 to fulfill the Genetics Core requirement may also count it toward their Laboratory Techniques requirement IF they take one additional Bioscience Elective course.

[7] Must be a laboratory-based project with a genetics focus; approval form available at http://genetics.unh.edu

June 2017

SAMPLE Course Sequence for Genetics Majors

This is just ONE way that the requirements for the Genetics degree can be arranged in order to complete the degree in 8 semesters.

	Fall	Spring
1st Year	GEN 401 – Professional Perspectives in Genetics*	BIOL 412 - Intro. Biology: Evol., Biodiv., & Ecology*
	BIOL 411 - Intro. Biology: Molecular & Cellular*	MATH 424B - Calculus for Life Sciences
	ENGL 401 - First-Year Writing	CHEM 404 - General Chemistry II*
	CHEM 403 - General Chemistry I*	Discovery Course
	Discovery Course	
2nd Year	GEN 604 - Principles of Genetics*	GEN 606 - Genetics Lab*
	CHEM 545/546 - Organic Chemistry/Lab	BMS 503/504 - General Microbiology/Lab*
	BIOL 528 - Applied Biostatistics	Major Elective (Bioscience)
	Discovery Course	Discovery Course
3rd Year	BMCB 658/659 - General Biochem/Lab	Major Elective (Pop Gen / Mol Evol)
	PHYS 401 - Introduction to Physics I	PHYS 402 - Introduction to Physics II
	Discovery Course	Genetics Core course
	Elective	Discovery Course
4th Year	Major Elective (Lab Techniques)	Capstone
	GEN 711 - Genomics and Bioinformatics	BMCB 605 - Eukaryotic Cell & Developmental Biol
	Major Elective (Bioscience)	Elective
	Elective	Elective

* = course should be taken in the indicated semester if possible