

Drexel University

Department of Biology

Major Sheet for Biological Sciences – Cell/MolBio/Genetics/Biochem Concentration

Name _____

Student Number _____

Humanities and Social Sciences (33 credits)

__ ENGL 101 3 Exp Writing and Reading
__ ENGL 102 3 Personal Writing and Reading
__ ENGL 103 3 Analytical Writing and Reading
__ COM 230 3 Techniques of Speaking
__ COM 310 3 Technical Writing
__ PHIL 251 3 Ethics
__ UNIV 101 1 The Drexel Experience (Fall)
__ UNIV 101 2 The Drexel Experience (Winter)

Humanities and Social Science Electives (9 credits)

Science, Technology & Human Affairs Elective (3 credits)

Choose from:

ANTH 210	HIST 290	PHIL 341
HIST 280	HIST 292	PHIL 351
HIST 281	ENGL 300	PHIL 361
HIST 285	ENGL 302	PSCI 371
HIST 286	SOC 235	CJ 279
NFS 446	BIO 212	CJ 378

Mathematics and Statistics (18 credits)

__ MATH101 4 Intro to Analysis I **OR** MATH 121
__ MATH102 4 Intro to Analysis II **OR** MATH 122
__ MATH239 4 Math for the Life Sci **OR** MATH 123
__ MATH410 3 Scientific Data Analysis I
__ MATH411 3 Scientific Data Analysis II

Physical Sciences (42 credits)

__ CHEM 101 3.5 General Chemistry I
__ CHEM 102 4.5 General Chemistry II
__ CHEM 103 5 General Chemistry III
__ CHEM 241 4 Organic Chemistry I
__ CHEM 242 4 Organic Chemistry II
__ CHEM 243 3 Organic Chemistry III
__ CHEM 244 3 Organic Chemistry I Lab
__ CHEM 245 3 Organic Chemistry II Lab
__ PHYS 152 4 Introductory Physics I
__ PHYS 153 4 Introductory Physics II
__ PHYS 154 4 Introductory Physics III

Co-op Placements

Biology Required Courses (36 credits)

__ BIO 122 4.5 Cells & Genetics
__ BIO 124 4.5 Evolution & Org Diversity
__ BIO 126 4.5 Physiology & Ecology
__ BIO 217 4 Evolution
__ BIO 218 4 Principles of Molecular Biology
__ BIO 219 2.5 Techniques in Molecular Biology
__ BIO 224 4 Form, Func & Evol of Vertebrates
__ BIO 225 2 Vertebrate Bio & Evol Lab
__ BIO 471 2 Seminar in Biological Science
__ BIO 472 2 Seminar in Biological Science
__ BIO 473 2 Seminar in Biological Science

A.) CMGB Concentration Requirements (13 credits)

__ BIO 214 3 Principles of Cell Biology
__ BIO 244 3 Genetics **OR** BIO 444 Human Genetics
__ BIO 270 3 Developmental Biology
__ BIO 311 4 Metabolism

B.) CMGB Concentration Electives (min 4 courses, 12 crs)

Cell/Mol Bio/Genetics/Biochemistry Elective (2 courses)

Organismal/Physiology Elective (1 course)

Evol Bio/Ecology Elective (1 course)

C. Laboratory courses (minimum of 2 courses, 4 credits)

Free Electives (24 credits – minimum 8 courses)

A minimum of **181 credits** and 2.00 GPA are required for graduation

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ELECTIVES

Cell/Mol Bio/Genetics/Biochem Electives

Pick two of the following

BIO 231 Cell Physiology	3 credits
BIO 244 Genetics	3 credits
BIO 314 Pharmacology	3 credits
BIO 318 Biology of Cancer	3 credits
BIO 331 Bioinformatics I	3 credits
BIO 332 Bioinformatics II	3 credits
BIO 346 Stem Cell Research	3 credits
BIO 404 Struct & Func of Biomolecules	4 credits
BIO 413 Genomics	3 credits
BIO 415 Proteins	3 credits
BIO 421 Biomembranes	3 credits
BIO 430 Cell Biology of Disease	3 credits
BIO 433 Advanced Cell Biology	3 credits
BIO 444 Human Genetics	3 credits
BIO 445 Microbial Genetics	5 credits
BIO 447 Adv Genetics & Molecular Bio	3 credits
BIO 451 Genetic Reg Development	3 credits
BIO 462 Biology of Neuron Function	3 credits
BIO 463 Mol Mech of Neurodegeneration	3 credits
BIO 465 Neurobiology of Disease	3 credits
BIO 498 Independent Study (by permission of department)	

Organismal/Physiology Electives

Pick one of the following

BIO 201 Human Physiology I	4 credits
BIO 221 Microbiology ⁺	3 credits
BIO 223 Parasitology	3 credits
BIO 254 Invertebrate Morph & Phys ⁺	3 credits
BIO 256 Vertebrate Morph & Phys*	5 credits
BIO 260 Plant Biology I	4 credits
BIO 284 Biology of Stress	3 credits
BIO 310 Comparative Physiology	3 credits
BIO 322 Mycology	4.5 credits
BIO 368 Embryology	4 credits
BIO 370 Teratology	3 credits
BIO 386 Gross Anatomy ⁺	3 credits
BIO 412 Biology of Aging	3 credits
BIO 420 Virology	3 credits
BIO 426 Immunology	3 credits
ENVS 392 Ichthyology & Herpetology	3 credits
ENVS 431 Epidemiology	3 credits

Evolutionary Bio/Ecology Electives

Pick one of the following

ENVS 230 General Ecology	3 credits
ENVS 270 History of Life on Earth	3 credits

ENVS 271 Dinosaurs and Their World	3 credits
ENVS 284 Phys and Pop Ecology	3 credits
ENVS 286 Comm and Ecosys Ecology	3 credits
ENVS 322 Tropical Ecology	3 credits
ENVS 323 Tropical Field Studies	3 credits
ENVS 330 Aquatic Ecology	3 credits
ENVS 336 Terrestrial Ecology*	3 credits
ENVS 338 Biodiversity and Conservation	3 credits
ENVS 360 Evo-Devo	3 credits
ENVS 364 Animal Behavior	3 credits
ENVS 375 Invertebrate Paleontology	4 credits
ENVS 388 Marine Field Methods*	5 credits
ENVS 390 Marine Ecology	3 credits
ENVS 441 Iss in Global Change I: Sem	2 credits
ENVS 476 Paleobotany	3 credits
ENVS 477 Vertebrate Paleontology	3 credits
ENVS 520 Fld Mthds Paleoecology	3 credits
ENVS 382 Field Botany: NJ Pine Barrens*	5 credits
ENVS 383 Ecology of NJ Pine Barrens*	5 credits

Laboratory Electives

Pick two of the following

BIO 202 Human Physiology Laboratory	2 credits
BIO 215 Tech Cell Biology	2 credits
BIO 222 Microbiology Lab ⁺	2 credits
BIO 255 Invert Morph & Phys ⁺	2 credits
BIO 256 Vertebrate Morph & Phys*	5 credits
BIO 271 Developmental Bio Lab	2 credits
BIO 306 Biochemistry Laboratory	2 credits
BIO 313 Comp Physiology Lab	2 credits
BIO 387 Gross Anatomy Lab ⁺	2 credits
BIO 406 Comp Biochemistry Laboratory	2 credits
BIO 427 Immunology Lab	2 credits
BIO 497 Research (by permission of dept)	0.5 – 12 credits
ENVS 285 Population Ecology Lab	2 credits
ENVS 287 Community Ecology Lab	2 credits
ENVS 336 Terrestrial Ecology *	5 credits
ENVS 365 Animal Behavior Lab	2 credits
ENVS 382 Field Botany: NJ Pine Barrens *	5 credits
ENVS 383 Ecology of NJ Pine Barrens*	5 credits
ENVS 388 Marine Field Methods *	5 credits

* Have both a lecture and laboratory component- 3 credits apply to lecture; 2 credits apply to lab

** Have both a lecture and laboratory component- 2 credits apply to lecture; 2 credits apply to lab

+ Lecture and lab must be taken together

Pre-requisites must be met before taking a course

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