BIOCHEMISTRY, BS (L&S)

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin-Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (https://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext) section of the Guide.

General Education	• Breadth–Humanities/Literature/Arts: 6 credits • Breadth–Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits • Breadth–Social Studies: 3 credits • Communication Part A & Part B * • Ethnic Studies * • Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF LETTERS & SCIENCE DEGREE REQUIREMENTS: BACHELOR OF SCIENCE (BS)

Students pursuing a Bachelor of Science degree in the College of Letters & Science must complete all of the requirements below. The College of Letters & Science allows this major to be paired with either the Bachelor of Arts or the Bachelor of Science degree requirements.

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

Mathematics	Complete two courses of 3+ credits at the Intermediate or Advanced level in MATH, COMP SCI, or STAT subjects. A maximum of one course in each of COMP SCI and STAT subjects counts toward this requirement.
Language	Complete the third unit of a language other than English.
L&S Breadth	Complete: • 12 credits of Humanities, which must include at least 6 credits of Literature; and • 12 credits of Social Science; and • 12 credits of Natural Science, which must include 6 credits of Biological Science and 6 credits of Physical Science.
Liberal Arts and Science Coursework	Complete at least 108 credits.
Depth of Intermediate/Advanced Coursework	Complete at least 60 credits at the Intermediate or Advanced level.
Major	Declare and complete at least one major.
Total Credits	Complete at least 120 credits.
UW-Madison Experience	Complete both: • 30 credits in residence, overall, and • 30 credits in residence after the 86th credit.
Quality of Work	• 2.000 in all coursework at UW–Madison • 2.000 in Intermediate/Advanced level coursework at UW–Madison

NON–L&S STUDENTS PURSUING AN L&S MAJOR

Non–L&S students who have permission from their school/college to pursue an additional major within L&S only need to fulfill the major requirements. They do not need to complete the L&S Degree Requirements above.

REQUIREMENTS FOR THE MAJOR

MATHEMATICS

Mathematics Requirements

Code	Title	Credits
Complete one of the following options:		
MATH 221 & MATH 222	Calculus and Analytic Geometry 1 and Calculus and Analytic Geometry 2	9
MATH 171 & MATH 217 & MATH 222	Calculus with Algebra and Trigonometry I and Calculus with Algebra and Trigonometry II and Calculus and Analytic Geometry 2	14

CHEMISTRY

General Chemistry

Code	Title	Credits
Complete one sequence:		
CHEM 103 & CHEM 104	General Chemistry I and General Chemistry II	9
CHEM 109	Advanced General Chemistry	5
CHEM 115 & CHEM 116	Chemical Principles I and Chemical Principles II (satisfies both general and analytical chemistry requirements)	10

Organic Chemistry

Code	Title	Credits
Complete All:		
CHEM 343	Organic Chemistry I	3
CHEM 344	Introductory Organic Chemistry Laboratory	2
CHEM 345	Organic Chemistry II	3

Analytical Chemistry

Code	Title	Credits
Complete one:		
CHEM 327	Fundamentals of Analytical Science	4
CHEM 329	Fundamentals of Analytical Science	4
CHEM 116	Chemical Principles II (satisfies both general and analytical chemistry requirements)	5

Physical Chemistry

Code	Title	Credits
Complete one:		
CHEM 665	Biophysical Chemistry (Recommended)	3
CHEM 561	Physical Chemistry I	3

BIOLOGY

Students must complete either Option A (introductory + upper-level biology), or Option B (biocore), for 16 total credits of biological science coursework.

Option A (Introductory and Upper-Level Biology)

Option A Introductory Biology

Code	Title	Credits
Complete one of the following introductory biology options:		
BIOLOGY/BOTANY/ ZOOLOGY 151 & BIOLOGY/ BOTANY/ ZOOLOGY 152	Introductory Biology and Introductory Biology (recommended)	10
BIOLOGY/ ZOOLOGY 101 & BIOLOGY/ ZOOLOGY 102 & BOTANY/ BIOLOGY 130	Animal Biology and Animal Biology Laboratory and General Botany	10

And Option A Upper-Level Biology

At least 6 credits of upper-level biological science coursework are required (to achieve 16 total credits—more than 6 credits may be required if introductory biology totals less than 10 credits due to transfer credits). Select from the course list below. To see courses offered in specific upcoming semesters, please see the biochemistry website (https://biochem.wisc.edu/undergraduate_program/advanced-biology-courses-undergraduate-program/).

Important: A course may not double count in both the "upper-level biology" and the "biochemistry" requirements for the major. Biochemistry courses on this list can count only for "upper-level biology" if they are above-and-beyond what is needed to fulfill the "biochemistry" portion of the major. For example, if students have taken BIOCHEM 501 (http://guide.wisc.edu/search/?P=BIOCHEM%20501), they will need one advanced biochemistry elective to fulfill the biochemistry requirement, and then any additional biochemistry courses taken can count for upper-level biology.

Code	Title	Credits
AGROECOL 370	Grassland Ecology	3
AGROECOL 377	Global Food Production and Health	3
ANAT&PHY 335	Physiology	5
ANAT&PHY 337	Human Anatomy	3
ANAT&PHY 435	Fundamentals of Human Physiology	5
AN SCI/ FOOD SCI 305	Introduction to Meat Science and Technology	4
AN SCI/DY SCI/ NUTR SCI 311	Comparative Animal Nutrition	3
AN SCI 314		3
AN SCI/DY SCI 320	Animal Health and Disease	3
AN SCI/DY SCI 361	Introduction to Animal and Veterinary Genetics	2
AN SCI/DY SCI 362	Veterinary Genetics	2
AN SCI/DY SCI 363	Principles of Animal Breeding	2
AN SCI/DY SCI 370	Livestock Production and Health in Agricultural Development	3
AN SCI/DY SCI 414	Ruminant Nutrition & Metabolism	3
AN SCI 415	Application of Monogastric Nutrition Principles	2
AN SCI 431	Beef Cattle Production	3
AN SCI 432	Swine Production	3
AN SCI/DY SCI 434	Reproductive Physiology	3
AN SCI 503		3
AN SCI 508		3
AN SCI 511		3
AN SCI 512		3
AN SCI/ FOOD SCI 515	Commercial Meat Processing	2
AN SCI/F&W ECOL/ ZOOLOGY 520	Ornithology	3
AN SCI/F&W ECOL/ ZOOLOGY 521	Birds of Southern Wisconsin	3
AN SCI 610	Quantitative Genetics	3
AN SCI/ NUTR SCI 626	Experimental Diet Design	1
B M E/MED PHYS/ PHMCOL-M/PHYSICS/ RADIOL 619	Microscopy of Life	3
BIOCHEM/ NUTR SCI 510	Nutritional Biochemistry and Metabolism	3
BIOCHEM/ NUTR SCI 560	Principles of Human Disease and Biotechnology	2
BIOCHEM/ M M & I 575	Biology of Viruses	2
BIOCHEM 601	Protein and Enzyme Structure and Function	2

BIOCHEM/B M I/ BMOLCHEM/ MATH 609	Mathematical Methods for Systems Biology	3
BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology	3
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	3
BIOCHEM/ BOTANY 621	Plant Biochemistry	3
BIOCHEM 625	Mechanisms of Action of Vitamins and Minerals	2
BIOCHEM/ GENETICS 631	Plant Genetics and Development	3
BIOCHEM/ NUTR SCI 645	Molecular Control of Metabolism and Metabolic Disease	3
BSE 349	Quantitative Techniques for Biological Systems	3
BSE 364	Engineering Properties of Food and Biological Materials	3
BSE 365	Measurements and Instrumentation for Biological Systems	3
BSE/ENVIR ST 367	Renewable Energy Systems	3
BSE 460	Biorefining: Energy and Products from Renewable Resources	3
BSE 461	Food and Bioprocessing Operations	3
BSE 472	Sediment and Bio-Nutrient Engineering and Management	3
BMOLCHEM/ MICROBIO 668	Microbiology at Atomic Resolution	3
B M I/STAT 541	Introduction to Biostatistics	3
B M I/ COMP SCI 576	Introduction to Bioinformatics	3
BOTANY 300	Plant Anatomy	4
BOTANY 305	Plant Morphology and Evolution	4
BOTANY 330	Algae	3
BOTANY/ PL PATH 332	Fungi	4
BOTANY 400	Plant Systematics	4
BOTANY 401	Vascular Flora of Wisconsin	4
BOTANY/ F&W ECOL 402	Dendrology: Woody Plant Identification and Ecology	3
BOTANY/ANTHRO/ ZOOLOGY 410	Evolutionary Biology	3
BOTANY 422	Plant Geography	3
BOTANY 455	The Vegetation of Wisconsin	4
BOTANY/ F&W ECOL/ ZOOLOGY 460	General Ecology	4
BOTANY/ENTOM/ ZOOLOGY 473	Plant-Insect Interactions	3
BOTANY/AMER IND/ ANTHRO 474	Ethnobotany	3-4
BOTANY 500	Plant Physiology	3-4
BOTANY/ENTOM/ PL PATH 505	Plant-Microbe Interactions: Molecular and Ecological Aspects	3
BOTANY/ENVIR ST/ F&W ECOL/ ZOOLOGY 516	Conservation Biology	3
BOTANY/ PL PATH 563	Phylogenetic Analysis of Molecular Data	3
BOTANY/ GENETICS/M M & I/ PL PATH 655	Biology and Genetics of Fungi	3
CHEM 575	Advanced Topics in Chemistry (Topics in Chemical Biology)	1-4
CRB 625	Stem Cell Seminar	1
CRB 640	Fundamentals of Stem Cell and Regenerative Biology	3
CRB 675	Topics in Cell and Regenerative Biology	1-3
DY SCI 378	Lactation Physiology	3
DY SCI 535	Dairy Farm Management Practicum	3
ENTOM/ ZOOLOGY 302	Introduction to Entomology	4
ENTOM 321	Physiology of Insects	3
ENTOM 331	Taxonomy of Mature Insects	4
ENTOM 351	Principles of Economic Entomology	3
ENTOM/ ZOOLOGY 371	Medical Entomology: Biology of Vector and Vector-borne Diseases	3
ENTOM 432	Taxonomy and Bionomics of Immature Insects	4
ENTOM/ ZOOLOGY 540	Theoretical Ecology	3
ENTOM/GENETICS/ ZOOLOGY 624	Molecular Ecology	3
ENVIR ST/ LAND ARC 361	Wetlands Ecology	3
ENVIR ST/ POP HLTH 471	Introduction to Environmental Health	3
ENVIR ST/ POP HLTH 502	Air Pollution and Human Health	3
ENVIR ST/ F&W ECOL 515	Natural Resources Policy	3
ENVIR ST/ ATM OCN 520	Bioclimatology	3
FOOD SCI/ MICROBIO 324	Food Microbiology Laboratory	2
FOOD SCI/ MICROBIO 325	Food Microbiology	3
FOOD SCI 410	Food Chemistry	3
FOOD SCI 440	Principles of Food Engineering	3
FOOD SCI 511	Chemistry and Technology of Dairy Products	3
FOOD SCI 514	Integrated Food Functionality	4
FOOD SCI 550	Fermented Foods and Beverages	2
FOOD SCI 611	Chemistry and Technology of Dairy Products	3
F&W ECOL 300	Forest Measurements	4

F&W ECOL 306	Terrestrial Vertebrates: Life History and Ecology	4
F&W ECOL 318	Principles of Wildlife Ecology	3
F&W ECOL 335		3
F&W ECOL/ ENVIR ST/ ZOOLOGY 360	Extinction of Species	3
F&W ECOL 379	Principles of Wildlife Management	3
F&W ECOL 401		3
F&W ECOL 410	Silviculture: Applied Forest Ecology	3
F&W ECOL/ A A E 430	Decision Methods for Natural Resource Managers	3
F&W ECOL/ SURG SCI 548	Diseases of Wildlife	3
F&W ECOL 550	Forest Ecology	3
F&W ECOL 561	Wildlife Management Techniques	3
F&W ECOL/ LAND ARC/ ZOOLOGY 565	Principles of Landscape Ecology	2
F&W ECOL 590	Integrated Resource Management	3
F&W ECOL 655	Animal Population Dynamics	3
GEN&WS 533	Special Topics in Gender and Biology	3
GENETICS 466	Principles of Genetics	3
GENETICS 467	General Genetics 1	3
GENETICS 468	General Genetics 2	3
GENETICS 525	Epigenetics	3
GENETICS 545	Genetics Laboratory	2
GENETICS/ MD GENET 565	Human Genetics	3
GENETICS 566	Advanced Genetics	3
M M & I 301	Pathogenic Bacteriology	2
M M & I 341	Immunology	3
M M & I/ENTOM/ PATH-BIO/ ZOOLOGY 350	Parasitology	3
M M & I/PATH-BIO 528	Immunology	3
M M & I 554	Emerging Infectious Diseases and Bioterrorism	2
MED PHYS/ H ONCOL 410	Radiobiology	2-3
MED PHYS/ B M E/H ONCOL/ PHYSICS 501	Radiation Physics and Dosimetry	3
MICROBIO 303	Biology of Microorganisms	3
MICROBIO 304	Biology of Microorganisms Laboratory	2
MICROBIO 305	Critical Analyses in Microbiology	1
MICROBIO/AN SCI/ BOTANY 335	The Microbiome of Plants, Animals, and Humans	3
MICROBIO 345	Introduction to Disease Biology	3
MICROBIO 357	General Bioinformatics for Microbiologists	3
MICROBIO/ SOIL SCI 425	Environmental Microbiology	3
MICROBIO 450	Diversity, Ecology and Evolution of Microorganisms	3
MICROBIO 470	Microbial Genetics & Molecular Machines	3
MICROBIO 520	Planetary Microbiology: What Life Here Tells Us About Life Out There	3
MICROBIO/ SOIL SCI 523	Soil Microbiology and Biochemistry	3
MICROBIO 525	Field Studies of Planetary Microbiology and Life in the Universe	3
MICROBIO 526	Physiology of Microorganisms	3
MICROBIO 527	Advanced Laboratory Techniques in Microbiology	2
MICROBIO 551	Capstone Research Project in Microbiology	2
MICROBIO 626	Microbial and Cellular Metabolomics	3
NEURODPT 629	Molecular and Cellular Mechanisms of Memory	3
NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	4
NTP/NEURODPT/ PSYCH 611	Systems Neuroscience	4
NUTR SCI 332	Human Nutritional Needs	3
NUTR SCI/ A A E 350	World Hunger and Malnutrition	3
NUTR SCI 379	Introduction to Epidemiology	3
NUTR SCI 431	Nutrition in the Life Span	3
ONCOLOGY 401	Introduction to Experimental Oncology	2
ONCOLOGY/ M&ENVTOX/ PHM SCI/PHMCOL-M/POP HLTH 625	Toxicology I	3
PHM SCI 310	Drugs and Their Actions	2
PHM SCI/B M E 430	Biological Interactions with Materials	3
PHYSICS/B M E/ MED PHYS/ PHMCOL-M/ RADIOL 619	Microscopy of Life	3
PL PATH 300	Introduction to Plant Pathology	4
PL PATH 517	Plant Disease Resistance	2-3
PL PATH 559	Diseases of Economic Plants	3
PL PATH 602	Ecology, Epidemiology and Control of Plant Diseases	3
PL PATH 622	Plant-Bacterial Interactions	2-3
PL PATH/M M & I/ ONCOLOGY 640	General Virology-Multiplication of Viruses	3
PLANTSCI 300	Cropping Systems	3
PLANTSCI 302	Forage Management and Utilization	3
PLANTSCI 320	Environment of Cultivated Plants	3
PLANTSCI 338	Plant Breeding and Biotechnology	3
PLANTSCI 340	Plant Genome Engineering and Editing	3

PLANTSCI 501	Principles of Plant Breeding	3
PLANTSCI/ ATM OCN 532	Environmental Biophysics	3
PLANTSCI 550	Molecular Approaches for Crop Improvement	3
PSYCH 454	Behavioral Neuroscience	3
PSYCH 513	Hormones, Brain, and Behavior	4
PSYCH 612	Neuropharmacology	3
SOIL SCI 323	Soil Biology	3
SOIL SCI 326	Plant Nutrition Management	3
SOIL SCI/ F&W ECOL 451	Environmental Biogeochemistry	3
SOIL SCI/ CIV ENGR/ M&ENVTOX 631	Toxicants in the Environment: Sources, Distribution, Fate, & Effects	3
ZOOLOGY 300	Invertebrate Biology and Evolution	3
ZOOLOGY 301	Invertebrate Biology and Evolution Lab	2
ZOOLOGY 304	Marine Biology	2
ZOOLOGY/ ENVIR ST 315	Limnology-Conservation of Aquatic Resources	2
ZOOLOGY 316	Laboratory for Limnology-Conservation of Aquatic Resources	2-3
ZOOLOGY 425	Behavioral Ecology	3
ZOOLOGY 430	Comparative Anatomy of Vertebrates	5
ZOOLOGY 470	Introduction to Animal Development	3
ZOOLOGY/ ENVIR ST 510	Ecology of Fishes	3
ZOOLOGY/ ENVIR ST 511	Ecology of Fishes Lab	2
ZOOLOGY/ PSYCH 523	Neurobiology	3
ZOOLOGY/ GEOSCI 542	Invertebrate Paleontology	3
ZOOLOGY 555	Laboratory in Developmental Biology	3
ZOOLOGY 570	Cell Biology	3
ZOOLOGY 603	Endocrinology	3-4
ZOOLOGY 611	Comparative and Evolutionary Physiology	3
ZOOLOGY 612	Comparative Physiology Laboratory	2
ZOOLOGY/ ANTHRO/ PSYCH 619	Biology of Mind	3

Option B (Biocore)

Biocore is an honors-level, integrated sequence of lecture and lab courses that covers introductory and intermediate biology topics. Students must apply and be accepted to the program to take BIOCORE classes.

Code	Title	Credits
Complete these lecture courses:		
BIOCORE 381	Evolution, Ecology, and Genetics	3
BIOCORE 383	Cellular Biology	3
BIOCORE 485	Principles of Physiology	3
BIOCORE 587	Biological Interactions	3
Complete two of these lab classes:		4
BIOCORE 382	Evolution, Ecology, and Genetics Laboratory	
BIOCORE 384	Cellular Biology Laboratory	
BIOCORE 486	Principles of Physiology Laboratory	
Total Credits		**16**

PHYSICS (CALCULUS-BASED)

Physics Requirements

Code	Title	Credits
Complete one of the following options: [1]		
PHYSICS 207 & PHYSICS 208	General Physics and General Physics (recommended)	10
PHYSICS 201 & PHYSICS 202	General Physics and General Physics	10

BIOCHEMISTRY

One set of introductory coursework and the capstone course are required, for a total of three BIOCHEM courses.

Introductory Courses

Code	Title	Credits
Select one of the following options:		
BIOCHEM 507 & BIOCHEM 508	General Biochemistry I and General Biochemistry II (recommended)	6-7
OR		
BIOCHEM 501	Introduction to Biochemistry	3
And one of the following advanced biochemistry electives:		
BIOCHEM/ NUTR SCI 510	Nutritional Biochemistry and Metabolism	
BIOCHEM/ NUTR SCI 560	Principles of Human Disease and Biotechnology	
BIOCHEM/ M M & I 575	Biology of Viruses	
BIOCHEM 601	Protein and Enzyme Structure and Function	
BIOCHEM/B M I/ BMOLCHEM/ MATH 609	Mathematical Methods for Systems Biology	
BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology	
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	
BIOCHEM/ BOTANY 621	Plant Biochemistry	
BIOCHEM 625	Mechanisms of Action of Vitamins and Minerals	
BIOCHEM/ GENETICS 631	Plant Genetics and Development	

BIOCHEM/ NUTR SCI 645	Molecular Control of Metabolism and Metabolic Disease

Capstone

Code	Title	Credits
BIOCHEM 551	Biochemical Methods	4
Total Credits		**4**

RESIDENCE AND QUALITY OF WORK

- 2.000 GPA in all BIOCHEM and major courses
- 2.000 GPA on at least 15 upper-level major credits in Residence. [2]
- 15 credits in BIOCHEM, taken on campus

[1] Students should consult with their advisor to discuss options if they have credit for PHYSICS 103 (http://guide.wisc.edu/search/?P=PHYSICS%20103) and PHYSICS 104 (http://guide.wisc.edu/search/?P=PHYSICS%20104).

[2] Major courses numbered 300-699 are considered Upper-Level in the major for purposes of this requirement.

HONORS IN THE MAJOR

Students may declare Honors in the Biochemistry Major in consultation with their Biochemistry undergraduate advisor. To be admitted to Honors in the Major in Biochemistry, students must have declared a major in Biochemistry and have a 3.300 overall university GPA.

HONORS IN THE MAJOR IN BIOCHEMISTRY: REQUIREMENTS

To earn honors in the major in biochemistry, students must satisfy the requirements for the major (above) as well as the following requirements. All courses used for honors in the major requirements must receive "B" or better grades to fulfill requirements.

- Earn a 3.300 University GPA
- Earn a 3.300 GPA for all BIOCHEM courses, and all courses accepted in the major
- Complete BIOCHEM 507 and BIOCHEM 508 for Honors
- Complete a two-semester Senior Honors Thesis for 6 credits total
- Complete at least 14 credits of any combination of the following coursework:
  - Honors courses that would fulfill the Biology or Biochemistry requirements in the major (see above)
  - Statistics coursework (does not need to be taken for honors): STAT 301, STAT 371, or STAT/B M I 541
  - Biochemistry elective coursework beyond the major requirements (does not need to be taken for honors): NUTR SCI/ BIOCHEM 510, BIOCHEM/NUTR SCI 560, M M & I/ BIOCHEM 575, BIOCHEM 601, MATH/B M I/ BIOCHEM/BMOLCHEM 609, MICROBIO/BIOCHEM/ GENETICS 612, MD GENET/BIOCHEM/GENETICS 620, BOTANY/BIOCHEM 621, BIOCHEM 625, BIOCHEM/ GENETICS 631, BIOCHEM/NUTR SCI 645
  - Honors coursework in MATH, CHEM, or PHYSICS, from the list below:

Math

Code	Title	Credits
MATH 341	Linear Algebra	3
MATH 375	Topics in Multi-Variable Calculus and Linear Algebra	5
MATH 376	Topics in Multi-Variable Calculus and Differential Equations	5
MATH 521	Analysis I	3
MATH 522	Analysis II	3
MATH 541	Modern Algebra	3
MATH 542	Modern Algebra	3

Chemistry

Code	Title	Credits
CHEM 109	Advanced General Chemistry	5
CHEM 115	Chemical Principles I	5
CHEM 116	Chemical Principles II	5
CHEM 343	Organic Chemistry I	3
CHEM 345	Organic Chemistry II	3
CHEM 344	Introductory Organic Chemistry Laboratory	2
CHEM 329	Fundamentals of Analytical Science	4
CHEM 547	Advanced Organic Chemistry	3
CHEM 561	Physical Chemistry I	3
CHEM 563	Physical Chemistry Laboratory I	1
CHEM 562	Physical Chemistry II	3
CHEM 564	Physical Chemistry Laboratory II	1
CHEM 665	Biophysical Chemistry	3

Physics

Code	Title	Credits
PHYSICS 201	General Physics	5
PHYSICS 202	General Physics	5
PHYSICS 207	General Physics	5
PHYSICS 208	General Physics	5
PHYSICS 241	Introduction to Modern Physics	3
PHYSICS 247	A Modern Introduction to Physics	5
PHYSICS 248	A Modern Introduction to Physics	5
PHYSICS 249	A Modern Introduction to Physics	4

UNIVERSITY DEGREE REQUIREMENTS

Total Degree	To receive a bachelor's degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.
Residency	Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. “In residence” credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.

Quality of Work	Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.