

**SCIENCE DIVISION
2001-2003 CATALOG UPDATE
Changes effective 2002-2003**

AGRICULTURAL SCIENCE

New Courses:

AGSC 391 Internship in Agriculture

4-12 hours

Internship in an agriculturally-oriented business under the supervision of a university faculty member. Only four hours of AGSC 391 may be applied toward learning plan. Prerequisites: sophomore standing AND assignment by university personnel and organization concerned. Co-requisite: AGSC 392.

AGSC 392 Evaluation and Analysis of Internship

1-3 hours

Encompassing research, analytical analysis, and evaluation of internship experience. Only one hour of AGSC 392 may be applied to learning plan. Co-requisite: AGSC 391.

Deleted Course:

AGSC 300 Internship in Agriculture

BIOLOGY

New Courses:

BIOL 214 Anatomy and Physiology I

4 hours

First class in a two-semester sequence covering structure and function of the human body, using a systems approach. (May not be used as a Biology elective by Biology majors.) Prerequisites: CHEM 100 AND concurrent or previous enrollment in BIOL 100.

BIOL 215 Anatomy and Physiology II

4 hours

Second class in a two-semester sequence covering structure and function of the human body, using a systems approach. (May not be used as a Biology elective by Biology majors.) Prerequisites: CHEM 100 AND concurrent or previous enrollment in BIOL 100.

Deleted Course:

BIOL 303 Anatomy and Physiology

Newly-Approved Writing-Enhanced Course:

BIOL 100 Biology 4 hours (Dan Hite)

CHEMISTRY

Curriculum Change:

Required Support	14-15
MATH 198 Analytical Geometry and Calculus I**	5
MATH 263 Analytical Geometry and Calculus II	5
PHYS 271 Physics for Scientists and Engineers I**	4 <i>or</i>
PHYS 185 College Physics I**	4 <i>or</i>
PHYS 195 Physics with Calculus I**	5

**May be used to fulfill LSP requirements

Bachelor of Science Requirements	7-8
PHYS 196 Physics with Calculus II	5 <i>or</i>
PHYS 272 Physics for Scientists and Engineers II	4
MATH 264 Analytic Geometry and Calculus III	3

PHYSICS

Curriculum Changes:

Bachelor of Science

Required Support	23
MATH 198 Analytical Geometry and Calculus I**	5
MATH 263 Analytical Geometry and Calculus II	5
MATH 264 Analytical Geometry and Calculus III	3
MATH 365 Ordinary Differential Equations	3
CHEM 120 General Chemistry I**	4
STAT 290 Statistics**	3

**May be used to fulfill LSP requirements

Bachelor of Science Requirements	7
CHEM 121 General Chemistry II	4
MATH 357 Linear Algebra	3

MAJOR REQUIREMENTS	47-51
PHYS 145 Physics Seminar	1
PHYS 195 Physics with Calculus I	5
PHYS 196 Physics with Calculus II	5
PHYS 250 Modern Physics I	3
PHYS 251 Modern Physics II	3
PHYS 275 Vibrations and Waves	3
PHYS 320 Electronics	3
PHYS 345 Junior Seminar	1
PHYS 382 Mathematical Physics	3
PHYS 386 Classical Mechanics	3
PHYS 388 Advanced Laboratory	3

PHYS 482 Electricity and Magnetism	3
PHYS 486 Thermodynamics and Statistical Mechanics	3
PHYS 490 Senior Research I	3 [#]
PHYS 491 Senior Research II	1 [#]
PHYS 518 Advanced Topics	1-5
PHYS 580 Quantum Mechanics	3
[#] Capstone courses	
Electives to Total	124

Bachelor of Arts

Required Support	24
MATH 198 Analytical Geometry and Calculus I**	5
MATH 263 Analytical Geometry and Calculus II	5
MATH 264 Analytical Geometry and Calculus III	3
MATH 365 Ordinary Differential Equations	3
CHEM 120 General Chemistry I**	4
CHEM 121 General Chemistry II	4

**May be used to fulfill LSP requirements

Bachelor of Arts Requirement	0-14
Intermediate proficiency in ONE foreign language	

MAJOR REQUIREMENTS	28-30
PHYS 145 Physics Seminar	1
PHYS 195 Physics with Calculus I	5
PHYS 196 Physics with Calculus II	5
PHYS 250 Modern Physics I	3
PHYS 251 Modern Physics II	3
PHYS 275 Vibrations and Waves	3
PHYS 345 Junior Seminar	1
PHYS 382 Mathematical Physics	3
PHYS 388 Advanced Laboratory	3
PHYS 445 Advanced Physics Seminar <i>or</i>	
PHYS 491 Senior Research II*	1 [#]

*PHYS 490 Senior Research I required before completing PHYS 491

[#]Capstone courses

Physics Electives	6-13
At least one course must be PHYS 386, PHYS 482, or PHYS 486	
PHYS 246 Astronomy I	4
PHYS 320 Electronics	3
PHYS 380 Optics	3
PHYS 386 Classical Mechanics	3
PHYS 441 Physics Research I	1-3
PHYS 442 Physics Research II	1-3
PHYS 443 Physics Research III	1-3
PHYS 482 Electricity and Magnetism	3
PHYS 486 Thermodynamics and Statistical Mechanics	3
PHYS 490 Senior Research <i>and</i>	3
PHYS 491 Senior Research II	1 [†]

PHYS 518 Advanced Topics	1-5
PHYS 580 Quantum Mechanics	3

†The 1 credit for PHYS 491 will be attributed to the Major Requirements section above. PHYS 490 credits (3) count toward Physics Electives section.

Learning Plan **15**

The learning plan may be any existing minor (excluding Physics) of which at least 15 hours are not counted elsewhere or it may be a group of appropriate courses chosen by the student and his or her advisor. The learning plan (and any future changes) must be approved by a committee consisting of the student’s advisor and two other physics faculty members (normally approved by the end of the sophomore year).

Electives to Total	124
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Physics Minor

The Physics Minor requires the successful completion of the following courses:

REQUIRED COURESES	19
PHYS 195 Physics with Calculus I	5
PHYS 196 Physics with Calculus II	5
PHYS 250 Modern Physics I	3
PHYS 275 Vibrations and Waves	3
ELECTIVE COURSE	3

One course from PHYS 251, any 300- to 500-level Physics course, NASC 400 or NASC 401.

New Courses:

PHYS 145 Physics Seminar
1 hour

The course is an introduction to a topic of modern physics that is not covered in the introductory sequence for majors. It is also designed to expedite transition of the student to the University and the physics discipline. The seminar is designed to assist students in study skills, academic planning, goal setting, time management and other abilities that are necessary for success in college.

PHYS 195 Physics with Calculus I
5 hours

Students will study the fundamental issues of motion—mechanics, fluids, vibrations, thermodynamics—mastering the skills and concepts needed for advanced work in science and engineering. Some of the history of physics, its technological, philosophical, and aesthetic aspects, and its place in the history of ideas will be explored. This course includes a laboratory component. Co-requisite: MATH 198. NOTE: General Honors Course. This course fulfills the Scientific: Physical Science Mode of Inquiry.

PHYS 196 Physics with Calculus II
5 hours

Students will study the fundamental laws of electromagnetism and optics, mastering the skills and concepts needed for advanced work in science and engineering. Students will also explore some of the history of physics, its technological, philosophical, and aesthetic aspects, and its place in the history of ideas. This course includes a laboratory component. Prerequisite: PHYS 195. Co-requisite: MATH 263. NOTE: General Honors Course. This course fulfills the Scientific: Physical Science Mode of Inquiry.

PHYS 275 Vibrations and Waves
3 hours

Physical systems disposed to simple harmonic motion and wave phenomena are studied in depth. Prerequisite: PHYS 196 with grade of C or better AND MATH 263 with grade of C or better.

PHYS 445 Advanced Physics Seminar

1 hour

Independent and in-depth investigation of a specific topic in physics or related to physics. This course serves as the capstone course for students in the Physics B.A. Program. Prerequisites: PHYS 251, PHYS 275, PHYS 382 with grades of C or better AND junior or senior status.

PHYS 490 Senior Research I

3 hours

You will work closely with a faculty member on an independent project, culminating in an external presentation and a final paper in which you will present your results. This is the first of a two-semester capstone required for the BS in Physics. Prerequisites: PHYS 251, PHYS 275, PHYS 382, and PHYS 388.

PHYS 491 Senior Research II

1 hour

You will work closely with a faculty member on an independent project, culminating in an external presentation and a final paper in which you will present your results. This is the second of a two-semester capstone required for the BS in Physics. Prerequisite: PHYS 490.

The Following Courses will be Phased Out:

PHYS 271 Physics for Scientists and Engineers I

PHYS 272 Physics for Scientists and Engineers II

PHYS 303 Physics for Scientists and Engineers III

PHYS 381 Engineering Thermodynamics and Thermal Analysis

PHYS 560 Radiation Science III

Re-numbered Courses:

PHYS 545 Senior Seminar becomes
PHYS 345 Junior Seminar

PHYS 350 Modern Physics I becomes
PHYS 250 Modern Physics I

PHYS 351 Modern Physics II becomes
PHYS 251 Modern Physics II