

REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN PHYSICS

COLLEGE OF ARTS AND SCIENCES THE UNIVERSITY OF OKLAHOMA

For Students Entering the Oklahoma State System for Higher Education:

Summer 2002 through Spring 2003

Minimum Credit Hours and Grade Point Averages Required			
Total Hours —	124	Upper-Division Within Total	48
Major Hours —	45	Upper-Division Within Major	27
Grade Point Averages:			
Overall & Major: Combined OU/Transfer - 2.00 OU - 2.00			
48 Upper-Division Hours REQUIRED			

Physics
(Professional Option)
1902B

Bachelor of Science
in Physics

GENERAL EDUCATION AND COLLEGE REQUIREMENTS Courses graded P/NP will not apply.	Some courses required for the major may also fulfill University General Education and/or College of Arts & Sciences Requirements																																																																																													
<p>Courses for fulfillment of General Education and College of Arts & Sciences requirements must be from the approved General Education course list published in the Class Schedule or at http://www.ou.edu/admrec/gened.htm.</p> <p style="text-align: center;">University-Wide General Education (minimum 40 hours) and College of Arts and Sciences Requirements</p> <p>Core Area I: Symbolic and Oral Communication (9-22 hours, 3-6 courses)</p> <p>a. English Composition (6 hours, 2 courses)</p> <ol style="list-style-type: none"> 1. English 1113, Principles of English Composition 2. English 1213, Principles of English Composition <p>b. Foreign Language (0-13 hours in the same language) The College of Arts and Sciences requirement <i>cannot be met by high school coursework</i>.</p> <ol style="list-style-type: none"> 1. Beginning Course (0-5 hours) _____ 2. Beginning Course, continued (0-5 hours) _____ <p>◆ 3. Intermediate Course (2000 level, 0-3 hours). _____ One course at the intermediate level or demonstrated competency at that level.</p> <p>c. Mathematics (3 hours, 1 course). _____</p> <p>Core Area II: Natural Science (7 hours, 2 courses) including one laboratory component.</p> <p>◆ 1. Biological Science _____ Chosen from the following approved General Education courses: BOT, HSS, MBIO, or ZOO.</p> <p>◆ 2. Physical Science _____ Chosen from the following approved General Education courses: ASTR, CHEM, GEOG, GEOL, GPHY, METR, or PHYS.</p> <p>Core Area III: Social Science (6 hours, 2 courses)</p> <ol style="list-style-type: none"> 1. Political Science 1113, American Federal Government 2. _____ <p>Core Area IV: Humanities (18 hours, 6 courses)</p> <p>a. Understanding Artistic Forms (3 hours, 1 course) _____</p> <p>b. Western Civilization and Culture (6 hours, 2 courses)</p> <ol style="list-style-type: none"> 1. History 1483, U.S., 1492-1865, or History 1493, U.S., 1865-Present, 2. _____ (excluding HIST 1483 and 1493) <p>c. Non-Western Culture (3 hours, 1 course): _____</p> <p>d. Additional Core IV Humanities courses (6 upper-division hours, 2 courses at the 3000- 4000-level). Must be outside the major and selected from Understanding Artistic Forms, Western Civilization and Culture, or Non-Western Culture.</p> <p>◆ 1. _____</p> <p>◆ 2. _____</p> <p>Core Area V: Senior Capstone Experience (3 hours, 1 course): _____</p> <p>◆ College of Arts and Sciences Requirements: College requirements are not automatically fulfilled by a previous degree.</p>	MAJOR REQUIREMENTS	MAJOR SUPPORT REQUIREMENTS																																																																																												
	<p>A total of 45 hours in Physics is required, including the courses listed below.</p> <p>PHYSICS</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1205</td><td style="width: 65%;">Introductory Physics I for Physics Majors</td><td style="width: 10%; text-align: center;">5</td><td style="width: 10%;"></td></tr> <tr><td>1215</td><td>Introductory Physics II for Physics Majors</td><td style="text-align: center;">5</td><td></td></tr> <tr><td>2064</td><td>Waves, Optics & Relativity</td><td style="text-align: center;">4</td><td></td></tr> <tr><td>2302</td><td>Electronics Laboratory I</td><td style="text-align: center;">2</td><td></td></tr> <tr><td>2312</td><td>Electronics Laboratory II</td><td style="text-align: center;">2</td><td></td></tr> <tr><td>3054</td><td>Physical Mechanics</td><td style="text-align: center;">4</td><td></td></tr> <tr><td>3113</td><td>Quantum Physics</td><td style="text-align: center;">3</td><td></td></tr> <tr><td>3183</td><td>Electricity & Magnetism I</td><td style="text-align: center;">3</td><td></td></tr> <tr><td>3302</td><td>Junior Laboratory I</td><td style="text-align: center;">2</td><td></td></tr> <tr><td>3312</td><td>Junior Laboratory II</td><td style="text-align: center;">2</td><td></td></tr> <tr><td>3803</td><td>Introduction to Quantum Mechanics I</td><td style="text-align: center;">3</td><td></td></tr> <tr><td>4153</td><td>Statistical Physics and Thermodynamics</td><td style="text-align: center;">3</td><td></td></tr> <tr><td>4300</td><td>Senior Laboratory Project (Capstone Course)</td><td style="text-align: center;">2</td><td></td></tr> <tr><td>4300</td><td>Senior Laboratory Project (2 enrollments required)</td><td style="text-align: center;">2</td><td></td></tr> </table> <p>One of the following:</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">4213</td><td style="width: 65%;">Nuclear and Particle Physics</td><td style="width: 10%;"></td><td style="width: 10%;"></td></tr> <tr><td>4243</td><td>Solid State Physics</td><td></td><td></td></tr> <tr><td>4813</td><td>Atomic and Molecular Physics</td><td></td><td></td></tr> </table> <p>_____ 3</p> <p>Recommended but not required:</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">4183</td><td style="width: 65%;">Electricity and Magnetism II</td><td style="width: 10%;"></td><td style="width: 10%;"></td></tr> <tr><td>4803</td><td>Intro. to Quantum Mechanics II</td><td></td><td></td></tr> </table> <p>ASTRONOMY 3000 or above.</p> <p><i>A grade of C or better must be earned in each required physics and mathematics course.</i></p>	1205	Introductory Physics I for Physics Majors	5		1215	Introductory Physics II for Physics Majors	5		2064	Waves, Optics & Relativity	4		2302	Electronics Laboratory I	2		2312	Electronics Laboratory II	2		3054	Physical Mechanics	4		3113	Quantum Physics	3		3183	Electricity & Magnetism I	3		3302	Junior Laboratory I	2		3312	Junior Laboratory II	2		3803	Introduction to Quantum Mechanics I	3		4153	Statistical Physics and Thermodynamics	3		4300	Senior Laboratory Project (Capstone Course)	2		4300	Senior Laboratory Project (2 enrollments required)	2		4213	Nuclear and Particle Physics			4243	Solid State Physics			4813	Atomic and Molecular Physics			4183	Electricity and Magnetism II			4803	Intro. to Quantum Mechanics II			<p>CHEMISTRY</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1315</td><td style="width: 65%;">General Chemistry</td><td style="width: 10%;"></td><td style="width: 10%; text-align: center;">5</td></tr> </table> <p>MATHEMATICS</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">2443</td><td style="width: 65%;">Calculus & Analytic Geometry IV</td><td style="width: 10%;"></td><td style="width: 10%; text-align: center;">3</td></tr> <tr><td>3413</td><td>Physical Mathematics I</td><td></td><td style="text-align: center;">3</td></tr> <tr><td>3423</td><td>Physical Mathematics II</td><td></td><td style="text-align: center;">3</td></tr> </table> <p>Three upper-division elective hours in mathematics:</p> <p>_____ 3</p>	1315	General Chemistry		5	2443	Calculus & Analytic Geometry IV		3	3413	Physical Mathematics I		3	3423	Physical Mathematics II		3
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INFORMATION CONCERNING GENERAL RULES, REGULATIONS AND MINIMUM REQUIREMENTS

TOTAL HOURS: A minimum of 124 semester hours acceptable toward graduation must be completed.

UPPER-DIVISION HOURS: A minimum of 48 upper-division semester hours acceptable toward graduation must be completed. OU courses numbered 3000 or above are upper-division. Transfer work will be counted as lower-division or upper-division credit depending on the level at which it was offered at the institution where the work was taken. All two-year college work is considered to be lower-division.

ARTS AND SCIENCES HOURS: At least 80 semester hours of liberal arts and sciences courses are required for a BA degree. At least 55 semester hours of liberal arts and sciences courses are required for a BS degree.

MAJOR WORK: At least 30 semester hours in the major must be completed.

PASS/NO PASS ENROLLMENT: A maximum of 16 semester hours of free elective credit may be attempted under this option.

INDIVIDUAL STUDIES (e.g., courses titled "Independent Study"): A maximum of 12 total semester hours may be counted toward graduation.

MILITARY, MILITARY IN-SERVICE, AND P.E. COURSES: A maximum of 16 semester hours total of basic skills courses; aerospace studies, military science, and naval science courses; advanced military in-service experience; and PE activity courses may be included in the minimum 124 semester hours required for graduation. No more than four of the 16 semester hours may be in PE activity courses.

SENIOR INSTITUTION HOURS: A minimum of 60 semester hours applied toward graduation must be earned at senior (4-year) institutions.

RESIDENCY:

- A minimum of 30 semester hours acceptable toward graduation must be earned in residence at OU, including at least 15 of the last 30 hours applied toward the degree.
- At least 15 semester hours of upper-division major work must be completed in residence at OU.
- OU correspondence courses are **not** considered resident credit.
- Credits earned via examination are neither resident nor nonresident credit.

GRADE POINT AVERAGES: Students must earn a minimum overall 2.00 for each of the following: Combined Retention GPA (all college grades), OU Retention GPA, GPA for all major courses, and GPA for all major courses taken at OU. Some schools and departments of the College have higher minimum grade point averages required for their students.

SPECIAL DEGREES: Students may qualify for an Honors degree (cum Laude, Magna cum Laude, or Summa cum Laude) by completing specific requirements of the Honors College. A degree will be earned with Distinction if the student completes at least 60 semester hours at OU with at least a 3.60 combined retention GPA and OU retention GPA. A degree will be earned with Special Distinction if the student completes at least 60 semester hours at OU with at least a 3.90 combined retention GPA and OU retention GPA.

APPLICATION FOR GRADUATION: Students must apply for graduation during the term in which they complete their degree requirements in order to graduate in that term. Application forms are available from the College of Arts and Sciences Academic Services, Physical Sciences Center, Room 429. The deadline for completion of all coursework to graduate in a particular term is the last day of classes in that term.

Refer to the OU General Catalog for more complete information.

GRADUATION PLAN			
Freshman Year	Sophomore Year	Junior Year	Senior Year
			Total Hours _____ Upper-Division _____