

3650 PHYSICS

Bachelor of Science

NOTE TO STUDENT: A student is expected to be familiar with the degree requirements. The following information has official approval of the Department of Physics but is intended only as a guide. Official degree requirements are established at the time of admission to the degree-granting college. **A prospective physics major should confer with the undergraduate adviser of the Physics department during his/her first semester at the University of Akron. An appointment may be arranged through the Physics secretary in Ayer 235, (330) 972-7078.**

<u>FIRST YEAR</u>	<u>Semester Credit Hours</u>	<u>Prerequisites</u>
<u>Summer Session (s)</u>		
3450:221 Analytic Geometry – Calculus I	4	Placement Test or 3450:149
<u>Fall Semester</u>		
7600:105 Introduction to Public Speaking -OR-		
7600:106 Effective Oral Communication	3	
3300:111 English Composition I	4	Appropriate Placement by Adviser
3450:222 Analytic Geometry – Calculus II	4	3450:221
3650:291 Elem. Classical Physics I (Lecture & Lab) - Honors section highly recommended	<u>4</u> 15	3450:221
<u>Spring Semester</u>		
3300:112 English Composition II	3	3300:111 or 1100:111
3450:223 Analytic Geometry – Calculus III	4	3450:222
3650:292 Elem. Classical Physics II (Lecture & Lab) - Honors section highly recommended	4	3650:291
3460:209 Introduction to Computer Science (Lect. & Lab)	<u>4</u> 15	3450:145 or 149 with a grade of C- or better or equiv.
<u>Summer Session(s)</u>		
Social Science (Note b.) or Language Req. (Note c.)	3-4	
3650:399 Undergraduate Research (elective)	1-4	See Physics Undergraduate Adviser
<u>SECOND YEAR</u>		
<u>Fall Semester</u>		
3150:151 Principles of Chemistry I	3	3450:145 or equiv. recommended
3150:152 Principles of Chemistry I Lab	1	3150:151 (coreq.)
3450:335 Introduction to Ordinary Diff. Equations	3	3450:223
3650:301 Elementary Modern Physics	3	3650:292
3650:323 Intermediate Lab II	3	3650:292, 3650:301 (highly recommended)
3400:210 Humanities in Western Tradition (Lect. & Disc.)	<u>4</u> 17	
<u>Spring Semester</u>		
3150:153 Principles of Chemistry II	3	3150:151, 152
Humanities option (Note a.)	3	
3650:322 Intermediate Laboratory I	3	3650:292
3650:340 Thermal Physics	3	3650:301, 3450:335
3650:350 Modeling & Simulation	3	3650:292, 3460:209 (or 3460:208)
Physical Education/Wellness (Note a.)	<u>1-3</u> 16-18	
<u>Summer Session(s)</u>		
Social Science (Note b.) or Language Req. (Note c.)	3-4	
3650:399 Undergraduate Research (elective)	1-4	See Physics Undergraduate Adviser

POLICY ALERT: 1) By the end of your first 48 credit hours attempted, you must have completed your General Education English, Math, and Communications (Speech) requirements; 2) By the end of your first 48 credit hours attempted, you must have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.

NOTES:

- Please see the General Education Guide at <http://www.uakron.edu/colleges/univcoll/guides> for options.
- Six credits of Social Science courses are required. Please refer to the General Education Guide at the web address above.
- Completion of the second year of a foreign language or sign language is required. See your academic adviser for placement.

MAJORING IN PHYSICS:

Condensed matter and materials physics have played a key role in many of the scientific and technological revolutions that have changed our lives in the past several decades. From the materials of construction of your car to those of your fastest computer or favorite DVD movie, physics plays a major role. Here at The University of Akron, we help you learn physics in an interdisciplinary materials science context that reaches into the fields of polymer science, chemistry, biology and all of the engineering disciplines. Your versatile training will enable you to hit the ground running when looking for an industrial job, or allow you to pursue graduate studies in any of these related disciplines. The Bachelor's degree in Physics provides you with one of the best backgrounds you can have for facing all of the yet-undefined challenges our country and the world will face in the next century. Check out the sites below to see what some students and professionals in Physics really do, and don't hesitate to contact us for information on doing undergraduate research projects and getting actively involved in learning about physics.

MINORING IN PHYSICS:

• Required for all students:	<u>Credit</u>
3650:291, 292, Elementary Classical Physics I, II, -OR-	
3650:261, 262, Physics for Life Sciences (may be substituted in whole or in part)	8
3650:301, Elementary Modern Physics	3
3650:3xx, Electives	7
• Recommended electives:	
3650:322, 323, Intermediate Laboratory I/II	6
3650:340, Thermal Physics	3
3650:350, Modeling and Simulation	3

TRANSFER TO COLLEGE OF ARTS & SCIENCES:

A student should apply to the college upon completion of 30 credits and a 2.0 or better overall GPA (including transfer work). In addition, the student must have achieved a 2.0 in all coursework in the major field (including transfer work). The 30 credits must include the completion of both required English Composition courses and 3 credits of mathematics or statistics which meets the General Education requirement. This transfer process is completed through an appointment with an academic adviser, the Academic Advisement Center, Simmons Hall 205, (330) 972-7430, or Summit College, Polsky 301, (330) 972-7220, depending upon the college in which you reside.

COLLEGE OF ARTS & SCIENCES:

Degree requirements in the College of Arts & Sciences include fourteen credits of a second language (most majors), and 47 credits of 300/400 level courses, not including workshops or courses taken to meet the Humanities in the Western Tradition or Area Studies and Cultural Diversity requirements. Consult your major department for any possible exceptions or problems.

PLACEMENT:

A student is encouraged to check with Physics department and with the Center for Career Management, Simmons Hall 301, (330) 972-7747, regarding employment opportunities in Physics. Employers look for students with solid training in the fundamentals of Physics, and skills developed in hands-on work such as undergraduate research projects.

WEBSITES:

- American Institute of Physics – <http://www.aip.org>
American Physical Society – <http://www.aps.org/>
<http://www.aps.org/jobs/> (Careers in Physics)
<http://www.aps.org/FIAP/index.html> (Forum on Industrial and Applied Physics)
NASA homepage – <http://www.nasa.gov/>
Physics Dept., Univ. Of A. – <http://www.physics.uakron.edu/index.htm>

Jobs in Physics, Astronomy and other fields – <http://www.phys-astro.sonoma.edu/people/faculty/tenn/jobs.html>

CAMPUS ORGANIZATIONS:

Society of Physics Students – Faculty Adviser, Dr. Ang Chen, angchen@physics.uakron.edu
Sigma Pi Sigma (Honorary)