

 FLORIDA ATLANTIC UNIVERSITY	NEW/CHANGE PROGRAM REQUEST Undergraduate Programs		UUPC Approval <u>1/29/24</u> UFS Approval _____ Banner _____ Catalog _____
	Department College The Harriet L. Wilkes Honors College		
Program Name Physics concentration electives	<input type="checkbox"/> New Program* <input checked="" type="checkbox"/> Change Program*	Effective Date (TERM & YEAR) Summer 2024	
<p>Please explain the requested change(s) and offer rationale below or on an attachment.</p> <p>Add H AST 2002 Honors Introduction to Astronomy to the list of electives in the Physics Concentration. Students concentrating in Physics should have the choice to count this as an elective, and it will enrich their education.</p>			
<p><small>*All new programs and changes to existing programs must be accompanied by a catalog entry showing the new or proposed changes.</small></p>			
Faculty Contact/Email/Phone Michal Pirog mpirog@fau.edu 3042162862		Consult and list departments that may be affected by the change(s) and attach documentation	
Approved by Department Chair <u>William O'Brien</u> College Curriculum Chair <u>Rachel Corr</u> College Dean <u>Julie Gann</u> UUPC Chair <u>Korey Sorge</u> Undergraduate Studies Dean <u>Dan Meeroff</u> UFS President _____ Provost _____		Date <u>1/12/2024</u> <u>1/12/24</u> <u>1/12/24</u> <u>1/29/24</u> <u>1/29/24</u>	

Email this form and attachments to mjenning@fau.edu seven business days before the UUPC meeting.

CONCENTRATION IN PHYSICS

Students must earn a "C" or better in each course taken to fulfill a concentration requirement.

Advisory board:

Dr. Yaouen Fily | Dr. Michal Pirog



The Honors College curriculum in Physics offers students a number of options for study, depending on their interests. The core requirements for the concentration are kept low enough to encourage interdisciplinary study. The advisory board for the concentration reflects this goal, but it should not be considered an exhaustive list of faculty who may guide students in an interdisciplinary physics curriculum. Students interested in a more linear, advanced physics track (leading, for example, to graduate study in physics or engineering) will also find the opportunity to take more advanced courses in physics.

Available Options: Concentration in Physics (minimal requirements); Graduate School Track and Pre-professional track;

Minor Concentration in Physics.

Concentration in Physics (minimal requirements)

These minimal requirements are not generally considered sufficient preparation for admission into graduate study in physics. Rather, they are intended for students who are interested in pursuing interdisciplinary tracks in physics. Examples include emphasis on applied mathematics, philosophy of science, science and culture, and scientific writing. Specific paths should be determined in consultation

with advisors from physics and appropriate disciplines. The senior thesis may reflect such interdisciplinary study, but must include significant concepts or techniques from the field of physics. Students who pursue interdisciplinary tracks in physics should arrange for a thesis advisory committee that represents these interests. In addition to the requirements for a minor in physics, students will earn a major concentration in physics by completing 6-9 credit hours of research toward and writing of a senior thesis in physics. Students are reminded they need 45 upper-level (3000- or 4000-level) credits to graduate.

Course #	Course Name	Cr
PHY 2048, 2048L	Honors General Physics I with Lab	5
PHY 2049, 2049L	Honors General Physics II with Lab	5
	Physics Electives	15
	Mathematics Electives	3
IDS 4970	Honors Thesis (two semesters)	6
	Total minimal concentration	34

Graduate school track: The minimal concentration listed above is not sufficient for admission to graduate study in physics. Students who wish to go to graduate school should take additional credits in physics and mathematics, including specific courses to be determined in consultation with an advisor. All students are encouraged to take advanced physics courses from the main campus in Boca Raton.

Pre-professional track: A specific example of an interdisciplinary physics concentration, the pre-professional physics track is intended for students who are interested in pursuing a career in medicine or possibly science education. Because of the nature of requirements for admission to medical school, there is very little room for non-science elective courses in this track. Students who wish to pursue a career in science education will most likely need additional education courses taken elsewhere. Students should consult with their thesis advisors for guidance in completing a track that meets their needs. In addition to the prerequisites, students must earn a grade of "C" or better in the following courses:

Additional Courses in the Pre-Professional Track

Course #	Course Name
BSC 1010, 1010L	Honors Biological Principles with Lab
BSC 1011, 1011L	Honors Biodiversity with Lab
CHM 2045, 2045L	Honors General Chemistry I with Lab
CHM 2046, 2046L	Honors General Chemistry II with Lab

Course #	Course Name
CHM 2210, 2210L	Honors Organic Chemistry I with Lab
CHM 2211, 2211L	Honors Organic Chemistry II with Lab
BCH 3033	Honors Biochemistry
	Total Credits <i>(including minimal concentration)</i>

Physics Electives

Course #	Course Name	Credits
Add: AST 2002	Honors Introduction to Astronomy	3
CHM 3400*	Honors Introduction to Physical Chemistry	3
CHM 4473**	Honors Quantum Chemistry	3
PHY 3101	Honors Introduction to Modern Physics	3
PHY 3221	Honors Intermediate Mechanics	4
PHY 3513*	Honors Thermal Physics	3
PHY 4151	Honors Computational Physics	3
PHY 4320	Honors Electricity and Magnetism	4
PHY 4523	Honors Statistical Physics	3
PHY 4604**	Honors Introductory Quantum Physics	3
PHY 4905	Honors Directed Independent Study in Physics	3
PHY 4936	Honors Special Topics in Physics <i>(may be repeated)</i>	1
PHZ 3601	Honors Relativity	3

* Either CHM 3400 or PHY 3513 can be used to fulfill the physics elective, but not both.

** Either CHM 4473 or PHY 4604 can be used to fulfill the physics elective, but not both.

Mathematics Electives

Course #	Course Name	Cr
MAC 2313	Honors Calculus with Analytic Geometry III	4
MAP 2302	Honors Differential Equations	3
MAS 2103	Honors Matrix Theory	3
MAT 4930	Honors Special Topics in Mathematics <i>(in consultation with advisor, may be repeated)</i>	1-4
COP 2000	Honors Foundations of Programming	3
COP 2220	Honors Introduction to Programming in C	3
COP 2930	Honors Topics in Computer Programming	3
COP 3012	Honors Advanced Programming	3
COP 3229	Honors Self-paced C++ Programming	1
COP 3254	Honors Self-paced Java Programming	1
COT 4930	Honors Topics in Computer Science	3

Minor Concentration in Physics

The minor concentration in physics is intended for students who will take a number of advanced courses in physics, but nevertheless concentrate and write their senior thesis in another discipline. Students may earn a minor by satisfying the prerequisites for the physics concentration and by having a minimum 2.0 grade point average in courses taken for the minor concentration.

Course #	Course Name	Cr
PHY 2048, 2048L	Honors General Physics I with Lab	5
PHY 2049, 2049L	Honors General Physics II with Lab	5
	Physics Electives (see addition above in Physics Electives)	9
	Mathematics Electives	3
	Total requirements for minor	22