

Academic Map: Physics, Engineering

Department: _____ Physics and Astronomy _____ **Degree:** _____ BS _____
Program/Major: _____ Physics _____
Track/Emphasis: _____ Engineering _____
Does this program require a minor? (Yes/No) _____ No _____

Important program information in the online *Undergraduate Bulletin*:

UCA Core Requirements: <http://uca.edu/ubulletin/general-policies-information/uca-core/>
LD Core Check Sheet: <http://uca.edu/academicbulletins/ld-uca-core/>
Degree Requirements: <http://uca.edu/ubulletin/general-policies-information/degree-requirements/>
Program Description: <http://uca.edu/ubulletin/colleges-departments-programs/college-of-natural-sciences-and-mathematics/department-of-physics-and-astronomy/>
Course Descriptions: <http://uca.edu/ubulletin/courses/>

This degree program requires a total of 126 semester credit hours, including at least 40 upper-division credit hours.

Comparable courses in the Arkansas Course Transfer System (ACTS) are cross-referenced in the ACTS column of each semester block below; a [core link](http://uca.edu/academicbulletins/ld-uca-core/) (http://uca.edu/academicbulletins/ld-uca-core/) takes the user to the *Undergraduate Bulletin*'s UCA Lower-Division Core check sheet, where UCA Core options and ACTS course numbers are listed in full; an [acts link](http://uca.edu/academicbulletins/acts/) takes the user to the *Undergraduate Bulletin*'s ACTS page (http://uca.edu/academicbulletins/acts/) for additional information and a UCA-ACTS crosswalk.

Year 1

Fall – Semester 1 (credit hours: 14)

SUBJ	NUM	TITLE	SCH	ACTS
PHYS	1441	University Physics 1	4	PHYS2034
MATH	1496	Calculus I ¹	4	MATH2405
WRTG	1310	Introduction to College Writing	3	ENGL1013
ENGR	1301	Introduction to Engineering (FYS) ¹	3	core link

Spring – Semester 2 (credit hours: 15)

SUBJ	NUM	TITLE	SCH	ACTS
PHYS	1442	University Physics 2	4	PHYS2044
MATH	1497	Calculus II	4	MATH2505
WRTG ENGL	1320 1320	Academic Writing and Research or Interdisciplinary Writing and Research or Other approved alternative (LD UCA Core: Research/Writing)	3	ENGL1023 ENGL1023 core link
CSCI	1470	Computer Science I	4	

Year 2**Fall – Semester 3 (credit hours: 15)**

SUBJ	NUM	TITLE	SCH	ACTS
PHYS	2443	University Physics 3	4	
MATH	2471	Calculus III	4	MATH2603
CSCI	1480	Computer Science II	4	
ENGR	2311	Statics	3	

Spring – Semester 4 (credit hours: 16)

SUBJ	NUM	TITLE	SCH	ACTS
ENGR	2447	Electronics	4	
ENGR	3311	Engineering Dynamics	3	
MATH	3331	Ordinary Differential Equations (UD UCA Core: C)	3	
		LD UCA Core	3	core link
		LD UCA Core	3	core link

Year 3**Fall – Semester 5 (credit hours: 18)**

SUBJ	NUM	TITLE	SCH	ACTS
PHYS	3360	Electromagnetism 1	3	
ENGR	3421	Robotics 1	4	
ENGR	3447	Microelectronics	4	
		Engineering Elective ²	4	
WRTG	3310	Technical Writing (UD UCA Core: C)	3	

Spring – Semester 6 (credit hours: 17)

SUBJ	NUM	TITLE	SCH	ACTS
PHYS	3361	Electromagnetism 2	3	
ENGR	3410	Microcontrollers	4	
ENGR	4421	Robotics 2	4	
		LD UCA Core	3	core link
PHIL	3320	Ethics (UD UCA Core: I, R)	3	

Year 4**Fall – Semester 7 (Credit hours: 15)**

SUBJ	NUM	TITLE	SCH	ACTS
PHYS		Physics Elective ²	3	
ENGR		Engineering Elective ²	3	
ENGR	4311	Senior Design 1	3	
		LD UCA Core	3	core link
		LD UCA Core	3	core link

Spring – Semester 8 (Credit hours: 16)

SUBJ	NUM	TITLE	SCH	ACTS
ENGR	4312	Senior Design 2 (UD UCA Core: Z)	3	
ENGR		Engineering Elective ²	3	
BIOL	1400	Exploring Concepts in Biology or Approved alternative (LD UCA Core: Life Science)	4	BIOL1004 core link
		LD UCA Core	3	core link
		General Elective (UD UCA Core: D)	3	

 SIGNED – DEPARTMENT CHAIR

 DATE

 SIGNED – COLLEGE DEAN

 DATE

To be completed by the advisor when an Eight-Semester plan is accepted by the student:

If applicable, has student selected a minor? Type “x” as appropriate. _____ No _____ Yes

If “yes,” specify: _____

Notes

¹ See appropriate choices, alternatives, or substitutions under “UCA Core” in the *Undergraduate Bulletin*. Prior to completion of 30 semester hours, a student must complete a UCA Core course designated as a First-Year Seminar (FYS) in Critical Inquiry, Diversity, or Responsible Living. The LD UCA Core Check Sheet may be reached through the [core link](#) provided throughout this Academic Map (AMAP).

The student will also need to complete major, minor, or general elective courses designated as fulfilling the upper-division and capstone requirements of the UCA Core. See annotations in this AMAP for courses in the major that fulfill these upper-division requirements. Consult the *Undergraduate Bulletin* and your academic advisor for other available courses; a comprehensive list of UD UCA Core courses is provided here: <http://uca.edu/academicbulletins/ud-uca-core/>.

² Engineering Elective and Physics Elective courses must be approved by the Chair of the Department of Physics and Astronomy.