

Academic Map: Engineering Physics (Pre-Calculus Start)

Department: _____ Physics and Astronomy _____ **Degree:** _____ BS _____
Program/Major: _____ Engineering Physics _____
Track/Emphasis: _____ Pre-Calculus Start _____
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: <https://uca.edu/ubulletin/colleges-departments/cn/physics-astronomy/>
Course Descriptions: <http://uca.edu/ubulletin/courses/>

This degree program requires a total of 129 semester credit hours [but see Note 1], 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.

Scholarship recipients: Please be aware of eligibility criteria for your scholarship(s). In particular, pay attention to (1) the enrollment requirements each semester for disbursement of your scholarship(s) and (2) the number of hours and GPA required each semester and/or year for renewal of your scholarship(s). Some Academic Maps may suggest enrollment in fewer hours than required for disbursement of your scholarship(s). In such cases, work with your academic advisor to adjust your schedule to meet requirements most efficiently. Contact the Office of Student Financial Aid at (501) 450-3140 with any questions regarding enrollment/renewal requirements of your scholarship(s). For online information resources, see endnote ².

Year 1

Fall – Semester 1 (credit hours: 13)

| SUBJ | NUM | TITLE | SCH | ACTS |
|------|------|-----------------------------------|-----|---------------------------|
| MATH | 1486 | Calculus Preparation ³ | 4 | |
| WRTG | 1310 | Introduction to College Writing | 3 | ENGL1013 |
| ENGR | 1301 | Introduction to Engineering | 3 | |
| | | LD UCA Core ⁴ | 3 | core link |

Spring – Semester 2 (credit hours: 15)

| SUBJ | NUM | TITLE | SCH | ACTS |
|--------------|--------------|---|-----|---|
| PHYS | 1441 | University Physics 1 | 4 | PHYS2034 |
| MATH | 1496 | Calculus I | 4 | MATH2405 |
| 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: 18)**

| SUBJ | NUM | TITLE | SCH | ACTS |
|------|------|----------------------|-----|---------------------------|
| PHYS | 1442 | University Physics 2 | 4 | PHYS2044 |
| MATH | 1497 | Calculus II | 4 | MATH2505 |
| CSCI | 1480 | Computer Science II | 4 | |
| ENGR | 2311 | Statics | 3 | |
| | | LD UCA Core | 3 | core link |

Spring – Semester 4 (credit hours: 18)

| SUBJ | NUM | TITLE | SCH | ACTS |
|------|------|--|-----|--------------------------|
| PHYS | 2443 | University Physics 3 | 4 | |
| MATH | 2471 | Calculus III | 4 | MATH2603 |
| ENGR | 2447 | Electronics | 4 | |
| ENGR | 3311 | Engineering Dynamics | 3 | |
| MATH | 3331 | Ordinary Differential Equations (UD UCA Core: C) | 3 | |

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 ⁵ | 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 4320 | Ethics (UD UCA Core: I, R) or Applied Ethics (UD UCA Core D, R) | 3 | |

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

| SUBJ | NUM | TITLE | SCH | ACTS |
|------|------|-----------------------------------|-----|---------------------------|
| PHYS | | Physics Elective ⁵ | 3 | |
| ENGR | | Engineering Elective ⁵ | 3 | |
| ENGR | 4311 | Senior Design 1 | 3 | |
| | | LD UCA Core | 3 | core link |
| | | LD UCA Core | 3 | core link |

Spring – Semester 8 (Credit hours: 15)

| SUBJ | NUM | TITLE | SCH | ACTS |
|------|------|--|-----|---------------------------|
| ENGR | 4312 | Senior Design 2 (UD UCA Core: Z) | 3 | |
| ENGR | | Engineering Elective ⁵ | 3 | |
| | | LD UCA Core | 3 | core link |
| | | LD UCA Core | 3 | core link |
| | | General Elective (UD UCA Core: D or I) | 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 The degree requires 125 hours. Students who are not calculus ready will require 4 additional hours to prepare for required calculus courses. Students taking this pathway can be back on track for eight-semester completion by the end of the second year.

² See online information resources for UCA scholarships at <https://uca.edu/scholarships/> and for state scholarships at <https://scholarships.adhe.edu/scholarships-and-programs/a-z/>.

³ Consult with your academic advisor for appropriate pre-calculus options.

⁴ See appropriate choices, alternatives, or substitutions under “UCA Core” in the *Undergraduate Bulletin* and consult your academic advisor. 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/>.

⁵ Engineering Elective and Physics Elective courses must be approved by the Chair of the Department of Physics and Astronomy.