

# Engineering Physics and Physics Major and Astronomy Minor 2017-2018

**DEPARTMENT CHAIR:** Dr. Jonathan W. Keohane, Gilmer 009 (434) 223-6176  
Please note that departmental contact is strongly recommended to further aid your academic planning. Irregularities in offerings do occur as a result of sabbaticals and medical leaves.

## PHYSICS MAJOR

\_\_\_\_\_ PHYS 131 (3) and 151 (1) (F)

↑ Has a pre- or co-req of MATH 141

\_\_\_\_\_ PHYS 132 (3) and 152 (1) (S)

↑ Has a pre- or co-req of MATH 142

\_\_\_\_\_ PHYS 233 (3) and 253 (1) (F)

\_\_\_\_\_ PHYS 244 (3) (S)

\_\_\_\_\_ PHYS 331 (3) (F)

↑ Has a pre-req of MATH 242

\_\_\_\_\_ PHYS 332 (3) (S)

\_\_\_\_\_ PHYS 106 (3) (S) **or** 243(3) (F)

\_\_\_\_\_ PHYS \_\_\_\_\_ (3) (100 level or ↑)

\_\_\_\_\_ PHYS \_\_\_\_\_ (3) (200 level or ↑)

\_\_\_\_\_ PHYS \_\_\_\_\_ (3) (200 level or ↑)

\_\_\_\_\_ MATH 141 (4)

\_\_\_\_\_ MATH 142 (4)

\_\_\_\_\_ MATH 242 (4) (F)

## ENGINEERING PHYSICS

\_\_\_\_\_ PHYS 101 (3) (F)

\_\_\_\_\_ PHYS 106 (3) (S)

\_\_\_\_\_ PHYS 131 (3) and 151 (1) (F)

↑ Has a pre- or co-req of MATH 141

\_\_\_\_\_ PHYS 132 (3) and 152 (1) (S)

↑ Has a pre- or co-req of MATH 142

\_\_\_\_\_ PHYS 215 (3) (F)

\_\_\_\_\_ PHYS 243 (3) (F)

\_\_\_\_\_ PHYS 244 (3) (S)

\_\_\_\_\_ PHYS 331 (3) (F)

↑ Has a pre-req of MATH 242

\_\_\_\_\_ PHYS 451 (1) (F)

\_\_\_\_\_ PHYS 452 (3) (S)

\_\_\_\_\_ PHYS \_\_\_\_\_ (3) (200 level or ↑)

\_\_\_\_\_ PHYS \_\_\_\_\_ (3) (200 level or ↑)

\_\_\_\_\_ PHYS 220 (3) (F) or COMS 261 (4)

\_\_\_\_\_ MATH 141 (4)

\_\_\_\_\_ MATH 142 (4)

\_\_\_\_\_ MATH 242 (4) (F)

\_\_\_\_\_ MATH 231 (4) (S)

\_\_\_\_\_ MATH 243 (3) (F)

**ASTRONOMY MINOR:** 18 credit hours

\_\_\_\_\_ ASTR 110 (3) and ASTR 151 (1) (each semester)

\_\_\_\_\_ PHYS 131 (3) and 151 (1) (fall)

\_\_\_\_\_ PHYS 132 (3) and 152 (1) (spr.)

\_\_\_\_\_ ASTR 210 (3) (fall- even yrs)

\_\_\_\_\_ ASTR 310 (3) (spr.-odd yrs.)

Physics and Chemistry majors who take the PHYS courses and elect to complete the Astronomy minor may only count the PHYS 131/151 and 132/152 in both the major and the minor.

**Important information for Physics and Pre-Engineering students:**

- Inform Physics and Astronomy Department chair of intended major interest.
- Students are NOT allowed to double major in Physics and Engineering Physics.
- For freshmen not placed into MATH 141, enroll in PHYS 101 and an appropriate level of MATH (likely MATH 105) for those students with an expressed interest in pursuing Pre-Engineering.
- Students should gain experience in computational work while at H-SC.
- Students are encouraged to become involved in research early through advanced lab, Hons. Advanced lab and summer research opportunities.
- After completing PHYS 131 and 132, students should enroll in both PHY 233 and PHYS 220 (fall) to prepare for PHYS 244 and PHYS 234 (spr.). Note: PHYS 220 and 234 are not required for the major, but serve to prepare the major for upper-level coursework.
- Majoring in PHYS is a great beginning to many careers including law, medicine, engineering and business.
- Students are encouraged to become involved with Society for PHYS Students (SPS) and/or in AXE, the professional chemistry fraternity.
- Students interested in taking advantage of either our Dual-Degree program with Old Dominion University or our Cooperative Program with the University of Virginia should contact the chair of the Physics and Astronomy Department as soon as possible to discuss requirements.
- Students are encouraged to take advantage of the tutoring services offered through the department for the introductory level courses.
- Students are encouraged to become tutors in the department at any time after the completing the introductory sequence of calculus-based physics—Students interested in employment as a tutor should see Dr. Thurman.

**UNOFFICIAL FORM- OFFICE OF ACADEMIC SUCCESS.**

Successful completion of the above items does not alone guarantee that graduation requirements have been met. Please see advisor.

Last updated 08/21

**Typical Course Pattern for an ENG. PHYS. Major:**

Courses in bold are provided to give students guidance toward applying for graduate school in engineering by completing the year-long sequence of Chemistry and for obtaining the Math minor by taking any upper-level course in Mathematics at the 300-level or above.

<b>Year</b>	<b>FALL</b>		<b>SPRING</b>	
<b>Fr.</b>	PHYS 101	Intro. to Engineering Physics	PHYS 106	Electronics I
	RHET 100		RHET 101	
	WCUL 101		WCUL 102	
	MATH 105		Language	
	Language		Elective	
	Elective			
<b>So.</b>	PHYS 131	Fundamentals of Physics I	PHYS 132	Fundamentals of Physics II
	PHYS 151	General Physics Lab I	PHYS 152	General Physics Lab II
	MATH 141	Calculus I	MATH 142	Calculus II
	RHET 102		Language	
	GCUL 10x		Elective	
	Language		Elective	
<b>Jr.</b>	PHYS 215	Statics	PHYS 244	Experimental Physics
	PHYS 243	Electronics II	MATH 231	Linear Algebra
	MATH 242	Calculus III	PHYS 2xx↑	
	<b>CHEM 110</b>	<b>Chemical Concepts</b>	<b>CHEM 221</b>	<b>Descr. Inorganic Chemistry</b>
	Elective		Elective	
<b>Sr.</b>	PHYS 331	Mechanics	PHYS 2xx↑	
	PHYS 451	Advanced Project I	PHYS 452	Advanced Project II
	MATH 243	Differential Equations	<b>MATH 3xx↑</b>	
	Computational	Either PHYS 220 or COMS 261	Elective	
	Elective		Elective	