

**Physics B. S. Program
Program Planning and Check-off Sheet**

Student Name: _____

Advisor Name: _____ Date: _____

General Education **39 sh**
Communications **6 sh**

Sem/Yr	Grade	Course	Course #	Credits
		College Composition I	COMP 01.111	3
		College Composition II	COMP 01.112	3

Science and Mathematics **15 sh**

Sem/Yr	Grade	Course	Course #	Credits
		Calculus I—MATH	MATH 01.130	4
		Chemistry I—LAB	CHEM 06.100	4
		Chemistry II	CHEM 06.101	4
		Intro. Sci. Prog. <i>or</i> Comp. Sci. & Prog.	CS 01.104 <i>or</i> CS 04.103	3

Social and Behavioral Sciences **6 sh**

Sem/Yr	Grade	Course	Course #	Credits

History, Humanities, and Languages **6 sh**

Sem/Yr	Grade	Course	Course #	Credits
		Phil of Science—WI,M/G (or other approved):	PHIL 09.369	3

Non-Program Courses (outside PHYS) **6 sh**

Sem/Yr	Grade	Course	Course #	Credits

Rowan Experience **≥6 sh**

Sem/Yr	Grade	Course	Course #	Credits
		Public Speaking—PS	CMS 06.202	3
		ACE course:		3

Comp. Lit. or Comp Exam _____ WI _____ M/G _____ LIT _____

Major Requirements

60–62 sh

Core Courses

49 sh

Sem/Yr	Grade	Course	Course #	Credits
		Calculus II	MATH 01.131	4
		Calculus III	MATH 01.230	4
		Linear Algebra	MATH 01.210	3
		Differential Equations	MATH 01.231	3
		Introductory Mechanics—RS	PHYS 02.200	4
		Introductory Thermo, Fluids, Waves & Optics	PHYS 02.210	4
		Introductory Electricity & Magnetism	PHYS 02.201	4
		Modern Physics	PHYS 02.300	4
		Analytical Mechanics	PHYS 02.315	4
		Electricity & Magnetism I	PHYS 02.430	4
		Quantum Mechanics I	PHYS 02.401	4
		Statistical Physics	PHYS 02.387	3
		Advanced Lab	PHYS 02.440	4

Physics Electives — Choose at least two

6–8 sh

Sem/Yr	Grade	Course	Course #	Credits
		Optics and Light	PHYS 02.305	4
		Independent Study	PHYS 02.310	1–3
		ZEMAX	PHYS 02.333	3
		Electric Circuits	PHYS 02.399	4
		Quantum Mechanics II	PHYS 02.402	3
		Electricity & Magnetism II	PHYS 02.431	3
		Selected Topics	PHYS 02.470	3–4
		Physics/Astronomy Research I, II, III, IV Maximum of 3sh can count for Physics Electives	PHYS 02.211, 212, 311, 411, ASTR 11.209, 212, 312, 412	1–3

Restricted Electives — Choose at least one approved course from

3–5 sh

Physics, Astronomy, Atmospheric Science, Earth Science, Materials Science, Engineering, Math, Chemistry, Computer Science, Biology, or Education, or any Physics Elective listed above

Sem/Yr	Grade	Course	Course #	Credits

Sum of Physics Electives and Restricted Electives must be at least 11 sh

Free Electives

13–15 sh

Sem/Yr	Grade	Course	Course #	Credits

Total Credits Needed

120 sh

A Possible Physics Major Program

Freshman Year

Fall	15 s.h.	Spring	15 s.h.
College Composition I	3	College Composition II	3
Calculus I—MATH	4	Calculus II	4
Intro Mechanics—RS	4	Intro TFW&O	4
Chemistry I—LAB	4	Chemistry II	4

Sophomore Year

Fall	17 s.h.	Spring	15 s.h.
Public Speaking—PS	3	Philosophy of Science—WI [HHL*]	3
Calculus III	4	Differential Equations	3
Intro E&M	4	Modern Physics	4
Programming course	3	GE/RE Elective [ACE*]	3
Linear Algebra	3	Free Elective	3

Junior Year

Fall	14 s.h.	Spring	16–17 s.h.
Analytical Mechanics	4	Quantum Mechanics I	4
Electricity & Magnetism I	4	Free Elective	3
Free Elective	3	Phys/Restr Elective	3–4
GE/RE Elective [HHL*, LIT]	3	GE/RE Elective [SBS*, M/G]	3
		Free Elective	3

Senior Year

Fall	13–14 s.h.	Spring	12–13 s.h.
Advanced Lab	4	Physics Elective	3-4
Restr/Phys Elective	3–4	Statistical Physics	3
Gen Ed Elective [SBS*]	3	Gen Ed Elective [NPC*]	3
Gen Ed Elective [NPC*]	3	Free Elective	3

*General Education requirements include 6 semester hours in Social and Behavioral Science (SBS), 6 semester hours in History, Humanities and Languages (HHL), and 6 semester hours in Non-Program Courses (NPC). Rowan Experience requirements include 3 semester hours in Public Speaking (PS) and Artistic and Creative Experience (ACE) each, as well as at least one course each designated as Multicultural/Global (M/G), Literature (LIT). These may be taken at any time, the above specified courses are for illustration only. Note that the Rowan Experience Writing Intensive (WI), Rowan Seminar (RS), Math (MATH), and Lab Science (LAB) requirements are accounted for in Program Requirements.

Approved Restricted Elective Courses

- Physics
 - Physics of Sound & Music (PHYS 02.140)
 - Physics of Everyday Life (PHYS 02.150)
 - Mathematical Physics (PHYS 02.325)
- Astronomy — any 200+ level Astronomy (ASTR 11) course
- Atmospheric Science — any course from the PHSC 13 program
- Earth Science/Geology
 - Any course from the ASTR 17 program
 - Geology I (GEOG 06.103)
 - Geology II (GEOG 06.104)
 - Investigations in Physical Geography (GEOG 06.110)
- Materials Science
 - Material Science (ENGR 01.281)
 - Interdisciplinary Materials Science (INTR 01.486)
- Engineering — any 300+ level Engineering course
- Mathematics — any 200+ level Math course
- Chemistry — any 200+ level Chemistry course (except Chemistry in the Environment)
- Computer Science — any 200+ level Computer Science course
- Biology — any Biology course
- Education
 - Teaching/Learning A: Science (SMED 34.330)
 - Practicum in Teaching/Learning A: Science (SECD 03.330)
 - Teaching/Learning B: Science (SMED 34.331)
 - Practicum in Teaching/Learning B: Science (SECD 03.332)