

Space Sciences and Engineering Sample Schedule

	Total Term:								
	Credit Hours	1	2	3	4	5	6	7	8
Subjects Required by all Programs (55 hours)									
Mathematics 115, 116, 215, and 216	16	4	4	4	4	-	-	-	-
Engineering 100, Introduction to Engineering	4	4	-	-	-	-	-	-	-
Engineering 101, Introduction to Computers	4	-	4	-	-	-	-	-	-
Chemistry 125/126 and 130 or Chemistry 210 and 2111	5	5	-	-	-	-	-	-	-
Physics 140 with Lab 141; Physics 240 with Lab 2412	10	-	5	5	-	-	-	-	-
Intellectual Breadth	16	4	4	4	4	-	-	-	-
Required Core Subjects (30 hrs.)									
SPACE 320, Earth and Space System Evolution	3	-	-	3	-	-	-	-	-
SPACE 321, Earth and Space System Dynamics	3	-	-	-	3	-	-	3	-
SPACE 323, Earth System Analysis	4	-	-	-	4	-	-	-	-
SPACE 370, Solar-Terrestrial Relations	4	-	-	-	-	4	-	-	-
SPACE 462, Instrumentation for Atmos & Space Sciences	4	-	-	-	-	-	4	-	-
SPACE 478, Space Environment	4	-	-	-	-	-	-	4	-
SPACE 423, Data Analysis and Visualization	4	-	-	-	-	-	-	-	4
SPACE 495/595 (Note 2)	4	-	-	-	-	-	-	-	4
Total	85								
Concentrations: (select one)									
Space Science (43 hrs. total)									
PHYSICS 340, Waves Heat and Light	3	-	-	-	-	3	-	-	-
SPACE 380, Introduction to Radiative Transfer	3	-	-	-	-	3	-	-	-
PHYSICS 405, Intermediate Electricity and Magnetism (Note 5)	4	-	-	-	-	-	4	-	-
PHYSICS 390, Modern Physics (Note 5)	3	-	-	-	-	-	3	-	-
PHYSICS 390, Lab	2	-	-	-	-	-	-	2	-
NERS 471, Introduction to Plasmas	3	-	-	-	-	-	-	-	3
SPACE 499/455 Capstone Research (Note 3) or SPACE 584	4	-	-	-	-	-	-	-	4
Technical Electives (11 hours)	11	-	-	-	-	3	-	4	4
General Electives (10 Hours)	10	-	-	-	-	3	3	4	-
Total	128								
Space Instrumentation (43 hr. total)									
Engineering Breadth (programming or EECS 215 Intro to Electronic Circuits) (Note 4)	4	-	-	-	-	4	-	-	-
SPACE 310 Small Satellite Design	3	-	-	-	-	-	3	-	-
SPACE 405 Astrophysics Engineering (Note 1)/SPACE 431 Radiowave Propogation (Note 8)	3/4	-	-	-	-	-	-	3/4	-
Sensors/Data/Stats Course/AERO 305 (Note 7)	3/4	-	-	-	-	-	-	-	3/4
SPACE 405, Space Sciences Instrumentation (Note 1 and 6)	3	-	-	-	-	-	3	-	-
SPACE 477, Space Weather Modeling	4	-	-	-	-	-	-	-	4
Technical Electives (10/11 hours)	10/11	-	-	-	-	4	3	3/4	-
General Electives (10 Hours)	12	-	-	-	-	4	3/4	4	-
Total	128	17	17	16	15	16	16/17	15	15/16

Revised: February-18

Candidates for the Bachelor of Science in Engineering in Space Sciences and Engineering must complete the program listed above. This sample schedule is an example of one leading to graduation in eight terms.

Notes:

1. New Course.
2. Students should take one of these courses (each offered every other year).
3. New Course. Student may take either year-long (2 CR each term) SPACE 499 Directed Study as a Senior Thesis option or SPACE 455 Senior Capstone Design.
4. Recommend students minor in another Engineering Discipline. If not, an intro CS, ME, EECS, MATSCI course. CoE Bulletin describing minors: <https://bulletin.engin.umich.edu/ug-ed/engin-minors/>
5. Students need to request waiver to Physics 351 for 405 or take 351 as a Tech Elective.
6. The Instrumentation course is also useful for our PhD students to learn about techniques and is a "theory" course.
7. CEE 575 Sensing for Civil Infrastructure Systems (3 cr) and Data; STATS 412 Introduction to Probability and Statistics (3 cr) or AERO 305 Aero Engineering Lab 1 (4 cr). If AERO 305 is taken reduce Unrestricted Elective from 12 to 11 credits. Have discussed AERO 305 option with instructor.
8. SPACE 405 and 431 are Every-other-year courses. If 431 is taken, reduce Tech Elective requirement from 11 to 10 credits