B.S. in Computer Science and B.S. in Applied Physics

(134 credits)

First Year		
1st Semester		**Credits**
CS 100	Roadmap to Computing	3
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
MATH 111	Calculus I	4
ENGL 101	English Composition: Introduction to Academic Writing	3
CHEM 125	General Chemistry I	3
CHEM 125A	General Chemistry Lab I	1
FYS SEM	First-Year Student Seminar	0
	Term Credits	**18**
2nd Semester		
CS 113	Introduction to Computer Science I	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
MATH 112	Calculus II	4
CHEM 126	General Chemistry II	3
CHEM 126A	Gen Chemistry Lab II	1
	Term Credits	**15**
Second Year		
1st Semester		
CS 114	Introduction to Computer Science II	3
MATH 211	Calculus III A	3
PHYS 234	Physics III	3
PHYS 231A	Physics III Lab	1
MATH 333	Probability and Statistics	3
ENGL 102	English Composition: Introduction to Writing for Research	3
	Term Credits	**16**
2nd Semester		
CS 280	Programming Language Concepts	3
MATH 222	Differential Equations	4
MATH 335 or MATH 328	Vector Analysis or Mathematical Methods for Scientists and Engineers	3
PHYS 335	Introductory Thermodynamics	3
CS 241	Foundations of Computer Science I	3
	Term Credits	**16**
Third Year		
1st Semester		
CS 288	Intensive Programming in Linux	3
CS 301	Introduction to Data Science	3
OPSE 310	Virtual Instrumentation	3
PHYS 430	Classical Mechanics I	3
PHYS 432	Electromagnetism I	3
	Term Credits	**15**
2nd Semester		
CS 331	Database System Design & Mgmt	3

CS 341	Foundations of Computer Science II	3
Physics 300/400 Elective		3
CS 350	Intro to Computer Systems	3
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
	Term Credits	**15**
Fourth Year		
1st Semester		
CS 435	Advanced Data Structures and Algorithm Design	3
CS 356	Introduction to Computer Networks	3
CS 490	Guided Design in Software Engineering	3
PHYS 442 or R750 404	Introduction to Quantum Mechanics or Quantum Mechanics	3
CS 332	Principles of Operating Systems	3
	Term Credits	**15**
2nd Semester		
PHYS 485	Computer Modeling of Applied Physics Problems	3
CS 351	Introduction to Cybersecurity	3
IS 350	Computers, Society and Ethics	3
COM 312 or COM 313	Oral Presentations or Technical Writing	3
	Term Credits	**12**
Fifth Year		
1st Semester		
CS 491 or PHYS 490	Senior Project or Independent Study	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
Social Sciences GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**12**
	Total Credits	**134**