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

(135 credits)

First Year		
1st Semester		**Term Credits**
CS 100	Roadmap to Computing	3
PHYS 111	Physics I	3
PHYS 111A	Physics I Laboratory	1
MATH 111	Calculus I	4
HUM 101	English Composition: Writing, Speaking, Thinking I	3
CHEM 125	General Chemistry I	3
FRSH SEM	Freshman Seminar	0
	Term Credits	**17**
2nd Semester		
CS 113	Introduction to Computer Science	3
PHYS 114	Introduction to Data Reduction with Applications	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Laboratory	1
MATH 112	Calculus II	4
CHEM 126	General Chemistry II	3
CHEM 124	General Chemistry Laboratory	1
	Term Credits	**18**
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 Laboratory	1
Social Science (lower-level):GUR		3
HUM 102	English Composition: Writing, Speaking, Thinking II	3
Physical Education Elective		1
	Term Credits	**17**
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
Social Science (lower-level):GUR		3
English Composition and Cultural History (lower-level):GUR		3
	Term Credits	**19**
Third Year		
1st Semester		
CS 252	Computer Organization and Architecture	3
CS 288	Intensive Programming in Linux	3
CS 241	Foundations of Computer Science I	3
MATH 333	Probability and Statistics	3
PHYS 430	Classical Mechanics I	3

PHYS 432	Electromagnetism I	3
	Term Credits	**18**
2nd Semester		
CS 435	Advanced Data Structures and Algorithm Design	3
CS 332	Principles of Operating Systems	3
Physics/OPSE 300/400 Elective		3
OPSE 310	Virtual Instrumentation	3
Management:GUR Elective		3
Physical Education Elective		1
	Term Credits	**16**
Fourth Year		
1st Semester		
CS 341	Foundations of Computer Science II	3
CS 490	Guided Design in Software Engineering	3
CS 431	Database System Design and Management	3
PHYS 442	Introduction to Quantum Mechanics	3
PHYS 485	Computer Modeling of Applied Physics Problems	3
	Term Credits	**15**
2nd Semester		
CS 491 or PHYS 490	Senior Project or Independent Study	3
Humanities and Social Sciences (upper-level):GUR Elective		3
Physics 300/400 Elective		3
IS 350	Computers, Society and Ethics	3
Capstone Seminar Humanities and Social Sciences (upper-level):GUR Elective		3
	Term Credits	**15**
	Total Credits	**135**

Electives

Phys/OPSE

Consult the physics department for information about qualifying courses.

Math/Phys/CS

Consult the physics department for information about qualifying courses.

Math/Phys/EE/CS

Consult the physics department for information about qualifying courses.

Technical

Consult the physics department for information about qualifying courses.

Refer to the **General University Requirements** for further information on GUR electives.

Co-op Courses

Co-op courses bearing degree credit replace a technical elective or another course approved by the faculty advisor in the students major department. In applied physics, both PHYS 311 Co-op Work Experience I and PHYS 411 Co-op Work Experience II are taken for degree Credit with permission.