

# BS in Computer Science and BS in Mathematical Sciences, Computational Mathematics

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(132 credits)

**First Year**

<b>1st Semester</b>		<b>Credits</b>
MATH 111	Calculus I	4
CS 100	Roadmap to Computing	3
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
ENGL 101	English Composition: Introduction to Academic Writing	3
FYS SEM	First-Year Student Seminar	0
<b>Term Credits</b>		<b>14</b>

**2nd Semester**

MATH 112	Calculus II	4
CS 113	Introduction to Computer Science	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
ENGL 102	English Composition: Introduction to Writing for Research	3
<b>Term Credits</b>		<b>14</b>

**Second Year****1st Semester**

MATH 213	Calculus III B	4
MATH 333	Probability and Statistics	3
CS 114	Introduction to Computer Science II	3
History and Humanities GER 200 level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/</a> )		3
Social Sciences GER ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/</a> )		3
<b>Term Credits</b>		<b>16</b>

**2nd Semester**

MATH 222	Differential Equations	4
MATH 337	Linear Algebra	3
CS 241	Foundations of Computer Science I	3
CS 280	Programming Language Concepts	3
CS 301	Introduction to Data Science	3
<b>Term Credits</b>		<b>16</b>

**Third Year****1st Semester**

MATH 340	Applied Numerical Methods	3
MATH 480	Introductory Mathematical Analysis	3
CS 288	Intensive Programming in Linux	3
CS 332	Principles of Operating Systems	3
CS 356	Introduction to Computer Networks	3
<b>Term Credits</b>		<b>15</b>

**2nd Semester**

MATH 331	Introduction to Partial Differential Equations	3
MATH 332	Introduction to Functions of a Complex Variable	3
CS 331	Database System Design & Mgmt	3
CS 341	Foundations of Computer Science II	3

CS 350	Intro to Computer Systems	3
<b>Term Credits</b>		<b>15</b>
<b>Fourth Year</b>		
<b>1st Semester</b>		
MATH 391	Numerical Linear Algebra	3
MATH 450	Methods Of Applied Math	3
CS 435	Advanced Data Structures and Algorithm Design	3
CS 490	Guided Design in Software Engineering	3
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
<b>Term Credits</b>		<b>15</b>
<b>2nd Semester</b>		
MATH 451	Methods Appl Math II	3
MATH 453	High-Performance Numerical Computing	3
CS 351	Introduction to Cybersecurity	3
CS 491	Senior Project	3
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
<b>Term Credits</b>		<b>15</b>
<b>Fifth Year</b>		
<b>1st Semester</b>		
MATH 440 or MATH 448	Advanced Applied Numerical Methods or Stochastic Simulation	3
MATH 300+ Elective		3
IS 350	Computers, Society and Ethics	3
Humanities and Social Science Senior Seminar GER ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/</a> )		3
<b>Term Credits</b>		<b>12</b>
<b>Total Credits</b>		<b>132</b>