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University Catalog 2023-2024

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B.S. in Computer Science  
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[Computer Science](#) »  
B.S. in Computer Science  
(120 credits minimum)

**First Year**

1ST SEMESTER		CREDITS
<a href="#">CS 100</a>	Roadmap to Computing	3
<a href="#">MATH 111</a>	Calculus I	4
<a href="#">ENGL 101</a>	English Composition: Introduction to Academic Writing	3
<a href="#">PHYS 111</a>	Physics I	3
<a href="#">PHYS 111A</a>	Physics I Lab	1
<a href="#">FYS SEM</a>	First-Year Student Seminar	0
<b>Term Credits</b>		<b>14</b>

**2ND SEMESTER**

<a href="#">CS 113</a>	Introduction to Computer Science	3
<a href="#">MATH 112</a>	Calculus II	4
<a href="#">ENGL 102</a>	English Composition: Introduction to Writing for Research	3
<a href="#">PHYS 121</a>	Physics II	3
<a href="#">PHYS 121A</a>	Physics II Lab	1

<b>Term Credits</b>		<b>14</b>
<b>Second Year</b>		
<b>1ST SEMESTER</b>		
<a href="#">CS 114</a>	Introduction to Computer Science II	3
CS/IS/IT Elective 200 or above <sup>1</sup>		3
<a href="#">MATH 333</a>	Probability and Statistics	3
<a href="#">Science Elective</a>		3
<a href="#">History and Humanities GER 200 level</a>		3
<b>Term Credits</b>		<b>15</b>
<b>2ND SEMESTER</b>		
<a href="#">CS 241</a>	Foundations of Computer Science I	3
<a href="#">CS 280</a>	Programming Language Concepts	3
<a href="#">IS 350</a>	Computers, Society and Ethics	3
<a href="#">COM 312</a> or <a href="#">COM 313</a>	Oral Presentations or Technical Writing	3
Free Elective <sup>2</sup>		3
<a href="#">YWCC 207</a>	Computing & Effective Com	1
<b>Term Credits</b>		<b>16</b>
<b>Third Year</b>		
<b>1ST SEMESTER</b>		
<a href="#">CS 288</a>	Intensive Programming in Linux	3
<a href="#">CS 332</a>	Principles of Operating Systems	3
<a href="#">Social Sciences GER</a>		3
<a href="#">CS 301</a>	Introduction to Data Science	3
<a href="#">CS 356</a>	Introduction to Computer Networks	3
<b>Term Credits</b>		<b>15</b>
<b>2ND SEMESTER</b>		
<a href="#">CS 331</a>	Database System Design & Mgmt	3
<a href="#">YWCC 307</a>	Professional Dev in Computing	1
CS Elective 300 or above		3
<a href="#">CS 341</a>	Foundations of Computer Science II	3
<a href="#">CS 350</a>	Intro to Computer Systems	3
<a href="#">CS 351</a>	Introduction to Cybersecurity	3
<b>Term Credits</b>		<b>16</b>
<b>Fourth Year</b>		
<b>1ST SEMESTER</b>		
<a href="#">CS 435</a>	Advanced Data Structures and Algorithm Design	3
<a href="#">CS 490</a>	Guided Design in Software Engineering	3
<a href="#">History and Humanities GER 300+ level</a>		3
Math or Science Elective <sup>3</sup>		3
CS Elective 300 or above		3

**Term Credits****15****2ND SEMESTER**

<a href="#">CS 491</a>	Senior Project	3
<a href="#">Humanities and Social Science Senior Seminar GER</a>		3
CS Elective 300 or above		3
Free Elective <sup>2</sup>		3
CS/IS/IT Elective 200 or above <sup>1</sup>		3

**Term Credits****15****Total Credits****120**

- <sup>1</sup> CS/IS/IT Elective: Two 3-credit CS/IS/IT electives (200-level or above).
- <sup>2</sup> Free Elective: Two courses any level. Please consult your advisor for appropriate free electives.
- <sup>3</sup> Math or Science Elective:  
If you took [MATH 244](#) Introduction to Probability Theory you must take [MATH 341](#) Statistical Methods II.  
If you took [MATH 333](#) Probability and Statistics you may take any of the following:  
[CS 337](#) Performance Modeling in Computing,  
[MATH 211](#) Calculus III A  
[MATH 213](#) Calculus III B,  
[MATH 222](#) Differential Equations  
or any Math 300/400 level except [MATH 305](#) Statistics for Technology.
- <sup>4</sup> The following cannot count as elective courses:  
[MATH 107](#) University Mathematics A  
[MATH 108](#) University Mathematics B  
[MATH 110](#) University Mathematics B II - Trigonometry  
[MATH 226](#) Discrete Analysis  
[MATH 326](#) Discrete Analysis for Computer Engineers

**Minimum Grades**

Prerequisite grade requirement for Computer Science majors:

Students are expected to earn a grade of B or better in CS 100. Students are expected to earn a grade of C or better in all CS courses that serve as prerequisites in a sequence of courses

**Co-op**

A GPA of 2.7 is required to enroll in co-op. Students may use up to 6 credits of co-op toward their free elective requirements.

See the [General Education Requirements](#) "Refer to the General Education Requirements for specific information for GER courses"

*This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits. First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.*

[New Jersey Institute of Technology](#)

University Heights Newark, New Jersey 07102

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