B.A. in Computing and Informatics

Academic Program Guide for New First-Year Students (Effective Fall 2018)
Department of Computer Science (computerscience@rowan.edu)

Students who entered Rowan University prior to Fall 2018 should follow the guide for their program and start year in consultation with their advisor.

Rowan University Graduation Requirements for all Majors / Degrees

- Students must complete at least 120 semester hours (sh) of coursework that apply to their Rowan University degree.
- Students must have a cumulative GPA of at least 2.0 in Rowan University coursework. (Transfer courses/credit do not count toward the RU GPA.)
- A minimum of 30 sh of coursework must be completed at/through Rowan University.
- Only grades of “D-” or above may apply to graduation/degree requirements. (Some programs may set higher minimums.)
- Students must meet the Rowan Core and Rowan Experience Requirements.

  - An individual course can potentially satisfy one Rowan Core literacy and/or multiple Rowan Experience attributes.
  - Rowan Core & Rowan Experience designations are listed in course details in Section Tally (www.rowan.edu/registrar) and may also be searched on that site under “Attributes.” A list of Rowan Core courses is here: https://confluence.rowan.edu/display/AS/Rowan+Core+Course+List.
- Students must apply for graduation and should do so for the term in which they will complete all program requirements.

Program-Specific Graduation Requirements for this Major / Degree

- A grade of C- or better in Calculus I, Discrete Structures, Introduction to Object Oriented Programming, Object Oriented Programming/Data Abstraction, Computer Organization, and Data Structures and Algorithms is required for graduation and to take any course that have the above courses as a prerequisite. This policy applies whether these courses are taken locally or transferred.
- Graduate courses may be counted as restricted electives when takes as senior privilege or part of the accelerated BS/MS degree program.

Rowan Core Requirements

Students must satisfy all six Rowan Core Literacies. A minimum total of 3 sh of coursework is required to satisfy each Literacy. With the exception of the 9 sh counted here for Communicative Literacy, credits attached to the courses in this section will apply elsewhere.

- (COML) Communicative Literacy: Must be met by the following three courses or their official equivalents:
  - COMP 01111 College Composition I (3 sh)
  - COMP 01112 College Composition II (3 sh)
  - CMS 04205 Public Speaking (3 sh)
- (ARTL) Artistic Literacy
  - Recommendation from major:
- (GLBL) Global Literacy
  - Recommendation from major:
- (HUML) Humanistic Literacy
  - Recommendation from major: INTR 01266 (3 sh counted under non-program)
- (QNTL) Quantitative Literacy
  - Recommendation from major: STAT 02260; MATH 03125 or 01130 (3 or 4 sh counted under non-program)
- (SCIL) Scientific Literacy
  - Recommendation from major:

Subtotal of credits counted in this section: 9 sh

Rowan Experience Requirements

Students must satisfy all three Rowan Experience attributes. Credits attached to the courses in this section will apply elsewhere.

- (LIT) Broad-Based Literature Attribute
  - Recommendation from major:
- (WI) Writing Intensive Attribute
  - Recommendation from major: INTR 01266 (3 sh counted under major)
- (RS) Rowan Seminar Attribute
  - Recommendation from major:

Non-Program Courses (minimum 18 sh)

Courses in this section cannot be in the major department.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Attributes / Notes</th>
<th>Sem/Yr</th>
<th>Grade</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 02260, MATH 03125 or MATH 01130</td>
<td>Statistics I, Calculus: Techniques &amp; Applications or Calculus I</td>
<td>Satisfies Quantitative Literacy</td>
<td>3, 3 or 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTR 01266</td>
<td>Computers and Society (WI)</td>
<td>Satisfies Humanistic Literacy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotal: 18 sh

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1 The Rowan Core requirements are waived for transfer students with an earned A.A. or A.S. degree from a NJ community/county college.
2 The Rowan Seminar requirement is waived for all students transferring 24 or more approved credits into Rowan University at the time of initial entry.
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Major Requirements (42 sh)

**SUMMARY OF MAJOR REQUIREMENTS**
- 21 sh of Foundational Courses
- 9 sh of Upper-Level and Capstone Courses
- 12 sh of Computing and Informatics Restricted Electives
- 42 sh total

**FOUNDATIONAL COURSES**

<table>
<thead>
<tr>
<th>Course #</th>
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</thead>
<tbody>
<tr>
<td>CS 00100</td>
<td>Computer Science Learning Community</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHIL 09130, MATH 03160 or MATH 03150</td>
<td>Introduction to Symbolic Logic, Discrete Structures or Discrete Math</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 01104, CS 04171 or CS 04110</td>
<td>Introduction to Scientific Programming, Creating Android Apps or Introduction to Programming Using Robots</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 04103</td>
<td>Computer Science and Programming</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 04210</td>
<td>Advanced Programming Workshop</td>
<td>2 sections of course must be taken with different topics (e.g., Ruby, C#)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 04225</td>
<td>Principles of Data Structures</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 01210</td>
<td>Intro to Computer Networks &amp; Data Communication</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotal: 21 sh

**UPPER-LEVEL AND CAPSTONE COURSES**

<table>
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<tr>
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<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MIS 02334 / CS 10334</td>
<td>Applied Database Technologies</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 10310</td>
<td>Introduction to Web Development</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 10430</td>
<td>Computing &amp; Informatics Capstone Experience</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subtotal: 9 sh

**COMPUTING AND INFORMATICS RESTRICTED ELECTIVES**

Choose 12 credits from the courses below.

- BINF 07250 Intro to Bioinformatics
- CS 01205 Computer Laboratory Techniques
- CS 01211 Principles of Information Security
- CS 01295 Special Topics in Computer Science
- CS 01395 Topics in Computer Science
- CS 04350 Blockchain Programming
- CS 10250 Cryptography and Blockchain Essentials
- CS 10271 Introduction to Android Programming
- CS 04372 Advanced Android Programming
- CS 10275 Introduction to iOS Programming
- CS 04376 Advanced iOS Programming
- CS 04471 Topics in Mobile Programming
- CS 07252 Foundations of Computer Forensics
- CS 07370 Introduction to Information Visualization
- CS 07430 Human Computer Interaction
- CS 07485 Web and Text Mining
- CS 09300 Computer Field Experience
- CS 09310 Advanced Learning Assistant Exp. in CS
- CS 10200 Fundamentals of Network Security
- CS 10215 Penetration Testing Fundamentals
- CS 99310 Advanced Learning Assistant Exp. in CS

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<tbody>
<tr>
<td>CS 10218</td>
<td>Ethical Hacking Fundamentals</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 10340</td>
<td>Systems Administration</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>CS 10342</td>
<td>Web Server Platforms</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>CS 10344</td>
<td>Concepts of Computing Technologies</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 16160</td>
<td>Intro to Mapping/Geographic Info Science</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 16260</td>
<td>Geographic Info Science I</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 16261</td>
<td>Cartography</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIS 02336</td>
<td>Advanced Database Management</td>
<td>only available to MIS double majors</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>MIS 02325</td>
<td>Project Management</td>
<td></td>
<td>3</td>
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</tbody>
</table>

Subtotal: 12 sh

### Free Electives for this Major/Degree (51 sh)

**Students should choose Free Electives that satisfy any Rowan Core or Rowan Experience requirements that are not fulfilled by Major or Non-Program courses.**

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Subtotal: 51 sh

### Total Program Credits Required for this Major / Degree: 120 SH

### Computing and Informatics Concentrations

If you declare a Concentration and choose the correct restricted electives from the list below, that designation will appear on your transcript.

Specific guidelines for these optional Concentrations can be found here: [https://academics.rowan.edu/ssm/departments/cs/advising/ba_ci/concentrations.html](https://academics.rowan.edu/ssm/departments/cs/advising/ba_ci/concentrations.html)

The following Concentrations are available for the Computing and Informatics major:

- Blockchain Technologies and Cryptocurrencies (C716)
- Cybersecurity (C705)
- Dev Ops (C713)
- Mobile Devices (C712)
- Cybersecurity Defense (C714) - only available to those students pursuing both a C&I major with a CS minor