# 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.
- o 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 (<u>www.rowan.edu/registrar</u>) and may also be searched on that site under "Attributes." A list of Rowan Core courses is here: <u>https://confluence.rowan.edu/display/AS/Rowan+Core+Course+List.</u>
- 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<sup>1</sup>

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:

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	OCOMP 01111 College Comp	sition I (3 sh) OCOMP 01112 College Composition II (3 sh) OCMS 04205 Public Speaking (3 sh)					
$\bigcirc$	(ARTL) Artistic Literacy	Recommendation from major:					
$\bigcirc$	(GLBL) Global Literacy	Recommendation from major:					
$\bigcirc$	(HUML) Humanistic Literacy	Recommendation from major: INTR 01266 (3 sh counted under non-program)					
$\bigcirc$	(QNTL) Quantitative Literacy	Recommendation from major: STAT 02260; MATH 03125 or 01130 (3 or 4 sh counted under non-program)					
$\bigcirc$	(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:
  - Recommendation from major: INTR 01266 (3 sh counted under major)
- ) (WI) Writing Intensive Attribute ) (RS) Rowan Seminar Attribute<sup>2</sup>
- Recommendation from major:

## Non-Program Courses (minimum 18 sh)

courses in this section cannot be in the major department.							
Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits		
STAT 02260,	Statistics I,				3,		
MATH 03125 or	Calculus: Techniques & Applications or	Satisfies Quantitative Literacy			3 or		
MATH 01130	Calculus I				4		
INTR 01266	Computers and Society (WI)	Satisfies Humanistic Literacy			3		
					l: 18 sh		

<sup>&</sup>lt;sup>1</sup> The Rowan Core requirements are waived for transfer students with an earned A.A. or A.S. degree from a NJ community/county college.

<sup>&</sup>lt;sup>2</sup> 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

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
CS 00100	Computer Science Learning Community	Not required for transfer students			1
PHIL 09130,	Introduction to Symbolic Logic,				
MATH 03160 or	Discrete Structures or				3
MATH 03150	Discrete Math				
CS 01104,	Introduction to Scientific Programming,				
CS 04171 or	Creating Android Apps or				3
CS 04110	Introduction to Programming Using Robots				
CS 04103	Computer Science and Programming				4
CS 04210	Advanced Programming Workshop	prereq CS 04103 or CS 04113;			2
CE 04210	Advanced Programming Workshop	2 sections of course must be taken			2
CS 04210		with different topics (e.g., Ruby, C#)			Z
CS 04225	Principles of Data Structures	prereq CS04103			3
CS 01210	Intro to Computer Networks & Data Communication				3
				C 1.1.1	.1.24.1

Subtotal: 21 sh

#### UPPER-LEVEL AND CAPSTONE COURSES

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
MIS 02334 / CS 10334	Applied Database Technologies	prereq Junior standing			3
CS 10310	Introduction to Web Development	prereq (CS 04210 or CS 04114) & (MIS 02334 or CS 10334 or CS 04430) & (CS 04225 or CS 04222)			3
CS 10430	Computing & Informatics Capstone Experience	prereq CS 10310 and CMS 04205			3
			Subto	tal: 9 sh	

#### COMPUTING AND INFORMATICS RESTRICTED ELECTIVES

Choose 12 credits from the courses below.

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
$\bigcirc$	BINF 07250	Intro to Bioinformatics	prereq CHEM 06101 & BIOL 01106 & CS 04103			3
$\bigcirc$	CS 01205	Computer Laboratory Techniques	prereq CS 04113 or CS 04103			3
$\bigcirc$	CS 01211	Principles of Information Security				3
$\bigcirc$	CS 01295	Special Topics in Computer Science	multiple sections of this course with different			3
$\bigcirc$	C3 01295	Special Topics III computer science	topics can be taken.			3
$\bigcirc$	CS 01395	Topics in Computer Science	prereq CS 04222 or CS 04225; multiple sections			3
$\bigcirc$	C3 01393		of course with different topics can be taken.			3
$\bigcirc$	CS 04350	Blockchain Programming	prereq (CS 10250 or CS 07350) and (CS 01104 or			з
$\bigcirc$	04330		CS 04113)			5
$\bigcirc$	CS 10250	Cryptography and Blockchain Essentials				3
$\bigcirc$	CS 10271	Introduction to Android Programming	prereq CS 04113 or CS 04171 or			з
$\bigcirc$	0271		CS 04103 or CS 01104 or CS 01102			
$\bigcirc$	CS 04372	Advanced Android Programming	prereq CS 10271 or CS 04222 or CS 04225			3
$\bigcirc$	CS 10275	Introduction to iOS Programming	prereq CS 04113 or CS 04171 or			3
$\bigcirc$	0275		CS 04103 or CS 01104 or CS 01102			
$\bigcirc$	CS 04376	Advanced iOS Programming	prereq CS 10275			3
$\bigcirc$	CS 04471	Topics in Mobile Programming				3
$\bigcirc$	CS 07252	Foundations of Computer Forensics				3
$\bigcirc$	CS 07370	Introduction to Information Visualization	prereq CS 04222 or CS 04225			3
$\bigcirc$	CS 07430	Human Computer Interaction	prereq CS 04222 or CS 04225			3

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Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
) CS 07485	Web and Text Mining	prereq CS 04222 or CS 04225			3
		prereq permission of instructor and (CS 04222			
	Computer Field Experience	or CS 04225). Field experience may be from 3 to			3
		12 credits; however only 3 credits can apply to			5
		the program requirements.			
) CS 99310	Advanced Learning Assistant Exp. in CS	prereq permission of instructor			3
CS 10200	Fundamentals of Network Security	prereq CS 01210			3
CS 10215	Penetration Testing Fundamentals	prereq CS 10200			3
) CS 10218	Ethical Hacking Fundamentals	prereq CS 10215			3
) CS 10340	Systems Administration	prereq CS 01210 and CS 01211			3
) CS 10342	Web Server Platforms	prereq CS 10310			3
CS 10344	Concents of Computing Technologies	prereq (CS 01210 or CS 06410) and			З
5 10344		(CS 01211 or CS 07351)			5
) GEOG 1616	Intro to Mapping/Geographic Info Science				3
) GEOG 1626	60 Geographic Info Science I	prereq GEOG 16160			3
) GEOG 1626	1 Cartography	prereq GEOG 16260			3
	Advanced Database Management	prereq MIS 02338; only available to MIS double			3
J IVIIS 02330		majors			3
MIS 02325	Project Management	prereq 57 or more sh			3
2					al: 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.							
Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits		
				<u> </u>	1 54 1		

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: <u>https://academics.rowan.edu/csm/departments/cs/advising/ba\_ci/concentrations.html</u> The following Concentrations are available for the Computing and Informatics major:

- Blockchain Technologies and Cryptocurrencies (code TBD)
- Cyber Security (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

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