

This model is in effect for all students entering the program after 9/1/2008

Name: \_\_\_\_\_

**PROGRAM GUIDE  
BACHELOR OF SCIENCE IN COMPUTER SCIENCE**

- ◆ All students are required to take a minimum combined total of 42 semester hours of General Education and Rowan Experience courses.  
*(Italics indicate prerequisites)*

GENERAL EDUCATION REQUIREMENTS (choice from Approved Gen Ed Guide)				
Transfer	Rowan	Hegis #	<b>COMMUNICATIONS BANK</b> <i>minimum 6 s.h.</i>	<b>6 S.H.</b>
		COMP01.111	College Composition I	3 s.h.
		COMP01.112	College Composition II ( <i>College Composition I</i> )	3 s.h.
		Hegis #	<b>SCIENCE/MATHEMATICS BANK</b> <i>minimum 7 s.h.</i>	<b>7 S.H.</b>
			Math/Science (choice from Approved S/M General Education Courses)	3 s.h.
			Lab Science (choice from Approved S/M General Education Courses)	4 s.h.
		Hegis #	<b>SOCIAL &amp; BEHAVIORAL SCIENCES BANK</b> <i>minimum 6 s.h.</i>	<b>6 S.H.</b>
			(choice from Approved SBS General Education Courses)	3 s.h.
			(choice from Approved SBS General Education Courses)	3 s.h.
		Hegis #	<b>HISTORY/HUMANITIES/LANGUAGE BANK</b> <i>minimum 6 s.h.</i>	<b>6 S.H.</b>
			(choice from Approved HHL General Education Courses)	3 s.h.
			(choice from Approved HHL General Education Courses)	3 s.h.
		Hegis #	<b>NON-PROGRAM ELECTIVES</b> <i>minimum 6 s.h.</i>	<b>6 S.H.</b>
				3 s.h.
				3 s.h.

ROWAN EXPERIENCE REQUIREMENTS (choose from Approved RE Guide) (Can be taken as a Gen Ed OR within the major requirements.)				
Transfer	Rowan	Hegis #		
		CMS 04205	Public Speaking ( <i>College Composition I and II</i> )	3 s.h.
			Artistic/Creative Experience	3 s.h.
<b>CHECK TO BE SURE THE FOLLOWING REQUIREMENTS ARE COMPLETED</b>				
			Broad Based Literature Course (LIT)	
			Writing Intensive Course (WI) ( <i>College Composition II</i> )	
			Multicultural/Global Course (M/G)	
			Lab Science Course (LAB) (S/M)	
			Computer Competency Exam or Computer Literacy Course	
			Rowan Seminar (RS) – <i>Freshmen Only</i>	

- ◆ **NOTE:** *M/G, LIT, ACE, WI and RS courses, if taken within the major program of study, CAN NOT COUNT towards the minimum total of Gen Ed 42 credits.*
- ◆ This information has been provided by the department listed above as of the date listed below and is subject to change.
- ◆ To declare this major go to the CAP Center in Savitz Hall.
- ◆ **Students should consult with their program advisor for suggested General Education and Rowan Experience courses.**

# Bachelor of Science in Computer Science

## Program Requirements

69 s.h.

Course #	COURSE NAME	S.H.	PREREQUISITES
MATH03.160	Discrete Structures	3 s.h	MATH 01.122 or MATH 01.130
MATH01.130	Calculus I	4 s.h	MATH 01.122 or equivalent experience
MATH01.131	Calculus II	4 s.h	MATH 01.130
MATH01.210	Linear Algebra	3 s.h	MATH 01.131 and MATH 03.160
STAT02.290	Probability and Statistical Inference for Computing Systems	3 s.h	MATH 01.131, MATH 03.160, and (CS 04.113 or CS 04.112) each with a grade of C- or better.
CS04.113	Introduction to Object-Oriented Programming	4 s.h	MATH 01.122 or MATH 01.123 or MATH 01.131
CS04.114	Object-Oriented Programming and Data Abstraction	4 s.h	CS 04.113 or (CS 04.103 and CS 04.112)
CS04.222	Data Structures and Algorithms	4 s.h	CS 04.114 (C- or better) and MATH 03.160
CS06.205	Computer Organization	3 s.h	(CS 04.113 and MATH 03.160) or (CS 04.103 and MATH 03.160)
CS07.210	Foundations of Computer Science	3 s.h	C- or better in MATH 01.130, and any one of the following: CS 01.102, CS 04.103, CS 01.104, CS 04.113
CS07.321	Software Engineering I	3 s.h	CS 04.222 or CS 04.225 and (COMP 01.112 or ENGR 01.201) and (CMS 06.202 or ENGR 01.202)
CS04.315	Programming Languages		CS 04.222 and CS 06.205
CS06.310	Principles of Digital Computers	3 s.h	CS 06.205 Co-requisite: CS 06.311
CS06.311	Digital Computer Laboratory	1 s.h	CS 06.205 Co-requisite: CS 06.310
CS07.340	Design and Analysis of Algorithms	3 s.h	CS 04.222 and CS 07.210
CS04.390	Operating Systems	3 s.h	CS 04.222 and CS 06.205
CS04.400	Senior Project	3 s.h	CS 04.315 and CS 07.340
<b>The following can be used as a Gen Ed Social &amp; Behavioral requirement</b>			
INTR01.265 OR INTR01.266	Computers and Society OR Computers and Society (WI)		CMS 06.202
<b>The following can be used as a Gen Ed Math/Science requirement</b>			
<b>Lab Science Elective: Choose a two-semester sequence and a third course from the following list:</b>			
BIOL01.104	Biology I	4 s.h	
BIOL01.106	Biology II	4 s.h	
PHYS02.200	Introductory Mechanics	4 s.h	
PHYS02.201	Introductory Electricity and Magnetism	4 s.h	
CHEM06.100	Chemistry I	4 s.h	
CHEM06.101	Chemistry II	4 s.h	
BIOL 01.100,101	Biology I, II	4 s.h	Transfers Only

## Restricted Electives

12 s.h.

CS01.395	Topics in Computer Science		permission of instructor
CS04.305	Web Programming		CS 01.205 and CS 04.222
CS04.327	Power Java		CS 04.222
CS04.380	Object Oriented Design		CS 07.340
CS04.391	Concurrent Programming		CS 04.390

CS04.392	System Programming and Operating System Internals		CS 04. 390 and CS 01.205
CS04.394	Distributed Systems		(CS 06.205 and CS 04.222) or (ECE 09.242 and CS 04.255)
CS04.401	Compiler Design		CS 07.210 and CS 04.315
CS04.430	Database Systems: Theory and Programming		CS 07.340
CS06.410	Data Communications and Networking		CS 07.340 and STAT 02.360
CS06.412	Advanced Computer Architecture		CS 06.310
CS06.415	Wireless Networks, Protocols and Applications		CS 06.410
CS06.416	TCP/IP and Internet Protocols and Technologies		CS 06.410
CS06.420	Embedded Systems Programming		(CS 04.390 and CS 06.310 and CS 06.311) or (CS 04.390 and ECE 09.241 and ECE 09.242)
CS07.310	Robotics		CS 04.113 and CS 04.222 and Math 01. 210) or (CS 04.103 and CS 04. 225 and ENGR 01.202 and MATH 01.236)
CS07.322	Software Engineering II		CS 07.321
CS07.350	Computer Cryptography		CS 07.210
CS07.360	Introduction to Computer Graphics		(MATH 01. 210 or MATH 01.235) and CS 07.340
CS07.370	Introduction to Information Visualization		MATH 01.210 or MATH 01.236
CS07.380	Introduction to Computer Animation		(MATH 01.210 or MATH 01.236) and PHYS 02.200
CS07.422	Theory of Computing		CS 04.222 and MATH 01.131 and CS 07.210
CS07.450	Artificial Intelligence		MATH 03.160, and CS 04.222 and CS 07.210
CS07.460	Computer Vision		CS 04.103 and MATH 01.210 and STAT 02.360
CS99.300	Computer Field Experience		permission of instructor note: only 3 credits for CFE can be applied towards the restricted electives.

## Free Electives

0-16 s.h.

The student who applies *Calculus I*, the lab science courses, and *Computers and Society* toward the General Education requirement will have 16 s.h. of free electives. These may be any courses offered by Rowan University, or they may be transferred in from another school.

**Total Credits in Program ..... 120 S.H.**

- Note:** 1) A grade of C- or better is required for graduation in
- Calculus I
  - Discrete Structures
  - Introduction to Object Oriented Programming
  - Object Oriented Programming/Data Abstraction
  - Computer Organization
  - Data Structures

This policy applies whether these courses are taken locally or transferred.

- 2) A 2.5 grade point average in the required and restricted elective courses together with College Composition I, whether they are taken locally or transferred, is required for graduation (A = 4; B = 3; C = 2; D = 1; F = 0; "+" = +0.3; "-" = -0.3).