

## COMPUTER SCIENCE (BS) – STEM TRACK

Fall 2009 – Spring 2010

### CONTACT INFORMATION

- Honors College Advisor: Kathleen Alligood (alligood@gmu.edu)
- Department Chair: Hassan Gomaa (hgomaa@gmu.edu)
- Assoc. Chair for Undergraduate Studies: Pearl Wang (pwang@gmu.edu)

Once students begin attending Mason and declare a major they should see both their Honors College and their major department advisor for advising.

### REQUIRED HOURS

- Hours Required in Major:
- Hours Required in Honors: see honors advisor
- This major requires a total of at least 120 credits to graduate, 45 of which must be at the 300-level and above.

### ADVISING SHEET

- Honors College Requirement
- ◆ Department Requirement
- ▲ College Requirement

	Credits
<b>1<sup>st</sup> Year – 1<sup>st</sup> Semester (Fall)</b>	
○ HNRS 110: Introduction to Research (grade C or better required)	4
○ MATH 113: Calculus I (designated placement score required) <sup>9</sup>	4
◆ CS 112 : Introduction to Computer Programming <sup>1</sup>	4
◆ CS 101: Preview of Computer Science	2
Semester Total	14
<b>1<sup>st</sup> Year – 2<sup>nd</sup> Semester (Spring)</b>	
○ HNRS 122: Reading the Arts	3
◆ MATH 125: Discrete Mathematics <sup>3</sup>	3
◆ MATH 114: Calculus II (prerequisite: C or better in MATH 113) or MATH 116: Honors Calculus II <sup>2</sup>	4
◆ CS 211H: Object Oriented Programming <sup>2</sup>	3
◆ CS 105: Computer Ethics and Society	1
Semester Total	14
<b>2<sup>nd</sup> Year – 1<sup>st</sup> Semester (Fall)</b>	
○ HNRS 131: Contemporary Society in Multiple Perspectives	3
○ HNRS 227 or Natural Science Sequence <sup>2, 4</sup>	4
◆ CS 310: Data Structures	3
◆ MATH 213: Calculus III or MATH 215: Honors Calculus III	3
◆ CS 262: Intro Low-level Programming (Prereq: CS 211)	1
Semester Total	14
<b>2<sup>nd</sup> Year – 2<sup>nd</sup> Semester (Spring)</b>	
○ HNRS 353: Technology in the Contemporary World (Grade of C or better required)	3

○ HNRS 228 or Natural Science Sequence <sup>2, 4</sup>	4
◆ ECE 301: Digital Electronics	3
◆ CS 421: Software Requirements and Design Modeling	3
◆ Department-approved Elective <sup>7</sup>	3
Semester Total	16
<b>3<sup>rd</sup> Year – 1<sup>st</sup> Semester (Fall)</b>	
○ HNRS 240: Reading the Past	3
◆ MATH 203: Linear Algebra	3
◆ Natural Science (see approved list in Department section of Catalog) <sup>2, 4</sup>	4
◆ CS 330: Formal Methods and Models	3
◆ CS 367: Computer Systems and Programming	3
Semester Total	16
<b>3<sup>rd</sup> Year – 2<sup>nd</sup> Semester (Spring)</b>	
◆ CS 465: Computer Systems Architecture	3
◆ STAT 344: Probability and Statistics for Engineers and Scientists	3
◆ CS 483: Analysis of Algorithms	3
◆ Department-approved Elective <sup>7</sup>	3
◆ CS-related Elective <sup>8</sup>	3
Semester Total	15
<b>4<sup>th</sup> Year – 1<sup>st</sup> Semester (Fall)</b>	
◆ OR 481 [or MATH 446]: Numerical Methods in Engineering [or Numerical Analysis I]	3
◆ CS Senior (see list below) <sup>5</sup>	6
◆ CS-related Elective <sup>8</sup>	3
◆ Department-approved Elective <sup>7</sup>	3
Semester Total	15
<b>4<sup>th</sup> Year – 2<sup>nd</sup> Semester (Spring)</b>	
◆ CS Senior (see list below) <sup>5</sup>	6
◆ Department-approved Elective <sup>7</sup>	3
◆ CS 306 (CS Synthesis Requirement)	3
◆ Elective	4
Semester Total	16
Total Hours	120 <sup>6</sup>

## NOTES

1. Students who take CS A AP Exam and score a 3 or better will receive credit for CS 112; students who take the CS AB Exam and score a 3 will receive credit for CS 112; and students who score a 4 or 5 will receive credit for CS 122 and CS 211. Students who take the Computing Studies HL IB Exam and score a 4, 5, 6, or 7 will receive credit for CS 112 and CS 211.

2. To complete the STEM Track, students must take two (2) of the following eleven courses:
  - BIOL 213H
  - BIOL 303H
  - ECON 103H
  - CHEM 211H
  - CHEM 212H
  - CS 211H
  - MATH 116
  - MATH 215
  - PHYS 160H
  - PHYS 260H
  - PHYS 262H
3. MATH 125 is a prerequisite of CCS 330
4. CS majors need 12 hours of Natural Science: 8 credits chosen from the two course lab sequences listed in the catalog for CS majors, plus HNRS 228. (Or HNRS 227, HNRS 228, plus another 4 credit lab science chosen from the catalog list for CS majors.)
5. CS Senior List: CS 440, 450, 451, 455, 468, 471, 475, 480, 482, 484, and 499. CS majors must take 4 courses from this list.
6. A grade of C or better is required in all CS, ECE, and ENGR courses.
7. College (VS) and CS requirements include 27 credit hours of department-approved liberal arts and social science electives.
8. CS majors need 6 hours of computer science related electives (as listed in the catalog for CS majors).
9. MATH 113 requires a placement exam. See the Math department for exam days and times.