

## COMPUTER SCIENCE BS – STEM TRACK

Fall 2008 – Spring 2009

### CONTACT INFORMATION

- Honors Program Advisor: Kathleen Alligood (alligood@gmu.edu)
- Department Chair: Hassan Gomma (hgomma@gmu.edu)
- Department Undergraduate Coordinator: Hakan Aydin (haydin@cs.gmu.edu)

### REQUIRED HOURS

- Hours Required in Major: 47
- Hours Required in Honors: see honors advisor
- This major requires a total of 120 credits to graduate, 45 of which must be at the 300-level and above.

### ADVISING SHEET

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

1 <sup>st</sup> Year – 1 <sup>st</sup> Semester (Fall)	Credits
○ HNRS 110: Introduction to Research (grade C or better required)	4
○ MATH 113: Analytic Geometry and Calculus I (designated placement score required)	4
◆ CS 112: Introduction to Computer Programming <sup>1</sup>	4
◆ CS 101: Preview of Computer Science	2
Semester Total	14
1 <sup>st</sup> Year – 2 <sup>nd</sup> Semester (Spring)	
○ HNRS 122: Reading the Arts	3
◆ MATH 125: Discrete Mathematics <sup>3</sup>	3
◆ MATH 114 or 114H: Analytic Geometry and Calculus II (prerequisite: C or better in MATH 113) or MATH 116: Honors Analytic Geometry and Calculus II	4
◆ CS 211 or 211H: Object Oriented Programming <sup>2</sup>	3
◆ CS 105: Computer Ethics and Society	1
Semester Total	14
2 <sup>nd</sup> Year – 1 <sup>st</sup> Semester (Fall)	
○ HNRS 131: Contemporary Society in Multiple Perspectives	3
○ HNRS 240: Reading the Past	3
◆ CS 310: Data Structures	3
◆ MATH 213: Analytic Geometry and Calculus III or MATH 215	3
◆ HNRS 227 or Natural Science Sequence I <sup>2,4</sup>	4
Semester Total	16
2 <sup>nd</sup> Year – 2 <sup>nd</sup> Semester (Spring)	
○ HNRS 353: Technology in the Contemporary World (Grade of C or better required)	3
◆ ECE 303: Digital Design/Intro Assembly Language	4

◆ CS 330: Formal Methods and Models	3
◆ HNRS 228 or Natural Science Sequence <sup>2, 4</sup>	4
Semester Total	14
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3 <sup>rd</sup> Year – 1 <sup>st</sup> Semester (Fall)	
◆ MATH 203: Matrix Algebra	3
◆ Natural Science (see approved list in Department section of Catalog) <sup>4</sup>	4
◆ CS 421: Software Requirements and design Modeling	3
◆ CS 367: Computer Systems and Programming	3
◆ Department-approved elective <sup>7</sup>	3
Semester Total	16
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3 <sup>rd</sup> Year – 2 <sup>nd</sup> Semester (Spring)	
◆ CS 365: Computer Systems Architecture	3
◆ STAT 344: Probability and Statistics for Engineers and Scientists I	3
◆ CS 483: Analysis of Algorithms	3
◆ Department-approved elective <sup>7</sup>	3
◆ CS related elective	3
Semester Total	15
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4 <sup>th</sup> Year – 1 <sup>st</sup> Semester (Fall)	
◆ OR 481: Numerical Methods in Engineering	3
◆ CS Senior (see list below) <sup>5</sup>	6
◆ CS related elective	3
◆ Department-approved elective <sup>7</sup>	3
Semester Total	15
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4 <sup>th</sup> Year – 2 <sup>nd</sup> Semester (Spring)	
◆ CS Senior (see list below) <sup>5</sup>	6
◆ Elective	7
◆ CS 306: Synthesis of Ethics and Law for the Computing Professional (CS Synthesis Requirement)	3
Semester Total	16
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Total Hours	120

## NOTES

- 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.
- To complete the STEM Track, students must take two (2) of the following courses:
  - BIOL 213H
  - ECON 103H
  - CHEM 211H
  - CHEM 212H

- CS 211H
  - MATH 116
  - PHYS 160H
  - PHYS 260H
3. MATH 125 is a prerequisite of CCS 330
  4. CS majors need 12 hours of Natural Science: HNRS 227 & 228 + 4 additional credits or another natural science sequence intended for scientists and engineers (ASTR 111/112, BIOL 103, CHEM 103, GEOL 101, PHYS 103 or 243/244 will NOT substitute for HNRS 227).
  5. CS Senior List: CS 440, 450, 451, 455, 471, 475, 480, and 490
  6. A grade of C or better is required in all CS, ECE, and ENGR courses.
  7. College requirements (VS) include 24 credit hours of department-approved liberal arts and social science electives.