

## BS Computer Science – Secondary Education Concentration (Effective Fall 2011)

*This is an unofficial description of degree requirements. For official audit see the Registrar's website.*

The Secondary Education concentration prepares a student for teaching computer science in the secondary education system. It does include one semester of full-time directed teaching experience.

### Computer Science Core: Credits

CS1000: Explorations in Computing 1

CS1121: Introduction to Programming I and CS1122: Introduction to Programming II	5/6
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**OR**

CS1131: Accelerated Introduction to Programming	
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CS1141: C for Java Programmers	2
CS2311: Discrete Structures	3
CS2321: Data Structures	3
CS3000: Ethical and Social Aspects of Computing	2
CS3141: Team Software Project	3
CS3311: Formal Models of Computation	3
CS3411: Systems Programming	3
CS3421: Computer Organization	4
CS3451: Network Administration	4
CS4121: Programming Languages	3
CS4321: Introduction to Algorithms	3
CS4xxx: (may be satisfied by CS4099)	3/4
Technical Electives: (credits for the Technical Electives and CS4xxx must total 8+ credits)	4-5

Technical Elective choices are found on the CS Advising web page.
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**Computer Science Subtotal:** 58+

### Mathematics Core:

MA1135/1160/1161: Calculus for Life Sciences/Calculus with Technology I 4/5

MA2720: Statistical Methods 4

**Mathematics Subtotal:** 8+

**HU3120:** Technical and Scientific Communication 3

**Lab Science Courses:** (see STEM list for options) 8+

*Note: Both lab and lecture components of a science are required for the science to count toward this requirement.*

**Education Core:**

CS 4750/ED4750: Teaching Methods in Computer Science (**)	3
ED3100: Instructional Technology	2
ED3210: Foundations in Education (*)	2
ED3410: Clinical Experience (*)	1
ED4700: Fundamentals of Instruction (**)	3
ED4910: Directed Teaching (***)	12
<i>In the course list above, those courses with matching asterisks must be taken concurrently.</i>	
ED4150/HU4150: Literacy in the Content Areas	4

*Note: For the Michigan Teaching Certification you must also complete a secondary teaching certification minor. Additional credits depend on the teaching minor chosen. In addition, you must be certified in First Aid and CPR for children and adults, either by completing EH3985 or Red Cross or American Heart Association Training. Consult Michigan Tech's Department of Cognitive and Learning Sciences for appropriate course selection.*

**General Education Core:**

UN1001: Perspectives	3
UN1002: World Cultures	4
<b>or</b>	
UN1003 (World Cultures Activities) and 2 sequential language courses <i>(one of the two language classes will be used as a HASS elective)</i>	
UN2001: Composition	3
UN2002: Institutions	3

**HASS Requirements:**

SS Elective (SS3510, SS3511, SS3520, SS3530, SS3630, SS3640, SS3800, SS3801, SS3810, or HU3701)	3
ED3110: Psychological Foundations of Learning	3
HASS Elective (3000 or higher)	3
HASS Electives (1000 or higher)	6

Co-curricular Activities: (see Co-curricular list on the Registrar's website) (3 units)

**General Education and HASS subtotal:** 28

**Free Electives:** **Variable**

*Free elective credits are usually fulfilled by the required Secondary Teaching Certification Minor credits. The amount will vary depending on the minor credits*

**Total Credits for graduation:** **124**