

Bachelor of Science (B.S.)  
**Software Engineering**  
 MTH 201 Start

1st Year					
Fall	Winter	Summer			
MTH 201: Calculus 1	4	CIS 163: Computer Science 2	4		
CIS 162: Computer Science 1	4	MTH 225: Discrete Structures: CS	3		
General Education	3	COM 201: Speech	3		
WRT 150: Strategies in Writing	4	General Education	3		
<b>or</b> WRT 120 <u>and</u> WRT 130		General Education	3		
CIS 100: Computing Exploration Seminar	1				
<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>		
2nd Year					
Fall	Winter	Summer			
MTH 325: Discrete Structures: CS 2	3	CIS 263: Data Structures and Algorithms	3		
CIS 241: System Level Program and Utilities	3	MTH/STA Elective	3		
CIS 290: Prof Responsibilities & Practices	3	CIS 350: Intro to Software Engineering	3		
MTH 204: Linear Algebra 1	3	General Education	3		
STA 215: Intro Applied Statistics	3	General Education	3		
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>		
3rd Year					
Fall	Winter	Summer			
CIS 353: Database	3	SE 413: Software Testing	3	CIS 490: Internship	2-5
CIS 352: Operating Systems Essentials	3	SE 422: Software Architecture and Design	3		
Science Elective	4	Science Elective	4		
MTH/STA Elective	3	SE 437: Software Quality Assurance	3		
		General Education	3		
<b>Total</b>	<b>13</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>2-5</b>
4th Year					
Fall	Winter	Summer			
CIS 418: Secure Software Engineering	3	SE 495: SE Capstone Project	3		
SE 430: Software Construction and Delivery	3	SE Track Elective	3		
SE Track Elective	3	SE Track Elective	3		
General Education	3	WRT 350: Business Communication (SWS)	3		
General Education	3	General Education	3		
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>		

- This is a suggested curriculum guide that might not be applicable to every student
- This suggested course sequence is intended as a general guide and may need to be adjusted based on course availability
- Student must have a **minimum of 120 credits** to graduate, with **58 of the 120 credits** being from a senior level institution and **18 of the last 30 credits** completed at GVSU

## General Education Requirements

WRT 150: Strategies in Writing (grade of "C" or higher required) <b>or</b> WRT 120 and WRT 130 (grade of "C" or higher required in both)	Life Sciences
Physical Sciences	Philosophy and Literature
Arts	Mathematical Sciences (MTH 201)
Social Behavioral Sciences (COM 201)	Social Behavioral Sciences
Historical Analysis	U.S. Diversity
Global Perspectives	2 Supplemental Writing Skills Courses (prerequisite: WRT 130 or WRT 150)
Issue Course (prerequisite: must have 55+ credits)	Issue Course (prerequisite: must have 55+ credits)

### Major Notes:

- 1.) MTH/STA Elective: Please select two of the following courses: MTH 202, MTH 205, MTH 465, STA 216, STA 318, STA 323 or STA 418.
- 2.) Science Cognate: Students may choose from BIO 120, BIO 121, BMS 202, CHM 115, CHM 116, GEO 111, PHY 220, PHY 221, PHY 230 and PHY 231.
  - a. The Physical Sciences and Life Sciences categories can be met by careful selection of CS science cognate courses. For example: BIO 120 and GEO 111 will fulfill the Life Sciences and Physical Sciences categories, respectively. Together, they fulfill the CS science cognate requirement.
- 3.) SE Track Electives: Take three classes within one track:
  - a. Track: Mobile and Web Application Development: CIS 357, CIS 263, CIS 371, HCC 304
  - b. Track: Software and System Security: CIS 258, CIS 358, CIS 437, CYB 453, CIS 457, CIS 458, SE 436, CYB 420
  - c. Track: Intelligent Software Systems: AI 201, AI 402, AI 411, AI 431, AI 441, AI 445, AI 451, CIS 464, CIS 378, SE 436
  - d. Track: Human-Centric Software Systems: AI 402, CIS 320, CIS 376, HCC 304
  - e. Track: Cloud and Edge Computing: AI 201, AI 441, CIS 371, CIS 373, CIS 437, CIS 457, CIS 458, SE 431, SE 436
  - f. Track: Game Development and AR/VR: CIS 367, CIS 373, CIS 376, HCC 304
  - g. Track: Project Management: CIS 450, CIS 460, MGT 300, MKT 300
- 4.) CIS 490 can be taken as 2-5 credits. Students will work with the Computing Internship Coordinator to determine the best number of credits for them.
- 5.) It is highly encouraged for students to "double dip" their general education requirements when possible.
  - a. Consider taking a course that fulfills the U.S. Diversity category and one Social and Behavioral Science course.
  - b. Consider taking a course that fulfills the Global Perspectives category and one Issues course.
- 6.) Two Supplemental Writing Skills (SWS) courses are required for graduation. WRT 350 will fulfill one SWS requirement. The remaining SWS requirement can be fulfilled via a general education category.