



# Software Engineering

## Composite Major

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## Major

Software Engineering (SE) is all around us. The IT industry is a diverse field impacting virtually every business—from the service industry and technology companies to manufacturing specialists and health care professionals within large companies and small businesses. VCSU’s Software Engineering, the only major of its kind in the North Dakota University System, prepares students with problem solving skills required to create software solutions to meet the needs of employers. The CSSE Department has joined in Academic Alliances with technology companies such as SAP, Microsoft, and Oracle, using these technologies to complete hands-on projects. Students often work in teams to encourage the learning of group dynamics and soft-skills. Nontraditional IT majors may be interested in Software Engineering because of the inclusion of humanistic issues such as project management, requirements gathering, and human computer interaction. Students with an SE degree can become software engineers, software developers, software architects, IT project managers, business analysts, systems analysts, software developers, cyber security managers and more.

Visit our page at [csse.vcsu.edu](http://csse.vcsu.edu) or watch the video at [www.code.org](http://www.code.org) (<http://www.code.org>). You don’t have to be a genius, you just have to be determined. You could be the next Mark Zuckerberg (creator of Facebook) or Jack Dorsey (creator of Twitter). Let your dream become a reality at Valley City State University!

## Practical Experience

Students are encouraged to work for internship credits while completing their degree in Software Engineering. Companies such as Doosan, Blue Cross Blue Shield of North Dakota, Bobcat, Eide Bailly, Thomson Reuters, Cavendish, John Deere, Microsoft, Appareo Systems, NBC Universal, and Best Buy have welcomed VCSU students in their internship programs. VCSU students develop excellent technology and soft skills and many are hired into full-time positions with these companies after graduation. In addition to internships, cooperative research projects with faculty give students first-hand experience with advanced research techniques. The undergraduate research ranges from Virtual Reality to the Internet of Things. Students also have the opportunity to participate in activities such as company tours, workshops, fairs, and technology conferences.

"I am grateful for the education I received from VCSU and the encouragement I got from faculty, staff, and peers at VCSU. I feel prepared to continue my work in technology at Target, setting my sights on future leadership roles." ~ Tara Cleveland '16, Menahga, MN; Software Engineer

## Plan of Study

### First Year

Fall	Credits	Spring	Credits
Additional Humanities and Social Science (Gen Ed)	2	CSCI 160	3
ENGL 110	3	ENGL 125 (Gen Ed)	3
Lab Science (Gen Ed)	4	HPER 100 (Gen Ed)	2
MATH 103 (Gen Ed)	3	Lab Science (Gen Ed)	4
SE 110	3	Speech Communication (Gen Ed)	3
UNIV 150	1		
	16		15

### Second Year

Fall	Credits	Spring	Credits
CSCI 127	3	CIS 147	3
CSCI 161	3	Directed Elective	3
Literacies (Gen Ed)	3	PSYC 111 (Gen Ed)	3
MATH 208	3	SE 211	3
SE 201	3	SE 212	3
	15		15

### Third Year

Fall	Credits	Spring	Credits
Directed Elective	3	Art and Music (Gen Ed)	3
SE 242	3	ECON 201 (Gen Ed)	3
Directed Elective	3	Elective	3
SE 311	3	SE 321	3
SE 385	3	SE 379	3
	15		15

### Fourth Year

Fall	Credits	Spring	Credits
Directed Elective	3	Directed Elective	3
Elective	3	Directed Elective	3
MATH 321	3	Elective	3
SE 370	3	SE 480	3
SE 380	3	SE 381	3
	15		15

Total Credits 121

Please note: This plan is intended for general information only. Students are strongly encouraged to meet with their academic advisor each semester before registration.