Software Engineering

About this Composite 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 first 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 Salesforce, 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. Software Engineering majors learn to create software from start to finish. They learn to ask questions to understand problems, design software to solve those problems, build and test the software, and implement the solution. Various courses contribute to this learning.

Visit our CSSE Homepage (http://csse.vcsu.edu/). Let your dream become a reality at Valley City State University!

Meet a Graduate

"The CSSE department and VCSU career services really does a phenomenal job in helping a student who wants to be proactive in the career search. I already have a job lined up for after graduation. I give all the credit to my department and career services for helping me achieve this. My vision and career goals are pretty simple after - excel with any assignment I am given and take any opportunity that comes my way." - Connor Aanderud '22, Hillsboro, ND

"When I started the Software Engineering program at VCSU, I did not know anything about programming or management. The SE program taught me how to program while also teaching me how to manage and be managed as a software engineer. With this experience I will eventually be able to become an expert in my field." Benjamin Kietzman '20, Edgeley, ND

www.vcsu.edu - catalog.vcsu.edu - 101 College St SW, Valley City, ND 58072 - 800-532-8641 - 701-845-7202

Career Opportunities

Students with an SE degree can become:

- Software engineers
- Software developers
- Software architects
- IT project managers
- Business analysts
- Systems analysts
- Cyber security managers

Practical Experience

Students are encouraged to complete internship credits and count those credits towards their Software Engineering major. VCSU students have completed successful internships with companies including:

- Doosan
- Blue Cross Blue Shield of North Dakota
- Bobcat
- NASA
- Thomson Reuters
- Cavendish
- John Deere
- Microsoft
- Appareo Systems
- NBC Universal
- North Dakota Information Technology Department.

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 bring together their skills and knowledge in the capstone course where they typically work in a student-led team with stakeholders outside of the classroom to complete a project that is technical in nature.

Contact Information
Department Chair and Faculty Contact

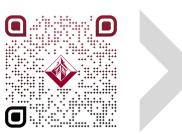Susan Pfeifer, susan.pfeifer@vcsu.edu, (701) 845-7719

Department Location

McFarland Hall 138

Schedule your visit today!

http://visit.vcsu.edu/

(701) 845-7101 or (800) 532-8641

Learn more about studying Software Engineering at Valley City State University

Plan of Study

First Year

Fall	Credits	Spring	Credits
ENGL 110 (Gen Ed)	3	CIS 147	3
Lab Science (Gen Ed)	4	CSCI 160	3
Mathematics (Gen Ed)	3	ENGL 125 (Gen Ed)	3
SE 110	3	Lab Science (Gen Ed)	4
UNIV 150	1	Speech Communication (Gen Ed)	3
	14		**16**

Second Year

Fall	Credits	Spring	Credits
CSCI 161	3	CSCI 127	3
CSCI 289	3	HPER 100 (Gen Ed)	2
MATH 208	3	SE 211	3
SE 201	3	SE 212	3
PSYC 111 (Gen Ed)	3	SE 242	3
		Additional Humanities and Social Science (Gen Ed)	2
	15		**16**

Third Year

Fall	Credits	Spring	Credits
SE 311	3	ECON 201 (Gen Ed)	3
SE 385	3	SE 321	3
COMM 360	3	SE 381	3
Directed Elective	3	Literacies (Gen Ed)	3
Elective	3	Directed Elective	3
	15		**15**

Fourth Year

Fall	Credits	Spring	Credits
SE 370	3	SE 480	3
SE 380	3	MATH 321	3
Art and Music (Gen Ed)	3	Directed Elective	3
Directed Elective	3	Elective	3
Elective	3	Elective	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.

Learning Outcomes

1. Effectively understand requirements, design solutions, and develop software (follow software engineering principles) to successfully implement software for various domains.

2. Think creatively, outside of the box, while designing solutions for unique problems.

3. Communicate effectively with stakeholders during all phases of a project.

4. Manage small, simple projects and work in high-performing teams to complete projects successfully.