Data Analytics and Visualization

About this Composite Major

The Data Analytics and Visualization major prepares students for roles that involve analyzing complex data, extracting insights, and presenting those insights in a clear and compelling way. This interdisciplinary field combines elements of statistics, computer science, business, and design to equip graduates with the skills needed to handle data-intensive tasks in various industries.

Students in the program will develop skills in areas such as data analysis, visualization techniques, statistics and machine learning, programming, critical thinking, and communication. Students will understand how to collect, clean, and interpret data using tools like Python or SQL. They will apply statistics and machine learning to use statistical methods and algorithms to identify trends, make predictions, or optimize processes. They will develop the ability to interpret data in context and draw actionable insights. Finally, they will learn how to present data-driven insights to non-technical audiences effectively.

The Computer Systems and Software Engineering Department has joined in Academic Alliances with technology companies such as SAP, Microsoft, and Salesforce. Students will have the opportunity to work with various tools and languages such as Excel, Tableau, Power BI, SAP S/4HANA, Salesforce, SQL, and Python while completing hands-on projects.

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

Career Opportunities

Career opportunities for graduates can include:

- Data Analyst
- Business Intelligence Analyst
- Visualization Specialist
- Data Scientist
- IT Business Analyst
- Enterprise Architect
- Program Analyst

Industries who may hire graduates in these career fields include:

- Technology
- Healthcare
- Finance
- Marketing and Advertising
- Government
- Education

Practical Experience

Data Analytics and Visualization students will participate in a Capstone course during their senior year. They will join students from Computer Information Systems and Software Engineering majors to work as a team to solve real problems. In addition students have the opportunity to complete undergraduate research with a faculty mentor. They can also complete internships and apply those credits to graduate.

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

Plan of Study

First Year

Fall	Credits	Spring	Credits
ACCT 200	3	CIS 147	3
CIS 170 (Gen Ed)	3	CIS 104	2
ENGL 110 (Gen Ed)	3	CIS 105	2
MATH 210 (Gen Ed)	3	CSCI 120 (Gen Ed)	3
UNIV 150	1	ENGL 120 or 125 (Gen Ed)	3
		HPER 100 (Gen Ed)	2
	13		**15**

Second Year

Fall	Credits	Spring	Credits
ART 115	3	BUSI 336	3
BUSI 214	3	COMM 110 (Gen Ed)	3
CSCI 222	3	MGMT 302	3
CSCI 289	3	Additional Humanities and Social Science (Gen Ed)	2
Lab Science (Gen Ed)	4	Literacies (Gen Ed)	3
	16		**14**

Third Year

Fall	Credits	Spring	Credits
ART 215	3	CIS 329	3

BUSI 350	3	CIS 355	3
CIS 369	3	MATH 321	3
CIS 470	4	SE 381	3
COMM 304	3	Lab Science (Gen Ed)	4
	16		**16**

Fourth Year

Fall	Credits	Spring	Credits
CIS 388	3	SE 480	3
SE 380	3	Art and Music (Gen Ed)	3
SE 385	3	Social Science (Gen Ed)	3
Social Science (Gen Ed)	3	Elective	3
Elective	3	Elective	3
	15		**15**

Total Credits 120

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. Students understand problem requirements, identify technology solutions for those needs, and communicate solutions effectively.
2. Students understand the big picture, how pieces fit together, and how they impact other pieces of the overall system.
3. Students research solutions to solve problems in a self-directed manner.
4. Students manage simple projects and work in high-performing teams to complete projects successfully.