

INFORMATICS | BACHELOR OF SCIENCE IN INFORMATION NETWORKING AND TELECOMMUNICATIONS

Program Summary

Code	Title	Hours
General Education		34
INT Core		18
Concentration Core & Electives		36
Open Electives ¹		32
Total Hours		120

¹ Open electives are the credit hours required to reach a minimum of 120 total hours and 45 upper-level hours. The number listed assumes all courses are completed at FHSU as listed. This number may vary if students transfer courses, or have individual substitutions allowed.

Students should speak with their advisor if either situation applies to determine if the number will vary, and to ensure they enroll in a minimum of 45 upper-level hours.

Students entering within 1 year of high school graduation will take UNIV 101 Freshman Seminar and may apply that hour in the open elective category.

Program Requirements

General Education

All undergraduate degrees require completion of the Kansas Systemwide General Education (<https://catalog.fhsu.edu/general-education/>).

Courses identified with ^{GE} on this page may satisfy a general education requirement in addition to the identified degree requirement. Students who apply a degree requirement to satisfy a general education requirement will typically add an equal number of hours to the the university elective category. This flexibility may allow you to complete a minor or certificate within the 120 hour degree. Transfer students and students majoring in programs with approved exceptions (<https://www.fhsu.edu/general-education/documents/fhsu-gen-ed-transfer-exceptions-explainer1.pdf>) are especially encouraged to select these courses in completing General Education requirements to maximize the likelihood of completing the degree with 120 credit hours.

Code	Title	Hours
General Education		34-35
INT Core		
INF 250	Introduction to Web Development	3
INF 300	Foundations of Informatics	3
INF 405	Research Methods in Informatics	3
INF 430	Technology Innovation and Entrepreneurial Leadership	3
INF 490	Capstone Seminar in Informatics	3

INF 610	Public Policy, Law, Ethics in Telecommunications	3
Total Hours		18

Concentrations

Computer Networking and Telecommunications (Online & On Campus)

Our Computer Networking and Telecommunications graduates are designing the communication networks of tomorrow. They go on to work in engineering, design, support, managerial, sales, consulting, and regulatory positions.

Computer Networking and Telecommunications - FHSU Informatics-HD (<https://vimeo.com/231427719/>) from Tiger Media Network (<https://vimeo.com/user38482753/>) on Vimeo (<https://vimeo.com/>).

This concentration can include courses you need to sit for these certifications:

- Cisco Certified Network Associate (CCNA) (<https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/associate/ccna.html>)
- Cisco Certified Network Professional (CCNP ENCOR) (<https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/professional/ccnp-enterprise.html>)

Our program provides extensive networking expertise and depth. We offer small class sizes and access to faculty. Our laboratory and computing environment is supported by leading companies such as Cisco and VMware. Regardless of where your skills are at when you enter, you'll leave with a competitive resume. Nearly 100 percent of our graduates are placed in their field of study.

The Computer Networking and Telecommunications concentration is offered both on campus and online. Some electives are offered only on campus or online.

Code	Title	Hours
Concentration Requirements: Computer Networking Technology		
INF 291	Internetworking I	3
INF 292	Internetworking II	3
INF 360	Programming with Python	3
INF 393	Internetworking III	3
INF 671	Linux in Networking	3
INF 680	Network Architecture and Data Communications I	3
INF 681	Network Architecture and Data Communications II	3
Emphasis Electives		
Select five of the following: ¹		15
CSCI 121	Computer Science I	
CSCI 221	Computer Science II	
GSCI 240	Introduction to Geographic Information Systems (GIS)	
GSCI 290	Cartography: Theory and Applications	
GSCI 360	Intermediate Geographic Information Systems	
INF 304	Management Information Systems	
INF 305	Windows Server Administration	

INF 360	Programming with Python
INF 472	Readings in Informatics
INF 473	Problems in Informatics
INF 479	Internship in Informatics
INF 603	Big Data Analytics
INF 650	Introduction to Human-Computer Interaction
INF 651	Front End Web Development I
INF 652	Database Design and Programming
INF 653	Back-End Web Development I
INF 654	Mobile Web Development
INF 658	Law of Cyberspace
INF 660	Global Telecommunications Policy
INF 662	Modern Telephony
INF 664	Wireless and Cellular Systems
INF 671	Linux in Networking
INF 672	Advanced Linux in Networking
INF 678	Seminar in Informatics
INF 684	Foundations of Information Systems Security
INF 685	Fundamentals of Network Security
INF 686	Network Security Firewalls
INF 695	Advanced Routing
INF 697	Advanced LAN Switching
MGT 601	Project/Program Management
MIS 602	Information Systems Design and Development

Total Hours 36

¹ Work with your advisor to choose five courses from the below list to meet your goals.

Cybersecurity (Online & On Campus)

The job opportunities in the cybersecurity industry are booming. According to CyberSeek.org (<http://cyberseek.org/>), as of April 2022, there are 714,548 job openings across the United States. This Cybersecurity program allows students to focus on becoming Cybersecurity Analysts, gaining an understanding of how to analyze today's cyber threats and how to react to them.

To accelerate your opportunities and further your career, pursue a Masters of Professional Studies: Cybersecurity (<https://www.fhsu.edu/academic/gradschl/MPS/Cyber-Security/index/>) through the Dept of Informatics.

Code	Title	Hours
Concentration Requirements: Cybersecurity		
INF 291	Internetworking I	3
INF 292	Internetworking II	3
INF 322	Topics in Informatics (Approved Topic)	3
INF 360	Programming with Python	3
INF 671	Linux in Networking	3
INF 686	Network Security Firewalls	3
INF 302	Windows Client Administration	3
or INF 305	Windows Server Administration	

Emphasis Electives

Select 15 credit hours from INF courses ¹	15
Total Hours	36

¹ Work with your advisor to choose courses to meet your goals.

Digital Media Production and Journalism (On Campus only)

In the Digital Media Production and Journalism Concentration students develop converged media skills. Curriculum includes traditional broadcast, but also digital media production to reflect the needs of today's media job market. If you're interested in production, you'll have unique opportunities in animation and motion picture production and can begin studio work as a freshman.

Our students and alumni regularly win awards and recognition, including Academy Awards for Visual Effects, Emmys, and National Association of Broadcasters and Kansas Association of Broadcasters awards.

Our graduates work at NBC, CBS, ABC, PBS, CNN, Fox affiliates, Honeywell, Steven Spielberg's Amblin Imaging, Eagle Communications, Cox Media and at the New York Film Institute. Some even own companies:

- KUTT 99.5 Radio
- 12 Inch Design
- Triumphant Productions
- First Son Productions

Code	Title	Hours
INT Core substitution allowed in this concentration		
INF 610	Public Policy, Law, Ethics in Telecommunications	
or INF 626	Law and Ethics in Journalism and Media	

Concentration Requirements: Digital Media Production and Journalism

INF 140	Introduction to Electronic Media	3
INF 240	Digital News Reporting	3
INF 346	Beginning Video Production	3
INF 348	Beginning Audio Production	3
INF 349	Convergent Media Lab	3
INF 349	Convergent Media Lab (Take Twice)	3
INF 603	Big Data Analytics	3

Emphasis Electives

Select 15 credit hours from the following:	15
COMM 345	Visual and Creative Design
ENG 602	Topics in Writing
HHP 305	Sport Information Management
INF 322	Topics in Informatics
INF 336	Electronic Newsroom Operation
INF 340	Media Performance
INF 350	Sports Announcing
INF 479	Internship in Informatics
INF 621	News Editing
INF 622	Feature Writing
INF 624	Media Continuity Writing

INF 625	Advanced Digital Journalism
INF 629	Media Management and Sales
INF 633	Advanced Video Production
INF 634	Graphics and Effects for Video and Film
INF 636	Computer Editing of Video
INF 638	Intensive Video Production
INF 651	Front End Web Development I
INF 658	Law of Cyberspace
INF 678	Seminar in Informatics
MGT 601	Project/Program Management
MUS 378	Introduction to Music Technology
MUS 498	Recording Practicum

Total Hours 36

¹ Work with your advisor to choose four courses from the below list to meet your goals.

Health Informatics (Online & On Campus)

The Health Informatics concentration is designed to give those already working in the healthcare industry, or hoping to work in healthcare the ability to understand the needs and demands of patient care and information security.

As the healthcare industry increasingly transitions to web-based interfaces, electronic storage and retrieval of patient information, and more sophisticated networks for medical information management, the demand for medical professionals with technology training and expertise is growing. In larger markets, technology professionals with training and expertise specific to medical industries, patient care practices, and information security have created niche demand that is not being met.

Hospitals, clinics, specialty practices, pharmaceutical, and insurance industries are aggressively recruiting this kind of professional, with a uniquely mixed background. These new positions now have some of the highest salaries in the IT field.

Code	Title	Hours
Concentration Requirements: Health Informatics		
INF 291	Internetworking I	3
INF 292	Internetworking II	3
INF 393	Internetworking III	3
INF 652	Database Design and Programming	3
INF 685	Fundamentals of Network Security	3
NURS 440	Informatics for the RN	3
NURS 442	Legal and Ethical Issues in Healthcare	3
Emphasis Electives		
Select five of the following: ¹		15
INF 302	Windows Client Administration	
INF 304	Management Information Systems	
INF 305	Windows Server Administration	
INF 322	Topics in Informatics	
INF 345	Electronic Game Theory and Practice	
INF 360	Programming with Python	
INF 472	Readings in Informatics	
INF 473	Problems in Informatics	

INF 479	Internship in Informatics
INF 651	Front End Web Development I
INF 653	Back-End Web Development I
INF 662	Modern Telephony
INF 664	Wireless and Cellular Systems
INF 678	Seminar in Informatics
INF 684	Foundations of Information Systems Security
INF 686	Network Security Firewalls
INF 695	Advanced Routing
INF 697	Advanced LAN Switching

Total Hours 36

¹ Work with your advisor to choose five courses from the below list to meet your goals.

Information Systems (Online & On Campus)

With a concentration in Information Systems, you will develop knowledge about information systems and how they relate to other informatics areas. This degree prepares you for technology-track careers.

Built on the concept of media convergence, our program teaches digital media and journalism, computer networking, web and mobile application development, and cybersecurity.

Our graduates work in business, government, education, entertainment, and health care organizations.

Code	Title	Hours
Concentration Requirements: Information Systems		
INF 302	Windows Client Administration	3
INF 304	Management Information Systems	3
INF 305	Windows Server Administration	3
INF 330	Business Intelligence	3
INF 360	Programming with Python	3
INF 604	Data Analytics I	3
MIS 602	Information Systems Design and Development	3
Emphasis Electives		
Select five of the following: ¹		15
CSCI 121	Computer Science I	
CSCI 221	Computer Science II	
GSCI 240	Introduction to Geographic Information Systems (GIS)	
GSCI 290	Cartography: Theory and Applications	
GSCI 360	Intermediate Geographic Information Systems	
INF 292	Internetworking II	
INF 393	Internetworking III	
INF 472	Readings in Informatics	
INF 473	Problems in Informatics	
INF 479	Internship in Informatics	
INF 603	Big Data Analytics	
INF 650	Introduction to Human-Computer Interaction	
INF 651	Front End Web Development I	

INF 652	Database Design and Programming
INF 653	Back-End Web Development I
INF 654	Mobile Web Development
INF 658	Law of Cyberspace
INF 660	Global Telecommunications Policy
INF 662	Modern Telephony
INF 664	Wireless and Cellular Systems
INF 671	Linux in Networking
INF 672	Advanced Linux in Networking
INF 678	Seminar in Informatics
INF 684	Foundations of Information Systems Security
INF 685	Fundamentals of Network Security
INF 695	Advanced Routing
INF 697	Advanced LAN Switching
MGT 601	Project/Program Management
MIS 602	Information Systems Design and Development

Total Hours **36**

¹ Work with your advisor to choose five courses from the below list to meet your goals.

Web and Mobile Application Development (Online & On Campus)

With a concentration in Web Development, you'll have the opportunity to develop coding, design, and video and animation skills for the web and mobile devices. You'll also learn e-commerce, work-flow and Web-based database development.

Built on the concept of media convergence, our program teaches electronic media as well as Web tools, software, scripting languages and databases. We'll prepare you for the Certified Web Designer Apprentice (CWDSA) and Oracle Certified Associate (http://education.oracle.com/pls/web_prod-plq-dad/db_pages.getpage/?page_id=146) certifications.

Our graduates work in business, government, education, entertainment, and health care organizations.

Code	Title	Hours
Concentration Requirements: Web and Mobile Application Development		
INF 360	Programming with Python	3
INF 650	Introduction to Human-Computer Interaction	3
INF 651	Front End Web Development I	3
INF 652	Database Design and Programming	3
INF 653	Back-End Web Development I	3
INF 654	Mobile Web Development	3
INF 655	Front-End Web Development II	3
Emphasis Electives		
Select at least 15 credit hours from INF courses ¹		15
Total Hours		36

¹ Work with your advisor to choose five courses from the below list to meet your goals.

Degree Requirements

Code	Title	Hours
Bachelor of Arts Degree Language Requirement		
Two consecutive semesters of a non-English Language		
All bachelor degrees require:		
GPA of 2.0 on FHSU courses & 2.0 on all coursework (Higher program requirements prevail over the 2.0 when set)		
A minimum of 30 hours earned from FHSU with a grade of D, C, B, or A		
Successful completion of an upper division Writing and Information Literacy course (Most majors contain a course designated)		
A minimum of 45 hours of recognized upper division credit		
A minimum of 120 hours of recognized college credit		

Degree Maps

Course	Title	Hours
First Year		
Fall		
ENG 101	English Composition I (SGE010 - English Discipline Area)	3
COMM 100	Fundamentals of Oral Communication (SGE020 - Communication Discipline Area)	3
INF 250	Introduction to Web Development	3
UNIV 101	Freshman Seminar	1
SGE030 - Math Statistics Discipline Area		3
Concentration Course		3
Hours		16
Spring		
ENG 102	English Composition II (SGE010 - English Discipline Area)	3
INF 300	Foundations of Informatics	3
SGE040 - Natural Physical Science Discipline Area		4
SGE070 - Institutionally Designated Area: Personal and Professional Development		3
Concentration Course		3
Hours		16
Second Year		
Fall		
Concentration Course		3
Concentration Course		3
SGE060 - Arts Humanities Discipline Area		3
SGE050 - Social Behavioral Sciences Discipline Area		3
SGE070 - Institutionally Designated Area: Critical Thinking		3
Hours		15
Spring		
INF 430	Technology Innovation and Entrepreneurial Leadership	3
Concentration Course		3
Directed Electives		3
SGE050 - Social Behavioral Sciences Discipline Area		3
SGE060 - Arts Humanities Discipline Area		3
Hours		15
Third Year		
Fall		
INF 405	Research Methods in Informatics	3
Concentration Course		3
Directed Electives		3
Directed Electives		3
Open Electives		3
Hours		15

Spring		
Concentration Course		3
Directed Electives		3
Directed Electives		3
Open Electives		3
Open Electives		3
Hours		15
Fourth Year		
Fall		
INF 610	Public Policy, Law, Ethics in Telecommunications	3
Open Electives		3
Open Electives		3
Open Electives		3
Open Electives		3
Hours		15
Spring		
INF 490	Capstone Seminar in Informatics	3
Open Electives		3
Open Electives		3
Open Electives		3
Open Electives		1
Hours		13
Total Hours		120

Academic Degree Maps are term-by-term sample course plans that specify milestones, courses, and special requirements that are necessary for facilitating on-time completion. Degree Maps are *examples* and are not prescriptive. Individualized choices such as concentration options, transfer credits, optional minors, advisory programs (certificates), etc. can alter the recommended coursework. Course offerings are subject to change. Students should consult with their academic advisors for additional guidance on course planning.

To determine courses to take in the directed choices (often listed as Program Elective Course) and directed elective course blocks see the overview tab for courses. To locate approved courses in General Education areas (Undergraduate Programs) see the general education section (<https://catalog.fhsu.edu/general-education/>) of the catalog.

The undergraduate course maps typically advise the most efficient route for students to complete the general education requirements. Courses that are required in the major may be listed as fulfilling relevant general education requirements. This will result in more open elective course hours in some maps than is listed on the degree overview page.