BACHELOR OF SCIENCE IN APPLIED SCIENCE IN INFORMATION TECHNOLOGY

Information technology provides systematic foundations that include methodologies and models for conceptualizing the complex dynamics of the Information Technology environment as it applies to information systems design and implementation.

IT professionals possess the right combination of knowledge and practical, hands-on expertise to take care of both an organization's information technology infrastructure and the people who use it. They assume responsibility for selecting hardware and software products appropriate for an organization. They integrate those products with organizational needs and infrastructure and install, customize and maintain those applications, thereby providing a secure and effective environment that supports the activities of the organization's computer users. In IT, programming often involves writing short programs that typically connect existing components (scripting).

Planning and managing an organization's IT infrastructure is a difficult and complex job that requires a solid foundation in applied computing as well as management and people skills. Those in the IT discipline require special skills – in understanding, for example, how networked systems are composed and structured, and what their strengths and weaknesses are. There are important software systems concerns such as reliability, security, usability, and effectiveness and efficiency for their intended purpose; all of these concerns are vital. These topics are difficult and intellectually demanding.

The program supports work processes and employee performance enhancements; is designed to improve overall workgroup and individual productivity; and addresses the creation, distribution, storage, and use of information in all its states. Business processes are incorporated as an integral part of all course content. Information Technology encompasses:

- Client/Server Side Computing
- Project Management
- Multimedia
- Networks
- Database Systems
- System Analysis
- Information Security
- Network/ Cybersecurity
- Application Development
- E-Commerce Programming

IT graduates of the AAS degree program may continue their studies towards a bachelor's degree in a computer or information technology area or may obtain full-time employment as database specialist, help desk support, network technicians, web/digital designers, and in other closely related fields.

IT graduates of the BSAS degree program may obtain full-time employment as web & multimedia designers/developers, network administrators, computer programmers, application developers, database managers, computer systems analysts, cybersecurity specialist, and in other closely related fields.

Bachelor's Degree Program

The information technology professional will develop his or her ability to conceptualize, design, and implement high-quality information systems based upon computer systems ranging from single-user systems to complex, interactive, and multi-user distributed systems.

IT majors will choose to follow one of several concentration areas:

- Database Engineering
- Networking
- Security
- Multimedia/Web
- Software Development

This degree may be earned in eight semesters if students average 16 hours per semester.

Students wishing to receive the Bachelor of Applied Science in information technology must complete the following:

COURSE	TITLE	S.H.
FIRST YEAR REQUIREMENT -STUDENT SUCCESS		
YSU 1500	Success Seminar	1-2
or SS 1500	Strong Start Success Seminar	
or HONR 1500	Intro to Honors	
General Education Requirements		
ENGL 1550	Writing 1	3-4
or ENGL 1549	Writing 1 with Support	
ENGL 1551	Writing 2	3
CMST 1545	Communication Foundations	3
Mathematics Requirement	Included in Support Courses	
Arts and Humanities (6 s.h.)		
PHIL 2625	Introduction to Professional Ethics	3
One additional Arts and Humanities course		3
Natural Sciences (Select 2 courses, 1 with lab) (6-7 s.h.)		7
Social Science (Select 2 courses 6 s.h.)		6
Social and Personal Awareness (Select 2 courses 6 s.h.)		6
Major Requirements		
CSIS 1525	Survey of Modern Operating Systems	3
CSIS 1570	Web Systems and Technologies	3
CSIS 1590	Survey of Computer Science and Information Systems	3
CSIS 1595	Fundamentals of Programming and Problem-Solving 1	2
CSIS 1595L	Fundamentals of Programming and Problem-Solving 1 Lab	1
CSIS 2605	Fundamentals of Programming and Problem- Solving 2	2
CSIS 2605L	Fundamentals of Programming and Problem- Solving 2 Lab	1
CSIS 2620	System Configuration and Maintenance	3
CSIS 3722	Development of Databases	3
CSIS 3731	Human-Computer Interaction	3
CSIS 3755	Information Assurance	3
CSIS 3782	Cisco Networking Academy 1	3
INFO 4880	Information Technology Analysis and Design	3
Concentration area (min 6 hours within the same area)		**6**
Data Engineering Concentration		
CSIS 3726	Visual/Object-Oriented Programming	
CSIS 4822	Database Applications	
CSIS 3760	Electronic Commerce Programming	
CSCI 4851	Data Science and Machine Learning	
CSCI 4852	Deep Learning	
CSCI 4871	Cloud Computing and Big Data	
Multimedia & Web Concentration		
INFO 3774	Digital Image Processing	
INFO 3775	Digital Multimedia Design & Creation	
INFO 3776	Client-Side Scripting Techniques	
INFO 3777	Digital Audio & Video Production	

INFO 5875	Advanced Multimedia Authoring	
CSIS 4878	Mobile Application Development	
Networking Concentration		
CSIS 3783	Cisco Networking Academy 2	
CSIS 3784	Cisco Networking Academy 3	
CSIS 4823	Data Communications Networking	
CSIS 5883	Remote Access and Multilayer Switched Networks	
CSIS 5884	Building Scalable Networks and Advanced Internetwork Troubleshooting	
Security Concentration		
CSIS 3756	Security Design	
CSIS 3757	Computer Forensics	
CSIS 5828	Computer Network Security	
CSCI 5857	Encoding and Encryption	
Software Development Concentration		
CSIS 3700	Data Structures and Objects	
CSIS 3700L	Data Structures and Objects Lab	
CSIS 3701	Advanced Object-oriented Programming	
CSIS 3726	Visual/Object-Oriented Programming	
CSIS 3760	Electronic Commerce Programming	
CSIS 4878	Mobile Application Development	
CSCI 4862	Server-Side Web Development and Programming	
CSCI 5801	Software Engineering	
Departmental Upper-Division Electives		
Select at least 9 additional semester hours of upper division Information Technology or CSIS courses. CSCI or CIS courses numbered 3000 and above may also be used as electives with advisor approval. Additionally, up to 3 semester hours of STEM 4890 may also be used toward the 9 upper-division hours.		9
Support Courses		
STAT 2601	Introductory Statistics	3
MATH 1552	Applied Mathematics for Management	4
INFO 3704	Business Communication	3
or ENGL 3743	Introduction to Public, Professional and Technical Writing	
Minor		
Select at least 12 s.h. from an unspecified minor.		12
Free Electives Any courses to meet 120 total hours		15
Total Semester Hours		**120-122**

Year 1		
Fall		**S.H.**
YSU 1500	Success Seminar	1-2
or SS 1500	or Strong Start Success Seminar	
or HONR 1500	or Intro to Honors	
ENGL 1550	Writing 1	3-4
or ENGL 1549	or Writing 1 with Support	
CSIS 1590	Survey of Computer Science and Information Systems	3
CSIS 1595	Fundamentals of Programming and Problem-Solving 1	2
CSIS 1595L	Fundamentals of Programming and Problem-Solving 1 Lab	1
GER Natural Science + Lab		4
	Semester Hours	**14-16**
Spring		
ENGL 1551	Writing 2	3
CSIS 1525	Survey of Modern Operating Systems	3
CSIS 2605	Fundamentals of Programming and Problem-Solving 2	2
CSIS 2605L	Fundamentals of Programming and Problem-Solving 2 Lab	1
MATH 1552	Applied Mathematics for Management	4
CMST 1545	Communication Foundations	3
	Semester Hours	**16**
Year 2		
Fall		
CSIS 1570	Web Systems and Technologies	3
CSIS 3722	Development of Databases	3
CSIS 2620	System Configuration and Maintenance	3
STAT 2601	Introductory Statistics	3
GER Arts & Humanities		3
	Semester Hours	**15**
Spring		
CSIS 3731	Human-Computer Interaction	3
CSIS 3782	Cisco Networking Academy 1	3
INFO 3704	Business Communication	3
or ENGL 3743	or Introduction to Public, Professional and Technical Writing	
Minor Course		3
GER Social Science		3
	Semester Hours	**15**
Year 3		
Fall		
CSIS 3755	Information Assurance	3
Departmental upper division elective		3
Minor Course		3
GER Social & Personal Awareness		3
GER Arts & Humanities		3
	Semester Hours	**15**
Spring		
IT Concentration		3
PHIL 2625	Introduction to Professional Ethics	3
Free elective		3
Minor Course		3
GER Social Science		3
Request a Graduation Evaluation after completing 80-85 s.h. from the STEM Advising Center, 2325 Moser Hall, (330) 941-2512.		
	Semester Hours	**15**
Year 4		
Fall		
IT Concentration		3
Departmental upper division elective		3
Minor Course		3
GER NS		3
Free Elective		3
	Semester Hours	**15**
Spring		
INFO 4880	Information Technology Analysis and Design	3
Departmental upper division elective		3
Minor Course		3
Minor Course		3
GER SPA		3
	Semester Hours	**15**
	Total Semester Hours	**120-122**

Learning Outcomes:

The Bachelor program in Information Technology provides preparation and instruction that enables students:

1. to analyze computing technology related problems, identify and define computing technology requirements to address these problems
2. to design, implement, and evaluate computing technologies to meet the needs of organizations or individuals using current techniques, skills, and tools
3. to communicate with clients effectively while understanding their needs and identifying appropriate solutions
4. to work collaboratively within a team environment to achieve its goal(s)
5. to understand the need and importance of continuous professional development
6. to recognize the technical and legal issues involved with technologies and concepts used in information technology
7. to offer solutions and perform required tasks in networking design, implementation, and administration; information assurance and security; database design, development, and administration; interactive program design and development; e-commerce design, development, and implementation; and report and document preparation.

Learning Outcomes

1. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to perform network design, implementation, and administration.
2. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to perform information assurance and security.
3. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to design, implement, and administer databases.
4. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to design and implement reports and documents required by the organization through extraction of information using appropriate programs and applications.
5. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to demonstrate information management skills in project management and system analysis, design, implementation, testing and monitoring.
6. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to write and produce or assist in developing interactive programs.
7. The Bachelors program in Information Technology provides preparation and instruction that enables for students acquire knowledge and technical competencies to recognize technical and legal issues involved with technologies and concepts used in information technology.