

Bachelor of Science Degree in Information Technology



www.maconstate.edu/it/

Welcome to Macon State College's School of Information Technology.

The College's bachelor of science degree in information technology prepares graduates for critical roles in the rapidly evolving IT profession.

Students majoring in IT learn the technical skills and gain the theoretical knowledge necessary to understand current computer technology, interpret emerging technologies and communicate with other information technology professionals.

Macon State's IT program is all about innovation, flexibility and convenience, with courses offered day and evening in classroom settings, as well as online and a blend of classroom and online.

The IT faculty are dedicated to developing the finest degree program and producing graduates with a diversified set of skills, roles and experiences, including knowledge in networking, information, media design and application development.

The major concentrations within this degree program include:

The **Network & Network Administration** major concentration which educates students in the use of current concepts and technologies of networking.

The **Information Assurance** major concentration which involves detecting, reporting and responding to cyber threats, making encryption codes to securely pass information between systems, and taking appropriate measures to ensure the security of valuable information.

The **Digital Media** major concentration which prepares students for the design, development and implementation of digital media products for use in a variety of IT applications.

The **Application Development** major concentration which focuses on the design, development and implementation of software solutions.

In addition, the **Informatics concentrations** allow students to more rapidly develop IT solutions for organizations within diverse disciplines.

All IT courses focus on critical thinking, problem solving, decision making, and interpersonal and communication skills.

Macon State's IT faculty prepare students to solve problems and apply new technologies within an increasingly interconnected and changing global environment. They emphasize career success through lifelong learning and professional development at all levels of the curriculum.

Join the IT students, take advantage of the College's highly qualified faculty and tap the fine resources at Macon State. Learn more about Macon State's IT program at: www.maconstate.edu/it/.

Innovation

About the Information Technology Degree

The mission of Macon State's School of Information Technology is to prepare students to solve problems and apply new technologies within an increasingly interconnected and changing global environment. The School pursues this mission through teaching excellence, scholarship, professional service and community outreach.



The first level of IT courses provide students with knowledge in the core information technologies. Students then can focus on one or more IT concentrations to enhance their skills and knowledge. The program is designed to produce graduates with a diversified set of skills, roles and experiences, including knowledge in IT infrastructure and/or IT design and management. It is appropriate to refer to IT graduates as "versatilists."

A versatilist can synthesize knowledge and context in order to respond rapidly to forces, changes and opportunities. The courses in the program focus on critical thinking, problem solving, decision-making, and interpersonal and communication skills. Career success through lifelong learning and professional development is emphasized at all levels of the curriculum.

Convenience

Affordability

Course Requirements

Candidates for the bachelor's degree in information technology must complete all graduation requirements as outlined in the current Macon State College Academic Catalog (www.maconstate.edu/academics/disclaimer.aspx). Students pursuing the Bachelor of Science degree in Information Technology must complete the following:

Areas A through E

Area F of the IT program as follows:

ITEC 2215 Introduction to Information Technology
ITEC 2260 Introduction to Computer Programming
ITEC 2270 Application Development
ITEC 2320 Networking Essentials
ITEC 2380 Web Development
MATH 1200 Elementary Statistics

IT Core Curriculum (30 hours)

ITEC 3155 Systems Analysis and Design
ITEC 3235 Human Computer Interaction
ITEC 3236 Interactive Digital Media
ITEC 3245 Database Principles
ITEC 3280 Data Driven Web Development
ITEC 3300 Project Management
ITEC 3310 Integrating Information Technologies
ITEC 3351 Decision Support and Org Intelligence
ITEC 4200 Foundations of Information Assurance
ITEC 4750 Senior Capstone

Upper-Level Electives Area (30 hours)

Students are required to take 30 hours of upper-level courses to further enhance their skills, knowledge and versatility. At least 15 hours must be IT courses.

Students may choose to satisfy the 30 hours of upper-level electives in one of the following four ways:

- 1. An IT major concentration plus an additional 15 hours of upper-level courses within IT discipline and/or outside the IT discipline**
- 2. Two IT major concentrations**
- 3. An Informatics concentration and either an IT major concentration or 15 hours of upper-level IT courses**
- 4. 15 hours of upper-level IT courses and an additional 15 hours of upper-level courses within IT discipline and/or outside the IT discipline**

The upper-level IT courses may be selected from various IT major concentrations and/or upper-level IT courses outside major concentrations.

Upper-level courses outside the IT discipline may be selected from various Informatics concentrations and/or other approved upper-level courses outside the IT discipline.

If a student completes one or more concentrations, the concentration name(s) will show on his or her transcript.

Flexibility

IT Major Concentrations

NETWORK & NETWORK ADMINISTRATION

The **Network & Network Administration** concentration educates students in the use of current concepts and technologies of networking. Students will learn to analyze the needs of organizations, communicate the needs to the users, and design and build networks to meet those needs. Graduates will be prepared for positions in networking or systems administration. It is recommended that students take at least 5 courses from the following:

ITEC 3325 Windows Systems Administration
ITEC 3328 Linux Systems Administration
ITEC 4285 Web Server Administration
ITEC 4321 Forensics/Data Recovery
ITEC 4324 Mobility: Networks and Applications
ITEC 4325 Advanced Windows Administration
ITEC 4327 Server Architecture
ITEC 4421 Network Security
ITEC 4329 Data Communications

And other approved courses in this area as they are offered



Opportunities

IT Major Concentrations

INFORMATION ASSURANCE

The **Information Assurance** concentration involves detecting, reporting, and responding to cyber threats, making encryption codes to securely pass information between systems, and taking appropriate measures to ensure the security of valuable information. Students will learn about digital evidence, computer crime and law, and server and network security important to law enforcement, forensic science, and information systems security. It is recommended that students take the following 5 courses:

ITEC 4205 Legal and Ethical Issues in Information Technology
ITEC 4285 Web Server Administration
ITEC 4321 Forensics/Data Recovery
ITEC 4341 Database Security and Disaster Recovery
ITEC 4421 Network Security

Also recommended is:

ITEC 4361 Software Security

And other approved courses in this area as they are offered



Rewarding Careers

IT Major Concentrations

DIGITAL MEDIA

The **Digital Media** concentration prepares students in the design and development of products for use in a variety of IT applications. Through the various courses, students will develop competencies in evaluating user and product needs and in designing, developing and implementing digital media products to meet those needs. Students learn a broad range of skills including graphic design and production, interface design, and analysis and design techniques for constructing interactive applications. Graduates will find career opportunities as digital media designers and developers, specialists, and trainers. It is recommended that students take at least 5 courses from the following:

ITEC 4230 – Graphic Imaging
ITEC 4232 – Desktop Publishing
ITEC 4236 – Digital Video Production
ITEC 4237 – 3D Modeling and Animation
ITEC 4238 – Motion Graphics
ITEC 4284 – Streaming Digital Media

Also Recommended are:

ITEC 4233 – Emerging Digital Media
ITEC 4235 – Advanced Graphic Imaging
ITEC 4239 – Intermediate Motion Graphics
ITEC 4385 – Live/TV Sports Broadcasting Practicum

And other approved courses in this area as they are offered

Professional Life Style

Freedom

IT Major Concentrations

APPLICATION DEVELOPMENT

The **Application Development** concentration prepares students for the design, development, and implementation of software solutions. Graduates will be prepared for a variety of careers including software developers or systems, application, or database programmers. It is recommended that students take at least 5 courses from the following:

ITEC	3265	Operating Systems
ITEC	4212	Computer Organization
ITEC	4242	Database Administration
ITEC	4244	Structured Query Language
ITEC	4248	Database Administration Using Database Tools
ITEC	4252	Advanced Systems Analysis and Design
ITEC	4266	C/C++ Programming
ITEC	4267	COBOL Programming
ITEC	4286	Web Applications Development



Upper-level IT Courses outside Major Concentrations

ITEC	3220	Hardware and Systems Software
ITEC	3340	Business Analysis Using Excel
ITEC	4231	Information Design
ITEC	4254	Business-Driven Technology
ITEC	4288	Electronic Commerce Systems
ITEC	4299	Topics in Information Technology
ITEC	4384	Introduction to Live TV/Internet Sports Broadcasting
ITEC	4501	Special Projects in Information Technology
ITEC	4701	Internship in Information Technology
ITEC	4710	Globalization and Technology

Informatics Concentrations

Informatics is the bridge that connects Information Technology to other areas of study. An Informatics Concentration provides students with a strong foundation in IT as well as a deeper understanding of another discipline. Informatics Concentrations allow students to more rapidly develop IT solutions for organizations within diverse disciplines. The Informatics Concentrations include Biology, Business, English, Health, History, Humanities, Mathematics and Political Science.

Each Informatics Concentration has two components:

1. 15 hours of courses (Informatics: Biology includes 16 hours of courses) as prescribed in the specific Informatics Concentration.
2. 15 hours of upper-level IT courses (The upper-level IT courses may be an IT major concentration or select from various IT major concentrations and/or upper-level IT courses outside major concentrations)

If the student takes all the upper-level IT courses within an IT Major Concentration, the student then would have two concentrations on his/her transcript (one Informatics Concentration and one IT Major Concentration). All courses in the Informatics Concentrations are taken outside the School of Information Technology. These courses are deemed to cover the foundations, theory and principles within each concentration. Some concentrations lead to recognized disciplines for graduate study.

INFORMATICS: HEALTH

Required Courses (15 Hours)

HLSA 3310	American Health Care System	3 hours
HLSA 3320	Health Care Management	3 hours
HLSA 3350	Public Health and Epidemiology	3 hours
HLSA 3360	Quality Management and Improvement	3 hours
HLSA 4435	Managed Care	3 hours

INFORMATICS: BUSINESS

Required Course (3 Hours)

MGMT 3101	Business Statistics
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Required Electives (12 hours)

Select four of the following classes

BUSA 3100	Business and Society	3 hours
ECON 3175	International Economics	3 hours
FINC 3131	Business Finance	3 hours
LENB 3135	Legal Environment of Business	3 hours
MGMT 3141	Principles of Management	3 hours
MKTG 3161	Principles of Marketing	3 hours
MGMT 3165	Operations Management	3 hours
ACCT 3110	Cost Accounting	3 hours

NOTE: MGMT 3101 (Prerequisites: MATH 1200); ECON 3175 (Prerequisites: ECON 2105 and ECON 2106); FINC 3131 (Prerequisites: ACCT 2102, ECON 2105 and ECON 2106); MKTG 3161 (Prerequisites: ECON 2105 and ECON 2106); MGMT 3165 (Prerequisites: MGMT 3101 and MGMT 3141); ACCT 3110 (Prerequisites: ACCT 2102)

Informatics Concentrations

INFORMATICS: BIOLOGY

Required Courses (12 Hours)

BIOL	3104K	Cell Biology	4 hours
BIOL	3510	Vertebrate Zoology	4 hours
BIOL	4110	Genetics	4 hours

Required Electives (4 Hours)

Select 1 course from the following:

BIOL	3360	Plant Biology	4 hours
BIOL	3540	Microbiology	4 hours
BIOL	3350	Ecology	4 hours
BIOL	3520	Invertebrate Zoology	4 hours

Students interested in the Informatics: Biology must take the following prerequisite courses: CHEM 1211K, BIOL 2107K, and BIOL 2108K. (All or some of these courses are normally taken in the liberal arts foundation core at Macon State College. They may also be approved transferred courses from other institutions.)

NOTE: This informatics concentration is not a bioinformatics program.

INFORMATICS: ENGLISH

Required Courses (15 Hours)

Select five courses from those listed below

ENGL	3106	Professional Communication	3 hours
ENGL	3108	Writing for Digital Media	3 hours
ENGL	4450	Visual Rhetoric: Principles of Production I	3 hours
ENGL	4451	Visual Rhetoric: Principles of Production II	3 hours
ENGL	4480	History of Print	3 hours
ENGL	4481	Survey of Film	3 hours

Students interested in the Informatics: English must take the following prerequisite courses: ENGL 1102 and BUSA 2201. (ENGL 1102 is normally taken in the liberal arts foundation core at Macon State College. BUSA 2201 is offered through the School of Business. Both courses may also be approved transferred courses from other institutions.)

INFORMATICS: HUMANITIES

Required Courses (15 Hours)

HUMN	3145	Technology and the Creative Artist	3 hours
HUMN	3153	Organizations, Work, and Literature	3 hours
HUMN	3600	Digital Storytelling	3 hours
HUMN	3999	Special Topics	3 hours
HUMN	4472	Studies in Culture	3 hours

Students interested in the Informatics: Humanities must take the following prerequisite course: ENGL 1102. (ENGL 1102 is normally taken in the liberal arts foundation core at Macon State College. This course may also be an approved transferred course from other institutions.)

Informatics Concentrations

INFORMATICS: HISTORY

Required Courses (15 Hours)

Option 1 – American History

Select five courses from those listed below

HIST	3710	Colonial and Revolutionary America	3 hours
HIST	3730	Jacksonian America, 1815 - 1848	3 hours
HIST	3750	The Civil War and Reconstruction	3 hours
HIST	3760	The U.S. 1877-1917	3 hours
HIST	3770	The U.S. 1917-1960	3 hours
HIST	3790	United States History Since 1960	3 hours
HIST	3930	History of Georgia	3 hours
HIST	4700	Multicultural America	3 hours
HIST	4710	Religion and Politics in American History	3 hours
HIST	4760	Gender, Marriage and the Family in American History	3 hours
HIST	4777	Native America to 1840	3 hours
HIST	4820	The South since the Civil War	3 hours

Students interested in the Informatics: American History must take the following prerequisite courses: HIST 2111 and HIST 2112. (These courses are normally taken in the liberal arts foundation core at Macon State College. They may also be approved transferred courses from other institutions.)

Option 2 – World History

Select five courses from those listed below

HIST	3050	The Ancient Mediterranean World	3 hours
HIST	3100	History of Latin America	3 hours
HIST	3150	History of Africa	3 hours
HIST	3200	Traditional China	3 hours
HIST	3210	Modern China	3 hours
HIST	3230	History of the Middle East	3 hours
HIST	3440	Europe in the Middle Ages	3 hours
HIST	3460	The Renaissance and Reformation	3 hours
HIST	3480	Europe in the Nineteenth Century	3 hours
HIST	3490	Europe in the Twentieth Century	3 hours
HIST	4220	History of Japan	3 hours
HIST	4290	History of Russia	3 hours
HIST	4308	Seventeenth Century Britain	3 hours
HIST	4320	France 1660-1815	3 hours
HIST	4330	Modern Germany	3 hours
HIST	4336	The Holocaust	3 hours
HIST	4360	Modern East Central Europe	3 hours
HIST	4455	The First World War	3 hours

Students interested in the Informatics: World History must take the following prerequisite courses: HIST 1111 and HIST 1112. (These courses are normally taken in the liberal arts foundation core at Macon State College. They may also be approved transferred courses from other institutions.)

Versatilist

Diversified

Informatics Concentrations

INFORMATICS: MATHEMATICS

Required Courses (6 Hours)

MATH 3040	Bridge to Higher Mathematics	3 hours
MATH 3600	Probability & Statistics	3 hours

Electives (9 Hours)

Select 3 courses from the following list:

MATH 3010	History of Mathematics	3 hours
MATH 3040	Bridge to Higher Mathematics	3 hours
MATH 3251	Applied Combinatorics	3 hours
MATH 3510	Foundations of Geometry	3 hours
MATH 3600	Probability and Statistics	3 hours
MATH 4110	Number Theory	3 hours
MATH 4150	Linear Algebra	3 hours
MATH 4260	Mathematical Analysis	3 hours
MATH 4300	Regression Analysis	3 hours
MATH 4480	Graph Theory	3 hours
MATH 4621	Mathematical Statistics I	3 hours
MATH 4622	Mathematical Statistics II	3 hours
MATH 4630	Topics in Applied Statistics	3 hours
MATH 4651	Numerical Analysis I	3 hours
MATH 4652	Numerical Analysis II	3 hours
MATH 4901	Operations Research I	3 hours
MATH 4902	Operations Research II	3 hours
MATH 4905	Optimization	3 hours
MATH 4910	Mathematical Models	3 hours

Students interested in the Informatics: Mathematics must take the following prerequisite courses: MATH 1251, MATH 2252, MATH 2253, MATH 2260 and MATH 2270. (Some of these courses are normally taken in the liberal arts foundation core at Macon State College. They may also be approved transferred courses from other institutions.)





School of Information Technology

Innovation, Flexibility, Convenience... www.maconstate.edu/it

Contact Information

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