

BACHELOR OF INFORMATION TECHNOLOGY

ABET Program Educational Objectives

Within a few years of graduation, graduates of the Information Technology program are expected to:

- Demonstrate peer-recognized expertise, and articulate that expertise for use in contemporary problem solving in the analysis, design and evaluation of computing and technology practices, as productive members of diverse professional teams.
- Successfully apply technical and business knowledge in a variety of contexts to innovate and create transformational change for metropolitan, regional, and global advancement.
- Demonstrate leadership in ethical and responsible development and deployment of secure technology to solve real-world problems and minimize risk in diverse communities, environments, and user groups.
- Demonstrate lifelong learning and professional growth via advanced study, career advancement, or social contributions.

ABET Student Outcomes

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing-based systems.

University Requirements

General Education

UMKC Essentials is the university-wide curriculum that all undergraduate students will complete. The 30-credit hour program includes a First Year Experience course; three critical thinking courses in the areas of Arts & Humanities, Natural & Physical Sciences, and Social & Behavioral Sciences; a Culture and Diversity course; a Civic & Urban Engagement course; two courses in Written Composition and one course in Oral Communication; and a Math Pathway course. Transfer students entering UMKC will elect from the UMKC Essentials General Education Program or the Missouri Core 42 General Education Curriculum. Academic advisors will meet with incoming transfer students to determine which option best serves the student's educational needs. More information about General Education may be found here: <https://catalog.umkc.edu/undergraduate-academic-regulations-information/general-education-requirements/> (<http://catalog.umkc.edu/undergraduate-academic-regulations-information/general-education-requirements/>)

Constitution Course

Every undergraduate student must take a course covering the United States Constitution and the Missouri State Constitution before graduation. Course options are included in the program requirements section below.

Exit Examinations

Information on exit examinations is available in the Undergraduate Academic Regulations and Information (<http://catalog.umkc.edu/undergraduate-academic-regulations-information/graduation/exitexams/>) section of the catalog.

Missouri Higher Education Civics Achievement Examination

In accordance with Missouri Senate Bill 807 (section 170.013.1), 'any student entering a public institution of higher education for the first time after July 2019 who is pursuing an associate's or bachelor's degree from such institution shall successfully pass an examination on the provisions and principles of American civics with a score of seventy percent or greater as a condition of graduation from such institution'. To satisfy this requirement at UMKC, students access the exam through the Canvas site. This requirement will be listed in the degree audit system as, 'Take State Mandated Missouri Higher Education Civics Achievement Examination', and listed on the transcript as 'Missouri Civics Examination'.

Student Learning Outcomes

Students graduating from this program will:

- Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.

- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member of a leader of a team engaged in activities appropriate to the program's discipline.
- Identify and analyze user needs and take them into account in the selection, creation, integration, evaluation and administration of computing-based systems.

Program Description

The Bachelor of Information Technology is accredited by the Computing Accreditation Commission of ABET (<http://www.abet.org> (<http://www.abet.org/>)).

The use of computers in commerce and industry keeps the college educated IT professional at the forefront of occupational demand. The Bachelor of Information Technology (B.I.T.) program prepares for a career path where the student contributes to the continued deployment of technology infrastructure (operating systems, browsers, applications, software, networking, etc.). It blends both CS, IT, and Business coursework and requires an internship for the completion of the degree. Please contact the SS&C Student Services Center for more information at (816)235-2399 or sce@umkc.edu.

Educational Objectives

The Bachelor of Information Technology degree is designed so that graduates will attain employment in an IT related field. Some graduates will achieve appropriate certifications and/or will pursue advanced study in business, IT or other fields. Graduates will be engaged in lifelong learning and thereby advance in their careers.

Career Implications

There remains a large and growing number of unfulfilled IT positions both nationwide and within the Kansas City area. B.I.T. graduates are typically employed as software developers, network specialists, web developers, information system operators, programmer analysts, digital media specialists and database administrators. The need of the future is for students with an analytic and problem solving mindset who are able to adapt quickly to an ever-changing environment.

Admission Requirements

High school students planning to apply to this degree program are strongly encouraged to take a college preparatory program that emphasizes mathematics, science and communication skills.

First-time college student applicants to the undergraduate program in information technology will be automatically admitted if they obtain:

1. An ACT mathematics score of at least 25 and
2. An ACT composite score of at least 24 and
3. A 3.0 core high school GPA.

First-time college student applicants who do not meet the above criteria but do meet UMKC general admission requirements will have their applications reviewed for admission. Applicants who are not admitted to this degree program but do meet UMKC general admission requirements may be admitted to University College.

Students without the prerequisite preparation must take the needed coursework before enrolling in courses required for the bachelor's degree. Students seeking re-admission must have been in good academic standing when last enrolled. Otherwise, re-admission requires a formal review by the undergraduate program committee.

Transfer applicants must have at least 24 credits of transferable college credit, an overall 2.0 GPA on a 4.0 scale in all coursework, which includes repeated coursework, attempted at previous institutions. Transfer applicants without a 2.0 or higher college GPA must submit a petition for admission.

Program Requirements

The requirements for the BIT degree are categorized into several areas totaling at least 124 hours of study.

UMKC Essentials

| Code | Title | Credits |
|---|--|---------|
| First Semester Experience Course (GEFSE) | | 3 |
| Written Communication: | | |
| ENGLISH 110 | Introduction to Academic Prose | 3 |
| ENGLISH 225 | English II: Intermediate Academic Prose | 3 |
| Oral Communication (choose one of the following): | | 3 |
| COMM-ST 110 | Fundamentals of Effective Speaking and Listening | |
| COMM-ST 140 | Introduction to Communication | |

| | | |
|--|-----------------------------|----|
| COMM-ST 212 | Argumentation And Debate | |
| COMM-ST 277 | Interpersonal Communication | |
| Math Pathway (Satisfied in program requirements below) | | |
| Critical Thinking in Arts & Humanities (GECRT-AH) | | 3 |
| Critical Thinking in Natural & Physical Sciences (GECRT-SC; Satisfied in program requirements below) | | |
| Critical Thinking in Social & Behavioral Sciences (GECRT-SS) | | 3 |
| Culture & Diversity Course (GECDEV) | | 3 |
| Civic & Urban Engagement Course (GECUE; Satisfied in program requirements below) | | |
| Total Credits | | 21 |

Constitution Course Requirement

Section 170.011.1 of the Missouri Revised Statutes, 2015, states that all candidates for a degree issued by a college or university in the state of Missouri must have "satisfactorily passed an examination on the provisions and principles of the Constitution of the United States and of the state of Missouri, and in American history and American institutions."

Courses at UMKC that satisfy this state requirement are:

| Code | Title | Credits |
|------------------------------|--|---------|
| Choose one of the following: | | |
| CJC 364 | The Supreme Court And The Criminal Process | 3 |
| HISTORY 101 | U.S. History to 1877 | |
| HISTORY 102 | U.S. History Since 1877 | |
| HONORS 230 | Honors American Government | |
| POL-SCI 210 | American Government | |
| Total Credits | | 3 |

There are a few other ways this requirement can be satisfied for students transferring to UMKC:

- Take an equivalent course from the list above at a regionally accredited institution.
- Earn credit for one of the above courses through AP, IB, or CLEP.
- Take a course that directly satisfies the Missouri Constitution Requirement at another Missouri institution.
- Have a previous bachelors degree (or higher) from a regionally accredited institution.
- Have an Associate of Arts degree from a regionally accredited institution.
- Complete the 42 Hour Core at a Missouri institution and have it listed on the official transcript.

Major Requirements

A minimum grade of C is required in all courses offered in the School of Science & Engineering.

| Code | Title | Credits |
|---|--------------------------------------|----------|
| Mathematics (satisfies Math Pathway) | | |
| MATH 120 (Precalculus; Typically not required due to ACT Admission Requirement) | | |
| MATH 210 | Calculus I ¹ | 4 |
| STAT 235 | Elementary Statistics ¹ | 3 |
| or STAT 115 | Statistical Reasoning | |
| or MOTRMATH 110 | MOTR Statistical Reasoning | |
| Life and Physical Sciences | | 7 |
| One Life Science | | |
| One Physical Science | | |
| To include at least one laboratory component | | |
| General Education Synthesis | | |
| COMP-SCI 449 | Foundations of Software Engineering | 3 |
| COMP-SCI 451R | Software Engineering Capstone | 3 |
| Anatomy of Business | | |
| ACCTNG 210 | Introduction To Financial Accounting | 3 |
| ECON 202 | Principles of Microeconomics | 3 |

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|--|--|---|
| MKT 324 | Principles of Marketing | 3 |
| DSOM 340 or MGT 332 | Supply Chain and Operations Management Principles of Organizational Behavior | 3 |
| Select two of the following: | | 6 |
| ACCTNG 211 | Introduction To Managerial Accounting | |
| ENT 315 | Entrepreneurial Mindset and Opportunity Recognition | |
| FIN 325 | Financial Management | |
| MGT 332 | Principles of Organizational Behavior (If not already completed above) ³ | |
| Computer Science/Information Technology | | |
| COMP-SCI 101 & 101L | Problem Solving and Programming I and Problem Solving & Programming I Lab | 4 |
| COMP-SCI 191 | Discrete Structures I | 3 |
| COMP-SCI 201R & COMP-SCI 201L | Problem Solving and Programming II and Problem Solving and Programming II - Lab | 4 |
| COMP-SCI 281R | Introduction to Computer Architecture and Organization (satisfies GECRT-SC course requirement) | 3 |
| COMP-SCI 291 | Discrete Structures II | 3 |
| COMP-SCI 303 | Data Structures | 3 |
| COMP-SCI 304WI | Ethics and Professionalism (Satisfies GECUE Requirement) | 3 |
| COMP-SCI 320 | Data Communications and Networking | 3 |
| COMP-SCI 431 | Introduction to Operating Systems | 3 |
| COMP-SCI 456 | Human Computer Interface | 3 |
| COMP-SCI 470 or COMP-SCI 371 | Introduction to Database Management Systems Database Design, Implementation and Validation | 3 |
| INFO-TEC 222 | Multimedia Production and Concepts | 3 |
| INFO-TEC 321 | Introduction to Computing Resources Administration | 3 |
| CS/IT Electives (Upper Level) | | 9 |
| Courses regularly offered include: | | |
| COMP-SCI 457 | Software Architecture: Requirements & Design | |
| COMP-SCI 458 | Software Testing and Verification | |
| COMP-SCI 490 | Special Topics | |
| INFO-TEC 426 | Practical Network Security | |
| INFO-TEC 429 | Introduction to Cybersecurity | |
| Internship Requirement ² | | |
| Take 1 hour of the following: | | 1 |
| INFO-TEC 491 | Internship | |

Total Credits 89

¹ Math Placement Assessment may be required.

² Students with appropriate CS/IT business experience may petition to replace the internship requirement with a 3 credit hour senior CS/IT course.

³ Course required if pursuing a business minor.

| Code | Title | Credits |
|--------------------------|-------|----------|
| General Electives | | 7 |

Minimum GPA: 2.0

Total Credit Hours: 120

Tools for Planning and Fulfilling Academic Requirements

UMKC's Major Maps are detailed, semester by semester plans that lead a student to complete all degree requirements within four years. Plans include benchmarks and critical courses by term that assist a student's evaluation of progress and major "fit". In order to ensure that the appropriate courses

are taken, students are encouraged to consult with the undergraduate advisor for this major. Please see the tab above to view the major map for this program.

UMKC's Transfer Guides (<https://www.umkc.edu/admissions/transfer-guides.html>) provide detailed guidance on recommended transfer coursework, plans of study, transfer timelines, and transfer contact information. To ensure a seamless transfer experience, students are encouraged to work with both their community college advisor and a UMKC advisor when planning their coursework.

UMKC's PlanMyDegree 'Audit' (<https://www.umkc.edu/registrar/academic-programs/plan-my-degree.html>) degree audit system provides an individual evaluation of all degree requirements (General Education, Degree Specific, Major Specific, etc.) for students' officially recorded (Office of Registration and Records) and "what if" exploratory plans of study. This evaluation is used to certify all graduation requirements.

UMKC's PlanMyDegree 'Plans' (<https://www.umkc.edu/registrar/academic-programs/plan-my-degree.html>) degree planning tool enables students to develop a personalized semester by semester plan of study towards completion of degree requirements for student's officially recorded (Office of Registration and Records) and "what if" exploratory plans of study. Update and edit your full plan to degree completion each term and confirm accuracy each semester with your Academic Advisor(s).

Major Map

Four Year Graduation Plan - Courses & Critical Benchmarks for First Time College Students:

UMKC's Major Maps are detailed, undergraduate four-year course outlines that inform students on the classes they should take and when to take them. Outlines are updated yearly. Graduate students should visit their program's individual school for program outlines.

The following is a sample course of study. Your path to graduation may vary based on factors such as college credit you earned while in high school, transfer work from other institutions of higher learning, and placement in Mathematics. You are responsible for checking prerequisites to any courses. It is the Student's responsibility to ensure that all program requirements are met. This guide is not a substitute for academic advisement.

First Year

| Fall Semester | Credits | Spring Semester | Credits |
|-----------------------------------|---------|---------------------------------|---------|
| MATH 210 ^{CC} | | 4 STAT 235 | 3 |
| COMP-SCI 101 & 101L ^{CC} | | 4 COMP-SCI 191 ^{CC} | 3 |
| GEFSE 101 | | 3 COMP-SCI 201R & COMP-SCI 201L | 4 |
| ENGLISH 110 | | 3 ENGLISH 225 | 3 |
| | | GECRT-SS 101 | 3 |
| | | 14 | 16 |

Second Year

| Fall Semester | Credits | Spring Semester | Credits |
|--------------------------|---------|------------------------------------|---------|
| COMP-SCI 291 | | 3 COMP-SCI 281R | 3 |
| COMP-SCI 303 | | 3 INFO-TEC 222 | 3 |
| ACCTNG 210 | | 3 MKT 324 | 3 |
| ECON 202 | | 3 Life Science Elective (with Lab) | 5 |
| COMM-ST 110, 140, or 277 | | 3 GECRT-AH 101 | 3 |
| | | 15 | 17 |

Third Year

| Fall Semester | Credits | Spring Semester | Credits |
|----------------------------------|---------|--|---------|
| COMP-SCI 304WI | | 3 COMP-SCI 371 or 470 | 3 |
| COMP-SCI 431 | | 3 INFO-TECH 3XX/4XX Specialty Elective | 3 |
| INFO-TEC 321 | | 3 DSOM 340 or MGT 332 | 3 |
| HISTORY 101, 102, or POL-SCI 210 | | 3 3XX/4XX Business Elective | 3 |

| | | | |
|---------------------------------------|----------------|---|----------------|
| GECDV 201 | | 3 Physical Science Elective (with Lab if not yet completed) | 3 |
| | | 15 | 15 |
| Fourth Year | | | |
| Fall Semester | Credits | Spring Semester | Credits |
| COMP-SCI 320 | | 3 COMP-SCI 451R | 3 |
| COMP-SCI 449 | | 3 COMP-SCI 3XX/4XX Elective | 3 |
| COMP-SCI 456 | | 3 INFO-TEC 491 | 1 |
| INFO-TECH 3XX/4XX Speciality Elective | | 3 3XX/4XX Business Elective | 3 |
| General Elective | | 3 General Elective | 3 |
| | | 15 | 13 |

Total Credits: 120

CC Critical Courses provide feedback regarding major fit and help indicate likelihood of successful completion of chosen academic program and degree.

Recommendations to Maintain Progress toward 4-Year Degree Completion

- Completion of the First Semester Experience (FSE) course in first term.
- Early completion of Written Communication, Oral Communication, and Math Pathway requirements.
- Maintain the minimum GPA required for academic Good Standing for your degree program.
- Completion of at least 15 credit hours toward degree each regular semester. (*Students may use the summer to ensure completion of 30 hours per academic year or to lighten Fall and Spring course loads.*)
- Enrollment in Critical Courses as listed on the Major Map is recommended in order to maintain timely progress and completion of prerequisite coursework.
- Regular consultation with Academic Advisor(s) for program(s) of study is strongly recommended and may be required for some degree programs..

Roo Advising (<http://catalog.umkc.edu/roo-advising/>)

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