BS in Information Technology

Degree Program Description

Information Technology (IT) students engage and collaborate with other disciplines to create software applications, design and manage technology-based infrastructures, manage database systems, develop web applications, build networks, implement cyber security, and use technology to solve a wide range of complex problems. This traditional IT core competencies are supplemented by a range of technical electives in a range of topics including virtual environments, augmented reality, digital media systems and post production processes, and 2D/3D animation. The program finishes with a one-semester highly collaborative capstone course, in which students complete design projects that serve as a culminating academic experience. As IT is a growing international field, the IT Program proudly offers as often as possible international study abroad courses. Internships with companies for real-world experience and undergraduate research opportunities with faculty are abundant and encouraged. The MU Engineering Career Services can assist students in searching for employment opportunities and for internship/co-op positions. Students are prepared to pursue a variety of IT related careers in today's evolving markets of programmer analyst, software engineer, wed developers, database administration, digital media post production specialists, VR/AR environment designers, all within both public and private sectors. Our program is designed to cater to your interests, as well as the ever-changing high-demand industry our students enter upon graduation.

Major Program Requirements

To receive the Bachelor of Science Degree in Information Technology, the candidate must successfully complete 120 semester hours of credit including the following distribution: 36 hours of INFOTC core courses, 30 hours of INFOTC technical electives or equivalent Computer Science (CMP_SC) courses, 9 hours of related math, 10 hours of science, 9-16 hours of courses in a possible minor and any remaining hours for elective courses approved by the IT program Director of Undergraduate Studies. General education courses include ENGLSH 1000, 9 hours of Social/Behavioral Sciences and 9 hours of Humanities/Fine Arts, with at least one course from Social/Behavioral/Humanities at the 2000 level or higher.

Information Technology students must earn a C-range grade or better in all INFOTC/CMP_SC courses that are prerequisites for other INFOTC/CMP_SC courses that the student takes. To graduate, a student must earn a cumulative UM grade point average of 2.0 or better and a 2.0 grade point average or better in all INFOTC/CMP_SC courses.

In addition to the major core requirements, students must complete all University graduation requirements (https://catalog.missouri.edu/academicdegreerequirements/universityrequirements/) including University general education (https://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/), as well as all degree and college or school requirements. See course descriptions for prerequisites.

Information Technology Core Courses		**36**
ENGINR 1000	Introduction to Engineering *	1
ENGINR 1050	Foundations of Engineering *	2
INFOTC 1040	Introduction to Problem Solving and Programming	3
or CMP_SC 1050	Algorithm Design and Programming I	
INFOTC 1610	Introduction to Digital Media Design	3
INFOTC 2040	Programming Languages and Paradigms	3
or CMP_SC 2050	Algorithm Design and Programming II	
INFOTC 2810	Fundamentals of Network Technology	3
INFOTC 2830	Web Application Development I	3
INFOTC 2910	Cyber Security	3
INFOTC 3380	Database Systems and Applications	3
INFOTC 3530	UNIX Operating System	3
INFOTC 3650	Leadership and Ethics in Information Technology	3
or INFOTC 3650W	Leadership and Ethics in Information Technology - Writing Intensive	
INFOTC 4320	Software Engineering	3
INFOTC 4970W	Senior Capstone Design - Writing Intensive	3
or INFOTC 4610W	Advanced Multimedia Design and Technology - Writing Intensive	
Information Technology Technical Electives		**30**
Choose from below or other courses with advisor approval (minimum of 30 credit hours with 15 hours at 3000 level or above):		
INFOTC 1600	Digital Systems	3
INFOTC 2001	Topics in Information Technology	3
CMP_SC 2010	Intellectual Property for Engineers	3
INFOTC 2610	Digital Media Design I	3
INFOTC 2615	Color Processing and Design	3
INFOTC 2620	Computer Modeling and Animation I	3
INFOTC 2630	Introduction to Game Theory and Design	3
INFOTC 3001	Topics in Information Technology	3
CMP_SC 3050	Advanced Algorithm Design	3
INFOTC 3330	Object Oriented Programming	3
or CMP_SC 3330	Object Oriented Programming	
INFOTC 3600	User Experience Design I	3
INFOTC 3610	Digital Media Design II	3
INFOTC 3620	Computer Modeling and Animation II	3
INFOTC 3630	Introduction to Virtual Reality	3
INFOTC 3640	Motion Graphics and Visual Effects I	3
INFOTC 3660	Audio Engineering	3
INFOTC 3810	Computer Network Security	3
INFOTC 3850	Computer System Administration	3
INFOTC 3910	Advanced Cyber Security	3
INFOTC 3940	Internship in Information Technology	1-6
INFOTC 4001	Topics in Information Technology	3
INFOTC 4085	Independent Projects	1-6
or CMP_SC 3085	Problems in Computer Science	
INFOTC 4200	Digital Production Systems	3
CMP_SC 4380	Database Management Systems I	3
INFOTC 4400	C#/.NET Development	3
INFOTC 4401	Python 1: Learn to Program in Python	3
INFOTC 4405	iOS App Development I	3
INFOTC 4410	Android App Development I	3
INFOTC 4420	Android App Development II	3
INFOTC 4425	iOS App Development II	3
CMP_SC 4530	Cloud Computing	3

INFOTC 4600	User Experience Design II	3
INFOTC 4610	Advanced Multimedia Design and Technology	3
INFOTC 4630	Game Development	3
INFOTC 4640	Motion Graphics and Visual Effects II	3
INFOTC 4830	Web Application Development II	3
INFOTC 4910	Digital Forensics	3
INFOTC 4990	Undergraduate Research in Information Technology	1-6
or CMP_SC 4990	Undergraduate Research in Computer Science	
INFOTC 4995	Undergraduate Research in Information Technology - Honors	1-6
or CMP_SC 4995	Undergraduate Research in Computer Science - Honors	
Mathematics and Business Courses		**9**
MATH 1300	Finite Mathematics	3
MATH 1400	Calculus for Social and Life Sciences I	3
STAT 2500	Introduction to Probability and Statistics I	3

* ENGINR 1000/ENGINR 1050 Waiver: Students transferring in with 60 or more credits are exempt from the ENGINR 1000 and ENGINR 1050 Requirement

Minor or Science Concentration

Ten hours in biological or physical science courses are required, including one course with a laboratory science section.

Semester Plan

Below is a sample plan of study, semester by semester. A student's actual plan may vary based on course choices where options are available. Summer courses are available, as well as internship credit. These courses may help to reduce the two 18-credit semesters. 12 hours is the minimum amount of hours that can be enrolled in to qualify for full time.

First Year			
Fall	**CR**	**Spring**	**CR**
ENGINR 1000	1	ENGINR 1050	2
INFOTC 1040 or CMP_SC 1050	3	INFOTC 2040 or CMP_SC 2050	3
Social or Behavioral Science	3	INFOTC 1610	3
MATH 1400	3	MATH 1300	3
ENGLSH 1000	3	Constitutional Requirement	3
		Humanities or Fine Art	3
	13		**17**
Second Year			
Fall	**CR**	**Spring**	**CR**
INFOTC 2810	3	INFOTC 2830	3
STAT 2500	3	Humanity or Fine Art	3
Social or Behavioral Science	3	Bio/Phys Science with Lab	4
Humanity or Fine Art	3	WI General Elective (INFOTC WI)	3
Technical Elective	3	INFOTC 2910	3
	15		**16**
Third Year			
Fall	**CR**	**Spring**	**CR**
Technical Elective	3	Technical Elective	3
INFOTC 3380	3	Technical Elective (3000 lvl or above)	3
INFOTC 3650W	3	Bio/Phys Science	3
INFOTC 3530	3	INFOTC 4320 or 3650	3
Diversity Requirement	3	Bio/Phys Science	3
	15		**15**
Fourth Year			
Fall	**CR**	**Spring**	**CR**
General Elective	2	Technical Elective (3000 lvl or above)	3
Technical Elective	3	Technical Elective (3000 lvl or above)	3
Technical Elective	3	Technical Elective (3000 lvl or above)	3
Humanity/Fine Art/Social or Beh Science (2000 lvl or above)	3	General Elective	3
Technical Elective (3000 lvl or above)	3	INFOTC 4970W or INFOTC 4610W	3
	14		**15**

Total Credits: 120