Bachelor of Science in Information Technology

Student Handbook

2015-2016



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Welcome

Thank you for your interest in the Bachelor of Science in Information Technology (BSIT) program at the KU Edwards Campus. We have created this handbook for both students who are interested in joining the BSIT program and those who are already in the program. The first half of the handbook provides you with information about the KU Edwards Campus, Information Technology as an academic discipline, the career opportunities you may have as a BSIT graduate, and the admissions process for the BSIT program. The second half provides you with detailed information about the BSIT curriculum, the advising and academic policies, and the BSIT course descriptions. For specific topics, please review the Table of Contents on page 3 of this handbook.

Developed in response to workforce and economic needs in the Kansas City metropolitan area, the BSIT program officially launched in the fall 2012 semester and is one of eight undergraduate programs offered at the KU Edwards Campus. The BSIT is a degree completion program designed for students and working professionals who have earned an associate's degree or equivalent hours and wish to complete the upper-level courses necessary for a bachelor's degree. The program is housed in the Electrical Engineering and Computer Science department in the KU School of Engineering.

Classes are taught by highly qualified Ph.D. faculty and professors of practice who have extensive IT industry experience. The breadth of topics offered in the BSIT program will provide you with key knowledge and skills in a variety of IT areas, including:

- Information assurance and security
- Computer networking
- IT integration and architecture
- Multimedia systems
- Software development technologies
- Operating systems
- System administration
- Web technologies

We, the BSIT faculty and advising staff, are dedicated to your success. We look forward to assisting you in reaching your academic and career goals.

Rock Chalk!

KU in Overland Park

Convenient Location. Valuable Resources.

At the KU Edwards Campus, we understand that you have a busy schedule and responsibilities outside the classroom. Aimed to meet the needs of recent community college graduates, working students seeking a career change, and IT professionals upgrading their technical knowledge, the BSIT program is conveniently offered in the Kansas City metropolitan area suburb of Overland Park, Kansas. Our evening classes are designed to accommodate your daytime scheduling constraints, such as work or family responsibilities. Evening classes also allow BSIT students to pursue daytime internship experiences.

Student Services

You have access to a variety of student services at the KU Edwards Campus, including:

- Computer labs with BSIT course software
- Engineering Career Center
- On-site financial aid counseling
- Full-service library
- Academic Achievement & Access Center
- Statistics tutoring
- Writing Center
- Dedicated rooms for individual or group study and projects
- Jayhawk Central Student Union
 - KU Bookstore
 - o LaMar's Donuts
 - o Sarpino's Pizzeria

Scholarships

There are numerous scholarship opportunities available to you in the BSIT program. You may apply for Edwards Campus scholarships, School of Engineering scholarships, and general KU transfer scholarships. As application deadlines and criteria vary for scholarships, it is important to seek information about them in advance so that you do not miss the opportunity to apply. If you have any questions about the scholarships, please contact the BSIT Undergraduate Advisor.

To learn more about scholarship opportunities, visit:

- http://affordability.ku.edu
- http://edwardscampus.ku.edu/scholarships
- http://engr.ku.edu/prospective > Select "Scholarships" below Undergraduate Programs

What is Information Technology?

Degree programs in Information Technology (IT) are relatively new in colleges and universities. Graduates of IT programs gain the comprehensive knowledge and necessary skills and training to become IT professionals who are able to meet the computer technology needs of users in industry, government, healthcare, and academic organizations. Both undergraduate and graduate programs (including Ph.D. degrees) in IT have become very popular.

As an academic discipline, IT covers the uses of computing technologies, such as computer networking, Web technologies, information security, operating systems and system administration, database development, system integration, and computer programming. The KU BSIT program is based on the curriculum proposed by the ACM and IEEE-CS, two of the largest computing societies with membership and representation from academia, industry, and government. Industry partners were also consulted in the development of this degree. The BSIT program will be accredited by ABET, a world leader in assuring quality education in technical degree programs.

Figure I below illustrates the major components of an IT degree program. Developed by the Special Interest Group of Information Technology Education (SIGITE) of the ACM, the pillars are well-known knowledge units (programming, networking, human-computer interaction, databases, and web systems) built on top of IT fundamentals (introductory computer science, mathematics, and sciences). Overarching the entire foundation are knowledge areas such as information security, professionalism, and ethics. The KU BSIT program emphasizes these foundational knowledge pillars while providing practical, hands-on expertise.

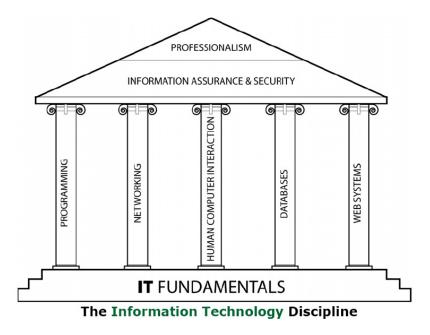


Figure I (http://test.sigite.hosting.acm.org/?page_id=30#!prettyPhoto)

How is IT different from Computer Science or Information Systems?

Information technology (IT), computer science (CS) and information systems (IS) are related and complementary academic disciplines within computing. While an IT program may seem comparable to a CS or an IS program, these three academic disciplines have distinct purposes. Figures 2, 3, and 4 below depict the computing space and illustrate the relationship between these disciplines.

Information Technology

IT programs began to emerge in the 2000s when the uses of computing technologies became increasingly pervasive and influential in nearly every sector. IT professionals are the intermediary between technology and the people who use technology. They are often characterized as the "user's advocate." They use technology as a tool to solve problems for their users.

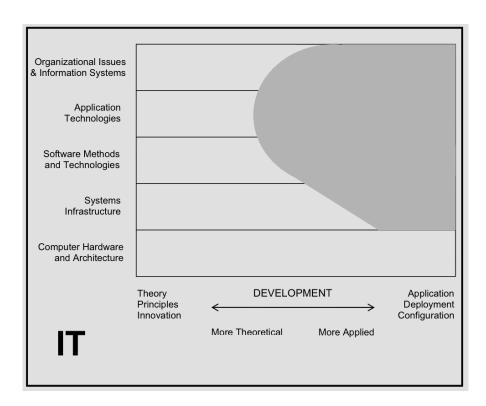


Figure 2 (http://test.sigite.hosting.acm.org/wp-content/uploads/2012/11/CC2005-March06Final.pdf)

Information Systems

Information Systems (IS) professionals focus on the information aspect of technology. They use technology to manage information for organizational efficiency and collaborative decision making. IS major programs are typically housed in a school of business and work from a business/organizational perspective.

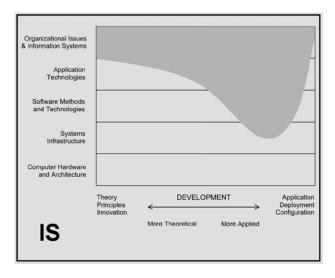


Figure 3 (http://test.sigite.hosting.acm.org/wp-content/uploads/2012/11/CC2005-March06Final.pdf)

Computer Science

Computer scientists, on the other hand, solve problems from a scientific and theoretical approach. They work in a broad range of positions involving tasks from theoretical work to software development. They design and implement software using their knowledge of algorithms and abstraction, and devise new ways to solve computationally intensive problems.

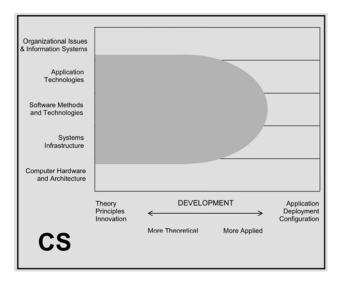


Figure 4 (http://test.sigite.hosting.acm.org/wp-content/uploads/2012/11/CC2005-March06Final.pdf)

Program Objectives and Student Outcomes

BSIT Program Objectives

Technical Proficiency: Graduates will have achieved success and visibility in their chosen careers as shown by technical accomplishments in industry, government, entrepreneurial activities, or academia.

Collaborative Activities: Graduates will have exercised shared responsibilities through activities such as contributions to multi-person or multi-disciplinary technical projects, participation in professional society/organization functions, or performing collaborative research. In all such cases, graduates will have contributed to documentation of the collaborative activities.

Professional Development: Graduates will have demonstrated continual updating to extend their expertise and adapt to a changing environment through graduate studies; short courses, conferences, and seminars; or professional self- study. In addition, graduates will have demonstrated evidence of increasing technical and/or managerial impact.

BSIT Program Student Outcomes

The program enables students to achieve, by the time of graduation:

- (a) An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline
- (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- (c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
- (d) An ability to function effectively on teams to accomplish a common goal
- (e) An understanding of professional, ethical, legal, security and social issues and responsibilities
- (f) An ability to communicate effectively with a range of audiences
- (g) An ability to analyze the local and global impact of computing on individuals, organizations, and society
- (h) Recognition of the need for and an ability to engage in continuing professional development
- (i) An ability to use current techniques, skills, and tools necessary for computing practice.
- (j) An ability to use and apply current technical concepts and practices in the core information technologies.
- (k) An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems.
- (I) An ability to effectively integrate IT-based solutions into the user environment.

- (m) An understanding of best practices and standards and their application.
- (n) An ability to assist in the creation of an effective project plan.

Careers in IT

Jobs in IT continue to expand in nearly all sectors, including business, healthcare, education, and government. The U.S. Bureau of Labor Statistics predicts job openings in IT to grow faster than most occupations. The Mid-America Regional Council (MARC) found that jobs in computing grew 30 percent in Kansas City from 2001-2013, and IT-related jobs in the Kansas City metro remain open because of a lack of qualified workers (March 2013). Jobs can be found at "inhouse" IT departments of businesses and organizations, such as the IT department of a local hospital, as well as in firms that develop and provide IT services to clients.

The breadth of IT topics offered in the BSIT curriculum offer students the opportunity to pursue a wide variety of IT careers, including:

- Computer network administrator
- System administrator
- Information security analyst
- Web system developer
- Computer network architect
- Database administrator

- Computer systems analyst
- Computer support specialist
- Software, hardware, network maintenance
- Platform technologies and integration expert

Typical salaries for an IT professional will vary depending on the IT career path and place of employment. The average starting salary for IT graduates is \$57,100 (The National Association of Colleges & Employers, April 2013).

Engineering Career Center

The Engineering Career Center (ECC) offers a comprehensive array of services to graduating students seeking permanent employment and to undergraduates seeking career-related internship or co-op employment. These services include:

- Online job postings for internships and full-time employment
- Phone and Skype appointments at your convenience
- Individual counseling on resumes, interviewing, and job search strategies
- Office hours monthly on the Edwards Campus
- On-campus interviewing program
- Career fair each February and September
- Resume-writing software
- Library of employer and career literature

For more information, visit the ECC website at: http://www.engr.ku.edu/career_center/.

BSIT Admission

The BSIT program is designed as a degree completion program in which the necessary lower-division coursework is completed elsewhere, generally before beginning classes at the Edwards Campus. The lower-division coursework provides you with the strong foundation in mathematics, science, and computer programming needed for your success in the upper-division IT courses.

Admission Requirements

- Completion of a minimum of 60 credit hours.
- Minimum 2.5 GPA in all coursework.
- Completion of the following courses:
 - College Algebra: MATH 101 or equivalent
 - Discrete Structures I and II: EECS 210 or equivalent
 - English Composition I: ENGL 101 or equivalent
 - English Composition II: ENGL 102 or equivalent
 - College Physics I: PHSX 114 or equivalent
 - General Chemistry I or Principles of Molecular & Cellular Biology: CHEM 130 or BIOL 150 or equivalent
 - Programming Fundamentals: Not offered at KU. See BSIT Undergraduate Advisor for enrollment options.
 - o Programming Algorithms: EECS 168 or equivalent
 - Data Structures: EECS 268 or equivalent
- Completion of the following courses are **strongly recommended** before admission:
 - o Public Speaking: COMS 130 or equivalent
 - General Psychology: PSYC 104 or equivalent
 - Survey of Economics: ECON 104 or equivalent
 - Survey of Accounting: ACCT 205 or equivalent
 - Database Management: Not offered at KU. See BSIT Undergraduate Advisor for enrollment options.
 - Unix Scripting and Utilities: Not offered at KU. See BSIT Undergraduate Advisor for enrollment options.

Admission Application

To apply for admission, complete the KU Online Admission Application found at: http://www.ku.edu/admission/. You must request official transcripts from the institution(s) at which you completed coursework to be sent to KU. You may send the transcripts electronically or by postal mail to: KU Office of Admissions, 1502 lowa, Lawrence, KS 66045. We recommend that you apply at least one semester before you plan to attend KU.

Degree Completion Plan

The BSIT program is intended to allow students to finish their degree at their own pace. Some students would like to finish the program in four years, while others may need more time. To create a personalized degree completion plan, please schedule an appointment with the BSIT Undergraduate Advisor.

Since most students complete their lower-division coursework at Johnson County Community College (JCCC), an example four-year degree completion plan through JCCC is detailed below. The Year I and 2 courses will lead to an Associate of Science degree in Information Systems Technology from JCCC.

Suggested 4-Year Course Plan

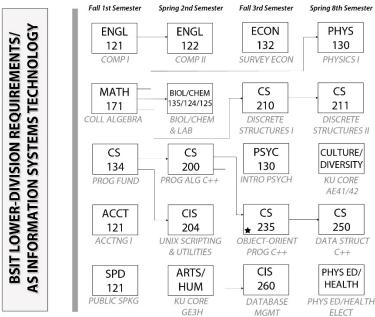
	Fall	Spring
Year I JCCC	3 ENGL 121: Composition I 3 MATH 171: College Algebra 4 CS 134: Programming Fundamentals 3 ACCT 121: Accounting I 3 SPD 121: Public Speaking 16 hours	3 ENGL 122: Composition II 4 CS 200: Program. Algorithms C++ 4-5 CHEM 124/125 or BIOL 135: Gen. Chem. w/lab or Molecular & Cell. Biol. 3 Arts & Humanities Elective 3 CIS 204 Unix Scripting & Utilities
Year 2 JCCC	3 CS 210: Discrete Structures I 3 ECON 132: Survey of Economics 3 PSYC 130: Intro to Psychology 4 CIS 260: Database Management 4 CS 235: Object-Oriented Prog. C++* 17 hours	17-18 hours 4 CS 250: Data Structures C++ 3 CS 211: Discrete Structures II 5 PHYS 130: Physics 3 Culture & Diversity Elective 1 Health or Phys. Ed. Elective** 16 hours
Year 3 KU Edwards	3 MATH 365: Statistics 3 MGMT 305: Survey of Management 3 IT 310: Comp. Org. & Platform Tech. 3 IT 340: Computer and Info Security 3 ENGL 362: Technical Writing 15 Hours	3 BBA 410: Project Management 3 IT 320: System Administration 3 IT 330: Web Sys. & Technologies 3 IT 342: Info. Security Management 3 Culture & Diversity Elective 15 Hours
Year 4 KU Edwards	3 IT 410: Software Engineering & Mgmt. 3 IT 422: Computer Networks 3 IT 430: Human-Computer Interactn. 3 IT Senior Elective I 3 IT 490: IT Capstone I 15 Hours	3 IT 416: System Integration & Arch. 3 IT 420: Operating Systems 3 IT 450: Social & Professional Issues 3 IT Senior Elective 2 3 IT 492: IT Capstone II 15 Hours

^{*}Strongly recommended for BSIT program; required for Associate of Science in Information Systems Technology degree at JCCC.

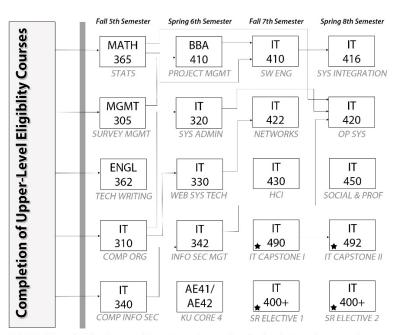
^{**}Required only for the Associate of Science in Information Systems Technology degree at JCCC.

Course Flow Charts

The following flow charts show the prerequisite relationships among technical portions of the BSIT program. These charts, the latest catalog, and the BSIT Undergraduate Advisor should be consulted if deviations from the suggested course sequence are contemplated.



★ Strongly recommended for BSIT; required for AS in Information Systems Technology degree.



★ IT490/492 and Sr Electives 1 and 2 require senior standing; for the electives the required prerequisite courses must have been taken.

Degree Requirements Checklist

A minimum of 120 credit hours and the following courses are required for the BSIT:

Information Technology (64 credit hours)	Hours	KU Core Goal	Semester/ Grade
Programming Fundamentals	4		
EECS 168 Programming Algorithms	4		
EECS 268 Data Structures	4		
Database Management	4		
Unix Scripting and Utilities	3		
IT 310 Computer Organization & Platform Tech.	3		
IT 320 System Administration	3		
IT 330 Web Systems and Technologies	3		
IT 340 Computer & Information Security	3		
IT 342 Information Security Management	3		
IT 410 Software Engineering & Management	3		
IT 416 System Integration and Architecture	3		
IT 420 Operating Systems	3		
IT 422 Computer Networks	3		
IT 430 Human-Computer Interaction	3		
IT 450 Social and Professional Issues	3	AE51*	
IT 490 IT Capstone I	3	AE61	
IT 492 IT Capstone II	3		
Senior IT elective I	3		
Senior IT elective 2	3		
Mathematics (12 credit hours)			
MATH 101 College Algebra	3	GE12	
Discrete Structures I & II	6		
MATH 365 Elementary Statistics	3	GE12	
Basic Science (8-9 credit hours)			
CHEM 130 General Chemistry I or	4-5	GE3N	
BIOL 150 Prn Molecular & Cellular Biology			
PHSX 114 General Physics I	4	GEII	

Business and Management (9 credit hours)	Hours	KU Core Goal	Semester/ Grade			
ACCT 205 Survey of Accounting	3					
MGMT 305 Survey of Management	3					
BBA 410 Intro to Project Management	3					
English (up to 9 credit hours)						
Completion of KU Core Goal GE21, typically com	pleted by:					
ENGL 101 Composition	3	GE21				
ENGL 102 Critical Reading and Writing	3	GE21				
AND						
ENGL 362 Foundations of Tech Writing	3					
Oral Communications (up to 3 credit hours)						
Completion of KU Core Goal GE22, typically com	pleted by:					
COMS 130 Speaker-Audience Comm.	3	GE22				
Social Science and Humanities (9-10 credit hours)						
ECON 104 Survey of Economics	3-4	GE3S				
PSYC 104 General Psychology	3	GE3S				
Arts & Humanities (GE3H) course	3	GE3H				
Culture & Diversity (up to 6 credit hours)						
U.S. Diversity (AE41)	3	AE41				
Global Awareness (AE42)	3	AE42				

KU Core. The KU Core is the university-wide curriculum that all incoming students must fulfill as part of their KU degree. Some of the degree requirements above may be completed by fulfilling KU Core requirements, which can be completed through coursework or approved experiences. If you fulfill any of the above requirements with an approved experience, then you will need to make up the credit hours with electives. All students must earn a minimum of I20 credit hours. If you have any questions about how you will fulfill KU Core and BSIT-specific degree requirements, please contact the BSIT Undergraduate Advisor.

KU Core Opt Out. New transfer students who start at KU between fall 2014 and summer 2015 will be given the choice to opt-out of the KU Core requirements and follow fall 2012 requirements. Please consider this option carefully with the BSIT Undergraduate Advisor as your choice is irreversible once made and must be recorded by July 31, 2015.

^{*}Pending final approval by the KU University Core Curriculum Committee.

Advising Q & A

Does the BSIT program lead to professional certifications?

No. While there is value in professional certifications, there are several reasons we do not offer academic credit for them in the BSIT program. First, our program prepares you to work in a variety of computing settings; it allows you the flexibility to find jobs in many different IT areas. Second, most professional certifications are vendor-specific and narrowly focused (i.e. Cisco). By choosing to use a particular product, we not only limit your ability to learn other products, but we impair our unbiased stance toward the education of many types of platforms, operating systems, and software products. Lastly, we emphasize both practical, hands-on and theoretical education. Most certification programs focus only on the hands-on components and lack the solid theoretical foundation needed for an IT degree.

I have work experience in IT. Can this count for credit toward my degree?

No, KU does not award credit for prior learning or work experiences. KU does accept some Advanced Placement, International Baccalaureate, and CLEP credits with qualifying scores. For more information, please see the BSIT Undergraduate Advisor or go to: http://admissions.ku.edu/apply/credits/.

Why do I need to take Physics and Chemistry or Biology courses with labs?

Completing science courses with labs, such as Physics, Chemistry, and Biology, allows you to hone your skills in thinking abstractly and solving problems logically using the scientific method. The type of thinking you will develop through these courses is needed every day in computing careers.

I still have a few lower-division prerequisite requirements to complete for the BSIT program. Can I begin the BSIT program at KU?

It depends. If you have completed the critical mathematics, science, and computer programming prerequisite courses listed on page 10, you may be able to start at KU while finishing your remaining lower-division courses. Please contact the BSIT Undergraduate Advisor for information about obtaining a prerequisite waiver.

Am I required to meet with an advisor every semester?

Yes. You will receive an Engineering Advising Hold (EAH) each semester that will block your enrollment until you have met with the BSIT Undergraduate Advisor. These meetings are intended to ensure you are enrolling in the next appropriate sequence of courses in order to

most efficiently complete your degree. You may also discuss professional development opportunities, such as internships or full-time employment.

Students who are completing prerequisite courses elsewhere (i.e. JCCC) are encouraged, but not required, to meet with the BSIT Undergraduate Advisor each semester, in addition to advising at their community college.

Is it OK for me to take the next course in a sequence, for example Discrete Structures II, at the same time I am repeating the prerequisite course, for example Discrete Structures I, to raise the grade to C or better?

Almost never. Prerequisite course requirements are designed to build solid foundations. This is not likely to happen if you haven't attained a C or better in the prerequisite course before taking the next course. If you have an extenuating circumstance that you believe warrants an exception, you should discuss this with the BSIT Undergraduate Advisor.

How do I know when courses are offered?

We recommend that you use http://classes.ku.edu to search for current and historical course offerings. You can change search parameters using the "More Options" link. You may also contact the BSIT Undergraduate Advisor.

I have an exemption for COMS 130: Speaker-Audience Communication. Do I need to make up these hours?

Yes. All students must earn a minimum of 120 credit hours. If you complete a KU Core and/or degree requirement with an exemption or an experience, you will need to replace these hours with elective credit. It is typical for a transfer student to transfer electives that can apply toward the total 120 credit hours, so be sure to check with the BSIT Undergraduate Advisor before enrolling in an elective course. **Note:** If you started at KU prior to fall 2013 or have opted out of the KU Core and have the COMS 130 exemption, you will be required to make up these hours in a Communication Studies course with COMS 130 as the prerequisite. See the BSIT Undergraduate Advisor for more details.

When and for what classes is the Credit/No Credit Option (pass/fail at some institutions) allowed?

Not recommended. Although the credit/no credit (CR/NC) option is allowed to fulfill English, humanities, social science, or oral communication courses, this option has the potential of lowering (not raising) your grade point average, since CR/NC courses are not included in GPA calculations.

How do I locate computing books, journals and conference proceedings in the KU libraries?

Edwards: Many research materials may be found online (see below). However, if you need print materials, the staff at the KU Edwards Campus library can assist you in having print materials from the main libraries in Lawrence or outside the KU library system (interlibrary loan) sent to the KU Edwards Campus.

Lawrence: Print materials on computing are housed in two different buildings at KU: Anschutz Library, 2nd floor (one floor below entry level), Call number QA 75.5-76.9. Anschutz covers mainly computer programming and software. Topics include general theory and application of computers, data processing, parallel processing, computer programming, programming languages, specific makes and models of computers and microprocessors, computer security, database and file management, etc. Spahr Engineering Library, 2nd floor, Call number TK 5100-7895. Spahr covers mainly computer engineering and hardware. Topics include telecommunication, signal processing, wireless, data transmission, computer networks, electronic circuits and apparatus, semiconductors, microelectronics, integrated circuits, microwaves, and computer hardware, components, and auxiliary equipment, etc. Sometimes there are materials on a topic in both Anschutz and Spahr.

What online publications are available?

The Spahr Engineering Library's web site provides online access to many computing publications. These include the ACM Digital Library, the IEEE Xplore journals and proceedings since 1998, and many other electronic journals and databases. Online publications are accessible from anywhere on campus. Regardless of location, all computing books, journals, and conference proceedings are listed in the library's online catalog. The same is true of all library materials at KU in every field of engineering. The catalog gives the location of each and every item. Librarians at the **KU Edwards Campus** can assist you in locating online materials from the Spahr Engineering Library.

Academic Policies

This section details department policies and procedures concerning completion of the curricula. In addition, each student is responsible for seeking out and complying with policies of the School of Engineering and the University. These are contained in the current Undergraduate Catalog of the University, or in sources referred to therein.

Transfer Admission Standards. All applications from transfer students either from other KU units or from other institutions are evaluated on a case-by-case basis. In general, students with grade-point averages under 2.5 are not considered for admission. If you have questions or concerns about this, please contact the BSIT Undergraduate Advisor.

Transfer Credits. The University accepts and will place on the student's permanent KU record credits for all academic courses taken at an accredited college or university. Vocational and remedial courses are excluded. Not all courses accepted by the University will apply toward a degree in engineering. A student will not receive engineering degree transfer credit for:

- Courses in which the grade was lower than C, or which were graded credit/no-credit or pass/fail.
- More than 64 hours from community or junior colleges.
- Courses in advanced engineering sciences or engineering design unless they were taken in an engineering program accredited by ABET or CSAB.

To clearly document the application of engineering transfer course credits toward a specific degree in engineering, there is a "transfer contract" form, to be completed by the student and submitted for approval by the appropriate Department and School representatives. Copies of this form are available in the KU Edwards EECS office, 250 BEST. This process should normally be completed no later than the student's first semester in the Department.

In cases where it appears that a strong case can be made for transferring freshman or sophomore-level courses from an international school, or other school from which credits are not routinely accepted by the School of Engineering, a process called "Advanced Standing Credit by Validation" is available. Information about this process and the necessary forms are available from the KU Edwards EECS Office, 250 BEST. All such validations should be petitioned during the student's first semester in the KU Edwards EECS Office, 250 BEST.

Academic Requirements. All School of Engineering undergraduates are subject to certain academic requirements (detailed in the Undergraduate Catalog) which call in part for maintaining a GPA of 2.0 or better, and which provide for academic probation and eventual dismissal from the School for failure to do so. You are expected to be familiar with these requirements.

Progress through the curriculum requires not just passing all courses required for a particular degree, but passing them at certain levels and/or in the proper sequence.

Course Prerequisites and Corequisites. You must pass (at the appropriate grade level) all prerequisite courses for a given course **before** taking the following course. If Course A is a Corequisite for Course B, Course A must be taken in the same semester as Course B or be completed prior to taking Course B.

Upper Level Eligibility. In addition to prerequisites and co-requisites, Information Technology undergraduates are required to earn *Upper Level Course Eligibility* by attaining grades of C or better in each of the following 8 courses:

- GE 21 (both)
- PHSX 114
- MATH 101
- Discrete Structures I and II (EECS 210, MATH 450, or equivalent)
- EECS 168
- EECS 268

If you earn less than a C in any of the above listed courses, you must repeat the course at the next available opportunity and must **not** take a course for which that course is a prerequisite. It is *your responsibility* to contact your advisor *before beginning the new semester* regarding any required repetitions and the associated enrollment adjustments (drops and adds).

To enroll in *any* upper-level IT course (numbered 300 and above), you must have fulfilled the *Upper Level Eligibility Requirements* detailed above. You may also petition for a *Partial Waiver of Upper Level Eligibility Requirements* by completing the appropriate petition by contacting the BSIT Undergraduate Advisor at bsit@ku.edu.

Graduation Requirements. In addition to completing each of the required and elective courses listed in the curriculum:

- 1. You must attain a cumulative grade-point average of at least 2.0 in courses applied toward the degree. You must also have a KU cumulative grade-point average of 2.0 whether or not all courses are being applied to the degree.
- 2. You must attain a cumulative grade-point average of at least 2.0 in all courses taken in the School of Engineering, including courses not applied toward a degree.
- 3. If you entered with advanced standing (transfer credit), you must attain a cumulative grade-point average of at least 2.0 in the resident courses applied toward the degree and at least a 2.0 in all courses taken in the school.
- 4. You must take the last 30 hours of credit toward the degree at KU and be officially enrolled in the School of Engineering during this time.

Readmission. Under various circumstances a student may leave the School of Engineering. Depending upon the reason for leaving and the student's current status, there are different procedures to be followed to be reconsidered for the BSIT program:

- I. If you leave the School of Engineering but remain a student in good standing at the University of Kansas and then wish to return to the School of Engineering, you would file an Application for Change of School. (Change of School Applications are available in the KU Edwards EECS Office, 250 BEST or at: www.registrar.ku.edu).
- 2. If you leave the School of Engineering and the University of Kansas and then wish to return to the School of Engineering, you would file an *Application for Readmission*. (Applications are available online at: http://admissions.ku.edu/apply/apps/readmits.shtml or in the KU Edwards EECS Office, 250 BEST).
- 3. If you have been dismissed from the School of Engineering for poor scholarship, you must not only file the appropriate application mentioned in 1 or 2 above, but you must also file a *Petition for Reinstatement* to the School of Engineering. Petition forms are available from the KU Edwards EECS Office, 250 BEST. The signed petition must be turned in to the Dean's office for review and decision.

If you have completed additional course work since being dropped from the School of Engineering or leaving the University, you will need to include an up-to-date transcript or a combination of a previous transcript and grade reports for all subsequent work.

University Course Repeat Policy. You can view the Course Repeat Policy at: https://documents.ku.edu/policies/governance/USRR.htm#art2sect2. The BSIT Undergraduate Advisor can provide answers to specific questions.

Academic Misconduct. The BSIT program and EECS Department regard academic misconduct as a very serious matter. Students who violate conduct policies will be subject to severe penalties, up through and including dismissal from the School of Engineering. Please refer to the Student Handbook web site under Codes Policies, Laws & Guidelines at www.studenthandbook.ku.edu for specific guidelines about actions considered to be academic misconduct and the repercussions of such action.

These actions include, but are not limited to disruption of classes, threatening an instructor or fellow student in an academic setting; giving or receiving of unauthorized aid on examinations or in the preparation of notebooks, themes, reports or other assignments; knowingly misrepresenting the source of any academic work; unauthorized changing of grades; unauthorized use of University approvals or forging of signatures; falsification of research results; plagiarizing of another's work; violation of regulations or ethical codes for the treatment of human and animal subjects; or otherwise acting dishonestly in research.

Advising and Enrollment

Scheduling Your Time. Obtaining a degree in Information Technology requires a commitment to organization and planning, as well as dedicating a large portion of time to inclass work, lab-work, and homework.

Time is probably the most important factor when deciding how many classes to take each semester. If you have job or family commitments, you need to consider taking fewer courses in order to successfully proceed through the curriculum. We suggest planning for two to three hours out-of-class study time for every one hour spent in the classroom. Students are strongly discouraged from violating the following "60-hour rule": (Total-credit-hours \times 3) + weekly-employment-hours \leq 60 hours. If you are not closely following the Suggested Course Plan for your degree, you should develop and keep current a complete plan of study for your degree. This should be done at each semester's meeting with the BSIT Undergraduate Advisor (see below).

Orientation. Each entering transfer student is encouraged to attend one of the Edwards Campus orientation programs. Edwards Campus orientation programs generally are offered in the late afternoon/evening in January, April, and July. At each orientation program, students are advised on course selection for their initial semester and given the opportunity to enroll. Students who cannot attend an orientation program may confer with the BSIT Undergraduate Advisor.

General Procedures. After the initial orientation advising, every BSIT undergraduate will continue to be advised by the BSIT Undergraduate Advisor. You should consult with this advisor at enrollment time and at any other time when questions or problems arise concerning your progress at the University or your professional future. We also encourage you to meet with your faculty mentor as desired.

All continuing BSIT students are to enroll during the regular enrollment periods that occur about half-way through a given semester for courses to be taken in the subsequent semester, i.e. in October/November for the following Spring semester, and in March/April for the following Summer session and Fall semester. Residual enrollment is only for new students and for continuing students who, for very good reasons, were unable to utilize the regular enrollment periods.

Each semester, a few days ahead of the start of enrollment itself, you are required to meet with the BSIT Undergraduate Advisor to plan your schedule and discuss other academic and career interests. The BSIT Undergraduate Advisor will contact you to remind you to set up an advising appointment prior to your online enrollment time. Prior to this advising period, you should schedule an appointment with this advisor. At the time of the appointment you should bring an Academic Program Planning Form (available at the KU Edwards EECS Office, 250 BEST or at www.eecs.ku.edu) filled out with preliminary course selections. You should also arrive with definite notions (preferably written down so they will not be forgotten) about both (a) what you are sure of in terms of plans for the coming semester and about degree requirements in

general, and (b) what you are unsure of that you need to discuss. This will make it possible for you and the BSIT Undergraduate Advisor to deal effectively with whatever problems or concerns you have. You both must sign your Academic Program Planning Form before you will be allowed to enroll.

You are also encouraged to call on the BSIT Undergraduate Advisor any time during the school year if you wish to change your schedule or discuss any other school or career related matters. Consultation with an advisor is strongly encouraged before making schedule changes.

Scheduling Appointments. The BSIT Undergraduate Advisor is available for appointments Monday through Friday, and offers evening appointments until 7 PM when classes are in session. The advisor can meet in-person, by phone, or by Skype. To schedule an appointment, call or email the BSIT Undergraduate Advisor at (913) 897-8623 or bsit@ku.edu.

Faculty Mentorship. Each student will be assigned to a faculty mentor, a BSIT professor of practice. Your faculty mentor will be available by appointment to discuss your academic and career aspirations, course content, current IT topics, etc. We strongly recommend that you visit your faculty mentor at least once per semester.

Policies. There are a number of Department and School policies concerning course selection and enrollment in both engineering and non-engineering courses. Many of these are discussed below. For further information see the latest University catalog. Also, you should regularly check the BSIT website: http://it.eecs.ku.edu.

Important notices regarding advising and enrollment are sent to your KU student email account; make sure you check your KU email account regularly or arrange to have your KU account email forwarded to another account that you check regularly.

Auditors. A person enrolled at KU may, with permission of the instructor of the course involved, audit a course. Auditors may not take examinations, submit daily assignments, or use laboratory equipment if a laboratory is part of the course. When auditing is allowed, students enroll and pay tuition, but not fees. No University credit is awarded.

Change of Major. If you wish to change majors within the School of Engineering, you must complete a Change of Major form available in the KU Edwards EECS Office, 250 BEST or at www.eecs.ku.edu. Completed Change of Major forms should be turned in to the KU Edwards EECS Office, 250 BEST.

If you wish to change your major to something other than engineering, you need to complete a Change of School Application form. Forms are available in the KU Edwards EECS Office, 250 BEST or at www.registrar.ku.edu. Completed forms should be turned in to the School in which you wish to change.

Concerns and Questions. Any concerns or questions about your experience in the BSIT program (i.e. classroom experience, grading, etc.) should be brought to the attention of the BSIT Undergraduate Advisor as soon as possible. We are committed to continuous improvement, and we want to provide you with the best educational experience possible.

Curriculum Changes. When degree requirements are revised, students already admitted to that degree and making normal progress toward that degree generally have two options: (I) change to the revised curriculum, or (2) continue under the curriculum in effect when entering the degree program. If no additional time is needed for completion, it is generally advisable to choose the new curriculum.

Double Major. If you wish to double-major (earn two degrees), you must fulfill all the requirements for the degrees in question. You must also consult the Engineering Dean's office and the department and/or school of the second major to find out if there are any additional requirements.

Graduate Courses. Courses 700-999 are designed for graduate students. Undergraduates may NOT enroll in courses numbered 800-999. An undergraduate student may not enroll in an EECS course numbered 700-799 unless the student's engineering GPA is 3.0 or higher. In addition, it is strongly recommended that the student have a grade of B or higher in each prerequisite course.

Limitation on Enrollment in Engineering Courses. After the 5th day of classes, enrollment in a course offered by the School of Engineering is permissible only with approval of the instructor and special permission of the dean. The School of Engineering reserves the right to deny admission to courses offered by the school to any student who is officially enrolled in another division of the university and who does not meet the standards established by the School of Engineering for admission or readmission.

Minimum and Maximum Enrollments. The maximum enrollment without the permission of the Dean of the School of Engineering is 19 hours in a semester and 9 hours in a summer session. There is no general minimum enrollment. However, for a particular student, a minimum enrollment requirement may be specified by the terms of a scholarship, student visa, or readmission agreement.

Substitutions. There are frequently times when it is necessary or desirable to make substitutions for a required course. This may occur when courses are transferred from another institution, or when there is a sound reason to substitute a course that lies outside the stated guidelines of the stated curriculum. Substitutions fall into one of the following four categories. Specific forms for cases 2, 3, and 4 are available from the KU Edwards EECS Office, 250 BEST.

Case 1: Courses transferred from another institution that automatically fulfill a course requirement. This occurs when the DPR (Degree Progress Report) Advising Report shows this course with the necessary KU course equivalent number. These courses should also appear in the appropriate requirement slots of the DPR and DPR Checklist, but if they don't, have the BSIT Undergraduate Advisor get this straight with the Dean's office. (The DPR is a computer

generated form that shows all courses for which KU gives you credit hours and other pertinent information to track your progress as a student at KU).

Note: Some transfer courses that have been approved to automatically fulfill BSIT degree requirements transfer to KU as "undesignated" transfer credit. This means that a particular transfer course does not equate to an exact KU course number (i.e. ACCT 121: Accounting I from Johnson County Community College transfers to KU as ACCT U but is approved to fulfill the BSIT Accounting requirement). Approved courses that transfer as undesignated transfer credit are noted on the published Transfer Guides for Johnson County Community College, Kansas City Kansas Community College, and Metropolitan Community College (Kansas City). These automatic substitutions will be communicated to the Dean's office at the time of admission into the BSIT program.

- Case 2: Technical courses transferred from another accredited institution that clearly contain the appropriate course material for required courses, but do not appear on the DPR with the necessary KU course number. In this case, a *Transfer Contract* form should be filled out, signed by the advisor and then sent to the undergraduate committee. The associate dean of the School of Engineering will then review for the final decision.
- Case 3: Courses transferred from another institution or KU courses that may contain the appropriate course material for required courses, but this equivalence is not obvious. In this case, a Course Substitution Petition should be filled out, signed by the advisor, and then sent to the undergraduate committee. The associate dean of the School of Engineering will then review for the final decision. If at all possible, these petitions are to be submitted for approval before the substituting courses are taken, and in any case at the earliest possible time.
- Case 4: Engineering courses which are not routinely transferred to the University of Kansas (for example, courses taken at a foreign university), but for which strong reasons can be advanced for their applicability toward degree requirements. In these cases, a petition for Advanced Standing Credit by Validation should be filled out. Case 4 applies only to 100- and 200-level (freshman and sophomore) courses.
- **Case 5:** Courses considered more rigorous than the courses required may be considered to fulfill a degree requirement through a petition using a Transfer Contract or Course Substitution Petition. The following course substitutions are routinely approved:
 - ACCT 205: ACCT 200 or equivalent
 - ECON 104: ECON 142 or ECON 144 or equivalent
 - MATH 101: MATH 104 or equivalent
 - PHSX 114: PHSX 211 (prior to fall 2013), PHSX 211/216 (fall 2013 or after), PHSX 210/216 (fall 2014 or after), or equivalent

Dropping a Course

General Information. Dropping courses should be avoided, since dropping almost always carries consequences of some sort; it is better to plan carefully. During advising and enrollment students will be strongly discouraged from enrolling in more courses than they can realistically

be expected to complete. The practice of over enrolling and dropping excess courses denies other students the opportunity to enroll in the first place. If a student is insistent about enrolling in more courses than the advisor believes is appropriate, the advisor may choose to approve 'with reservations', by recording these reservations on the Academic Program Planning Form.

Even with careful planning, however, you may at some point wish to drop a course that you have already enrolled in. The BSIT Undergraduate Advisor should always be consulted before making changes to your class schedule.

Procedural Details. Deadline dates and the latest information on dropping procedures and conditions for a given semester are available in the University academic calendar (currently available at www.registrar.ku.edu/calendar/academic.shtml) in effect for that semester. To complete a drop, you must also meet with the BSIT Undergraduate Advisor and complete the Schedule Change form.

Honors Programs

Departmental Honors. A student may graduate with departmental honors in the Information Technology major by satisfying the requirements below. Most of the requirements for graduation with Honors are completed during the final two semesters of the undergraduate program.

- 1. The student must file an application to graduate with Departmental Honors during the semester preceding the student's final two semesters (a summer semester may count as one of these). This must be done prior to enrolling in any EECS 498 course (see step 3 below). These forms are available in 250 BEST. Applicants must have an overall GPA of 3.25 or higher and an engineering GPA of 3.5 or higher. Applicants must identify a research topic and obtain consent of a faculty member to supervise the Honors research.
- 2. Applicants who receive preliminary approval must remain enrolled full-time and must maintain the above minimum cumulative overall and engineering GPAs until graduation.
- 3. Applicants who receive preliminary approval must enroll in EECS 498: Honors Research for one credit hour for his/her last two semesters (a summer semester may count as one of theses) under the supervision of the faculty member named in the Honors application. These credits are in addition to those required for the degree.
- 4. The student must complete an independent research project paper and oral presentation to a panel of three faculty members, including the research supervisor. This panel makes the recommendation concerning graduating with honors.

University and School of Engineering Honors. The School of Engineering encourages all qualified students to participate in the Honors Program. Students must meet with an engineering advisor every semester and may also meet with an honors program advisor. See the Honors Program section in the General Regulations chapter in the College of Liberal Arts and Sciences section of the undergraduate catalog.

Student Activities and Organizations

Students in the School of Engineering are encouraged to supplement their academic programs by participating in professional activities offered by the school's student organizations.

Edwards Opportunities

Student Advisory Board. The Student Advisory Board (SAB) communicates Edwards Campus student needs and interests to Edwards Campus administration. They strive for continuous improvement of the Edwards Campus student experience through voicing student concerns, participating in campus decision-making, and developing workforce and community engagement on campus.

Computing Conferences. Students in the BSIT program have the opportunity to attend computing conferences in the Kansas City metro area. Previous conferences have included: Compute Midwest, Mobile Midwest, and the Kansas City Developer Conference. The KU Edwards Campus may be able to sponsor student tickets or negotiate discounted ticket rates for students. Opportunities for attending conferences will be communicated to BSIT students by email.

Lawrence Opportunities

Engineering Student Council. The Engineering Student Council, composed of elected representatives of the engineering student body, is the student governance organization for the School of Engineering. Engineering Student Council also sponsors an Engineering Exposition each year. Student groups and organizations plan and create exhibits that describe specialized areas of engineering and demonstrate engineering processes and resultant products. Awards are given for the best student displays.

Honor Societies. In their junior and senior years, outstanding engineering students may be invited to join one or more of the engineering honor societies on campus. These include Tau Beta Pi, all engineering disciplines; Eta Kappa Nu, electrical engineering and computer engineering; and Upsilon Pi Epsilon, computer science.

Minorities and Women. The *Engineering Diversity Program* encourages minority and women students to choose engineering as a career. It provides financial and academic support to its students, with retention as a main goal. Students may join chapters of the National Society of Black Engineers, American Indian Science and Engineering Society, the Society of Hispanic Professional Engineers, and/or the Society of Women Engineers. For further information, contact the Engineering Diversity Program director, (785) 864-3620.

National Engineering Societies. Most national engineering societies have student chapters on campus. In EECS, the primary societies are the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE).

Student Publication. Students in the School of Engineering publish a magazine, the *Kansas Engineer*, for distribution on campus and to alumni who subscribe.

Courses

IT 310: Computer Organization and Platform Technologies (3)

Machine-level representation of data, Digital logic and digital systems, Computer architecture and organization, Computing infrastructure, Introduction to multiprocessing systems, Firmware, Hardware and software integration, Introduction to intersystems communications, Enterprise deployment management, Introduction to virtual machine emulation, Platform technologies. Prerequisites: Upper-level IT eligibility.

IT 320: System Administration (3)

This course introduces operating systems and network administration and presents topics related to the selection, installation, configuration, and maintenance of operating systems and computer networks. Topics to be covered include: Unix and Windows operating systems installation, configuration, and maintenance, server administration and management, client and server services, user and group management and support, software systems installation and configuration, content management and deployment, security management, network administration, backup management and disaster recovery, resource management, automation management, operating systems and Web domain management, operating systems and application version control management. A laboratory component will provide hands-on experience with system and network administration. Prerequisite: Knowledge of Linux/Unix operating systems, IT 310, and upper-level IT eligibility.

IT 330: Web Systems and Technologies (3)

The objective of this course is to discuss how the Web systems are programmed and maintained and how online pages are created and delivered by Web servers and used by clients. Topics to be covered include: Web systems and technologies, information architecture, digital media, Web development, Web standards, vulnerabilities, social network software, client-side programming, server-side programming, Web services and servers, XHTML, CSS, flash and CGI programming, CSS, Web systems security, JavaScript, PHP, and, emerging technologies. Prerequisite: IT 310 and upper-level IT eligibility.

IT 340: Computer and Information Security (3)

Fundamentals of computer security, Security mechanisms, Information states, Security attacks, Threat analysis models, Vulnerability analysis models, Introduction to cryptography, Authentication, Intrusion detection, Intrusion prevention (firewalls), Operating systems security, Database security, Software security, Host hardening, Incident and disaster response. Prerequisites: Upper-level IT eligibility.

IT 342: Information Security Management (3)

The objective of this course is to present topics related to the administration and management of information security. Topics to be covered include: security fundamentals, operational issues, cost-benefit analysis, asset management, security risk management, security policies and enforcement, risk avoidance, risk prevention, risk transfer, security services, security forensics, contingency planning, security auditing . A laboratory component will provide hands-on experience with security management and administration. Prerequisite: IT 340 and upper-level IT eligibility.

IT 399: Directed Reading in IT (1-4)

Reading under the supervision of an instructor on a topic in Information Technology. The topic, expected outcome, evaluation criteria, and the number of credit hours must be mutually agreed on by the student and the instructor. Course may not be used to fulfill major elective requirements. Consent of the department required for enrollment. Prerequisite: Consent of instructor and upper-level IT eligibility.

IT 410: Software Engineering and Management (3)

This course introduces the software development life cycle and key concepts related to software engineering. Topics include software process models, software project management, software requirements engineering, formal and informal modeling, software architecture, software design, coding and implementation, software testing and quality assurance, software deployment, and software evolution. Additional topics such as software metrics and measures, application domains, software engineering standards, and software configuration management will also be presented. This is a project-driven course. Prerequisites: Knowledge of programming (comparable to EECS 268), BBA 410, MATH 365, and upper-level IT eligibility.

IT 414: Introduction to Databases (3)

The objective of this course is to present key concepts related to database design and implementation. Topics to be discussed include: database architecture, relational data model, SQL, database design life cycle, conceptual data modeling, relational database normalization, query processing, transaction processing, database security, and database administration. This is a project-driven course. Prerequisites: IT 310, IT 330, senior standing, and upper-level IT eligibility.

IT 416: System Integration and Architecture (3)

This course introduces system integration and architecture. Key concepts to be presented include: system architecture, system requirements, organizational context, acquisition and sourcing, system and component integration, middleware platforms, design patterns, integrative coding, scripting coding, testing and quality assurance, system deployment. Prerequisites: IT 410.

IT 420: Operating Systems (3)

This course introduces operating systems principles and associated key concepts. Topics to be discussed include: processes and threads, concurrency, scheduling and dispatch, memory management, processor management, device management, security and protection, file system, disk scheduling, real-time and embedded systems, fault tolerance, scripting, and an introduction to virtualization. Prerequisites: MATH 365, IT 320, IT 342, and upper-level IT eligibility.

IT 422: Computer Networks (3)

Foundations of computer networking with practical applications and network administration, with emphasis on the Internet and wireless public switched telephone network. Topics to be covered include routing and switching, routing algorithms, physical layer, data link layer, network layer, network security, network management, and application areas. Prerequisite: IT 330.

IT 424: Network Security (3)

This course covers the fundamental concepts, principles, and mechanisms in network and distributed system security. The topics that will be covered include: network security primitives, distributed authentication, key management, secure communication protocols, firewalls, intrusion detection, traffic monitoring and analysis, email and Web security, etc. Prerequisites: IT 340, IT 422, and senior standing.

IT 430: Human-Computer Interaction (3)

This course introduces principles of human-computer interaction. Important topics to be presented include: human factors, human-centered design and evaluation, graphical user interfaces, multimedia system integration, interactive systems development, computer-supported cooperative work, human cognitive skills, accessibility, alternative input/output media, and emerging technologies. Prerequisite: Consent of the instructor.

IT 450: Social and Professional Issues (3)

This course will provide an overview of the history of computing and presents key concepts related to the social and professional aspects of IT. Topics to be covered include: Pervasive themes in IT, social context of computing, intellectual property, legal issues in computing, professional and ethical issues and responsibilities, privacy and civil liberties. Prerequisite: Consent of the instructor.

IT 452: Special Topics in IT: _____(3)

This course introduces a special topic of current interest in information technology, offered as the need arises. May be repeated for additional credit. Prerequisites: Upper-level IT eligibility and consent of instructor.

IT 490: IT Capstone I (3)

IT Capstone is a senior level course designed to allow a student to review, analyze, integrate, and apply technical knowledge in a meaningful and practical manner. The student will be expected to complete an approved academic project in IT that may be in collaboration with an industrial partner. Prerequisite: Senior standing.

IT 492: IT Capstone II (3)

IT Capstone II is a continuation of IT Capstone, is a senior level course designed to allow a student to review, analyze, integrate, and apply technical knowledge in a meaningful and practical manner. The student will be expected to complete an approved academic project in IT that may be in collaboration with an industrial partner. Prerequisite: Senior standing.

Resources

BSIT Program

http://it.eecs.ku.edu

http://edwardscampus.ku.edu/BSIT

EECS Department

www.eecs.ku.edu

Engineering Career Center

http://www.engr.ku.edu/career_center/

Financial Aid and Scholarships

http://affordability.ku.edu

KU Catalog

www.catalog.ku.edu

KU Edwards Campus

www.edwardscampus.ku.edu

KU Schedule of Classes

www.classes.ku.edu

University of Kansas

www.ku.edu

This handbook is an abridged version of the official EECS undergraduate handbook and represents information most useful to our BSIT students; information in this document is subject to change. Revised April 18, 2014.