# Bachelor of Applied Science in Applied Cybersecurity

The BAS in Applied Cybersecurity is designed to meet the growing employment demands for an information security related workforce. This program is for undergraduate students with a strong interest in practical and applied training in information technology and cybersecurity pathways and who have already earned an associate's degree or equivalent hours and are looking to complete the last two years necessary for a bachelor's degree. The program is completed online. Applicants to this program will work with the program's academic success coach on the KU Edwards Campus for advising. Courses in this program will support the following Degree Learning Outcomes:

- Demonstrate the ability to effectively work as both a team member and leader in workplace environments.
- Effectively communicate to a wide-ranging audience with varying levels of technical ability.
- Recognize the need and importance of continued learning and professional development.
- Analyze systems, programs, and processes (for security risks in Cyber; data problems in Applied Data) and provide appropriate analysis and solutions.
- Apply current practices and procedures.

The Kansas City area is home to numerous tech-sector growth initiatives, such as the National Security Crossroads, an effort led by Kansas and Missouri focused on raising government awareness of security-related operations. These initiatives encompass seven major military bases as well as 11 national-security installations. In 2020, more than 20,000 tech-job openings were posted in Kansas City, the third-highest percentage growth in tech jobs in the U.S., trailing only San Francisco and Austin. In the next 10 years, the region's tech-workforce demand is expected to increase. More specifically related to information security workforce needs, in 2019 the Mid-America Regional Council identified a need to strengthen educational offerings in cybersecurity to meet area employers' growing demand for talent. Nationally, according to the Bureau of Labor Statistics, employment of information security analysts is projected to grow 33 percent from 2020 to 2030, much faster than the average for all occupations. About 16,300 openings for information security analysts are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Applications to the BAS in Applied Cybersecurity program will generally be considered under the guidelines of the Transfer Admission Standards. Students must apply and be admitted by the School of Professional Studies. In addition, to be considered for admission, students will need to have completed the prerequisite course work and have already earned 60 credit hours. The deadline for admission consideration is Dec. 15 for the spring semester.

The **BAS in Applied Cybersecurity** has the following degree requirements in addition to the statewide general education requirements:

- 120 (minimum) total credit hours
- 45 (minimum) upper-division credit hours (these may include the following)
- 10-11 foundational quantitative core credit hours
- 9 foundational information systems core credit hours
- 6 professional studies core credit hours
- 30 applied cybersecurity core credit hours
- 6 applied cybersecurity elective credit hours
- 3 capstone credit hours

The following tables describe the specific courses to fulfill the above requirements.

| Code | Title | Hours |
|---|---|---|
| **Foundational Quantitative Core: 10-11 Credit Hours** | | |
| MATH 101 | College Algebra: _____ (and MATH 103) | 4-5 |
| or MATH 104 | Precalculus Mathematics | |
| or MATH 115 | Calculus I | |
| or MATH 125 | Calculus I | |
| PFS 304 | Introduction to Real-World Statistics | 3 |
| or BSAN 202 | Statistics | |
| or EECS 461 | Probability and Statistics | |
| or MATH 365 | Elementary Statistics | |
| or MATH 526 | Applied Mathematical Statistics I | |
| or MATH 628 | Mathematical Theory of Statistics | |
| or PSYC 210 | Statistics in Psychological Research | |
| ITEC 303 | Discrete Math for Information Technology Professionals | 3 |
| or EECS 210 | Discrete Structures | |
| **Foundational Information Systems Core: 9 Credit Hours** | | |
| ITEC 301 | Survey of Information Systems | 3 |
| ITEC 302 | Introduction to Programming | 3 |
| or EECS 268 | Programming II | |
| ITEC 380 | Managing IT Projects | 3 |
| **Professional Studies Core: 6 Credit Hours** | | |
| PFS 301 | Communication in the Workplace | 3 |
| or ENGL 362 | Foundations of Technical Writing | |
| PFS 302 | Leadership in Practice | 3 |
| or ABSC 150 | Community Leadership | |
| or BBA 303 | Survey of Management and Leadership | |
| or BBA 305 | Operations and Supply Chain Management | |
| or COMS 342 | Problem Solving in Teams and Groups | |
| or LDST 201 | Introduction to Leadership | |
| or MGMT 305 | Survey of Management and Leadership | |
| or MGMT 310 | Principles of Management | |
| or PUAD 441 | Public Service Leadership | |
| or SCM 310 | Management Science and Operations Management | |
| **Applied Cybersecurity Core: 30 credit hours** | | |
| ITEC 312 | Emerging Technologies in Cybersecurity | 3 |
| ITEC 340 | Computer and Information Security | 3 |
| ITEC 342 | Information Security Management | 3 |
| ITEC 420 | Operating Systems | 3 |
| ITEC 422 | Computer Networks | 3 |
| ITEC 424 | Network Security | 3 |

| | | |
|---|---|---|
| ITEC 426 | Cyber Defense and Countermeasures | 3 |
| ITEC 428 | Testing and Vulnerability Analysis | 3 |
| ITEC 450 | Social and Professional Issues | 3 |
| ITEC 454 | Information Security Law and Policy | 3 |
| **Applied Cybersecurity Elective Courses: 6 Credit Hours** | | **6** |
| Choose any two 300-400 level ITEC courses not already included in the degree plan. See list below: | | |
| ITEC 310 | Computer Organization and Platform Technologies | |
| ITEC 314 | Fundamentals of Applied Data Analytics | |
| ITEC 316 | Database Applications | |
| ITEC 320 | System and Network Administration | |
| ITEC 330 | Web Systems and Technologies | |
| ITEC 404 | Fundamentals of Data Visualization | |
| ITEC 406 | Data Mining and Intelligence | |
| ITEC 410 | Software Engineering and Management | |
| ITEC 412 | Predictive Analytics and Forecasting | |
| ITEC 416 | System Integration and Architecture | |
| ITEC 429 | Digital Forensics | |
| ITEC 430 | Human-Computer Interaction | |
| ITEC 440 | Cloud Computing | |
| ITEC 452 | Special Topics in ITEC: _____ | |
| **Capstone: 3 Credit Hours** | | |
| ITEC 490 | ITEC Capstone | 3 |

## BAS Applied Cybersecurity 4-Year Graduation Plan

The undergraduate program in Applied Cybersecurity BAS is designed for students who have earned an associate's degree or equivalent hours (freshman/sophomore level) and wish to complete the upper-level courses necessary for a bachelor's degree. Junior/Senior level KU courses are offered online through the School of Professional Studies at the KU Edwards Campus in Overland Park, 12600 Quivira Rd., Overland Park, KS 66213.

Students considering this degree option should contact the Applied Cybersecurity academic success coach on the Edwards Campus (913-897-8539) for advising on the first two years of study. An academic success coach will help develop a personalized program plan of study for degree completion.

**Freshman**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| MATH 101 or 104 (Core 34: Math and Statistics (SGE))[030] | 3-5 | MATH 103 (Needed if MATH 101 taken 1st semester) | 2 |
| Core 34: English (SGE)[010] | 3 | Core 34: English (SGE)[010] | 3 |
| Core 34: Communications (SGE)[020] | 3 | Core 34: Natural and Physical Sciences (SGE)[040] | 4-5 |
| Core 34: Social and Behavioral Sciences (SGE)[050] | 3 | Core 34: Arts and Humanities (SGE)[060] | 3 |
| Open Elective Course | 3 | Open Elective Course | 3 |
| | **15-17** | | **15-16** |

**Sophomore**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| Core 34: Social and Behavioral Sciences (SGE)[050] | 3 | Core 34: Global Culture (SGE)[070] | 3 |
| Core 34: US Culture (SGE)[070] | 3 | MATH 365 (or PFS 304) | 3 |
| Core 34: Arts and Humanities (SGE)[060] | 3 | Open Elective Course | 3 |
| Open Elective Course | 3 | Open Elective Course | 3 |
| Open Elective Course | 3 | Open Elective Course[1] | 3 |
| | **15** | | **15** |

**Total Hours 60-63**

## Third and Fourth Year Online through the KU Edwards Campus in Overland Park

**Junior**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| ITEC 302 | 3 | ITEC 301 | 3 |
| ITEC 303 | 3 | ITEC 312 | 3 |
| ITEC 380 | 3 | ITEC 340 | 3 |
| PFS 301 | 3 | ITEC 422 | 3 |
| PFS 302 | 3 | ITEC 454 | 3 |
| | **15** | | **15** |

**Senior**

| Fall | Hours | Spring | Hours |
|---|---|---|---|
| ITEC 342 | 3 | ITEC 424 | 3 |
| ITEC 420 | 3 | ITEC 450 | 3 |
| ITEC 426 | 3 | ITEC 490 (Capstone) | 3 |
| ITEC 428 | 3 | Applied Cybersecurity Elective Course | 3 |
| Applied Cybersecurity Elective Course | 3 | Open Elective Course[1] | 3 |
| | **15** | | **15** |

**Total Hours 60**

[1] Open elective credits needed and total hours for the bachelor's degree depends on which math and science courses were taken. Consult with your academic success coach.

**Notes:**

* - This course is a Required major course and is also part of Core 34: Systemwide General Education. If this course is not taken to fulfill the Core 34:SGE requirement, it must be taken in place of elective hours.

** - This course is a Recommended Core 34: Systemwide General Education course. This specific course is not required but is recommended by the program's faculty.

*** - This course is a Required Core 34: Systemwide General Education course. This program is approved by the Kansas Board of Regents to require this specific Core 34:Systemwide General Education course. If a student did not take this course it must be taken in addition to other degree requirements.