DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:
05/24/2022

Institution
Missouri Baptist University

Site Information

Implementation Date:
8/22/2022 12:00:00 AM

Added Site(s):

Selected Site(s):

Missouri Baptist University, 1 College Park Drive, St. Louis, MO, 63141

CIP Information

CIP Code:
430404

CIP Description:
A program that focuses on the study of strategy, policy, and standards regarding the security of and operations in cyberspace. Includes instruction in incident response, information assurance, recovery policies, vulnerability reduction, deterrence, threat reduction, and resiliency.

CIP Program Title:
Cybersecurity Defense Strategy/Policy

Institution Program Title:
Cybersecurity

Degree Level/Type

Degree Level:
Bachelor's Degree

Degree Type:
Bachelor of Science

Options Added:

Collaborative Program:
N

Mode of Delivery

Current Mode of Delivery

Classroom

Student Preparation

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Special Admissions Procedure or Student Qualifications required:
The School of Business requires a minimum standard of academic performance for acceptance into the School of Business for any major in business, except applied management. Specifically:

Freshmen: Student must have a high school cumulative GPA of 2.8 or higher on a 4.0 scale and an ACT score of 20. Transfers: Student must have a 2.5 or higher cumulative GPA.

Students not meeting the admission requirement may be immediately accepted into the applied management major. Students wishing to be admitted into the other business majors will be allowed to present a written request for acceptance to the Dean of the School of Business after at least one full semester of study at MBU if the cumulative 2.5 GPA requirement has been met. A 2.5 cumulative grade point average is required for graduation.

Specific Population Characteristics to be served:
n/a

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:
Faculty teaching in the B.S. in Cybersecurity will have at least a master's degree in the content area, doctorate preferred.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:
Estimated that at least 75% of credit hours in the Cybersecurity program will be taught by full time faculty; 25% or less will be taught by adjunct faculty.

Expectations for professional activities, special student contact, teaching/learning innovation:
Capstone/research project course culminating in the presentation of the project in the annual student research symposium.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 6	Part Time: 0	
Year 2	Full Time: 8	Part Time: 0	
Year 3	Full Time: 12	Part Time: 0	Number of Graduates: 0
Year 4	Full Time: 15	Part Time: 0	
Year 5	Full Time: 20	Part Time: 0	Number of Graduates: 12

Percentage Statement:
n/a

Program Accreditation

Institutional Plans for Accreditation:
The institution has no immediate plans for specialized accreditation. However, the program will be eligible to apply for ABET accreditation beginning in the 2025-2026 academic year. Per ABET, programs requesting an initial accreditation review must have at least one graduate prior to the academic year when the on-site review occurs.

Program Structure

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Total Credits:
120

Residency Requirements:
At least 6 hours of the major (3 hours of any minor) must be taken in residence at Missouri Baptist University. At least 24 of the last 32 credit hours must be taken at Missouri Baptist University.

General Education Total Credits:
42

Major Requirements Total Credits:
66

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
ITBU 483	3	Senior Capstone/Research Project
ITBU 213	3	IT Infrastructure
ITCS 313	3	Information Risk Management
BUSN 303	3	Business Ethics
ITBU 363	3	Business Analytics
ITBU 433	3	Organizational Security
ITBU 313	3	Introduction to Cybersecurity
ITBU 343	3	Network Security
ITBU 373	3	Operating Systems
MRKT 313	3	Introduction to Marketing
MATH 243	3	Probability & Statistics
ITBU 473	3	Project Management
ITBU 443	3	Threats and Countermeasures
ECON 123	3	Microeconomics
ACCT 213	3	Principles of Financial Accounting
MGMT 303	3	Management Concepts and Practices
ACCT 223	3	Principles of Managerial Accounting
BUSN 353	3	Communication Strategies in Business
BUSN 463	3	Strategic Management
ITBU 203	3	Introduction to Application Development
ITCS 423	3	Cybersecurity Framework and Threats Model
BUSN 363	3	Financial Management

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Free Elective Credits:

12

Internship or other Capstone Experience:

Research should use methods appropriate to the studentÃ¢â€šâ€žÂ¢s major area. The modes of learning may include oral reports, written reports and essays, laboratory or field experiences, or any of a variety of methods appropriate to the academic discipline. Project topics will be chosen by the student with the approval from the course faculty.

Assurances

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

I certify that the program will build upon existing programs and faculty expertise.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

Contact Information

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CYBERSECURITY CURRICULUM

ACCT 213 - PRINCIPLES OF FINANCIAL ACCOUNTING
Semester Hours: Three
An introductory study of accounting with emphasis on the accounting cycle, accounting terminology, the collection of accounting data, the recording of data into the accounting system, and the preparation and interpretation of basic financial statements. Topics include accounting for transactions of service and merchandising enterprises, internal control, ethics, common adjusting entries, and application of generally accepted accounting principles as applied to receivables, inventory, productive assets, and liabilities.

ACCT 223 - PRINCIPLES OF MANAGERIAL ACCOUNTING
Semester Hours: Three
A study of corporate accounting, job order, process cost, and standard accounting systems, this course includes corporate financial statements, bond liabilities, investments, statement of cash flows, and decision-making topics such as variable (direct) costing, break even analysis, EOQ method, budgeting, and financial statement analysis.

MATH 243 - PROBABILITY AND STATISTICS (MOTR MATH 110)
Semester Hours: Three
This course includes descriptive and inferential statistics, data summarization methods, concepts of probability theory, random variables and their mathematic expectations, discrete and continuous probability distributions, sampling theory, confidence intervals, tests of hypotheses, and simple linear regression.

BUSN 303 - BUSINESS ETHICS
Semester Hours: Three
This course will involve the analysis of ethical issues impacting contemporary business leaders today. Topics covered include key terminology, the external environment surrounding the firm, the corporation and its stakeholders, business/government relationships, public policy issues, and the people who are affected. The framework in which business and social policies are established will also be a focus of this course. Case study analysis and experiential exercises will be utilized to examine and dissect ethical dilemmas.

BUSN 353 - COMMUNICATION STRATEGIES IN BUSINESS
Semester Hours: Three
This course focuses on both communication strategies and tools which directly apply to today's business environment, including communication within and between business organizations, as well as with all business stakeholders. Students will apply business writing principles to the creation of effective business documents and oral presentations as well as the communication techniques for social media platforms. Students will also be exposed to typical business communication tools, with emphasis on the Microsoft Office Suite and the integration of these tools into both formal and informal communication. Emphasis is placed on using critical thinking skills to analyze and solve business problems. This course includes the study and application of team communication and the use of technology to facilitate the communication process. Additionally, the fundamentals of professional decorum, etiquette, and communication across cultures will be incorporated. Prerequisites: BCIS 203, ENGL 113, ENGL 123, and Junior standing.

BUSN 363 - FINANCIAL MANAGEMENT
Semester Hours: Three
This course is designed to equip students with key tools, techniques, and theories that promote wealth-maximizing decision-making within the firm. These tools, techniques, and theories include financial institutions and markets, financial statement analysis, working capital management, cash budgets and cash flow analysis, pro-forma statements, time value of money and capital budgeting.

Prerequisites: ACCT 213, ACCT 223, and BCIS 203

BUSN 463 - STRATEGIC MANAGEMENT
Semester Hours: Three
A capstone course designed to give students exposure to the overall strategy and policy formulation in a business enterprise. Extensive use of the case study method is emphasized.
Prerequisites: ACCT 213, ACCT 223, BUSN 303, BUSN 353, BUSN 363, ECON 113, ECON 123, and MRKT 313 (Healthcare Management majors only may use the following prerequisites: ACCT 213, ACCT 223, BUSN 353, HCMG 313, HCMG 323, and HCMG 363).
Note: This course will not be accepted in transfer from another institution and cannot be taken through Directed Study.

ECON 123 - MICROECONOMICS (MOTR ECON 102)
Semester Hours: Three
This course presents an introduction to economic thought. Concepts covered may include interdependence and gains from trade, supply and demand, elasticity, externalities, and firm behavior in industry organizations of competitive markets, monopoly, monopolistic competition, and oligopoly.

MGMT 303 - MANAGEMENT CONCEPTS AND PRACTICES
Semester Hours: Three
This course is designed to establish a foundation of the key issues and decision-making tools needed to develop managers. The topics covered include the areas of firm planning, organizing, leading, and controlling. Exercises will require students to develop solutions to management problems, identifying necessary change, discovering new opportunities, and following through on the implementation of the solutions.

MRKT 313 - INTRODUCTION TO MARKETING
Semester Hours: Three
This course is the introduction to the concept of marketing and its application to domestic and foreign markets, and to consumer, producer, institutional, and service markets. Analysis of marketing mix, including product, price, promotion/advertising, and distribution policies. Overview of career opportunities in the field of marketing.

ITBU 203 - INTRODUCTION TO APPLICATION DEVELOPMENT
Semester Hours: Three
This course is an introduction to application development using modern developer tools. Topics include foundations of the computing discipline, introduction to a current Object-Oriented Language, and project-based learning in various current application areas.

ITBU 213 - IT INFRASTRUCTURE
Semester Hours: Three
This course provides an introduction to IT infrastructure issues for students majoring in Information Technology. It covers topics related to both computer and systems architecture and communication networks, with an overall focus on the services and capabilities that IT infrastructure solutions enable in an organizational context. It gives the students the knowledge and skills that they need for communicating effectively with professionals whose special focus is on hardware and systems software technology and for designing organizational processes and software solutions that require in-depth understanding of the IT infrastructure capabilities and limitations. It also prepares the students for organizational roles that require interaction with external vendors of IT infrastructure components and solutions. The course focuses strongly on Internet-based solutions, computer and network security, business continuity, and the role of infrastructure in regulatory compliance.

ITBU 313 - INTRODUCTION TO CYBER SECURITY
Semester Hours: Three
This course introduces the fundamental principles and topics of Cyber Security at the organizational level. Students will learn critical security principles that enable them to plan, develop, and perform security tasks. The course will address hardware, software, processes, communications, applications, and policies and procedures with respect to organizational IT Security and Risk Management.
Prerequisites: BCIS 303

ITBU 343 - NETWORK SECURITY
Semester Hours: Three
This course will include network security principles for securing organization infrastructure(s). Students will learn device and media security, security topologies, intrusion detection, cryptography, and general security baselines. Topics covered include: firewalls; instruction detection systems (IDS); proxies; intrusion preventions systems (IPS); network monitoring; DMZ's; NAT; encryption systems; and other related topics. In addition, network security innovation and best practices are reviewed.
Prerequisites: ITBU 213 and ITBU 313

ITBU 363 - BUSINESS ANALYTICS
Semester Hours: Three
Business analytics refers to technologies, applications and practices for the collection, integration, analysis, and visualization of business information. The purpose of business analytics is to support better business decision making. This course provides advanced Excel training and Tableau software for better support for managing large quantities of data.

ITBU 373 - OPERATING SYSTEMS
Semester Hours: Three
This course examines the principles of operating system design and function. System programming is also considered. Students are presented with various common operating systems, including UNIX/Linux, and Windows.
Prerequisite: ITBU 213

ITBU 433 - ORGANIZATION SECURITY
Semester Hours: Three
This course introduces the concepts and practices associated with security from an ethical and organization perspective. Students will understand their role as a security professional as it relates to training the operational staff, policies and procedures, and securing the organization at all levels. In addition, the course will cover common procedures associated with disaster avoidance and recovery.
Prerequisites: ITBU 213 and ITBU 443

ITBU 443 - THREATS AND COUNTER MEASURES
Semester Hours: Three
Study of Internet security problems and discussion of potential solutions: network vulnerabilities and attacks, secure communication and use of cryptography, Internet security protocols and tools to defend against network attacks, network intrusion detection, and wireless network security.
Prerequisites: ITBU 213 and ITBU 313

ITCS 313 – Information Risk Management
Semester Hours: Three

This course provides a unique perspective on how to conduct basic quantitative risk analysis using factor analysis that provides a practical framework for measuring and analyzing information risk. Covering such key areas as risk theory, risk calculation, scenario modeling, and communicating risk within the organization, provides a unique perspective on how to do a basic quantitative risk analysis model for information security and operational risk.
Prerequisites: MATH 243, ITBU 313

ITCS 423 – Cybersecurity Framework and Threat Models
Semester Hours: Three
The National Institute of Standards and Technology (NIST) has issued the NIST Cybersecurity Framework (CSF), a set of guidelines that were originally developed for government entities and have since been adapted for private sector use. Not only does CSF provide a framework to understand cybersecurity risk management, it also includes guidelines to help companies prevent and recover from attacks. This course will examine the NIST Cybersecurity Framework, Cybersecurity Maturity Model Assessment, OCTAVE and other selected methodologies.
Prerequisites: ITBU 213, ITBU 313, ITBU 443

ITBU 473 - PROJECT MANAGEMENT
Semester Hours: Three
This course discusses the processes, methods, techniques, and tools that organizations use to manage their projects. The course covers a systematic methodology for initiating, planning, executing, controlling, and closing projects. This course assumes that project management in the modern organization is a complex team-based activity, where various types of technologies (including project management software as well as software to support group collaboration) are an inherent part of the project management process. Students are encouraged to sit for the Certified Associate in Project Management (CAPM) exam and earn the certificate in project management from the Project Management Institute upon completion of this course.
Prerequisites: BCIS 103 or BCIS 203

ITBU 483 – Capstone/Research Project
Semester Hours: Three
The nature of the academic work should fall within the purview of the student's major area but should also draw upon knowledge acquired during the entirety of the student's education. Research should use methods appropriate to the student's major area. The modes of learning may include oral reports, written reports and essays, laboratory or field experiences, or any of a variety of methods appropriate to the academic discipline. Project topics will be chosen by the student with the approval from the course faculty.
Prerequisites: Completion of Technical Core Courses and senior standing