Prepared by the Department of Business
Date of Departmental Approval: October 5, 2015
Date approved by Curriculum and Programs: November 13, 2015 **Effective:** Fall 2016

1. **Course Number:** BIT244

   Course Title: IT Security: Reverse Engineering

2. **Description:** Students learn to analyze situations dealing with malware, artifacts, programs or anything that can destroy information. Students gain the ability to reverse binaries efficiently. This course completes the preparation for the CREA (Certified Reverse Engineering Analyst) certification exam. Prior to starting the course, students will be required to sign an agreement stating all knowledge learned in this course will not be used for illegal or malicious purposes.

3. **Student Learning Outcomes** (instructional objectives, intellectual skills)**:**
   Upon successful completion of this course, students are able to do the following
   - Demonstrate extensive knowledge of the behavioral patterns of malware
   - Explain registry keys
   - Use deciphering, hashing, or encryption for communication and storage
   - Create a sandbox to isolate malware
   - Discern, stack, or heap overflows
   - Describe Windows API's
   - Debug both kernel and user level operating system functions.
   - Identify high level language constructs such as branching statements, looping functions and network socket code.
   - Evaluate network behavior

4. **Credit(s):** 3 credits

5. **Satisfies General Education Requirement:** N0

6. **Prerequisite(s):** BIT243 IT: Advanced Ethical Hacking II (or the CEPT Certified Expert Penetration Tester certification). Certifications must have been earned within the past 5 years

7. **Semester(s) Offered:** Varies

8. **Suggested Guidelines for Evaluation:** hands on labs, quizzes, midterm, final

9. **General Topical Outline** (Optional)**:**