Graduate Certificate in Cyber Security

Proposal: A Certificate Program in Cyber Security with Computer Science and Mathematics Tracks jointly offered by the Department of Computer and Electrical Engineering and Computer Science and Department of Mathematical Sciences - to establish a 12 credit Graduate Certificate in Cyber Security. The joint certificate program in Cyber Security has two tracks:

Computer Science (CS) and Mathematics (Math).

I. Tracks
   A. Cyber Security Certificate in Computer Science (CS Track) will be issued to a student admitted to the CS Track Certificate Program if s/he successfully completes four (4) 3-credit courses as follows:
      - Core courses: three (3) 3-credit courses from the CS Cyber Security courses listed in the attachment
      - Elective course: one (1) 3-credit course from either the Math Cyber Security courses or from the CS Cyber Security courses listed in the attachment.

   B. Cyber Security Certificate in Mathematics (Math Track) will be issued to a student admitted to the Math Track Certificate Program if s/he successfully completes four (4) 3-credit courses as follows:
      - Core courses: three (3) 3-credit courses from the Math Cyber Security courses listed in the attachment
      - Elective course: one (1) 3-credit course from either the CS Cyber Security courses or from the Math Cyber Security courses listed in the attachment.

II. Curriculum
    The CS Cyber Security courses and the Math Cyber Security courses are listed in the attachment.

III. Admission and Completion
    A. CS Track: The certificate program will be open to students who have a BS degree in Computer Science or a related field of Science and Engineering, a GPA of at least 3.0 and must satisfy the prerequisites required for each course in the program. All four courses in the program must be completed with a GPA of 3.0 or better.
    B. Math Track: The certificate program will be open to students who have a Bachelor degree in Mathematics or a related field, a GPA of at least 3.0 and must satisfy the prerequisites required for each course in the program. All four courses in the program must be completed with a GPA of 3.0 or better.

Faculty contact, email and complete phone number:
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Consult and list departments that might be affected by the change and attach comments.
Computer and Electrical Engineering and Computer Science (College of Engineering & Computer Science)

Approved by:
Department Chair:
College Curriculum Chair:
College Dean:
UGPC Chair:
Graduate College Dean:
UGPC Approval: 10-19-15
UFS Approval: 10-24-15
UFS President:
Provost:

Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

FAU program change–Rev. November 2012
Proposal: A Certificate Program in Cyber Security with Computer Science and Mathematics Tracks jointly offered by the Department of Computer and Electrical Engineering and Computer Science¹ and the Department of Mathematical Sciences²

Introduction and Rationale: According to Center for Strategic and International Studies, June 2014, the estimated annual cost of cybercrime to global economy is more than $400 billion, which is more than the national income of most countries in the world. The most significant part of this cost comes from its damage to national economies and to the performance of the private sectors.

Cybercrime related issues especially impact the State of Florida because a significant part of the state’s economic development comes from tourism, international banking and high-tech industries. However, the number of scientists, engineers and experts with special skills in Cyber Security or with a Master’s degree/certificate in Cyber Security is not on track with the need for such experts. In fact, high-tech industries from different division such as Information Technology, Financial Services, Digital Media or Interactive Entertainment, and Aviation & Aerospace can significantly benefit from this program. To name a few, we can refer to IBM, Symantec, Boeing and Lockheed Martin within Florida’s high-tech corridor.

The Departments of Computer & Electrical Engineering and Computer Science and Mathematical Sciences, due to their extensive expertise and facilities, are uniquely positioned to offer a certificate degree in Cyber Security with two tracks: Computer Science (CS) and Mathematics (Math).

1. Tracks
   A. Cyber Security Certificate in Computer Science (CS Track) will be issued to a student admitted [III.A] to the CS Track Certificate Program if s/he successfully completes four (4) 3-credit courses as follows:
      i. Core courses: three (3) 3-credit courses from the CS Cyber Security courses listed in [1]
      ii. Elective course: one (1) 3-credit course from either the Math Cyber Security courses listed in [2] or from the CS Cyber Security courses listed in [1].
   B. Cyber Security Certificate in Mathematics (Math Track) will be issued to a student admitted [III.B] to the Math Track Certificate Program if s/he successfully completes four (4) 3-credit courses as follows:
      i. Core courses: three (3) 3-credit courses from the Math Cyber Security courses listed in [2]
      ii. Elective course: one (1) 3-credit course from either the CS Cyber Security courses listed in [1] or from the Math Cyber Security courses listed in [2].

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¹ College of Engineering and Computer Science
² College of Science
III. Admission and Completion

IV. Curriculum

A. Math Track: The certificate program will be open to students who have a bachelor degree in Mathematics or a related field, a GPA of at least 3.0, and must satisfy the prerequisites.

B. Math Track: The certificate program will be open to students who have a bachelor degree in Computer Science or a related field of Science and Engineering, a GPA of at least 3.0, and must satisfy the prerequisites required for each course in the program. All four courses in the following list of 3 credit courses:

- CTS 6319 - Cyber Security: Measurement and Data Analysis
- COT 6316 - Security Sharing Protocols
- CIS 6370 - Computer Data Security
- CIS 6372 - Distributed Systems Security

Following courses are offered for the Cyber Security Certificate Program.