UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: __ Charles Boncelet _____phone number__X 8008_____

Department: __ Electrical and Computer Engineering __email address boncelet@ece.udel.edu

Date: __ 11/25/13 _____

Action: _____Add New Minor_____
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term__students can add minor in 14F, but cannot graduate with the minor until 15S__
(use format 04F, 05W)

Current degree_____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name:_____Cybersecurity_____
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

Revising or Deleting:

Undergraduate major / Concentration:_____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor:_____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change:_____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study:_____
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration:_____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?
(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

CPEG/ELEG/CISC/MISY 465/665	Introduction to Cybersecurity
CPEG/ELEG 494/694	System Hardening & Protection
CPEG/ELEG 495/695	Digital Forensics
CPEG/ELEG 496/696	Topics in Cybersecurity

These and other existing courses will form the basis of a Cybersecurity minor to enable and recognize deeper study in the field. The 465 and 494 classes have been taught as experimental (467) classes. The 495 class will be developed for 14F-15S.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: http://www.ugs.udel.edu/gened/

This minor in cybersecurity and the associated new courses, address several of the 10 UD goals of undergraduate education. Increasing knowledge of computer and network security is increasingly critical to Goal #1 to "attain effective skills in … the use of information technology." The complex technical areas covered in a cybersecurity education furthers Goal #2 to "Learn to think critically to solve problems." And the programs desire to combine subject theory the hands on experience of lab exercises will provide students a deep understanding of the material taught in lecture as well as provide an avenue for self-study. This directly addresses Goal #7 to "develop the ability to integrate academic knowledge with experiences that extend the boundaries of the classroom."

Identify other units affected by the proposed changes:
(Attach permission from the affected units. If no other unit is affected, enter "None")

Department of Computer and Information Science, approval attached
Department of Mathematical Sciences, approval attached
Department of Sociology and Criminal Justice, approval attached

Describe the rationale for the proposed program change(s):
(Explain your reasons for creating, revising, or deleting the curriculum or program.)

Establishing high quality Cybersecurity educational programs is a top national priority as well as a regional imperative. This minor is being introduced with a suite of new courses to help infuse cybersecurity fundamentals into UD CPEG and CIS BS degree programs. This and other courses will also form the basis of a Cybersecurity minor to enable and recognize deeper study in the field.

Program Requirements:
(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

MINOR IN CYBERSECURITY

A minor in Cybersecurity may be earned by a student in any University bachelor's degree program. This minor provides students with an opportunity to help infuse cybersecurity fundamentals into other degree programs. To qualify for a Minor in Cybersecurity, students must complete a minimum of 18 credits as described below with a minimum grade of C- in each course.

CURRICULUM		CREDITS

Course Requirements

1. All students must take the following four courses:

CPEG 465(b)	Introduction to Cybersecurity	3
CPEG 494(b)	System Hardening and Protection	3
CISC 361	Operating Systems	3
CPEG 419 / CISC 450	Computer Communications Networks	3

2. And two of the following courses:

CPEG 495(b)	Digital Forensics	3
CPEG 496(b)	Topics in Cybersecurity	3
MATH 549	Coding Theory and Cryptography	3
CRJU 457	Criminal Evidence	3
TOTAL CREDITS		18

a. A 600-level and cross-listed (ELEG, CISC, MISY) versions of these courses are acceptable.
b. The listed 400 and 600-level courses are open to any student who has completed requirement (1) and the necessary prerequisites (or obtained permission of instructor). Other courses can be included upon approval by the minor administration committee.

Further inquiries about the Cybersecurity Minor can be made to Professor Chase Cotton at (302) 831-8517 or ccotton@udel.edu.

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson _____ Date _____

Dean of College _____ Date _____

Chairperson, College Curriculum Committee _____ Date _____

Chairperson, Senate Com. on UG or GR Studies _____ Date _____

Chairperson, Senate Coordinating Com. _____ Date _____

Secretary, Faculty Senate _____ Date _____

Date of Senate Resolution _____ Date to be Effective _____

Registrar _____ Program Code _____ Date _____

Vice Provost for Academic Affairs & International Programs _____ Date _____

Provost _____ Date _____

Board of Trustee Notification _____ Date _____

Revised 02/09/2009 /khs

APPROVAL - Department of Computer and Information Science

Cybersecurity Minor - Approval of Inclusion of CISC361

Errol Lloyd <elloyd@udel.edu> Mon, Nov 25, 2013 at 11:48 AM
To: Chase Cotton <chase.cotton@gmail.com>
Cc: "Errol L. Lloyd" <elloyd@cis.udel.edu>, Chase Cotton <ccotton@udel.edu>, Kenneth Barner <barner@udel.edu>, "Nelson, Deborah L." <dnelson@udel.edu>

Chase,

Definitely!

Errol

On Mon, Nov 25, 2013 at 11:46 AM, Chase Cotton <chase.cotton@gmail.com> wrote:

> Dr. Lloyd,
>
> I wanted to confirm your approval of the inclusion of "CISC361 Operating Systems" as a required foundation course in the Cybersecurity minor that is being proposed.
>
> thanks,
>
> Chase
>
> ---
>
> Chase Cotton, Ph.D.
> Director, Center for Information and Communications Sciences (CICS)
> Professor, Electrical and Computer Engineering
> 104 Evans Hall
> University of Delaware
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APPROVAL - Department of Mathematical Sciences

The minor and Math549

Robert Coulter <coulter@math.udel.edu> Thu, Dec 5, 2013 at 11:06 AM
To: Chase Cotton <chase.cotton@gmail.com>
Cc: coulter@math.udel.edu

Hi Chase.

Meant to send this Monday... the chair confirmed during Thanksgiving (not in person, of course!) that our department had no problems with Math549 being included as you described.

Hope the end of semester isn't quite as hectic for you as it has so far been for me. I've stupidly set myself up to fly to Australia next Tuesday, and so am finding myself a little swamped! oh well, it's almost over.

cheers,
Robert.

Dr. Robert Coulter
Associate Professor
520 Ewing Hall
Department of Mathematical Sciences
University of Delaware
Newark DE 19716
USA

APPROVAL - Department of Sociology and Criminal Justice

CRJU 457 Criminal Evidence as an elective for a new Cybersecurity minor

Williams, Kirk R. <kirkw@art-sci.udel.edu> Mon, Jan 6, 2014 at 1:37 PM
To: Chase Cotton <chase.cotton@gmail.com>, John Polk <johnpolk@udel.edu>, Kirk Williams <kirkw@udel.edu>

Hi Chase,

I think this would be fine. Looks like an interesting minor.

Best, Kirk

From: Chase Cotton [mailto:chase.cotton@gmail.com]
Sent: Monday, January 06, 2014 12:57 PM
To: John Polk; Kirk Williams
Subject: Re: CRJU 457 Criminal Evidence as an elective for a new Cybersecurity minor

attachment

On Mon, Jan 6, 2014 at 12:48 PM, Chase Cotton <chase.cotton@gmail.com> wrote:

John, Kirk,

I'm faculty in Electrical and Computer Engineering and am one of four faculty, along with the chairs in ECE and CIS pulling together a cybersecurity minor under an NSF SFS capacity building grant.

One of the technical electives in the minor is a course in digital forensics (i.e. the recovery and investigation of information found on digital devices, typically part of a computer crime investigation). One subject area typically offered in conjunction with the teaching digital forensics is a foundation in the legal issues and processes associated with criminal evidence.

We would like to include your department's CRJU457 Criminal Evidence course to meet that need for students interested in the legal issues in more depth. It would be one of several elective courses offered in the minor. I've attached a short deck highlighting the structure of the minor and how your course would fit in.

I would not expect the student load to be significant. When I researched CRJU457 last year, it appeared there were usually free seats in the section.

Would it be possible for me to come by this week and discuss. A call would also work (as I see John is adjunct and is probably are not on campus in January).

much thanks,

Chase

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