

# LONG SIGNATURE SHEET



UNC CHARLOTTE

Proposal Number: ITIS 08-2010

Proposal Title: Computer Security and Privacy (ITIS 6201)

Originating Department: Software and Information Systems

TYPE OF PROPOSAL: UNDERGRADUATE \_\_\_\_\_ GRADUATE X UNDERGRADUATE & GRADUATE \_\_\_\_\_  
 (Separate proposals sent to UCCC and Grad. Council)

| DATE RECEIVED | DATE CONSIDERED | DATE FORWARDED | ACTION   | SIGNATURES   |
|---------------|-----------------|----------------|----------|--|
| 11/19/11      | 11/18/11        | 11/18/11       | Approved | <u>DEPARTMENT CHAIR</u><br>Dr. Bill Chu  |
| 11/18/11      | 11/21/11        | 11/18/11       | Approved | <u>COLLEGE CURRICULUM COMMITTEE CHAIR</u><br>Dr. Anthony Fodor                           |
| 11/18/11      | 11/18/11        | 11/18/11       | Approved | <u>COLLEGE FACULTY CHAIR (if applicable)</u><br>Dr. Barry Wilkinson                      |
| 11/18/11      | 11/21/11        | 11/18/11       | Approved | <u>COLLEGE DEAN</u><br>Dr. Teresa Dahlberg   |
|               |                 |                | Approved | <u>GENERAL EDUCATION</u><br>(for General Education courses)                              |
|               |                 |                | Approved | <u>UNDERGRADUATE COURSE &amp; CURRICULUM COMMITTEE CHAIR</u> (for undergraduate courses) |
| 1-27-12       | 2-9-12          | 5-22-13        | Approved | <u>GRADUATE COUNCIL CHAIR</u><br>(for graduate courses)<br>Rob Roy McGregor              |
|               |                 |                | Approved | <u>FACULTY GOVERNANCE ASSISTANT</u><br>(Faculty Council approval on Consent Calendar)    |
|               |                 |                |          | <u>FACULTY EXECUTIVE COMMITTEE</u><br>(if decision is appealed)                          |

# UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

## NEW GRADUATE COURSE PROPOSAL

ITIS 08-2010

FROM: DEPARTMENT OF SOFTWARE AND INFORMATION SYSTEMS

TITLE: COMPUTER SECURITY AND PRIVACY

### A. PROPOSAL SUMMARY AND CATALOG COPY:

#### 1. SUMMARY:

The Department of Software and Information Systems proposes to create a new course, ITIS 6201 Computer Security and Privacy. The focus of the course is on security and privacy issues associated with computing and communication systems. The course is intended for students at the non-IT masters level. It is a required course for the Graduate Certificate Program on Healthcare IT and the proposed PSM on Healthcare Informatics.

#### 2. PROPOSED CATALOG COPY:

**ITIS 6201. Computer Security and Privacy. (3) Prerequisites or Corequisites: full graduate standing, or permission of department;** Topics include threats to computer and communication systems and privacy concepts; basic security defense techniques; web and network security issues; portable device security; operating systems security issues; email security; security issues in major business applications. (*Fall, Evenings*)

### B. JUSTIFICATION

#### 1. Need

Data security and privacy is becoming a major concern of all users of computer and communication systems, including those whose primary roles are not necessarily directly associated with IT. Understanding challenges in security and privacy together with basic security techniques for safe guarding information assets is becoming an indispensable technique skill for many non-IT professionals. The focus of the course is on security and privacy issues associated with computing and communication systems. The course is intended for students at the non-IT masters level. It will be a required course for the Graduate Certificate Program on Healthcare IT and the proposed PSM on Healthcare Informatics.

#### 2. Prerequisites/Corequisites:

Full graduate standing.

### **3. Course numbering:**

ITIS 6201 is intended to be a graduate level course for students in a non-IT masters program, and required by the Graduate Certificate Program on Healthcare IT and the proposed PSM on Healthcare Informatics.

### **4. Effect on scope, quality, and efficiency:**

The proposed courses will broaden the scope of the software and information systems curriculum to the teaching of security and privacy issues to non-IT major graduate students. Successful completion of the course will enhance significantly the students' understanding of security and privacy threats and basic countermeasures against these threats.

## **C. IMPACT**

### **1. Students served:**

This course will be offered to students in a non-IT masters program.

### **2. Effect on existing courses and curricula:**

- a. ITIS 6201 will be offered each fall.
- b. The content/frequency of other courses will not be affected.
- c. The anticipated enrollment is 25 students for ITIS 6201.
- d. Impact on enrollments in other elective courses will be minimal as it will be an elective course for non-IT masters students.
- e. ITIS 6201 has been offered twice as on a trial basis during the Fall 2009 and Spring 2010. The enrollments were 7 and 6, respectively.
- f. Other areas of catalog copy affected: The proposed courses should be listed as an elective option for non-IT masters programs.

## **D. RESOURCES REQUIRED TO SUPPORT PROPOSAL**

### **1. Personnel**

- a. Specify requirements for new faculty, part-time teaching, student assistant and/or increased load on present faculty.

No new faculty members are needed in order to teach these courses.

- b. List by name qualified faculty members interested in teaching the course(s).

In general, research faculty in data privacy and security areas are qualified to offer these courses. In particular, Bill Chu, Ehab Al-Shaer, Brent Kang, Xintao Wu, Mohamed Shehab, Yongge Wang, Weichao Wang and Yuliang Zheng are interested in offering these courses.

### **2. Physical Facility**

No new physical facilities are needed.

### **3. Equipment and Supplies**

No new equipment and supplies are needed to teach the courses.

### **4. Computer**

Specify requirements for computer usage by students and/or faculty, and include an assessment of the adequacy of computing resources by Computing Services.

Students will use the computing facilities in the Woodward 335 lab to complete their course projects and assignments. These facilities are adequate for the course.

### **5. Audio-Visual**

Specify requirements for audio and/or visual equipment and media production services from Media Services.

This course requires only the use of existing presentation equipment in classrooms. No additional audio/visual equipment or services are needed.

### **6. Other Resources**

Specify and estimate cost of other new/added resources required, e.g., travel, communication, printing and binding.

This course does not require any additional resources.

### **7. Funding Sources**

Indicate source(s) of funding for new/additional resources required to support this proposal.

This course does not require any additional resources.

## **E. CONSULTATION WITH THE LIBRARY AND OTHER DEPARTMENTS OR UNITS**

### **1. Library Consultation**

Library consultation was initiated December 8, 2010 and completed on December 10, 2010.

### **2. Consultation with other departments or units**

Consultation with the Departments of Computer Science and Bioinformatics and Genomics and the College of Health and Human Services was initiated December 8, 2010.

## **F. INITIATION AND CONSIDERATION OF THE PROPOSAL**

### **1. Originating Unit**

Approved by the Software and Information Systems Faculty on November 23, 2010.

Approved by the College of Computing and Informatics on March 15, 2011.

**2. Other Considering Units**

The Department of Computer Science approved the proposal on January 7, 2011.

The Department of Bioinformatics and Genomics approved the proposal on December 11, 2010.

The College of Health and Human Services raised no objection to the proposal.

**G. ATTACHMENTS**

1. ITIS 6201 Syllabus
2. ITIS 6201 Schedule (includes list of topics covered)
3. Library Consultation
4. Letters of Support

## Attachment 1. ITIS 6201 Syllabus

### Course Catalog Description

**ITIS 6201. Computer Security and Privacy. (3) Prerequisites or Corequisites: full graduate standing, or permission of department;** Topics include threats to computer and communication systems and privacy concepts; basic security defense techniques; web and network security issues; portable device security; operating systems security issues; email security; security issues in major business applications. (Fall, Evenings)

### Prerequisites

Full graduate standing, or permission of department.

### Instructional Method

This course incorporates lectures and discussions of assigned readings.

### Grading

All students will be evaluated by a midterm exam, a final exam, and a project focusing on an in-depth analysis of a specific topic in the area of computer security and privacy. Students will be required to write up a report detailing their findings upon the completion of the project and present the findings in a class room setting. The weight distribution of the three evaluation components is shown below, although attendance and class participation may be also factored into the final grade.

|                          |     |
|--------------------------|-----|
| Midterm exam             | 30% |
| Final exam               | 40% |
| Project and presentation | 30% |

Grading Policy: A = 90-100 B = 80-89 C = 70-79 U = below 70

### Academic Integrity

Unless otherwise specified, the UNC Charlotte guidelines on Academic Integrity specified under <http://www.legal.uncc.edu/policies/ps-105.html> fully apply to all work in this course. This includes term project and exams.

### Textbook and resources

Charles P. Pfleeger and Shari L. Pfleeger: Security in Computing, 4<sup>th</sup> Edition, Prentice Hall, 2007. ISBN: 0-13-239077-9.

R. R. Panko: Corporate Computer and Network Security, Prentice Hall, 2003, ISBN: 0-13-038471-2

**Attachment 2. ITIS 6201 Schedule**

| Week | Topics Covered                             |
|------|--|
| 1    | Introduction: security and privacy threats |
| 2    | User authentication                        |
| 3    | Protection of data                         |
| 4    | Security software packages                 |
| 5    | Data integrity                             |
| 6    | Privacy versus user authentication         |
| 7    | Midterm                                    |
| 8    | Network security                           |
| 9    | Email security                             |
| 10   | Wireless security                          |
| 11   | Student project presentations              |
| 12   | Student project presentations              |
| 13   | Student project presentations              |
| 14   | Final                                      |

**Attachment 3. Library Consultation**



## Consultation on Library Holdings

**To:** Bruce Long  
Assistant Chair & Director of Undergraduate Programs  
Software and Information Systems Department  
College of Computing and Informatics

**From:** Reese Manceaux

**Date:** December 9, 2010

**Subject:** ITIS 6201 --- Computer Security and Privacy

### Summary of Librarian's Evaluation of Holdings:

**Evaluator:** Reese A. Manceaux

**Check One:**            Holdings are superior  
 **Holdings are adequate (Please see comments)**    **YES**  
                                 Holdings are adequate only if Dept. purchases additional items.  
                                 Holdings are inadequate

### Comments:

This is a proposal for an new graduate course. It focuses on security and privacy issues associated with computing and communication systems. It is a required course for the Graduate Certificate Program on Healthcare IT and the proposed PSM on Healthcare Informatics. Topics include threats to computer and communication systems and privacy concepts; basic security defense techniques, web and network security issues, etc.

A small sampling of subject searching in the Atkins Library online catalog reveals the following holdings in support of these courses. (See the table that follows). A search of the related subjects retrieved over 3,600 pertinent items.

The Library has electronic access to periodicals and other electronic resources (e-books from Skillport/Books 24x7) that support these courses. Skillport, in particular, has an enormous catalog of computer related literature; especially up-to-date programming language books. In addition, the library has many electronic databases such as EBSCO databases (Cinahl), Springer Link, ACM Digital Library, IEEE Explore, ScienceDirect and Compendex (many with links to full text articles) supporting the overall Computing and Informatics program. The collection, especially if supported by ongoing purchases, is quite adequate to support this program.

**Atkins Library Holdings in Areas Related to  
Computer Security and Privacy**

| <b>Library of Congress Subject Headings</b>         | <b>Books</b> | <b>After Year 2001</b> | <b>Journals</b> | <b>Skillport /Books 24x7</b> |
|---|--------------|------------------------|-----------------|------------------------------|
| Computer Networks – Security Measures               | 355          | 259                    | 7               | 291                          |
| Data Protection                                     | 317          | 188                    | 5               | 286                          |
| Computer Security                                   | 862          | 550                    | 24              | 943                          |
| Internet – Security Measures                        | 83           | 44                     |                 | 105                          |
| Cyberterrorism (Intrusion Detection and Protection) | 124          | 117                    |                 | 269                          |
|   |              |                        |                 |                              |
|   |              |                        |                 |                              |
| <b>TOTAL</b>  | <b>1741</b>  | <b>1158</b>            | <b>36</b>       | <b>1894</b>                  |

*Reese A. Manceaux*

\_\_\_\_\_  
Evaluator's Signature

December 9, 2010

**Attachment 4. Letters of Support**

Long, Bruce

From: Wu, Wensheng  
Sent: Friday, January 07, 2011 12:31 PM  
To: Wu, Wensheng; Long, Bruce  
Cc: Ribarsky, William  
Subject: RE: Consultation

Bruce:

Graduate committee has discussed the proposals from SIS and consulted with CS Chair and relevant faculty.

In general, the chair has asked that we be mindful of efficiency and avoid duplicating course offerings within our department or across the departments. When there is significant overlap between courses, as in 4500/5500 and 4180/5180, we will ask for cross-listing or some other mechanism to enable joint teaching. The chair says that CS will need to go through a review of its curriculum and prioritization of its course offerings. He predicts that SIS will need to do a similar thing. This will be the only way we will be able to teach what we want to across the departments while maximizing efficient use of limited resources.

Here is feedback on specific courses:

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For ITIS 6201/8201 (Computer Security and Privacy):

If SIS determines there is no substantial overlap with other courses in SIS (e.g., 6200, 6210), we support the addition of this new course.

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ITIS 6510/8510 (Network Science):  
CS supports the addition of this new course to the SIS curriculum.

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ITIS 4500/5500 (Web Mining)

This course is very similar to ITCS 6265 (Advanced Topics in KDD): Information Retrieval and Web Mining, a graduate-only course offered by CS in Fall 2009 (<http://www.cs.uncc.edu/~wwu18/itcs6265/>). CS faculty (esp. Zbyszek and Wensheng) are interested in offering similar course to undergraduate students.

The graduate committee consulted with KDD faculty including Dr. Ras and also with CS chair Dr. Ribarsky. Based on the consultation, we recommend SIS to cross-list the course as ITIS/ITCS 4500/5500. This also improves the efficiency of course offerings by both CS and SIS.

Given that CS is already offering a similar course at the graduate level (KDD faculty also plans to offer a new graduate course on Text Data Mining), we suggest that 4500/5500 focuses on the application aspects of Web mining, while ITCS 6265 (& the planned new course) focuses on principles, analysis, and advanced techniques. Again, this would improve the efficiency & avoid duplicate offerings.

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ITIS 4180/5180 (Mobile Application Development)

Several CS faculty members (e.g., Robert Kosara) are interested in the subject & plan to offer similar courses. So the graduate committee consults with CS chair Dr. Ribarsky on this. Based on the consultation, we recommend the course to be cross-listed as ITIS/ITCS 4180/5180, given the conflict of interest & efficiency in offering.

1/7/2011

Regards,

Wensheng

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Web: <http://www.cs.uncc.edu/~wwu18/>  
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Long, Bruce

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**From:** Mays, Larry  
**Sent:** Saturday, December 11, 2010 9:29 PM  
**To:** Long, Bruce; Marshall, Elise  
**Subject:** Re: Course proposal consultation

I support the adoption of all of these.

Page 1 of 1

Long, Bruce

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**From:** Long, Bruce  
**Sent:** Wednesday, December 08, 2010 2:26 PM  
**To:** Mays, Larry; Marshall, Elise  
**Subject:** Course proposal consultation  
**Attachments:** ITIS 4180 5180 Mobile Application Development.docx; ITIS 4500-5500 Webmining-Nov-23.docx; itis6201-ComputerSecurityAndPrivacy-proposal-2010-09-15 (1).doc; ITIS 6510 8510 Network Science\_ver2.docx

Larry,  
SIS has a number of course proposals pending. I am forwarding them for your consultation. If you have any questions please let me know.

Thanks,  
Bruce

Bruce Long  
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