School of Technology  
Eastern Illinois University  

Request for New Course

1. Catalog Description  
   a) Course number:  TEC 5353  
   b) Title:  Network Security  
   c) Meeting times and credit:  3-1-3  
   d) Term to be offered:  F  
   e) Short title:  Network Security  
   f) Course description:  A study on technology for network security and on Cryptographical principles and applications.  
   g) Prerequisite:  TEC 5313 or equivalent.  
   h) Initial term of course offering:  Fall 2006

2. Student Learning Objectives and Evaluation  
   a) Student learning objectives of the course:  
      EIU graduates will:  
      • Design the appropriate computer security layouts for different applications.  
      • Research and apply national and international laws related to computer security.  
      • Apply computer risk assessment and computer vulnerability analysis techniques.  
      • Identify cryptography principles and the public/private key infrastructure.  
      • Demonstrate skills and knowledge to set up Web Servers, LAN servers, Routers and Firewalls to assure computer and network security.  
      • Discuss issues related with information security, homeland security and their repercussions in today’s world.  
   
   b) Student assessment and grades:  
      Student achievement will be assessed and grades will be given according to class participation and class exercise, internet activities, quizzes, homework, application projects, laboratories, mid-term and final exam. Grades will be based upon the following distribution:  
      
      | Component                      | Percentage |
      |-------------------------------|------------|
      | Internet activities and quizzes| 20%        |
      | Laboratory activities         | 15%        |
      | Application projects and final paper | 30%       |
      | Midterm paper                 | 10%        |
      | Mid-term test                 | 10%        |
      | Final exam                    | 15%        |

a) Technology-Delivered Format  
   • This course deals with computer network systems. Delivering most of the course though the Web will enable those professionals working in the field to gain access to the course.
• This course will be delivered via technology-delivered modality. Students will need to visit campus one weekend during the semester in order to complete laboratories.

• Homework will be submitted through WebCT. The integrity of the course will be the same as face-to-face courses in terms of homework and projects.

• Mid-term and final exams will be administered online with time limits. The time limit will restrict students from consulting references or other individuals. Moreover, homework and projects carry much more weight than the mid-term test and final exam.

• Active interactions will be maintained through emails, WebCT discussion boards, online problem-solving community, chat room, and presentations. Virtual office hours will be planned, as appropriate or as requested, using MSN Messenger.

3. Outline of the Course

<table>
<thead>
<tr>
<th></th>
<th>Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Understanding information systems</td>
<td>2</td>
</tr>
<tr>
<td>b) Crime, privacy and the law</td>
<td>2</td>
</tr>
<tr>
<td>c) Models of information security</td>
<td>2</td>
</tr>
<tr>
<td>d) Cryptographic principles, methods and public key infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>e) Viruses, worms and malicious software</td>
<td>2</td>
</tr>
<tr>
<td>f) Data telecommunications principles and security</td>
<td>2</td>
</tr>
<tr>
<td>g) Firewalls</td>
<td>2</td>
</tr>
</tbody>
</table>

The above content was designed on a typical 15-week term. It will remain the same regardless if the course is instructed via the Web or face-to-face modality.

4. Rationale

a) Purpose and need:

• “On September 11, 2001, it became clear to every Illinois citizen that the very fabric of their society had radically changed. As Illinois expands both its response to a post 9/11 environment and its economy into the homeland security industry, it is incumbent upon the state, which is already home to over 600 industrial research and technology laboratories to have both appropriate educational programs.”¹

• The development of a strong and competitive homeland security sector in Illinois requires both a commitment of the state and public higher education to design, implement, and support courses, seminars, workshops, internships, and programs for the student or professional pursuing a career related to homeland security.”²

• This course is a necessary complement in the area of computer technology.

• The US government will spend billions of dollars in the next decade implementing network security systems. EIU through this course will provide our graduates with the necessary knowledge to contribute with this initiative.

¹ “HOMELAND SECURITY EDUCATIONAL INITIATIVE”, State of Illinois, August 12, 2005
² “HOMELAND SECURITY EDUCATIONAL INITIATIVE”, State of Illinois, August 12, 2005
b) Justification of the course level:

A graduate-level course is suitable for students who are preparing or are already managers in industry. The proposed course will provide graduate students with knowledge and skills to effectively manage network and computer security. With this foundation, students will be able to develop more advanced skills and gain additional experience to become effective leaders in technology security.

c) Similarity to existing courses: None.

d) Impact on program(s):
This will be an elective course for the graduate certificate program of “Technology Security.” In addition, graduate students can take this course as an elective for Master of Science in Technology degree, and/or an elective for “Computer Technology” graduate certificate program. This course will enhance the offerings of the graduate programs in technology.

5. Implementation
a) Faculty: Dr. Rigo Chinchilla
b) Additional cost to students: None
c) Textbook(s)

6. Community College Transfer: Not applicable.

7. Date approved by the School of Technology Curriculum Committee: 10/21/05

8. Date approved by Lumpkin College of Business and Applied Sciences Curriculum Committee: 11/14/05

9. Date approved by Council of Graduate Studies: