INDIANA UNIVERSITY SOUTH BEND

UNDERGRADUATE COURSES

Curriculum Change
(New Course Requests / Course Change Requests / New Program Requests)

CAMPUS ROUTE SHEET

College of Liberal Arts & Sciences
DIVISION/UNIT/DEPARTMENT Department of Computer & Information Sciences

CHANGE REQUESTED: Add new course CSCI-B451 for Fall 2010

SIGNATURES

Dept/Unit Chair  

Date 2/23/2010

Unit Curriculum Committee Chair  

Date 3/5/2010

Dean/Assoc Dean  

Date 3/22/10

Director of General Education
(if applicable)

Date

Senate Curriculum Committee Chair  

Date 4/15/10

Assoc Vice Chancellor Academic Affairs  

Date 5/3/10

July 2006
New Course Request  

Indiana University  

South Bend Campus

Check Appropriate Boxes:  
Undergraduate credit [X]  
Graduate credit [ ]  
Professional credit [ ]

1. School/Division  
Liberal Arts and Sciences

2. Academic Subject  
Code  
CSCI

3. Course Number  
B451 (must be cleared with University Enrollment Services)

4. Instructor  
R. Adaikkalavan

5. Course Title  
Security in Computing

Recommended Abbreviation (Optional)  
(Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year):  
Fall 2010

7. Credit Hours: Fixed at  
3  
or Variable from  
__________ to  
__________

8. Is this course to be graded S-F (only)?  
Yes [ ]  
No [X]

9. Is variable title approval being requested?  
Yes [ ]  
No [X]

10. Course description (not to exceed 50 words) for Bulletin publication:  
An introduction to computing security to include confidentiality, integrity and availability triad, cryptography, software security, operating system security, trusted operating system design and evaluation, authentication, network threats and defenses, security management, legal aspects of security, privacy and ethics. P: CSCI-C335

11. Lecture Contact Hours: Fixed at  
3  
or Variable from  
__________ to  
__________

12. Non-Lecture Contact Hours: Fixed at  
0  
or Variable from  
__________ to  
__________

13. Estimated enrollment:  
30  
of which  
10  
percent are expected to be graduate students.

14. Frequency of scheduling:  
Every 2 years

Will this course be required for majors?  
No, but it is an elective

15. Justification for new course:  
To allow diverse undergraduate elective offerings

16. Are the necessary reading materials currently available in the appropriate library?  
Yes

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.  
See attached.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.  
No

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:  
Signature  
Date  
2/23/2010

Department Chairman/Division Director

Approved by:  
Signature  
Date  
3/22/10

Dean

Dean of Graduate School (when required)

Date

Chancellor/Vice-President

Date

University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

UPS 724  
University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White
Security in Computing
Course URL: www.cs.iusb.edu/~raman/security
Computer & Information Sciences, Indiana University South Bend
Course Syllabus

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Dr. Raman Adaikkalavan</th>
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<tbody>
<tr>
<td>Website</td>
<td><a href="http://www.cs.iusb.edu/~raman">http://www.cs.iusb.edu/~raman</a></td>
</tr>
<tr>
<td>Office</td>
<td>North Side Hall 329</td>
</tr>
<tr>
<td>Email</td>
<td>Message via <a href="http://oncourse.iu.edu">http://oncourse.iu.edu</a></td>
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| Office Hours | |
|--------------||

**COURSE OBJECTIVE & OUTLINE**

An introduction to computing security to include confidentiality, integrity and availability triad, cryptography, software security, operating system security, trusted operating system design and evaluation, authentication, network threats and defenses, security management, legal aspects of security, privacy and ethics. P: CSCI-C 335

**TEXT BOOK**

- Supplemental materials and reading assignments will be provided

**GRADING**

Total Points (1000):  A+ (>999), A (>949), A- (>899), B+ (>869), B (>829), B- (>799),
                    C+ (>769), C (>729), C- (>699), D+ (>669), D (>629), D- (>599), F (<600)

There will be quizzes (8%), three exams (36%), assignments (46%), and presentation (5%). Lowest Quiz score will be dropped. Class participation is vital for active and effective learning and will constitute for 5% of the grade. This is an initial proposal, and instructor reserves the right to re-distribute the percentages, if deemed necessary. The grading scale may also be modified.

**ATTENDANCE & MAKE-UP**

There are NO make-ups after the scheduled time. If you miss a quiz or an exam with a VALID excuse (University excused absence (e.g., representing IUSB); or Proper documentation of an illness (for the entire period)), your Final Exam grade will count in place of that grade. Attendance is required. If you are unable to attend class, you are responsible for completing the material covered. Please keep me informed about any extenuating circumstances that may affect your attendance.

**HOW TO DO WELL IN THIS COURSE**

Students who get the most out of this course will be the ones who put in the most effort. If you want to do well, attend all the lectures, participate in discussions, read the assigned topics, and start early on your assignments. If you are having difficulty, you owe it to yourself to get help. I will be more than happy to help you. Don’t be afraid or feel shy to come and see me, as no question is a dumb question. If you cannot make it to office hours but really need help, contact me via email to setup an appointment. I sincerely want all of you to do well. It is your responsibility to check the course website, and read oncourse Emails/Announcements. I would recommend you to utilize oncourse effectively.
HOMEWORKS & PROJECTS

- Students must work alone on all assignments unless specified. Your work must be your own.
- Late assignments can be submitted for credit with NO penalty, with a valid excuse. 10% every 24 hours for the first 96 hours. After 96 hours assignments will not be accepted.
- Students are allowed to take an automatic extension of 24 hours on three assignments without any penalty, by sending an email to the instructor. After 24 hours usual penalties apply.
- After the graded sheets are returned, students will have 10 days to discuss any grading issues. For submissions during the end of the semester and final exam, check with the instructor.

ACADEMIC HONESTY STATEMENT

It is the responsibility of the student to know of the prohibited actions such as cheating, fabrication, plagiarism, academic, and personal misconduct, and thus, to avoid them. All students are held to the standards outlined in the code. Please reference the entire code for a complete listing (www.dsa.indiana.edu/Code/). Any violation may result in serious academic penalty, ranging from receiving a warning, to failing the assignment, to failing the course, to expulsion from the University.

DISABILITIES STATEMENT

If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Disabled Student Services (Administration Building, room 149, telephone number 520-4832), as soon as possible to work out the details. Once the Director has provided you with a letter attesting to your needs for modification, bring the letter to me. For more information, please visit the web site for Office of Disabled Student Services http://www.iusb.edu/~sbdss/

ACCOMMODATIONS FOR RELIGIOUS OBSERVANCES STATEMENT

If any student will require academic accommodations for a religious observance, please provide me with a written request to consider a reasonable modification for that observance by the end of the second week of the course. Contact me after class, during my office hours, or by individual appointment to discuss the issue. If after discussion we reach no consensus, either party or both should seek the advice of the Department Chair or the Dean, and if no consensus is reached, then the advice of the Vice Chancellor of Academic Affairs (“VCAA”). Either the instructor or the student may appeal the VCAA’s decision to the Office of Affirmative Action within ten business days of the determination.

EFFECTIVE LEARNING ENVIRONMENT

All devices (laptops, cell phones, PDAs, music players, etc) must be turned off during lectures/labs

USE OF KNOWLEDGE GAINED

The main purpose of this course is to teach students about security in computing. It includes topics such as cryptanalysis, vulnerability analysis, etc. The knowledge gained must not be used to engage in any activity in IU or any other computing infrastructure that is not legal. Refer IU computing policy at http://it.iusb.edu
## Tentative Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
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| 1    | • Overview  
      | • Security Survey  
      | • NSTISSI 4011 Standard  
      | • Ware’s 1967 Report on S & P in Computer Systems |
| 2    | • Security in Computing Chapter 1  
      | • McCumber’s Cube |
| 3    | • Classical Cryptography |
| 4    | • Symmetric Key Cryptography |
| 5    | • Public Key Cryptography  
      | • Key management |
| 6    | • Program Security Vulnerabilities & Malicious Code |
| 7    | • Program Security Controls |
| 8    | • Operating System Overview  
      | • Memory Protection & Access Control |
| 9    | • Identification & Authentication |
| 10   | • Trusted Systems Design and Evaluation |
| 11   | • Network Overview  
      | • Network Threats and Defenses |
| 12   | • Network Threats and Defenses |
| 13   | • Security Management |
| 14   | • Legal Aspects of Security, Privacy and Ethics |