Course Title: Software Security
Course Code: SE 612
Course Credit: 3 Credits (2 Credit Theory and 1 Credit Lab)

Course Outline: Introduction: Security principles, concept of computer security, security services and policies Security risks: Database security, operating systems security, secure coding Countermeasures: methodologies and tools for identifying and eliminating security vulnerabilities, techniques to prove the absence of vulnerabilities, and ways to avoid security holes in new software. Secure software design: essential guidelines for building secure software, information security standards

Suggested Readings:

1. Security in Computing, 4th Edition, by Charles P. Pfleeger , Publisher: Prentice Hall; 4th edition
2. Computer security: principles and practices, by William Stallings and Lawrie Brown, 2nd Edition,
3. Brian Chess and Jacob West, Secure Programming with Static Analysis (required)
4. David A. Wheeler, Secure Programming for Linux and Unix HOWTO Version 3.5, Aug 2004 (required)
5. Goertzel et al, Software Security Assurance State of the Art Report, May 2007.
6. Aleph One, Smashing the Stack for Fun and Profit. Phrack Vol 7, Nr. 49
7. Tim Newsham, Format String Attacks, Guardent tech report, Sept 2000

Semester 7 (4th year 1st Semester)

Course Title: Internship
Code: SE 701
Credit: 18 Credit Lab

Outline: The student will work full-time as an intern to particular company for a period of six months. S/he will be evaluated based on the marks provided by the company along with the marks of at least two presentations given at IIT.