I. Catalog Description and Credit Hours of Course:
   Understanding of web based systems in different evolution of web architectures; Web 1.0, Web 2.0. Understanding of HTML and HTML5. Principle of Single Sign On for web based systems. Understanding of role of certificate authority and various PKCS (public key cryptographic standards) for web infrastructures. Understanding distributed infrastructures and their security requirements. Secure coding standards for web development. 3 credit hours.

II. Prerequisite (s): CY320 and IS245 or consent of instructor.

III. Purposes or Objectives of the Course:
   A. Identify constructs of distributed architectures and their security requirements.
   B. Apply Single Sign On concept on web / cloud infrastructures.
   C. Identify different aspects of certificate authority administration with PKCS.
   D. Implement service based computing systems in Web 2.0 constructs.
   E. Ability to test security aspects of web/cloud based system.

IV. Student Learning Outcomes:
   A. Students will be able to identify constructs of distributed architectures and their security requirements.
   B. Students will be able to apply Single Sign On concept on web / cloud infrastructures.
   C. Students will be able to identify different aspects of certificate authority administration with PKCS.

V. Expectations of Students:
   A. Students are expected read assigned materials.
   B. Students are expected to complete all assignments. Assignments will ONLY be accepted on the due dates provided, unless previous arrangements are made or student provides a written medical doctor's excuse.
   C. Students are expected to participate in class and group discussions.
   D. Student work will be completed in accordance with Code of Student Conduct (http://www6.semo.edu/judaffairs/code.html).
   E. In a professional environment, work areas are kept clean. In keeping with a professional attitude towards fellow students, always clean your area before leaving.
   F. All laboratory work must be completed during the regularly scheduled lab time.
VI. Course Content or Outline:  
(4 contact hours per week)

A. 1. Security in Web 1.0/ Web 2.0  
2. Security in HTML and HTML5  
3. Single Sign On in Web/Cloud based systems  
4. Certificate Authority  
5. X509 certificates creation and revocation  
6. PKCS and web services  
7. Security of Distributed Systems  
8. Secure coding standards of web based systems  
9. Penetration Testing of Web Based Systems

VII. Textbook(s) and/or Other Required Materials or Equipment:

A. Textbook to be announced.

B. Supplemental materials will be provided by instructor.

VIII. Basis for Student Evaluations

A. Homework ............................................................... 15%
Labs ................................................................. 10%
Class Participation* .............................................. 5%
Mid-term Exam ..................................................... 25%
Final Exam ............................................................. 30%
Project ............................................................... 15%

B. Grading Policy:
90-100 A
80-89.9999 B
70-79.9999 C
<70 F

C. The weight of evaluation criteria may vary at the discretion of the instructor and will be indicated at the beginning of each course.

D. * Participation to class discussions, taking labs, homework, and exams on the assigned time slots. The instructor reserves the right, acting within the policies and procedures of the university, to make changes in course content or instructional techniques without notice or obligation. No late assignments will be accepted. “Emergencies” require that YOU contact the instructor ASAP. Request for a late submission after the due time will not be granted.