

**THE UNIVERSITY OF HONG KONG
FACULTY OF BUSINESS AND ECONOMICS**

**School of Business
BUSI0063 – Internet Applications Development and Security
Semester 1, 2009**

I. Information on Instructor, Tutor, and Course

Instructor: Michael Chau, Ph.D.
Office: Room 729D, Meng Wah Complex
Phone: 2859-1014
Email: mchau |at| business.hku.hk
URL: <http://www.business.hku.hk/~mchau/>
Consultation times: by appointment

Tutor: Miss Becky Tsang
Email: beckytyp |at| hku.hk

Lecture hours: Tuesday 4:00-4:50pm, Thursday 4:00-5:50pm

Course Website:

Class readings, assignments and other related materials will be provided on the course blog site:
<http://www.xanga.com/busi0063/> . Please visit this site frequently.

Pre-requisites:

1. *BUSI0048 Business applications development* or *CSIS1117*; and
2. *BUSI0052 Database development and management* or *CSIS0278*

Reference Text:

Core Servlets and JavaServer Pages, Vol. 1: Core Technologies, Second Edition
by Marty Hall, Larry Brown
Prentice Hall, ISBN: 0130092290

Network Security Essentials
by William Stallings
Prentice Hall, ISBN: 0132303787

II. Course Description and Objectives

This course studies the techniques in developing Internet-based business applications and the basics of Internet security. Resources, tools and new techniques will be introduced. Topics to be covered include:

- The Internet and the World Wide Web
- HTML and Web scripting (VBScript and JavaScript)
- Java Servlets and JSP
- CGI, Perl, PHP, ASP
- Web spiders and search engines
- Google technologies
- Web 2.0 technologies and applications
- Wireless applications (e.g., J2ME, WAP)
- Internet security technologies
- Types of network attacks
- Cryptography
- Web transaction security (e.g., HTTPS, e-certs)
- Other current topics

Course objectives

1. To learn the basics of the Internet and the World Wide Web and some popular Internet applications, and their impact on business.
2. To acquire hands-on experience in developing Internet applications using various technologies.
3. To learn the basis of Internet security, the relevant technologies, and the business implications.

III. Learning Outcomes

After taking this course, students should be able to:

1. Describe and explain the architecture and the business potential of the Internet and the World Wide Web.
2. Design, implement, and evaluate Internet-based business applications.
3. Know the characteristics of various popular Web programming languages and platforms, compare their pros and cons, and use them effectively to develop applications
4. Work in teams on Internet application development.
5. Recognize and justify the needs for and importance of Internet security and apply preventive measures.

IV. Alignment of Program and Course Outcomes

| Program Learning Outcome | Course Learning Outcome |
|---|-------------------------|
| 1. Acquisition and internalization of knowledge of business and information systems | 1,2,3,4,5 |
| 2. Application and integration of knowledge of business and information systems | 1,2,3,4,5 |
| 3. Inculcating professionalism and instilling leadership skills | 4 |
| 4. Developing global outlook | 1 |
| 5. Mastering communication skills | 1,4,5 |

V. Teaching and Learning Activities

Teaching and learning activities for this course include:

- Lectures: basic concepts and knowledge will be presented in-class through powerpoint-slides.
- Demonstration: live demonstrations of software and technologies will be given in class to show students how they work.
- Tutorial lab sessions: students practice concepts learned in class in the computer lab and work on examples with the tutor.
- Videos: video clips are shown for selected topics. Students are required to answer questions and problems based on the video contents. These questions offer students opportunities to apply basic concepts and techniques to specific scenarios.
- In-class exercises: basic concepts and techniques are illustrated using examples. Students work along with the lecturer to solve the problems. These exercises help students follow the lectures closely and actively.
- In-class discussions: sometimes discussion questions are raised by the lecturer. Students are encouraged to participate in discussions and share opinions with their peers. These discussions encourage students to think more for certain arguable topics.
- Online discussions: students express and share their ideas and questions online. These discussions encourage students to think about the class materials after class.
- Guest seminar: guest speakers from the industry will be invited to share experience on the applications of the concepts and technologies in the real world.
- Assignments: students accomplish tasks using technologies covered in class. Through the assignments they can acquire hands-on experience using these technologies.
- Project: students apply the knowledge learned in-class in a group project in hypothetical or real business situations.
- Written examination: a written exam tests students' knowledge of the topics covered in class and their application of the knowledge.

VI. Assessment

| Learning outcome | Teaching and learning activity | Assessment |
|--|--|--|
| 1. Describe and explain the architecture and the business potential of the Internet and the World Wide Web. | Lectures, demonstration, in-class exercises, tutorials, in-class discussions, online discussions, assignments, exam, project | Participation in discussions, assignments, exam |
| 2. Design, implement, and evaluate Internet-based business applications. | Lectures, demonstration, in-class exercises, tutorials, in-class discussions, online discussions, assignments, exam, project | Participation in discussions, assignments, project, exam |
| 3. Know the characteristics of various popular Web programming languages and platforms, compare their pros and cons, and use them effectively to develop applications. | Lectures, demonstration, in-class exercises, tutorials, in-class discussions, online discussions, assignments, exam, project | Participation in discussions, assignments, project, exam |
| 4. Work in teams on Internet application development. | Lectures, in-class discussions, online discussions, project | Participation in discussions, assignments, project, exam |
| 5. Recognize and justify the needs for and importance of Internet security and apply preventive measures. | Lectures, videos, in-class exercises, tutorials, in-class discussions, online discussions, exam, project | Participation in discussions, assignments, project, exam |

VII. Standards for assessment

| | |
|---------------------|-----|
| Assignments (2) | 25% |
| Group Project | 40% |
| Written Exam | 25% |
| Class Participation | 10% |

Assignments

Two programming assignments will be given. You will have approximately two weeks to complete each assignment. The assignments may be individual or group assignments. For individual assignments, please make sure you work on the assignments yourself and do not share your assignments with others. Please be prompt in submitting your assignments. If your submission is late for 24 hours or less, 40% will be deducted. If your submission is late for more than 24 hours, no credit will be given.

Group Project

You will need to form a group of three to five students for the group project in this course. Each group will develop an application in Facebook (www.facebook.com), one of the most popular social networking Web sites. You will apply the technologies and knowledge you learn in class in this project. You are required to submit a brief proposal for the approval of topic before carrying out your project. Each group will give two presentations and demonstrations during the semester and submit a project report at the end of the course.

Exam

The written exam will be closed book, closed notes. You must receive permission to take the exam at a different time at least one week prior to the scheduled date and have a documented emergency. Failure to do so will result in a zero for the exam. Other exam/projects during the same week do not constitute a valid excuse.

Class Participation

Your class participation will be assessed based on both your participation inside classroom (in-class discussion) and outside classroom (online discussion).

VIII. Academic Conduct

Plagiarism will be reported to the University. Plagiarism and sharing of your assignments with others are serious offences and may lead to disciplinary actions. You should read the chapters on “Plagiarism” and “Copyright” in the Undergraduate/Postgraduate Handbook for details. You are strongly advised to read the booklet entitled “What is Plagiarism” which was distributed to you upon your admission into the University, a copy of which can be found at www.hku.hk/plagiarism. A booklet entitled “Plagiarism and How to Avoid it” is also available from the Main Library.

IX. Course Schedule (tentative)

| <i>Week</i> | <i>Date</i> | <i>Topic</i> | <i>Submission Due</i> |
|-------------|------------------------------|--|-----------------------------|
| 1 | Sep 1 (Tue) Sep 3 (Thu) | Course Introduction Web Servers, Browsers, and HTTP | |
| 2 | Sep 8 (Tue) Sep 10 (Thu) | Web Servers, Browsers, and HTTP Web and Web 2.0 applications | |
| 3 | Sep 15 (Tue) Sep 17 (Thu) | HTML, CGI, and Perl HTML, CGI, and Perl | |
| 4 | Sep 22 (Tue) Sep 24 (Thu) | PHP and MySQL Client-side Scripting and Dynamic Contents | Project Proposal Due |
| 5 | Sep 29 (Tue) Oct 1 (Thu) | Client-side Scripting and Dynamic Contents -- <i>National Day</i> -- | HW 1 Due |
| 6 | Oct 6 (Tue) Oct 8 (Thu) | Java Servlets and JSP Java Servlets and JSP | |
| | Oct 12 - 17 | -- <i>Reading Week</i> -- | |
| 7 | Oct 20 (Tue) Oct 22 (Thu) | Project Prototype Presentation Project Prototype Presentation | |
| 8 | Oct 27 (Tue) Oct 29 (Thu) | Wireless Application Development Web Search Engines | |
| 9 | Nov 3 (Tue) Nov 5 (Thu) | Network Security and Internet Security Network Security and Internet Security | HW 2 Due |
| 10 | Nov 10 (Tue) Nov 12 (Thu) | Cryptography Written Exam | |
| 11 | Nov 17 (Tue) Nov 19 (Thu) | Security in E-commerce Applications Spyware and Privacy Issues | |
| 12 | Nov 24 (Tue) Nov 26 (Thu) | Project Final Presentation Project Final Presentation | |
| | Dec 1 (Tue) | | Project Report Due |