COURSE OUTLINE

2013/2014

COURSE NAME: Information Systems Architecture & Security

COURSE CODE: BAIS3110

COURSE DESCRIPTION

The definition of any project requires both a clear and tested architecture and a clear security implementation model. This course will examine a variety of architectures and their impacts on how projects get constructed and how they will perform under load. Security will be examined from both network and application perspectives, and a variety of security solution patterns will be examined.

Course Credits: 3

Pre-requisites: None

Co-requisites: BAIS3150

LEARNING OUTCOMES

OUTCOME	Upon successful completion of this course, you will be able to
1	Write sample applications using a variety of internet protocols. The following concepts, skills, and issues are used to support this Outcome: • Complete the in class assignment: examining the TCP/IP protocol • Complete the in class assignment: examining the HTTP protocol • Complete the in class assignment: examining web services • Write the Protocol Exam
2	Explain operating system architecture. The following concepts, skills, and issues are used to support this Outcome: • Complete the in class assignment: examining and documenting ASP.NET • Complete the Web Services & Architecture Exam
3	Develop and implement secure applications. The following concepts, skills, and issues are used to support this Outcome: • Complete the in class assignment: hacking a buffer overrun and eliminating it • Complete the in class assignment: hacking SQL injection and cross site scripting and eliminate them • Complete the in class assignment: implementing Authorization and Authentication • Complete the in class assignment: implementing data encryption • Write the Security exam • Write the Security Management exam

4	Analyze existing applications for security issues. The following concepts, skills, and issues are used to support this Outcome: • Complete the in class assignment: perform a Threat Model • Write the Security Management Exam
5	Design security policies that follow industry best practice. The following concepts, skills, and issues are used to support this Outcome: • Complete the in class assignment: performing a Security Review • Write the Security Management Exam

STUDENT EVALUATION

OUTCOME	ACTIVITY DESCRIPTION	MARK DISTRIBUTION
3	Security concept research paper	10%
1	Protocol Exam	10%
2	Web Services & Architecture Exam	10%
3	Security Exam	15%
3, 4 and 5	Security Management Exam	15%
1	In-class lab assignment examining the TCP/IP protocol	4%
1	In-class lab assignment examining the HTTP protocol	4%
1	In-class lab assignment examining web services	4%
2	In-class lab assignment examining and documenting ASP.NET	4%
3 and 4	In-class lab assignment hacking a buffer overrun and eliminating it	4%
3 and 4	In-class lab assignment hacking sql injection and cross site scripting and eliminiting them	4%
3	In-class lab assignment implementing Authorization and Authentication	4%
3	In-class lab assignment performing data encryption	4%
4 and 5	In-class lab assignment performing a threat model	4%
4 and 5	In-class lab assignment performing a secure code review	4%
	TOTAL	**100%**

COMPLETION REQUIREMENTS

Achieve a final mark of no less than 60% or a C-. Students are required to maintain an overall GPA of a 2.3 (C+) in years 3 and 4 of their program.

Students must achieve a 60% average in all theory components of the course in order for the practical components to count. Students must achieve a 60% average in all practical components of the course in order for the theory components to count. Any student who fails to achieve a 60% in either the theory or practical component will receive the lower mark as a final grade and will be required to repeat the course.

OPTIONAL LEARNING RESOURCES

Michael Howard and David LeBlanc. (2002). Writing secure code. (1). Redmond, Wash. : Microsoft Press,. ISBN: 0735615888.

Microsoft. (2003). Building secure Microsoft ASP. NET applications: authentication, authorization, and secure communication: patterns & practices. (1). Redmond, Wash. : Microsoft Press,. ISBN: 0735618909.

DELIVERY METHOD

This course will be taught using a variety of delivery methods which may include face-to-face, online, or blended teaching platforms. Activities such as collaborative exercises/assignments, seminars, labs, discussion, audio/visual presentations, case studies, and practicums may be used to support learning.

STUDENT RESPONSIBILITY

Enrolment at NAIT assumes that the student will become a responsible citizen of the Institute. As such, each student will display a positive work ethic, assist in the preservation of Institute property, and assume responsibility for his/her education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

EQUITY STATEMENT

NAIT is committed to providing an environment of equality and respect for all people within the learning community, and to educating faculty, staff, and students in developing inclusive teaching and learning contexts that are welcoming to all.

Leadership Review Date: February 13, 2013

Curriculum Committee Review Date: February 18, 2013