CSCI 595 Research - Neelima Devana

Meets 8/31/2015 through 12/18/2015 **During office hours or other F2F technology as needed**	**Instructor Office Hours (Jour210):** **Wed: 3:15-5:00PM, Thurs: 3:15-5:00PM and Mon-Fri 10:00am-8:00pm (by appt).**

INSTRUCTOR:

Dr. Tanik
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Texas A&M University – Commerce
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Phone: 903-886-5419

TEXTBOOK:

Support: Guide to the SWEBOK (online)
Wolfram Framework (Mathematica) and other security tools

COURSE DESCRIPTION:

Student will be trained in developing professional reports, including IEEE/SDPS journal paper, SBIR/NSF grant, (mainly security area) that involve Data Analysis and Visualization using tools like Wolfram Framework (e.g. Mathematica) and OWASP principles and tools. A security module for DPSL will be developed.

Credit hours: 3.

STUDENT LEARNING OUTCOMES:

1. Student will learn 5-10 functions/week
2. Most functions will support security related
3. Ancillary security technology/OWASP will be learned, including other Wolfram applications
4. SDPS/IEEE journal paper will be completed for mid-term
5. SBIR grant will be completed for Final, extending midterm paper
6. DPSL security module will be developed with team in schedule, following assigned lead.

TENTATIVE COURSE OUTLINE:

Following is the tentative schedule of the topics that will be covered in this course. This schedule is subject to change so it's students' responsibility to watch for course announcements that will be posted on course eCollege site. The student will review topics in textbook and explore and report on related Wolfram Mathematica functions that can help with analysis and/or design work, especially for research or corporate work (10-20 functions/week). Every week Wed you will send a progress report, which includes in checklist format (1. What you did, and what you plan to do next) Other Wolfram applications will be explored like Connected Devices and their relationship to IoT devices that utilize Big Data.

<u>You will demo/report 5-10 Wolfram Mathematica Functions/Week (focus on security)</u>

Week- 1: (Considering till september8, till today) ->Vision Document and Requirements gathering like finalizing the extent of project, ->Getting clear Idea about the proposed project's objective.

Week- 2: (Sept 14-Sept21) -> web application and its types

Week- 3 :(Sept 21-Sept28) -> Programming languages used to design web application

Week- 4: (Sept 28-Oct5) -> web application security and owap top 10

Week- 5: (Oct5-Oct12) -> A-1 injection scenarios

Week- 6: (Oct12-Oct19) ->. A-1 injection manual and automated testing.

MIDTERM: Journal paper in SDPS/IEEE format (www.sdpsnet.org)

Week- 7: (Oct19-Oct26) -> A-2 Broken Authentication and session management

Week- 8: (Oct 26-Nov 2) ->A-3 Crosssite scripting XSS)

Week- 9: (Nov 2-Nov9) -> A-3 Crosssite scripting (XSS)

Week- 10: (Nov 9-Nov16) ->A-4 insecure Direct object reference, A-5 Security Misconfiguration,A-6 Sensitive data Exposure

Week- 11: (Nov 16-Nov23) ->A-7 Missing function Level Access control

Week- 12: (Nov 23-Nov30) ->A-8 Cross Site Request forgery (CSRF)

Week- 13: (Nov 30- Dec3) ->A-9 using Components with Known Vulnerabilities, A-10 Unvalidated Redirects and forwards.

Week-14: (Dec 3-Dec8) Documentation as per IEEE Standards

Week- 15: (Dec 8-Dec14) Final Review and Presentation of Project

FINAL EXAM: SBIR/NSF grant will be written in full, extending SDPS/IEEE paper

Note: This above Syllabus is tentative, need to work more on Better Understanding of Design and Implementation based on time and resource factors. -> Along with this syllabus we will be having reviews and meetings every week and scheduled discussions as per the project requirements.

Deliverables that are required, in addition to Midterm journal paper, and Final grant work.
1. 20 item checklist due as part of your final work in your Wix site
http://media.wix.com/ugd/60b844_1fcef18f93ce44c290b673d3d3c0c09a.pdf

2. IEEE standards found here (e.g. vision doc, IEEE 830, 1016, 1058)
http://jtanik.wix.com/csci440?_ga=1.177020583.309077289.1418001553

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1. Wix site to transfer end of semester/Cover page and Table of Contents (including Concept map in HTML & Cmaptools format)

2. Brief Project Proposal & Research

3. Personal skills/interests sheets

4. Vision document

5. Architecture (all types in SDD document)

a. Application architecture

b. Information architecture

c. System architecture

d. UML architecture (structure diagrams with behavior diagrams)

6. SRS with top-level FR list from App Arch (IEEE 830 format)

7. Axiomatic design tool screenshots for any features used

a. Design Matrix - FR/DP

b. DSM - DP/DP

c. FMEA

d. QFD

8. Progress reports (in MS Word, table format, weekly from each member)

9. SWEBOK technical reviews KA-1 thru 11

10. PMP (IEEE 1058 format)

11. Gantt chart (comprehensive)

12. All slides

13. SDD (IEEE 1016 format)

14. Individual work (e.g. Exams I & II, HW, etc)

15. UML (in the SDD document)

16. Appendix (Anything else stated in your PMP deliverables table, e.g. feasibility)

17. Key References, in any convenient format

18. Acknowledgements (optional)

19. Conclusion

20. Future work

7 Conclusion

EVALUATION

Attendance (F2F), class-participation & quizzes 10%
Homework Assignments 20%
Project 20%
Midterm Exam 20%
Final Exam (Comprehensive of all the material covered) 30%

100%

Letter grades will be assigned according to the following scale:

A - at least 90% of the total points
B - at least 80% of the total points
C - at least 70% of the total points
D - at least 60% of the total points
F - less than 60% of the total points

COURSE REQUIREMENTS:

Assignments: Project work will include best industry practices. There will be regularly assigned homework problems (at least 10-20 Functions explored in Wolfram/week), which may require the application of various software packages. Assignments will be given and returned online via the online eCollege system (using the course Wix site developed by the student). It is the student's responsibility to login and check the course eCollege site daily for announcements, assignments and course-related content daily.
Quizzes: Quizzes may be given as needed.
Exams: Two exams will be given, one midterm exam (SDPS paper) and one final exam (IEEE paper). Midterm exam will primarily cover topics from Chapters 1-6 (e.g. Survey paper in SDPS format), and final exam will be comprehensive (Survey paper in IEEE format).
Policy: Follow all rules of ethics, e.g. you should do your own work on exams/projects and for assignments. Copying another student's work is not acceptable. As stated in the "Academic Ethics" section, any indication of cheating and/or plagiarism on an assignment or exam will be an automatic 0 (zero) for all students involved, in addition to disciplinary action.

ATTENDANCE:

Student will attend office hours weekly (mainly Thursday), unless otherwise noted.

COMMUNICATION:

All announcements and updates about the course will be posted on course eCollege site (wix site). You will also find chapter presentations, quizzes, assignments and/or exams on this portal. For any questions you may have, you can contact me via email during weekdays and I will respond quickly. Each student is responsible for the content/instructions of email communications.

ACADEMIC ETHICS:

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedures, Conduct). Ethics include the issue of plagiarism, and copying parts or whole of assignments, quizzes and exams is just as serious as any other type of plagiarism. Any indication of cheating and/or plagiarism on an exam/assignment/project will be an automatic 0 (zero) for the exam/assignment/project for all students involved. Yet, based on cheating and plagiarism activity in any section of the class, instructor holds the right to give F grade for the course to the identified student(s).

STUDENTS WITH DISABILITIES

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

DISCLAIMER:

This syllabus is meant to provide general guidance of what to expect from this course. The instructor reserves the right to make changes as appropriate based on the progress of the class. All changes made to this syllabus during the semester will be announced. This document has been posted electronically. If you print a copy of it, please be sure to consult the last modified date of the online version to verify that your printed copy is current.

Smoke, Vapor & Tobacco Free Environment:

University Procedure 34.05.99.R1 now prohibits the use of vapor/electronic cigarettes, smokeless tobacco, snuff and chewing tobacco inside and adjacent to any building owned, leased, or operated by A&M – Commerce