QFO-AP-FI-MO02	اسم النموذج: Course Syllabus	جامعة فيلادلفيا
رقم الاصدار : 1 (Revision)	الجهة المصدرة: كلية تكنولوجيا المعلومات	
التاريخ: 2017/11/05	الجهة المدققة: عمادة التطوير والجودة	**Philadelphia University**
عدد صفحات النموذج:		

Course Syllabus	
Course Title: Software Engineering of Websites	Course code: 0721422
Course Level: 3	Course prerequisite (s) and/or co-requisite (s):
Lecture Time: 9:10 – 10:00 Sun., Tues & Thur.	Credit hours: 3

Academic Staff Specifics				
Name	Rank	Office Number and Location	Office Hours	E-mail Address
Samer Odeh Hanna	Assistant Prof.	IT 313	9:30-11:15 Mon. & Wed.	shanna@philadelphia.edu.jo

Course module description:

Digital libraries are complex systems that are intended for use by diverse audiences. A thorough, systematic approach is required for the successful development of digital library projects. Web Engineering introduces a structured methodology utilized in software engineering to Web development projects. The course addresses the concepts, methods, technologies, and techniques of developing Web sites that collect, organize and expose information resources. Topics covered include requirements engineering for Web applications, design methods and technologies, interface design, usability of web applications, accessibility, testing, metrics, operation and maintenance of Web applications, security, and project management. Specific technologies covered in this course include client-side (HTML, JavaScript, and CSS) and server-side (ASP.NET).

Course module objectives:

The World Wide Web has become a major delivery platform for information resources. Many applications continue to be developed in an ad-hoc way, contributing to problems of usability, maintainability, quality and reliability. This course examines systematic, disciplined and quantifiable approaches to developing of high-quality, reliable and usable web applications. The course introduces the methodologies, techniques and tools that support their design, development, evolution, and evaluation.

The goals of the course are as follows:

- To be able to analyze and design comprehensive systems for the creation, dissemination, storage, retrieval, and use of electronic records and documents.

- To learn and use some of the client-side and server-side languages used to manipulate information on the World Wide Web – i.e. ASP.NET, and Javascript.
- To learn techniques and evaluation metrics for ensuring the proper operability, maintenance and security of a web application.

Course/ module components

- **Books (title , author (s), publisher, year of publication)**
  Engineering Web applications, by Sven Casteleyn et. al. Springer 2009. (Available online)

  Web Engineering: A Practitioner's Approach by Roger Pressman and David Lowe, McGraw-Hill, 2009.

  HTML and CSS: Comprehensive 7th edition, by by Denise M. Woods and William J. Dorin. Publisher: Cengage Learning; (2012) ISBN-10: 1133526144

  Internet & World Wide Web How to Program, 5/e
  Paul J. Deitel, Harvey M. Deitel, Abbey Deitel, Pearson Education 2012

Teaching methods

Duration: 16 weeks, 60 hours in total. Lectures: 30 hours, 2 per week. Tutorial: 15, 1 per week. Laboratories: 15 hours in total, 1-hour per week (personal). The last week is reserved to practical works examination.

Learning outcomes

Knowledge and understanding of
1. The methods and processes that should be followed to map a certain requirement, architecture or design of a Web application to the corresponding implementation. (A2, A3)
2. The current available software technologies used with Web applications and justifying which of these technologies to choose depending on the problem to be solved. (A2)
3. The needed methods to correctly implement and document solutions to significant Web applications computational problems. (A2, A3)
4. The application of Web applications in a business context. (A8)
5. The needed methods to debug a program using appropriate debugging strategies and distinguish between error types. (A2)
6. Evaluation of the tools and techniques in the software construction of Web applications. (A2)
7. The knowledge to develop Web applications in development environment that makes use of commonly supported tools. (A2)

Cognitive skills (thinking and analysis)
8. Analyze a software problem or architecture and think of the most proper way to map them to the suitable Web application. (B2)
9. Design, write and debug Web applications in appropriate languages. (B3)
10. Solve real Web applications problems from the software industry. (B3)
11. Identify a range of solutions and critically evaluate and justify proposed design solutions of Web applications. (B4)
12. Analyze, transform, improve, and validate Web applications. (B2)
13. Evaluate software applications in terms of general quality attributes and possible trade-offs presented within a given problem in building a Web application. (B6)

Practical skills
14. Use API libraries for developing Web applications. (C1)
15. Write Web applications in both ASP.NET and PHP (C3)
16. Use Web applications related technologies such as XML, JSON, AJAX etc. (C3).

17. Prepare and deliver coherent and structured verbal and written technical report.(C7)
18. Use the scientific literature effectively. (C8)

Transferable skills

19. Process Web applications data. (D1)
20. Solve problems for the Web (D3)
21. Use creativity (D2)
22. Communicate effectively with non-specialist as well as computer scientist, (D4)
23. Give oral presentations and write report and technical documents. (D5)

Assessment of Learning Outcomes

Learning outcomes (1-7) are assessed by examinations. Learning outcomes (8-23) are assessed by tutorials, laboratory work, projects and examinations.

Assessment instruments

- **Class works**: 15   (project and quizzes)
- **Practice** (Web application tool): 05
- **Final examination:** 40
- **Short Examinations:** 2 x 20

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**20**
Second examination	**20**
Final examination:	**40**
Reports, research projects, Quizzes, Home works, Projects	**20**
Total	**100**

Documentation and academic honesty

- Documentation style (with illustrative examples)
  - Practical works reports must be presented according to the style specified in the homework and practical work guide
- Protection by copyright
- Avoiding plagiarism
  - Any stated plagiarism leads to an academic penalty

Course/module academic calendar

week	Basic and support material to be covered	Homework/repots (due dates)
(1)	*Chapter 1: An Introduction to Web Engineering*	
(2)	*Chapter 2: Requirements Engineering for Web Applications*	
(3)	*Chapter 3: Modeling Web Applications*	

(4)	*Chapter 4: Web Application Architectures*	
(5)	*Chapter 5: Technology-aware Web Application Design*	**1st PW**
(6)	*Chapter 11: Usability of Web Applications*	**First examination**
(7)	*Chapter 6: Technologies for Web Applications*	**2nd PW**
(8)	*Chapter 9: Web Project Management*	
(9)	*Chapter 10: The Web Application Development Process*	
(10)	*Chapter 13: Security for Web Applications*	**3rd PW**
(11)	*Chapter 13: Security for Web Applications*	**Second examination**
(12)	*Chapter 7: Testing of Web Applications*	**4th PW**
(13)	*Chapter 7: Testing of Web Applications*	
(14)	*Chapter 8: Operation & Maintenance of Web Applications*	
(15)	Introduction to AJAX	**Specimen exam (Optional)**
(16)	**Practical Exam**	**Final Examination**

Expected workload

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Book: Software Engineering for Modern Web Applications: Methodologies and Technologies: Methodologies and Technologies. (2008) by Brandon, Daniel M. Google book, available at: https://books.google.jo/books?id=yDyJ-iH6vpwC&source=gbs_similarbooks

Book: Web Engineering: Principles and Techniques (2005). By Woojong Suh. Google book, available at: https://books.google.jo/books?id=MPQhKGjI6tUC&redir_esc=y