Department of Software Engineering
MSc Program
First Semester, 2020/2021

Course Syllabus	
Course Title: Web Software Engineering	**Course code: 0721722**
Course Level: MSc	**Course prerequisite (s) and/or co-prerequisite (s):** -------
Lecture Time: Saturday 12-3	**Credit hours: 3**

Academic Staff Specifics				
Name	**Rank**	**Office Number and Location**	**Office Hours**	**E-mail Address**
Dr. Amro Al-Said Ahmad	**Assistant Professor**	**Room 308 IT Building**	STT: 11-12 M: 10:00-12:00	asaid@philadelphia.edu.jo

http://www.philadelphia.edu.jo/academics/asaid/

Course module description:

The aim and objective of this course are to provide the concepts and skills needed for web software engineering. web engineering needs activity that accompanies the entire development process. Topics include verification and validation, test planning and management, testing tools, technical reviews, and the economics of testing of applications. As well as, the quality assurance and its relationship with testing in order to deliver a quality product.

Course module objectives:

This course includes the study of the following broader areas:
1. Web Engineering,
2. Microservices Engineering,
3. Continuous software engineering.

Course/ module components

Books (title, author (s), publisher, year of publication)

Title: Microservices: Science and Engineering
Author(s): Editors: Bucchiarone, A., Dragoni, N., Dustdar, S., Lago, P., Mazzara, M.,
          Rivera, V., Sadovykh, A. (Eds.)
Publisher: Springer
Year of edition: 2020

Title: Web Engineering: A practitioner approach
Author: R. S. Pressman, D. Lowe
Publisher: Mac Graw-Hill
Year of edition: 2017 (India), 2009

Title: Web Engineering: Modelling And Implementing Web Applications.
Author: Daniel Schwabe, Gustavo Rossi, Luis Olsina.
Publisher: Springer.
Year of edition: 2008, 2015(2nd edition)

Title: Software Engineering for Modern Web Applications: Methodologies and
Technologies
Author: Daniel M. Brandon
Publisher: IGI Global
Year of edition: 2008

Support material (s) (vcs, acs, etc): Slides

Teaching methods
    Lectures, tutorials

Learning outcomes
  A student completing this module unit should be able to:
A. Knowledge and understanding:
    A1. Understand the benefits of web development, and
    A2. Understand the concept of Domain-Oriented Design and Architecture, and
    Continuous software engineering.
    A3. Model Web Application using Microservices Architecture.

B. Intellectual skills
    B2. Use appropriate techniques and tools in web software development

C. Practical skills
    C1. Develop small programs using Domain-Oriented Design and Microservices
    Architecture.
    C2. Apply appropriate approaches to various categories of software engineering
    problems

D. Transferable skills and personal qualities
    D1. Prepare structured technical reports for lab work assignment.
    D2. Use the online scientific databases to research articles on the subjects of this
    course; prepare a state-of-the art reports; and deliver verbal communications.

Learning Outcomes Achievements:

Learning outcomes A1, A2, B1, and B2 are assessed by examinations; Learning outcomes A3, C1, and C2 are assessed by lab work; Learning outcomes D1 and D2 are assessed by seminars and/or workshops.

Assessment instruments

Allocation of Marks	
Assessment Instruments	**Mark**
Midterm examination	**20 +10**
Final examination	**50**
Assignments (lab work), research work	**20 + 10**
Total	**100**

Documentation and academic honesty

Submit your homework covered with a sheet containing your name, number, course title and number, and type and number of the home work (e.g. tutorial, assignment, and project).

Any completed homework must be handed in to my office (room IT 602) by 15:00 on the due date. After the deadline "zero" will be awarded. You must keep a duplicate copy of your work because it may be needed while the original is being marked.

You should hand in with your assignments:
1- A printed listing of your test programs (if any).
2- A brief report to explain your findings.
3- Your solution of questions.

For the research report, you are required to write a report similar to a research paper. It should include:
o **Abstract**: It describes the main synopsis of your paper.
o **Introduction**: It provides background information necessary to understand the research and getting readers interested in your subject. The introduction is where you put your problem in context and is likely where the bulk of your sources will appear.
o **Methods (Algorithms and Implementation)**: Describe your methods here. Summarize the algorithms generally, highlight features relevant to your project, and refer readers to your references for further details.
o **Results and Discussion (Benchmarking and Analysis)**: This section is the most important part of your paper. It is here that you demonstrate the work you have accomplished on this project and explain its significance. The quality of your analysis will impact your final grade more than any other component on the paper. You should therefore plan to spend the bulk of your project time not just gathering data, but determining what it ultimately means and deciding how best to showcase these findings.
o **Conclusion**: The conclusion should give your reader the points to "take home" from your paper. It should state clearly what your results demonstrate about the problem you were tackling in the paper. It should also generalize your findings, putting them into a useful context that can be built upon. All generalizations should be supported by your data, however; the discussion should prove these points, so that when the reader gets to the conclusion, the statements are logical and seem self-evident.
o **Bibliography:** Refer to any reference that you used in your assignment. Citations in the body of the paper should refer to a bibliography at the end of the paper.

Protection by Copyrights

1. Coursework, laboratory exercises, reports, and essays submitted for assessment must be your own work, unless in the case of group projects a joint effort is expected and is indicated as such.
2. Use of quotations or data from the work of others is entirely acceptable, and is often very valuable provided that the source of the quotation or data is given. Failure to provide a

source or put quotation marks around material that is taken from elsewhere gives the appearance that the comments are ostensibly your own. When quoting word-for-word from the work of another person quotation marks or indenting (setting the quotation in from the margin) must be used and the source of the quoted material must be acknowledged.

3. Sources of quotations used should be listed in full in a bibliography at the end of your piece of work.

Avoiding Plagiarism.

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.

2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.

3. Direct quotations from an earlier piece of your own work, if not attributed, suggest that your work is original, when in fact it is not. The direct copying of one's own writings qualifies as plagiarism if the fact that the work has been or is to be presented elsewhere is not acknowledged.

4. Plagiarism is a serious offence and will always result in imposition of a penalty. In deciding upon the penalty the Department will take into account factors such as the year of study, the extent and proportion of the work that has been plagiarized, and the apparent intent of the student. The penalties that can be imposed range from a minimum of a zero mark for the work (without allowing resubmission) through caution to disciplinary measures (such as suspension or expulsion).

Course/module academic calendar

Week	Basic and support material to be covered	Homeworks
(1)	**Introduction on Web Software Engineering: Why?**	
(2)	**Web Engineering: Principle.**	
(3)	**Web Engineering: Principle.** **Tutorial: UML/WebML Design**	
(4)	**Web Architecture and Restful Services**	
(5)	**Domain-Oriented Design and Architecture** **Tutorial**	**Assignment 1**
(6)	**Microservices Engineering**	
(7)	**Microservices Engineering**	
(8)	**Designing a Successful Microservices Engineering**	
(9)	**Microservices Engineering** **Tutorial: Microservices Engineering**	
(10)	**Reports (I) Presentations**	

(11)	**Continuous Software Engineering**	**Assignment 2**
(12)	**Continuous Software Engineering (II)**	
(13)	**Dominant Designs in Web Software Engineering**	
(14)	**Dominant Designs in Web Software Engineering (II)**	
(15)	**Reports (II) Presentations**	
(16)	**Revision**	

Expected workload

On average students need to spend 3 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.