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| جامعة فيلادلفيا*cid:image001.png@01CFF76F.9CE975D0*Philadelphia University | **اسم النموذج: خطة تدريس مادة دراسية** **Course Syllabus** | QFO-AP-FI-MO02 |
| **الجهة المصدرة: كلية تكنولوجيا المعلومات** | رقم الاصدار :1 Revision 1  |
| **الجهة المدققة: عمادة التطوير والجودة** | التاريخ :05/11/2017 |
| عدد صفحات النموذج: 5 |

**Department of Management Information Systems**

**First Semester, 2020/2021**

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| **Course Syllabus** |
| **Course: Databases Fundamentals** | **Course code: 731221** |
| **Course Level: 2** | **Course prerequisite(s) and/or co-requisite(s): 721220** |
| **Lecture Time: 12:45 – 14:00 MW** | **Credit hours: 3**  |

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| **Academic Staff Specifics** |
| **Name** | **Rank** | **Office Location** | **Office Hours** | **E-mail Address** |
| Wafa Bani Mustafa | Lecturer | IT 333 | SST 11-12 MW 11:00-12:30 | wbanimustafa@philadelphia.edu.jo |

**Home Page:** [**http://www.philadelphia.edu.jo/academics/wbanimustafa/**](http://www.philadelphia.edu.jo/academics/wbanimustafa/)

**Course Description:**

This module aims to give the students the main concepts of databases, database models, database design, relational algebra, query languages, object-oriented database, normalization techniques, query optimization and database on the web.

**Course Components**

1- Introduction, Concepts and Definitions

2- Data Base Models.

3- Relational Data Base.

4- E-R Diagrames.

5- Relational Algebra.

6- SQL.

**Text book:**

Title: Fundamentals of Database Systems

Author(s):El Masri & Navathe

Publisher: Addison-Wesley, 6th edition, 2014**.**

Website: www.awlonline.com

In addition to the above, the students will be provided with handouts by the lecturer.

**Teaching Methods:**

Duration :16 weeks, 48 hours in total

Lectures : 42 hours, 3 hours per week, (including two 1-hour midterm exams)

Seminars : 6 hours (in last 2 weeks)

Labs : 16 hours

**Learning Outcomes:**

A. Knowledge & Understanding

1. The essential mathematics and statistics relevant to databases, including sets and relational algebra;
2. A wide range of principles and tools available to database professionals including ERD and schema tools, in addition to major database management systems.
3. The professional and ethical responsibilities and understanding of quality;
4. The principles and techniques of a number of research in databases including BigData, datamining and NoSQL;
5. The application of database systems in management and business context;

B. Intellectual Skills

1. Solve a wide range of problems related to the analysis, design and implementation of database systems;
2. Contribute in design and implement database systems in the field of decision making and Strategic planning;
3. Identify a range of solutions and critically evaluate and justify proposed design solutions in database projects including decision making, business systems, planning, project management, etc.;

C. Practical Skills

1. Plan and undertake a major group project.
2. Prepare and deliver coherent and structured verbal and written technical reports.
3. Give technical presentations suitable for the time, place, and audience.
4. Use the scientific literature effectively and make discriminating use of Web resources.
5. Design, write, and debug computer programs in tools relevant to database systems, including Oracle, MS SQL Server, etc.
6. Use appropriate computer-based design support tools, e.g. Dia, ERWin, etc.

D. Transferable Skills and Personal Qualities

1. Display an integrated approach to the deployment of communication skills.
2. Use IT skills and display mature computer literacy.
3. Work effectively with and for others.
4. Strike a balance between self-reliance and seeking help when necessary.
5. Display personal responsibility by working to multiple deadlines in complex activities.
6. Employ discrete and continuous mathematical skills as appropriate.

**Allocation of Marks**

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| **Mark** | **Assessment Instruments** |
| **20%** | First examination |
| **20%** | Second examination |
| **40%** | Final Exam (written unseen exam) |
| **20%** | Reports, Assignments, Quizzes, Homeworks and labs |
| **100%** | Total |

**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 by 15:00 on the due date. After the deadline “zero” will be awarded. You must keep a duplicate copy your work because it may be needed while the original is being marked.

**Protection by Copyright**

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 Academic Calendar**

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| **Week** | **Topic(s)** | **Homework/Reports** |
| **(1)** | Introduction, Concepts and Definitions |  |
| **(2)** | DB, DBMS and Actors |  |
| **(3)** | Data Models and basic definitions |  |
| **(4)** | ER Diagrams | Assignment/Quiz 1 |
| **(5)** | ER Diagrams |  |
| **(6)****First Exam** | ER Diagrams |  |
| **(7)** | Extended ER Diagrams |  |
| **(8)** | Reduction of ERD to Tables | First submission of project |
| **(9)** | Reduction of ERD to Tables | Assignment /Quiz 2 |
| **(10)** | Relational Algebra |  |
| **(11)** | Relational Algebra |  |
| **(12)****Second Exam** | Relational Algebra |  |
| **(13)** | Normalization | Final submission of project |
| **(14)** | Normalization |  |
| **(15)** | Normalization.  |  |
| **(16)****Final Exam** | Project discussion |  |

**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**

1. Advanced DB Technology and Design, by Mario, & Oscar, 2002. *www.artechhouse.com*.
2. Database System Concepts, by Abraham Silberschatz, & Henry S. Sudarshan, Mcgraw-Hill International Edition, 2006. *www.mhhe.com*
3. Patrick Valduriez M. TamerOzsu, Principles of Distributed Database Systems, 2nd Edition, Prentice Hall, 1999.