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| **Faculty of computers and Information** |  |
| Department Of Information Systems  Degree: Bachelor  Instructor: DR/Marwa Salah |
| *1- Course Information:* | |
| Course Title: Advanced Databases Systems  Code: IS 312  Hours: Lecture:2 Tutorial: 2 Credit: -3  **Pre Requisites:** IS 211  Academic year/ Level: 3/4 Semester :First Term | |
| *2- Course Description:* | |
| The main objective of this course is to provide students with an in-depth understanding of the design and implementation of database systems and the administration features of any DBMS.  Upon successful completion of this course, students will have advanced skills to effectively develop, implement and manage medium to large-scale database management systems. | |
| *3- Text Books:* | |
| R. Elmasri and S. Navathe, Fundamentals of Database Systems, 6th edition I, Addison-Wesley, 2010 | |
| *4- Reference Books:* | |
| C. J. Date: An Introduction to Database Systems, 6th Edition. Addison-Wesley | |
| *5- Course Aim:* | |
| To understand the basics of Database management techniques and how DBMS can be used in the management queries in different cases.  Explain how use different transaction processing techniques. | |
| *6- Course Intended Learning Outcomes* | |
| **A- Knowledge and understanding:**  **A1**  List different DBMS  **A2** Describe Databases Design and Implementation.  **A3** Describe Transaction Processing techniques  **B. Intellectual Skills:**  **B1-**  Differentiate between different Entities and Relations  **B2** Discuss different query types  **B3-**  Describe how use different Transaction Processing techniques and Recoverability and serializability  **C- Professional and Practical Skills:**  **C1:**Examine Different Database management methodologies.  **C2:** Illustrate Concurrency Control and Recovery techniques    **D- General and Transferable Skills:**  **D1:**Infer possible solution to different Database cases | |
| *7- Course Outline:* | |
| **Week No.1 :**  Review of Relational model  **Week No.2** Relational Algebra and SQL Part1  **Week No.3:** Relational Algebra and SQL Part2  **Week No.4 :** Complex Queries    **Week No.5 :** Correlated Query    **Week No.6 :** Enhanced ERD(EER)  -  **Week No.7 Quiz, Midterm**    **Week No.8 :** EER Mapping  **Week No.9:** Introduction to Transaction Processing Concepts and Theory  **Week No.10:** Concurrency Control and Recovery  **Week No.11 :**  Recoverability and serializability Examples  **Week No.12 :**  Distributed Database Systems   1. **Week No.13 :** Distributed Transaction Management and Distributed Query Processing   **Final Exam.** | |

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| *8- Assignments Schedule:* |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Assign.**  **No.** | **Topics** | **Start Week No.** | **Subm. Week No.** | **Subm. Date/** | | 1 | Complex Query sheet | 3 | 5 | Term Time | | 2 | Procedures and Functions in SQL Support Systems ( | 6 | 7 | Term Time | | 3 | Triggers in SQL | 8 | 10 | Term Time | | 4 | Introduction to PLSQL | 11 | 14 | Term Time | |

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| *9- Grading and Assessment Method (for practical courses)* | | | | | | | | |
| Week # | Marks | Lab work | Oral | Thesis | Continuous Work | Midterm Exam | Final Exam | Others |
| 6 | 10 | \* |  |  |  |  |  |  |
| 7 | 20 |  |  |  |  | \* |  |  |
| 1-13 | 10 |  |  |  | \* |  |  |  |
| 14-15 | 60 | \* |  |  |  |  | \* |  |

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| *10- Educational Resourses* |
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| **Prepared by** : |  | **Approved by :** | Course coordinator: |
| Name:Marwa Salah |  | Name: |  |
| Sign |  | Sign | Dr.Marwa Salah |
| Date First Term 2019-2020 |  | Date |  |
|  |  | **Approved by :** | Head of Department: |
|  |  | Name: |  |
|  |  | Sign | Prof.Asst/Mona Nasr |
|  |  | Date |  |