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| **ISHIK UNIVERSITY FACULTY OF SCIENCE Department of INFORMATION TECHNOLOGY,2017-2018 Spring Course Information for IT 215 DATABASE SYSTEMS I** |

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| --- | --- |
| **Course Name:** | DATABASE SYSTEMS I |
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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| IT 215 | 2 | 3 | 2 | 2 | 3 |  |

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| **Name of Lecturer(s)-Academic Title:** | MUSA M.AMEEN - MA |
| **Teaching Assistant:** | Rebin Muhammed |
| **Course Language:** | English |
| **Course Type:** | Non-area Elective |
| **Office Hours** | Tuesday after 14:30-16:00, Thursday after 14:30-15:30 |
| **Contact:** | Email:musa.ameen@ishik.edu.iq Tel:  |
| **Teacher's academic profile:** | BSc Degree in Computer Engineering. MSc Degree in Computer Engineering. Lecturer in Ishik University  |
| **Course Objectives:** | The main objectives of this course are: Design methodology for databases and verifying their relations, design correctness and using queries to get needed, calculated data from database. These include data independence, integrity, security, performance, database design principles, and database administration. Develop the logical design of the database using data modeling concepts such as entity-relationship diagrams. |
| **Course Description (Course overview):** | This course introduces Databases. A database is an organized collection of data. The data are typically organized to model relevant aspects of reality in a way that supports processes requiring this information; For example, modeling the availability of rooms in hotels in a way that supports finding a hotel with vacancies. The main objectives of this course are: Design methodology for databases and verifying their design correctness, and using queries. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 2 | 8-12/10/2017 | Terminology of Database, File Based Systems |
| **2** | 2 | 15-19/10/2017 | Roles in DB Environment |
|  |  |  |  |
| **3** | 2 | 22-26/10/2017 | Relational Databases |
| **4** | 2 | 29/10-2/11/2017 | Unique Values and Primary Keys Defining Relationships |
|  |  |  |  |
| **5** | 2 | 5-9/11/2017 | Many to Many Relationship |
| **6** | 2 | 12-16/11/2017 | Transactions and the ACID test, Introduction to SQL |
|  |  |  |  |
| **7** | 2 | 19-23/11/2017 | Midterm Exam |
| **8** | 2 | 26-30/11/2017 | Designing Relational Database, Questions Before Starting Schema |
|  |  |  |  |
| **9** | 2 | 3-7/12/2017 | ER Diagram |
| **10** | 2 | 10-14/12/2017 | Entities and Attributes, Composite Key |
|  |  |  |  |
| **11** | 2 | 17-21/12/2017 | Creating Relationship, The Natural Order of DB Design |
| **12** | 2 | 24-28/12/2017 | Defining One to Many Relationships, Exploring One to One Relationships |
|  |  |  |  |
| **13** | 2 | 31/12/2017-4/1/2018 | Defining Many to Many Relationships |
| **14** | 2 | 7-11/1/2018 | Referential Integrity and Relationship Rules |
|  |  |  |  |
| **15** | 2 | 14-18/1/2018 | Final Exam |
| **16** | 2 | 21-25/1/2018 | Final Exam |
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| **COURSE/STUDENT LEARNING OUTCOMES**

|  |  |
| --- | --- |
|  |  |
| **1** | Design methodology for databases |
| **2** | Describe relationship in databases |
| **3** | Using constraints and integrities efficiently |
| **4** | Analyze database requirements and determine the entities involved in the system and their relationships. |
| **5** | Building interface for users |

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| **COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES**(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

|  |  |  |
| --- | --- | --- |
|  | **Program Learning Outcomes** | **Cont.** |
| **1** | An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution | I |
| **2** | An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs | I |
| **3** | An ability to function effectively on teams to accomplish a common goal | I |
| **4** | An understanding of professional, ethical, legal, security, social, and economic issues and responsibilities |  |
| **5** | An ability to analyze the local and global impact of computing on individuals, organizations, and society |  |
| **6** | An ability to use current techniques, skills, and tools necessary for computing practice | I |
| **7** | An ability to use and apply current technical concepts and practices in the core information technologies of human computer interaction, information management, programming, networking, web systems and technologies |  |
| **8** | An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems |  |
| **9** | An ability to effectively integrate IT-based solutions into the user environment |  |
| **10** | An ability apply problem solving skills, core IT concepts, best practices and standards to information technologies | P |
| **11** | An ability to identify and evaluate organizational requirements and current and emerging technologies | P |
| **12** | An ability to select, design, integrate and administer IT-based solutions into the organizational environment |  |

 |
| **Prerequisites (Course Reading List and References):** | There is no prerequisites required for this course. |
| **Student's obligation (Special Requirements):** | Installing DB environment, Attending courses on time, Submitting projects on time. Studying for the course each week. |
| **Weekly Laboratory/Practice Plan:** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topics** |
| 1 | 2 | 8-12/10/2017 | MS Office Access Interface |
| 2 | 2 | 15-19/10/2017 | Building relations (tables), types of attributes (columns) |
|  |  |  |  |
| 3 | 2 | 22-26/10/2017 | Relations, keys |
| 4 | 2 | 29/10-2/11/2017 | Primary and foreign keys |
|  |  |  |  |
| 5 | 2 | 5-9/11/2017 | Unique fields, Constraints |
| 6 | 2 | 12-16/11/2017 | Calculated fields |
|  |  |  |  |
| 7 | 2 | 19-23/11/2017 | Midterm Exam |
| 8 | 2 | 26-30/11/2017 | Forms, Form wizard |
|  |  |  |  |
| 9 | 2 | 3-7/12/2017 | Form elements |
| 10 | 2 | 10-14/12/2017 | Query, SQL app of Access |
|  |  |  |  |
| 11 | 2 | 17-21/12/2017 | Queries |
| 12 | 2 | 24-28/12/2017 | Reports |
|  |  |  |  |
| 13 | 2 | 31/12/2017-4/1/2018 | Project submission and presentation |
| 14 | 2 | 7-11/1/2018 | Review |
|  |  |  |  |
| 15 | 2 | 14-18/1/2018 | Final Exam |
| 16 | 2 | 21-25/1/2018 | Final Exam |
|  |  |  |  |

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| **Course Book/Textbook:** | - Database System Concepts, 6th edition, Abraham Silberschatz - Microsoft Access 2013 Step by Step, Joyce Cox, Joan Lambert |
| **Other Course Materials/References:** | www.ishik.edu.iq/engineering/computer/musa-m-ameen -Video Tutorials |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Excersises, Presentation, Project, Assignments, Case Studies |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Quiz | 1 | 10 |
| Project | 1 | 15 |
| Midterm Exam(s) | 1 | 25 |
| Presentation | 1 | 10 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Essay Questions, Fill in the Blanks, Short Answers |  |  |

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| **Extra Notes:** |
| **ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Duration (Hour)** | **Total Work Load** |
| Course Duration (Including the exam week: 16x Total course hours) |  |  | 0 |
| Hours for off-the-classroom study (Pre-study, practice) |  |  | 0 |
| Assignments Mid-terms |  |  | 0 |
| Final examination |  |  | 0 |
| Other |  |  | 0 |
| **Total Workload** | **0** |
| **ECTS Credit (Total workload/25)** | **0** |

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**Peer review**

|  |  |  |
| --- | --- | --- |
| Signature: | Signature: | Signature: |
| Name: | Name: | Name: |
| Lecturer                                                                       | Head of Department                                                         | Dean |

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