**Course Specification**

(IS 351 System Analysis and Design-1)

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| **University:** | Helwan University |
| **Faculty:** | Faculty of Computers & Information |
| **Department:** | Information systems |

**1. Course Data**

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| --- | --- |
| **Code:** | **IS 351** |
| **Course title:** | System Analysis and Design**-**1 |
| **Level:** | 2 |
| **Specialization:** | General |
| **Credit hours:** |  |
| **Number of learning units (hours):** | (3) theoretical (3) practical |

**2. Course Objective**

Introducing fundamentals of information systems development, functions and skills of the system analyst, concepts associated with files, analytical study of the various information systems development stages: preliminary study, analysis, design, implementation, evaluation.

**3. Intended Learning Outcomes:**

1. **Knowledge and Understanding:**

A13. Apply Object oriented Analysis and Design.

A14. Apply Unified modeling.

A16. Integrate IS development and implementation.

1. **Intellectual Skills**

B18. Devise a solution to practical problems.

1. **Professional and Practical Skills**

C11. Prepare Technical Reports.

1. **General and Transferable Skills**

D4. Specify and arrange Report writing steps.

D7. Practice Learning and working both independently and in groups.

**4. Course contents**

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| --- | --- | --- | --- |
| **Topic** | **No. of hours** | **Lecture** | **Tutorial/ Practical** |
| **Introduction**  System Analyst Responsibilities  System Analyst Position and Role  System Analyst Skills  End-Users of Information System  Business Dimension of Information System  Information Systems Components  Essential Principles for Successful Systems Development  Systems Development Life Cycle  Systems Development Methodologies | 6 | 2 | 2 |
| **Structured Methodology**  Structured System Analysis  The System Analysis Phases  Pieces Framework  Information and Data Analysis  Service Analysis | 3 | 1 | 1 |
| **Feasibility Survey and Study Phases**  Purpose and Objectives  How to Complete the Survey and Study Phases  Study Phase Report | 3 | 1 | 1 |
| **Data Flow Diagrams for the current system**  Gane-Sarson diagrams  DeMarco-Yourdon diagrams  Common Errors  Examples | 6 | 2 | 2 |
| **Application of DFD on Case Study** | 3 | 1 | 1 |
| **Entity Relationship Diagrams**  Entity Relationship Diagram Components  Data Entity  Data Entity Keys  Relationship  How to Perform Data Modeling with ERD?  Good Data Model Specifications  Normalization | 6 | 2 | 2 |
| **Application of ERD on Case Study** | 3 | 1 | 1 |
| **Data Dictionary**  Process Description  Data Store Description  Entity Description  Data Element Description | 3 | 1 | 1 |
| **Data Flow Diagrams for the Proposed System**  Decomposition Diagrams  Context Diagrams  System Diagrams  Middle and Primary Level Data Flow Diagrams | 6 | 2 | 2 |

**Mapping contents to ILOs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Topic | Intended Learning Outcomes (ILOs) | | | |
| Knowledge and understanding | Intellectual Skills | Professional and practical skills | General and Transferable skills |
| **Introduction** | A13 |  |  |  |
| **Structured Methodology** | A13 |  |  |  |
| **Feasibility Survey and Study Phases** | A13 |  |  |  |
| **Data Flow Diagrams for the current system** | A14 | B18 | C11 |  |
| **Application of DFD on Case Study** | A14 | B18 | C11 |  |
| **Entity Relationship Diagrams** | A14 | B18 | C11 |  |
| **Application of ERD on Case Study** | A16 | B18 | C11 |  |
| **Data Dictionary** | A16 | B18 | C11 |  |
| **Data Flow Diagrams for the Proposed System** | A16 | B18 | C11 | D4,D7 |

**5. Teaching and Learning Methods**

Lectures

Practical Training / Laboratory

Case Study

**6. Teaching and Learning Methods for students with limited capability**

Using data show

e-learning management tools

**7. Students Evaluation**

**a) Used Methods**

Written Exams to assess Concepts related to System analysis and design

Project to assess understanding of systems analysis and design

Presentation. to assess workgroup collaboration and communication skills.

**b) Time**

Assessment 1…Study Phase Report Week 3.

Assessment 2 …DFD for the current System Week 7.

Assessment 3….ERD Week 10.

Assessment 4… DFD for the Proposed System Week 13.

**c) Grades Distribution**

Mid-Term Examination 10%

Final-term Examination 50%

Semester Work and Project 20%

Other Assignments/class work 20 %

Total 100%

Any formative only assessments

**List of Books and References**

**a) Notes**

Course Notes

**b) Mandatory Books**

**Whitten, Jeffery and L., Lonnie D. Bentley, Kevin C. Dittman . Systems analysis and design methods.** Boston : McGraw-Hill Irwin, c2004 . 6th ed.

**c) Suggested Books**

**Gupta, Preeti. System Analysis and Design. 2004.**

**d) Other publications**

http://www.umsl.edu/~sauter/analysis/analysis\_links.html

<http://books.google.com/books?vid=ISBN0878352570&id=toi7ZlEg0XgC&q=System+Analysis+and+Design+periodicals&dq=System+Analysis+and+Design+periodicals&pgis=1>

**Course Coordinator:** Dr. Ayman Khedr

**Chairman of the Department:** Prof. Dr. Yehia Helmy