**Course Name:** Analysis and Design of Information System - 2

**Course Code:** IS352

1. Basic Course Information

Major or minor element of program: Major & Minor

[Department offering the course](#DeptOfferingCourseInstruction" \o "For instructions): Information Systems Department

[Academic level](#AcademicLevelInstruction" \o "For instructions): 400 level

[Semester in which course is offered](#SemesterOfferingInstruction" \o "For instructions): Second (spring) Semester

[Course pre-requisite(s)](#CoursePrerequisisteInstruction" \o "For instructions): IS351 Analysis and Design of Information System - 1

[Credit Hours](#CreditHoursInstruction" \o "For details and instructions): 3

Contact Hours Through:

|  |  |  |  |
| --- | --- | --- | --- |
| Lecture | Tutorial \* | Practical \* | Total |
| 3.0 | 0.0 | 1.5 | 4.5 |

\* 1.5 hours for **either** Tutorial or Practical

[Approval date of course specification](#AuthorizationDateInstruction" \o "For instructions): February 2015

1. [Overall Aims of Course](#OverallAimsInstructions" \o "For definition and instruction)

|  |
| --- |
| This course aims to help the student develop a solid understanding of the nature of information systems design, the role of modelling and using two major information systems perspectives in design, and to develop competent design-oriented DFD and process design skills. |

1. **Program ILOs covered by course**

|  |  |  |  |
| --- | --- | --- | --- |
| **Program Intended Learning Outcomes (By Code)** | | | |
| Knowledge & Understanding | Intellectual Skills | Professional Skills | General  Skills |
| K12, K13, K17 | I6, I14, I16 | P6, P14, P15, P20 | G2, G3, G7 |

1. [**Intended Learning Outcomes of Course (ILOs)**](#ILOsOverall)

***a.*** [***Knowledge and Understanding***](#KnowledgeDefinition)

On completing the course, students should be able to:

1. List the different tasks of the system design phase.
2. Describe the basics of input and output design.
3. Recognize the fundamentals of user interface design.
4. State the basics of database design.
5. Define Business Process Modelling & Notation.

b. [Intellectual/Cognitive Skills](#IntellectualDefinition)

On completing the course, students should be able to:

1. Assess data storage requirements.
2. Devise input/output procedures
3. Plan systems deployment
4. Construct comprehensive system models

c.  [Practical/Professional Skills](#PracticalDefinition)

On completing the course, students should be able to:

1. Prepare data flow diagrams
2. Select appropriate input/output methods
3. Sketch user interface
4. Practice developing BPMN models
5. Prepare full system design specifications

d. [General and Transferable Skills](#TransferableSkillsDefinition)

On completing the course, students should be able to:

1. Apply analytical techniques in solving problems
2. Self-learn new computer tools
3. Form a team and work within a team

1. **[Course Matrix Contents](#CourseContentInstruction" \o "For instructions)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Main Topics / Chapters** | **Duration (Weeks)** | **Course ILOs Covered by Topic**  **(By ILO Code)** | | | |
| **K & U** | **I.S.** | **P.S.** | **G.S.** |
| 1- | Introduction to systems design | 1 | K1 |  |  |  |
| 2- | Application Architecture | 1 | K4 | I1, I4 | P1 |  |
| 3- | Physical DFD | 1 | K4 | I1, I4 | P1 |  |
| 4- | Procurement options & contracting | 1 | K2 | I2 | P2 | G1 |
| 5- | Output & input design and guidelines | 1 | K2 | I2 | P2 | G1 |
| 6- | Systems implementation & support | 1 | K1 | I3 | P5 | G1 |
| 7- | Case Studies | 1 | K1, K2, K3, K4 | I1,I2,I3,I4 | [P1,P2,P3 | G1 |
| 8- | Performance Engineering | [1] | [K5] | [I4] | [P4, P5] | [G1, G2] |
| 9- | [Object Relational Mapping ORM] | [1] | [K5] | [I4] | [P4, P5] | [G1, G2] |
| 10- | [Intro+SOA  BPEL4WS] | [1] | [K5] | [I4] | [P4, P5] | [G1, G2] |
| 11- | [Mapping of BPMN to BPEL] | [0.5] | [K5] | [I4] | [P4, P5] | [G1, G2] |
| 13- | [Process Instantiation] | [0.5] | [K5] | [I4] | [P4, P5] | [G1, G2] |
| 14- | Process Mining | 1 | K5 | I4 | P4, P5 | G1, G2 |
| 15- | [Process Mining] | [1] | [K5] | [I4] | [P4, P5] | [G1, G2] |
|  | **Net Teaching Weeks** | **13** |  |  |  |  |

1. Course Weekly Detailed Topics / hours / ILOs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week No.** | **Sub-Topics** | **Total Hours** | **Contact Hours** | |
| Theoretical Hours | Practical Hours \* |
| 1 | Introduction to systems design | 3 | 3 |  |
| 2 | Application Architecture | 4.5 | 3 | 1.5 |
| 3 | Physical DFD | 4.5 | 3 | 1.5 |
| 4 | Procurement options & contracting | 4.5 | 3 | 1.5 |
| 5 | Output & input design and guidelines | 4.5 | 3 | 1.5 |
| 6 | Systems implementation & support | 4.5 | 3 | 1.5 |
| 7 | **Midterm Exam** | | | |
| 8 | Case Studies | 4.5 | 3 | 1.5 |
| 9 | Object relational mapping ORM | 4.5 | 3 | 1.5 |
| 10 | Intrio+SOA+BPEL4WS | 4.5 | 3 | 1.5 |
| 11 | Mapping of BPMN to BPEL | 4.5 | 3 | 1.5 |
| 12 | Process Instantiation | 4.5 | 3 | 1.5 |
| 13 | Process mining | 4.5 | 3 | 1.5 |
| 14 | Process mining | 4.5 | 3 | 1.5 |
| 15 | **Final Exam** | | | |
| **Total Teaching Hours** | | **57** | **39** | **18** |

\* No Practical/Tutorial during the first week of the semester

1. [Teaching and Learning Methods](#TeachingMethodsInstruction)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Teaching/Learning Method** | **Selected Method** | **Course ILOs Covered by Method (By ILO Code)** | | | |
| **K & U** | **Intellectual Skills** | **Professional Skills** | **General Skills** |
| Lectures & Seminars | ✓ | All | All |  | G1 |
| Tutorials |  |  |  |  |  |
| Computer lab Sessions | ✓ |  | All | All | G1 |
| Practical lab Work |  |  |  |  |  |
| Reading Materials |  |  |  |  |  |
| Web-site Searches |  |  |  |  |  |
| Research & Reporting | ✓ |  |  |  | G2, G3 |
| Problem Solving / Problem-based Learning |  |  |  |  |  |
| Projects | ✓ |  | All | All | All |
| Independent Work |  |  |  |  |  |
| Group Work |  |  |  |  |  |
| Case Studies | ✓ |  |  | All | All |
| Presentations |  |  |  |  |  |
| Simulation Analysis |  |  |  |  |  |
| Others (Specify): |  |  | | | |
|  |  |  |  |

1. [Assessment Methods](#AssessmentMethodsInstruction" \o "For instructions), Schedule and Grade Distribution

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Assessment Method** | **Selected Method** | **Course ILOs Covered by Method**  **(By ILO Code)** | | | | **Assessment**  **Weight / Percentage** | **Week**  **No.** |
| **K & U** | **I.S.** | **P.S.** | **G.S.** |
| Midterm Exam | ✓ | All | All |  |  | 10% | 7 |
| Final Exam | ✓ | All | All |  |  | 60% | 15 |
| Quizzes |  |  |  |  |  |  |  |
| Course Work |  |  |  |  |  |  |  |
| Report Writing | ✓ |  |  |  | G2,G3 | 10% | 11 |
| Case Study Analysis |  |  |  |  |  |  |  |
| Oral Presentations |  |  |  |  |  |  |  |
| Practical |  |  |  |  |  |  |  |
| Group Project | ✓ |  | All | All | All | 20% | 7, 12, 14 |
| Individual Project |  |  |  |  | All |  |  |
| Others (Specify): |  |  | | | |  |  |
|  |  |  |  |

1. **[List of References](#ReferencesInstruction" \o "For details and instructions)**

|  |  |
| --- | --- |
| **Essential Text Books** | System Analysis & Design, L. Whitten, D. Bentley,Kevin Dittman, McGraw-Hill, 6th Edition, 2007.  Process Mining: Discovery, Conformance and Enhancement of Business Processes; Wil M.P. van der Aalst, Springer-Verlag Berlin Heidelberg 2011. |
| **Course notes** | * None |
| **Recommended books** | * None |
| **Periodicals, Web sites, etc …** | * Some websites relevant to the course topics |

1. **[Facilities required for teaching and learning](#FacilitiesInstructions)**

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| List the facilities required   * CASE tool, such as Oracle Designer and Power Designer |

**Course coordinator:** Dr. Sherif Mazen and Dr. Ahmed Hany

**Head of Department:** Dr. Ihab Ezzat Hassanein

**Date:** February 2015