University of Asia Pacific (UAP)

**Department of Computer Science**

**Course Outline**

**Program:** Computer Science and Engineering (CSE)

**Course Title:** System Analysis and Design

**Course Code:** CSE 305

**Semester:** Spring 2022

**Level:** 5th Semester

# Credit Hour: 3.0

**Name & Designation of Teacher:** Shammi Akhtar, Assistant Professor **Office/Room:** 7th Floor, Teacher’s Compound

**Class Hours:**

# Consultation Hours: Monday 12:30 – 2:00 PM

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**Mobile:** +8801713309903

**Rationale:** The required knowledge may be useful for developing software products

**Pre-requisite** (if any)**:** N/A

# Course Synopsis:

Information, Data, Role, Tasks, Information Sources, Gathering techniques, System requirements, Steps of systems, technical facilities, cost analysis, confidence level, project timing, effort analysis, hardware analysis, software analysis, project management, documentation, Ethics & Privacy etc.

**Course Objectives:** The objectives of this course are to:

1. **Understand** the objective of Information system designing.
2. **Explain** the principles, methods and techniques of system development.
3. **Analyze** requirements, feasibilities to develop a system.
4. **Apply** normalized concept to select the best methodology to develop a system
5. **Create** project proposal, behavioral diagrams, and structural diagrams.

# Course Outcomes (COs) and their mapping with Program outcomes (POs) and Teaching-Learning Assessment methods:

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| --- | --- | --- | --- | --- | --- |
| **CO**  **No.** | **CO Statements:**  Upon successful completion of the course, students should be able to: | **Corresponding POs**  **(Appendix-1)** | **Bloom’s taxonomy domain/level (Appendix-2)** | **Delivery methods**  **and activities** | Assessment  Methods/Tools |
| CO1 | **Identify** the system requirements  using formal language and  tools. | 2 | Analyze | Lecture, System Examples. | Class Tests, Assignments, Exams |
| CO2 | **Analyze** design flow and sequence of a system. | 4 | Analyze | Lecture, Example from Real Life  Systems | Class Tests, Assignments, Exams |
| CO3 | **Model** data in a system. | 3 | Analyze | Problem Exercise | Class Tests, Assignments, Exams |
| CO4 | **Apply** standard project planning and project  management techniques**.** | 3 | Apply | Multimedia, Problem  Solve | Class Tests, Assignments, Exams, Case study |

**Weighting COs with Assessment methods:**

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| --- | --- | --- | --- | --- | --- |
| **Assessment Type** | **% weight** | **CO1** | **CO2** | **CO3** | **CO4** |
| Final Exam | **50%** | 10 | 10 | 20 | 20 |
| Midterm | **20%** | 6.67 | 6.67 |  | 6.66 |
| Class test1 | **10%** | 5 | 5 |  |  |
| Class test2 | **10%** |  | 10 |  |  |
| Assignment | **10%** |  |  |  | 10 |
| **Total** | **100%** | 21.67 | 31.67 | 20 | 26.66 |

**Grading Policy:** As per the approved grading policy of UAP (Appendix-3)

**Course Content Outline and mapping with COs**

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| --- | --- | --- | --- | --- |
| **Weeks** | **Topics / Content** | **Course Outcome** | **Delivery methods and activities** | **Reading Materials** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | Introduction to information system, System Development  Life Cycle (SDLC) | CO1 | Lecture, Multimedia | 1) Kendall and Kendall  2) Hoffer |
| 2 | System Development Life Cycle(contd.), SDLC phases  description System Analyst Responsibilities,  Information Gathering | CO1 | Lecture, Multimedia | 1) Kendall and Kendall  2) Hoffer |
| 3 | Understanding organizational Systems: Data Flow Diagram, E-R Diagram | CO2 | Lecture, Problem Solve | 1) Kendall and Kendall  2) Hoffer |
| 4 | E-R Diagram  Class test | CO2 | Lecture, Problem Solve | 1) Kendall and Kendall  2) Hoffer |
| 5 | Managing the Information System Projects | CO4 | Lecture, Multimedia | 1) Kendall and Kendall  2) Hoffer |
| 6 | Managing the Information System Projects **CT#01** | CO4 | Lecture, Written Exam | 1) Kendall and Kendall  2) Hoffer |
| 7 | Determining and analyzing System Requirements | CO1 | Lecture, Multimedia | 1) Kendall and Kendall  2) Hoffer |
| **MID SEMESTER EXAMINATION** | | | | |
| 9 | Object oriented Systems analysis and design: USE CASE Diagram | CO3 | Problem Solving in Group | 1) Kendall and Kendall  2) Hoffer |
| 10 | Activity Diagram  CT#02 | CO3 | Lecture, Problem Solve | 1) Kendall and Kendall  2) Hoffer |
| 11 | Class Diagram | CO3 | Lecture, Written Exam | Book- Kendall and  Kendall |
| 12 | Designing Databases | CO3 | Lecture, Example Problem | 1) Kendall and Kendall  2) Hoffer |
| 13 | Implementing and Maintaining the System, Systems Repository | CO4 | Lecture, Problem Solve | 1) Kendall and Kendall  2) Hoffer |
| 14 | Review Class | All CO | Written Test,  Consultation | Verbal Lecture |

**Required Reference(s): -System Analysis and Design by Kendall & Kendall**

**-Modern Systems Analysis and Design by Hoffer, George, Valacich**

**Special Instructions:**

* Minimum 70% attendance is required for a student to appear in the final exams
* Late presence Any student coming after 20 minutes will miss the attendance

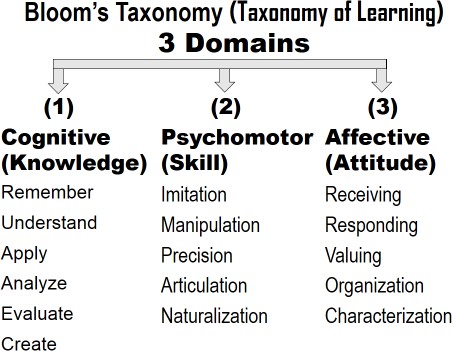
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| --- | --- | --- |
| **Prepared by** | **Checked by** | **Approved by** |
| Shammi Akhtar | Chairman, PSAC committee | Head of the Department |

**Appendix-1:**

**Washington Accord Program Outcomes (PO) for engineering programs:**

|  |  |  |
| --- | --- | --- |
| **No.** | **PO** | **Differentiating Characteristic** |
| 1 | Engineering Knowledge | Breadth and depth of education and type of knowledge,  both theoretical and practical |
| 2 | Problem Analysis | Complexity of analysis |
| 3 | Design/ development of solutions | Breadth and uniqueness of engineering problems i.e. the  extent to which problems are original and to which solutions have previously been identified or codified |
| 4 | Investigation | Breadth and depth of investigation and experimentation |
| 5 | Modern Tool Usage | Level of understanding of the appropriateness of the tool |
| 6 | The Engineer and Society | Level of knowledge and responsibility |
| 7 | Environment and Sustainability | Type of solutions. |
| 8 | Ethics | Understanding and level of practice |
| 9 | Individual and Team work | Role in and diversity of team |
| 10 | Communication | Level of communication according to type of activities  performed |
| 11 | Project Management and Finance | Level of management required  for differing types of activity |
| 12 | Lifelong learning | Preparation for and depth of Continuing learning. |

**Appendix-2**



**Appendix-3**

# UAP Grading Policy:

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| --- | --- | --- |
| **Numeric Grade** | **Letter Grade** | **Grade Point** |
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