Course Title: System analysis and design (3 Cr.)
Course Code: CACS203
Year / Semester: II / III
Class Load: 4 Hrs. / Week (Theory: 3 Hrs. Tutorials: 1 Hrs.)

Course Description

This course mainly focuses on diff erent aspects of system analysis and design such as foundations, planning, analysis, design and implementation and maintenance.

Course Objectives

The general objective of this course is to provide concepts related to information system development in systematic approach including foundation, planning, analysis, design, implementation and maintenance.

Course Detail

Specific Objectives	Course Content	Hours	References
• Basic fundamental of system development • Describe about information system and types • Describe about developing information systems and SDLC • Describe CASE tools, RAD, SOA, Agile methodologies • Explain about eXtreme Programming • Explain about system acquisition and reuse • Explain, how to manage information system project • Describe in detail how information system project can be scheduled and represented.	**Unit 1 : System development fundamentals** **1.1 The system development environment** 1.1.1 Introduction 1.1.2 Modern Approach of System Analysis and Design 1.1.3 Information System and its Types 1.1.4 Developing Information systems and the System Development Life Cycle 1.1.5 The Heart of System Development Process 1.1.6 The Traditional Waterfall SDLC	9 Hrs.	1. Chapter 1- Introduction to system analysis and design; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design, an object oriented programming approach with UML", Fifth edition, Wiley 2. Chapter 2- Project Management; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design, an object oriented programming approach with UML",, Fifth edition, Wiley 3. Chapter 1- Context of system analysis and design methods; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and***

	1.1.7 Approaches for Improving Development 1.1.8 CASE tools 1.1.9 Rapid Application Development 1.1.10 Service-Oriented Architecture 1.1.11 Agile Methodologies 1.1.12 eXtreme Programming 1.1.13 Object-Oriented Analysis and Design **1.2 The origins of software** 1.2.1 Introduction 1.2.2 System Acquisition 1.2.3 Reuse **1.3 Managing the Information Systems Project** 1.3.1 Introduction 1.3.2 Managing Information Systems Project 1.3.3 Representing and Scheduling Project Plans		***design*", Latest edition, Prentice Hall India** 4. Chapter 2- Information system building blocks; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 5. Chapter 3- Information system development; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 6. Chapter 4- Project Management; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 7.

	1.3.4 Using Project Management Software		
• Describe the system development projects • Identifying and selecting system development projects • Describe about process of initiating and planning IS development Projects • What is corporate information system planning	**<u>Unit 2 : Planning</u>** **2.1 System development projects: Identification and Selection** 2.1.1 Introduction 2.1.2 Identifying and Selecting System Development Projects 2.1.3 Corporate and information systems planning **2.2 System development projects: Initiation and Planning** 2.2.1 Introduction 2.2.2 Initiating and Planning Systems Development Projects 2.2.3 Process of Initiating and Planning IS Development Projects 2.2.4 Assessing Project Feasibility 2.2.5 Building and Receiving the Baseline Project Plan	7 Hrs.	1. Chapter 2- Project Selection and Management; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design",, Fifth edition, Wiley **2.** Chapter 4- Project Management; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India**

• Describe about System requirement • Describe about System process requirement • Describe about System data requirements • What are the traditional and contemporary methods of determining requirement • What are the radical methods of determining requirement. • Describe about requirement management tool • Explain in detail how agile methodologies can be applied for requirement determination. • What is process modeling • Explain about data flow diagram and its importance. • How data flow diagram can be applied in requirement analysis. • Explain about decision tables and its importance in requirement analysis. • Explain about conceptual data modeling • Explain about the process of gathering data for conceptual data modeling • Describe ER diagram and its importance.	**<u>Unit 3 : Analysis</u>** **3.1 System requirements** 3.1.1 Introduction 3.1.2 Performing Requirements Determination 3.1.3 Traditional Methods For Determining Requirements 3.1.4 Contemporary Methods For Determining System Requirements 3.1.5 Radical Methods For Determining System Requirements 3.1.6 Requirements Management Tools 3.1.7 Requirement Determination Using Agile Methodologies **3.2 System Process Requirements** 3.2.1 Introduction 3.2.2 Process Modeling 3.2.3 Data Flow Diagramming Mechanics 3.2.4 Using DFD In The Analysis Process 3.2.5 Modeling Logic With Decision Tables	13 Hrs.	1. Chapter 3- Requirement determination; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design", Fifth edition, Wiley 2. Chapter 5- Process modeling; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design", Fifth edition, Wiley 3. Chapter 6- Data modeling; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design", Fifth edition, Wiley 4. Chapter 6- Fact finding techniques for requirement discovery; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 5. Chapter 8- Data modeling and analysis; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 6. Chapter 9- Process Modeling; **Jeffrey A. Hoffer, Joey**

	3.3 System Data Requirements 3.3.1 Introduction 3.3.2 Conceptual Data Modeling 3.3.3 Gathering Information For Conceptual Data Modeling 3.3.4 Introduction To ER Modeling 3.3.5 Conceptual Data Modeling And The E-R Model 3.3.6 Representing Super-Types And Sub-Types 3.3.7 Business Rules 3.3.8 Role Of Packaged Conceptual Data Models- Database Patterns		**George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India**
• Explain about database design • Explain about designing forms and reports • Explain about designing Interface and Dialogues • Explain about Relational data modeling • Explain about normalization and its importance in database design.	**<u>Unit 4 : Design</u>** **4.1 Designing Databases** 4.1.1 Introduction 4.1.2 Database Design 4.1.3 Relational Database Model 4.1.4 Normalization	12Hrs.	1. Chapter 14- Database design ; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 2. Chapter 9- User Interface Design; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design", Fifth edition, Wiley

	4.1.5 Transforming E R Diagrams Into Relations 4.1.6 Merging Relations 4.1.7 Physical File And Database Design 4.1.8 Designing Fields 4.1.9 Designing Physical Tables **4.2 Designing Forms And Reports** 4.2.1 Introduction 4.2.2 Designing Forms And Reports 4.2.3 Formatting Forms And Reports 4.2.4 Assessing Usability **4.3 Designing Interfaces and Dialogues** 4.3.1 Introduction 4.3.2 Designing Interfaces And Dialogues 4.3.3 Interaction Methods And Devices 4.3.4 Designing Interfaces And Dialogues In Graphical Environments		3. Chapter 15- Output Design and prototyping; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 4. Chapter 16-Input design and prototyping; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 5. Chapter 17- User Interface design ; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India**
• Explain the meaning of system implementation	**<u>Unit 5 : Implementation and Maintenance</u>** **5.1 System Implementation**	4 Hrs.	1. Chapter 12- Moving Into Implementation; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and

• Explain about software application testing and its types. • Explain the importance of documentation in the SDLC. • List out organizational issues in System implementation	5.1.1 Introduction 5.1.2 System Implementation 5.1.3 Software Application Testing 5.1.4 Installation 5.1.5 Documenting The System 5.1.6 Training And Supporting Users 5.1.7 Organizational Issues In Systems Implementation **5.2 System Maintenance** 5.2.1 Introduction 5.2.2 Maintaining Information System 5.2.3 Conducting Systems Maintenance		design", Fifth edition, Wiley 2. Chapter 13- Transition to the new system; Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "System analysis and design", Fifth edition, Wiley 3. Chapter 19- System construction and Implementation; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India** 4. Chapter 20- System Operation and support; **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India**

Teaching Methods

The general teaching pedagogy includes class lectures, group discussions, case studies, guest lectures, research work, project work, assignments(theoretical and practical), and examinations(written and verbal), depending upon the nature of the topics. The teaching faculty will determine the choice of teaching pedagogy as per the need of the topics.

Evaluation

Evaluation Scheme				
Internal Assessment		External Assessment		Total
Theory	Practical	Theory	Practical	100
40	-	60 (3 Hrs.)	-	

Internal/Practical Assessment Format [FM = 40]

Internal Assessment Format [FM = 40] – Subject Teacher					
Term Examination		Assignment	Attendance	Total	
First-Term	Pre- Final				
8	12	15	5	40	

Note: Assignment may be subject specific case study, seminar paper preparation, report writing, project work, research work, presentation, problem solving etc.

Final Examination Questions Format [FM = 60, PM = 24, Time = 3 Hrs.]

SN	Question Type	Number of Questions Given	Marks per Question	Total Marks
1	Group – 'A' Objective Type Questions(Multiple Choice Questions)	10	1	10 x 1 = 10
2	Group – 'B' Short Questions (Attempt any SIX questions)	7	5	6 x 5 = 30
3	Group – 'C' Long Questions (Attempt any TWO questions)	3	10	2 x 10 = 20

- Student must pass 'Internal Assessment' and 'Final Examination' separately.
- Student must attend each and every activity of 'Internal Assessment' otherwise he/she will be declared as 'Not Qualified' for final Examination.

Text Books

1. **Jeffrey A. Hoffer, Joey George, Joe Valacich, "*Modern system analysis and design*", Latest edition, Prentice Hall India**
2. **Alan Dennis,Barbara Haley Wixom,Roberta M. Roth "*System analysis and design*", Fifth edition, Wiley**

Reference Books

3. **Jeffery Whitten, Lonnie Bentley, " *Systems analysis and design methods*" , Latest edition,McGraw Hill India**

Internal Assessment marks Submission format

Campus Name:									
Subject Name: System Analysis and design						**Subject Code: CACS203**			
SN	**TU Registration No.**	**Name**	**Symbol No.**	**First– Term [8]**	**Pre – Final [12]**	**Assignment [15]**	**Attendance [5]**	**Total [40]**	**Remarks**

Name of Subject Teacher:

Signature:

Date:

Name of Director/HoD/Coordinator:

Signature:

Date: