



ICT284 System Analysis and Design

Teaching Period: TM 2024



Unit Coordinator



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About the unit...

Handbook description

- This unit introduces methods and techniques for analysing problematic organisational situations, particularly those leading to the development of an information system, and draws on both technical and organisational material to provide the knowledge and skills necessary to design and implement an operational system.

Prerequisites

- ICT102 Introduction to Computer Science OR ICT105 Introduction to Information Technology OR ICT108 Introduction to the Internet and Multimedia OR ICT159 Foundations of Programming OR ICT158 Introduction to Information Systems OR ICT170 Foundations of Computer Systems



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Lectures and tutorials

- There are a lecture and tutorial activities for each topic.
- Students should complete the tutorial exercises each week and discuss your progress with your tutor

Lecturers and Tutors

Lecturers:

- Dr Mostafa Hamadi

Tutors:

You will be notified who your teaching team is at the beginning of the teaching period.

The teaching team member will provide you with their contact details.



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Textbook

- Satzinger, J., Jackson, R. and Burd, S. (2016) *Systems Analysis and Design in a Changing World*, 7th edition, Course Technology, Cengage Learning: Boston. ISBN-13 9781305117204
- This is the same text as used last year so should be available second hand
- The 6th edition is also OK, although there are some differences that you will need to be aware of



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Aims and objectives

- You'll need **Word** or similar for assignments, plus a drawing tool such as Visio that can create UML diagrams
- We will use **Microsoft Visio 2016** and **MS Project 2016** in the tutorials
- Murdoch University subscribes to the **Azure Dev Tools** for Teaching. Should you wish to do so, you will be able to download copies of applications such as Visio and install them on your own computer. You can further detail of this by visiting:

<https://murdochuniversity.sharepoint.com/sites/DITMS-Tech/ITSubscriptions/SitePages/Home.aspx>



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Aims and objectives

The broad **aims** of this unit are to:

- Provide an overview of how information systems are developed to fulfil organisational needs
- Present and explain tools and techniques used for systems analysis and early systems design
- Encourage an appreciation of the issues surrounding analysis and design work



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Learning outcomes

On successful completion of the unit you should be able to:

1. Explain how information systems are used within organisations to fulfil organisational needs
2. Describe the phases and activities typically involved in the systems development life cycle
3. Describe the professional roles, skills and ethical issues involved in systems analysis and design work
4. Use a variety of techniques for analysing and defining business problems and opportunities and determining system requirements
5. Model system requirements using UML, including use case diagrams and descriptions, activity diagrams and domain model class diagrams



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Learning outcomes

On successful completion of the unit you should be able to:

6. Explain the activities involved in systems design, including designing the system environment, application components, user interfaces, database and software
7. Represent early system design using UML, including sequence diagrams, architectural diagrams and design class diagrams
8. Describe tools and techniques for planning, managing and evaluating systems development projects
9. Describe the key features of several different systems development methodologies
10. Present systems analysis and design documentation in an appropriate, consistent and professional manner

Lecture Topic	Reading	Tutorials	Assessment + Due Dates (Sun 11:55pm)
Topic 1: Introduction to systems analysis and design	Ch. 1, online Ch. A	Tutorial 1 – Introduction to systems analysis and design	Quiz 1
Topic 2: Investigating system requirements	Ch. 2	Tutorial 2 – Investigating system requirements	Quiz 2
Topic 3: Use case modelling	Ch. 3	Tutorial 3 – Use case modelling	Quiz 3
Topic 4: Domain modelling	Ch. 4	Tutorial 4 – Domain modelling	Quiz 4
Topic 5: Extending the requirements models	Ch. 5	Tutorial 5 – Verifying requirements models using CRUD; State machine diagrams	Quiz 5
Topic 6: From analysis to design	Ch. 6	Tutorial 6 – Extending the use case models	Quiz 6 Assignment 1
Topic 7: Designing the system architecture	Ch.7, 9	Tutorial 7 – Options for design	Quiz 7
Topic 8: Designing user interfaces	Ch. 8	Tutorial 8 – Designing user interfaces	Quiz 8
Topic 9: Software design	Ch. 12	Tutorial 9 – Designing software classes and methods	Quiz 9
Topic 10: System implementation and deployment	Ch. 10	Tutorial 10 – System testing and deployment	Quiz 10
Topic 11: Project planning and project management	Ch. 11, online Ch. C	Tutorial 11 – Project management	Quiz 11 Assignment 2
Topic 12: Approaches to system development	Ch. 14	Tutorial 12 – Evaluating alternatives	Quiz 12
Exam Revision			

Study
schedule
(see unit
guide)



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How to study

As we will cover quite a lot of material it is very important to keep up with the work. There are two sets of online quizzes designed to help you do this:

- Each lecture topic has a number of **topic review questions** that will be posted in the form of a quiz on LMS. The review questions are NOT assessable: their purpose is to let you review your understanding of the material and highlight areas that you may need to revise before the tutorial.
- There is a **Quiz** due every week that will test your understanding of the material covered in the tutorial. The quizzes consist of 10-20 multiple choice questions. The quizzes ARE assessable and are worth 10% of your total mark.



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How to study

1. Read the relevant textbook material for the Topic
2. Attend scheduled sessions, Listen to the recording
3. Review your understanding of the material using the online topic review questions
4. Attempt the tutorial exercises (contacting your tutor if you need to)
5. Complete the Quiz.

Assessment



Assessment item	Description	Aligned Learning Outcomes	Value	Due
Assignment 1	Problem-based exercises relating to early systems analysis	LO 1,2,3,4,5,10	15%	Sunday Topic 6
Assignment 2	Case-study: analysis and design for an information systems development project	LO 5,6,7,10	25%	Sunday Topic 11
Quizzes	Online quizzes covering lecture and tutorial material for that week	LO 1-9	10%	Weekly
Examination	2 hours, closed book	LO 1-10	50%	Exam period

* Always check the LMS submission points for exact due dates. Regularly check announcements for any changes or updates regarding unit schedule and deadlines.