



# Computer Science (COMP) 361

## Systems Analysis and Design (Revision 8)

**Status:**

Replaced with new revision, see the [course listing](#) for the current revision

**Delivery mode:**

Individualized study online with eText

**Credits:**

3

**Area of study:**

Science

**Prerequisites:**

COMP 200, or CMIS 351, or instructor's permission which is based on the student's basic knowledge of programming (e.g., Java); the student's basic knowledge of object orientation; and the student's basic knowledge of databases.

**Precluded:**

COMP 361 may not be taken for credit if credit has already been obtained for COMP 271.

**Challenge:**

COMP 361 is not available for challenge.

**Faculty:**

Faculty of Science and Technology

**Notes:**

Students who are concerned about not meeting the prerequisites for this course are encouraged to contact the **course coordinator** before registering

## Overview

System analysis and design deal with planning the development of information systems through understanding and specifying in detail what a system should do and how the components of the system should be implemented and work together. System analysts solve business problems through analysing the requirements of information systems and designing such systems by applying analysis and design techniques. This course deals with the concepts, skills, methodologies, techniques, tools, and perspectives essential for systems analysts. The practical component of COMP 361 is object oriented and use-case driven, requiring students to go through the steps of system analysis and design to solve a real-life business problem.

## Outline

**Unit 0: Overview.** A short introduction to systems analysis and design and an explanation of the course activities and grading.

**Unit 1: An Introduction to Systems Development** You will learn about the organizational and business context of systems development.

**Unit 2: Approaches to Systems Development and Project Management** You will learn to explain and apply systems development methodologies, models, tools and techniques for developing quality software. Furthermore, in this unit you will learn about project management in the context of systems development.

**Unit 3: Systems Analysis Activities** You will learn about how to define, prioritise, and evaluate requirements of an information system as well as build general and detailed models that specify the system requirements.

**Unit 4: Essentials of Systems Design** You will learn to describe, organize and structure the components of a system, including decisions about the system's hardware, software, and network environment. Furthermore, you will learn about designing effective user and system interfaces considering human-computer interaction principles.

**Unit 5: Advanced Systems Design Concepts** You will learn to apply object-oriented design in order to build detailed models that assist programmers in implementing the system. Furthermore, you will learn how to store and exchange data in the system by considering database management and security issues, and creating database models and controls.

**Unit 6: Making the System Operational** You will learn about implementation, software testing and deployment issues.



**Unit 7: Current Trends in System Development** You will learn about emerging trends in systems development.

## Learning outcomes

Upon successful completion of this course, you will be able to


- gather data to analyze and specify the requirements of a system.
- design system components and environments.
- build general and detailed models that assist programmers in implementing a system.
- design a database for storing data, a user interface for data input and output, and controls to protect the system and its data.


## Evaluation

To **receive credit**  for COMP 361, you must achieve a course composite grade of at least **D (50 percent)** , including at least 50 per cent on each assignment, participation mark, and final examination. The weighting of the composite grade is as follows:


Activity	Weight
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Activity	Weight
Assignment 1	15%
Assignment 2	20%
Assignment 3	8%
Assignment 4	15%
Assignment 5	12%
Participation	5%
Final Online Exam	25%
<b>Total</b>	<b>100%</b>

The **final examination** for this course must be requested in advance and written under the supervision of an AU-approved exam invigilator. Invigilators include either ProctorU or an approved in-person invigilation centre that can accommodate online exams. Students are responsible for payment of any invigilation fees. Information on exam request deadlines, invigilators, and other exam-related questions, can be found at the [Exams and grades](#)  section of the Calendar.

To learn more about assignments and examinations, please refer to Athabasca University's [online Calendar](#) .

## Materials

J. W. Satzinger, R. B. Jackson and S. D. Burd. *Systems Analysis and Design in a Changing World*, 6<sup>th</sup> ed. Boston, USA: Thomson Course Technology, 2012. (ISBN-10: 1-111-53415-2 ISBN-13: 978-1-111-53415-8)  (eText)

**eText**

Registration in this course includes an electronic textbook. For more information on **electronic textbooks** [↗](#), please refer to our **eText Initiative site** [↗](#).

## Other Resources

The remaining materials for COMP 361 are distributed in electronic format on the course site. At this time, those materials include

- the ten units of the COMP 361 study guide
- case studies and exercises (as well as their solutions)
- detailed descriptions and requirements for the individual assignments
- links to a variety of resources on the World Wide Web
- a course evaluation form

Additional supporting materials of interest to students of COMP 361 will be made available through a link guide on the course site.

In order to draw diagrams and models (as required for some of the assignments), recommendations for software (including freely available software) are provided. Other software can be used with approval from your tutor.

## Special Course Features

COMP 361 is offered in individualized study throughout the year. Delivery is facilitated through a variety of computer-mediated communication options, allowing the course to be completed at the student's workplace or home.

COMP361 encourages and requires interaction and discussions between students through forum and blog communications.

## Important links

- › [Academic advising](#) [↗](#)
- › [Program planning](#) [↗](#)
- › [Request assistance](#) [↗](#)

[› Support services](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

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*Updated November 8, 2024*

View [previous revision](#) 

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