

Module: System Analysis & Design 361

Module name:	Systems Analysis & Design361
Code:	SYA361
NQF level:	6
Type:	Speciality – Diploma in Information Technology (Business)
Contact Time:	42 hours
Structured time:	7 hours
Self-directed time:	21 hours
Notional hours:	70 hours
Credits:	7
Prerequisites:	ERP261, DBD261

Purpose

This module covers the method and methodologies that are required for eliciting business requirements and transforming the requirements into software implementation. It covers a systematic methodology for analysing a business problem or need, determining what role computer-based technologies play in addressing the business need, and specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements and the requirements for the information systems solution.

Outcomes

Upon successful completion of this module, the student will be able to:

- Understand a range of methods of enquiry in the discipline and their suitability for application for the investigation of business needs within the agile framework, writing clear, concise user stories, documenting and converting them into technical specifications.
- Analyse and model requirements using UML notations for the realization of specific use cases.
- Demonstrate and communicate their understanding of object-oriented systems analysis and design
- Take decisions and articulate ethical, cultural, and legal issues and their feasibilities among alternative solutions.
- Develop software methods from a detailed analysis of design artefacts.

Assessment

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through written assignments, formative tests, and a summative test.
- Continuous evaluation through tracking of progress, offering support, guidance and provision of constant stream of opportunities to prove mastery of subject material and pursuing more challenging work as they master the basics.
- Final assessment through an examination.

Teaching and Learning

Learning materials

Prescribed books (EBSCO)

- 📖 **Kenneth Barclay and John Savage (2004) Object-Oriented Design with UML and Java. Oxford: Butterworth-Heinemann.**
- 📖 **Ambler, S. W. (2003) The Elements of UML Style. Cambridge, UK: Cambridge University Press.**
- 📖 **Satzinger, J.W., Jackson, R.B. and Burd, S.D. (2015). Systems analysis and design in a changing world. Cengage learning.**

Learning activities

Learning will be facilitated by the lecturer with student centred activities that involve problem-based learning where pupils are presented with challenges that replicate the situation in the real-world environment. This will be achieved through a combination between presentation of theoretical concepts, guided exercises, group work and discussions during the module.

Notional learning hours

Contact	Distance	Other	Type of learning activities	% Learning
y	y	n	Lectures (face-to-face, limited interaction or technologically mediated)	40%
y	y	n	Tutorials: individual groups	20%
n	y	n	Syndicate groups	10%
n	y	n	Independent self-study of standard texts and references (study guides, books, journal articles)	10%
n	y	n	Independent self-study of specially prepared materials (case studies, multi-media, etc.)	20%

Syllabus

- Agile Methodologies
- Object orientation core concepts
- Use-Case realization
- System Planning
- Requirement elicitation
- Requirement Analysis
- UML Modelling
- System Development Lifecycle and Methodologies
- Patterns
- Testing - Test Planning, Defining UAT scope, UAT design, UAT Execution, Confirm Business Objectives, Tools, Techniques and applications for UAT