



UNIVERSITY OF WALES: TRINITY SAINT DAVID
PRIFYSGOL CYMRU: Y DRINDOD DEWI SANT

School of Applied Computing

Information Engineering
ACCC4004

AIM(S)

- To introduce the student to the underlying concepts of systems analysis and design of computer-based systems with an emphasis on requirements analysis. This continues through to the analysis of data. Database design techniques are studied and used to translate theoretical skill into practical applications.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Apply appropriate systems investigation and analysis techniques to identify and translate user requirements into a requirements specification.
2. Produce systems specifications and use them appropriately in the development of a database design model.
3. Produce a database solution that involves problem solving techniques to create a prototype application.

INDICATIVE CONTENT

- Systems development lifecycle (SDLC) rational and stages, including alternative approaches to analysis and design.
- Systems investigation techniques, requirements gathering, reporting and investigation.
- Modeling and recording techniques appropriate the approach employed(e.g. use case diagrams or DFD, use case or process description, class diagrams or ERD)
- Database models (e.g. relational, Object-Oriented and Object relational)
- Database design and entity analysis techniques. Select suitable data types, entity and reverential constrains.
- Database implementation using suitable DBMS software.

LEARNING AND TEACHING STRATEGY

Key concepts and theoretical issues will be delivered through a formal mechanism such as lectures, which will allow the student to gain the knowledge applicable to the module. During weekly laboratory sessions, students will apply the theoretical concepts to practical situations

ASSESSMENT

Assignment component 1 - In Class Test (Practical) – 30%

In-class test. This assessment will test theoretical understanding and application of concepts. Within the given time the student will be expected to produce a robust Logical Data Model for a given business scenario.

Assignment component 2 - Coursework – 70%

Learning Outcomes tested (from module syllabus)	Assessment Criteria To achieve each outcome a student must demonstrate the ability to:
1. Produce systems specifications and use them appropriately in the development of a database design model. 2. Produce a database solution that involves problem solving techniques to create a prototype application.	Database design and entity analysis techniques. Select suitable data types, entity and referential constraints. Database implementation using suitable DBMS software.

BIBLIOGRAPHY

Essential

Begg, C. and Connolly, T. (2010) *Database Systems, A Practical Approach to Design, implementation and Management* Addison Wesley

Hoffer, J.A., George, J.F. and Valacich, J.S. (2011) *Modern Systems Analysis and Design*, 6th International Edition., Prentice Hall: New Jersey

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Stevens, P. & Pooley, R. (2006) *Using UML: Software Engineering with Objects and Components*, 2nd Edition., Addison Wesley

Dennis, A., Wixom, B.H. and Tegarden, D. (2010) *Systems Analysis and Design: An Object-oriented Approach with UML*, 3rd Edition., Wiley: MA.

Elmasri, R. and Navathe, S. (2010) *Fundamentals of Database Systems*, Addison Wesley

Patricia Ward (2008) 2nd edition, *Database Management Systems* Thomson Learning

Websites

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