Title (Units): **COMP7590 Information Management Systems Development (3,2,1)**

Course Aims: To extend the student's knowledge of information management systems and development methodology through the study of advanced theories and techniques. At the end of the study of this course, students should be able to develop new solutions and models for an information management system. They should also have an appreciation of methodological pluralism (that there is not one but many methods and that the 'correct' method is contingent on the problem being studied).

Prerequisite: Nil

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Explain theoretical concepts including historical perspective, information theory, and definition of information management systems
2	Explain how the IS methodologies can be applied to develop information management systems
3	Illustrate the advanced concepts in structured approach and object-oriented methodology
	Professional Skill
4	Perform system development under structured approach
5	Perform system development under object-oriented methodology with selected application such as Rational software
	Attitude
6	Articulate the integrative perspective of information management system development with consideration on selecting appropriate method based on the problem being studied

Calendar Description: To extend the student's knowledge of information management systems and development methodology through the study of advanced theories and methodologies, and to examine the critical issues of current information systems (IS) research, so as to provide a student an integrative perspective of information management systems and development.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-3,6	Students will attend lectures to learn the procedures and philosophy of different systems development methodologies.
4,5,6	Students will attend laboratory sessions and tutorials to practice the procedures of different systems development methodologies.
4-6	Students will work out assignments to show their understanding on the different types of methodology and selection of appropriate methodology for different situations.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Continuous Assessment	40%	1-6	It may include assignments/term papers and case studies/mini-projects.
2	Examination	60%	1-4, 6	Final examination questions are designed to assess how far students have achieved the intended learning outcomes. Questions are designed to measure students' ability to work with each development methodology under different problem domains.

Assessment Rubrics:

Excellent (A)	• Achieves the first five CILOs, demonstrating a good mastery of both the theoretical and practical aspects of the knowledge and skills associated with theories and methodologies of information management systems development • Able to develop and present sound arguments and correct solutions to problems in information management systems development, accompanied by in-depth analysis and insight • Demonstrates a thorough understanding and solid knowledge of theories and methodologies of information management systems development • Able to draw on a variety of techniques and relevant knowledge and appropriately apply them to new information management systems development situations and problems
Good (B)	• Achieves the first five CILOs, demonstrating a good understanding of theories and methodologies of information management systems development • Able to develop solutions to problems in information management systems development, accompanied by adequate explanations • Demonstrates a competent level of knowledge of theories and methodologies of information management systems development • Able to make use of appropriate techniques and knowledge and apply them to information management systems development situations and problems
Satisfactory (C)	• Achieves most of the first five CILOs, demonstrating a basic level of understanding of theories and methodologies of information management systems development • Able to provide acceptable solutions to problems in information management systems development • Demonstrates an adequate level of knowledge of theories and methodologies of information management systems development • Able to make use of some techniques and knowledge and apply them to familiar situations
Fail (F)	• Achieves less than two of the first five CILOs, with little understanding of theories and methodologies of information management systems development • Unable to provide solutions to simple problems in information management systems development • Knowledge of concepts in the theories and methodologies of information management systems development falling below the basic minimum level • Unable to apply techniques and knowledge to situations or problems

Course Content and CILOs Mapping:

Content		**CILO No.**
I	Theoretical Concepts	1,6
II	Current Methodologies	2,3,4,5,6
III	Application of CASE tools	2,3,4,5,6

References:

- Alan Dennis, Barbara Wixom, and David Tegarden. Systems Analysis and Design: An Object-Oriented Approach with UML, 6th Edition, Wiley, November 17, 2020.
- Paul Bocij. Business Information Systems: Technology, Development and Management for the Modern Business, Pearson, 6/E, 2018.
- Joseph S. Valacich and Joey F. George. Essentials of Systems Analysis and Design, Pearson, 6/E, 2014.
- David Avision and Guy Fitzgerald. Information Systems Development: Methodologies, Techniques and Tools (4th Edition), McGraw Hill, 2006.
- Robert V. Stumpf, Lavette C. Teague, Object-Oriented Systems Analysis and Design with UML, Prentice Hall. 2005.
- Ian Sommerville and Perita Stevens, "Using UML Software Engineering with Objects and Components", Addison Wesley, 2007.

Course Content:

Topic

I. Theoretical Concepts
   A. Historical perspectives
   B. Information theory
   C. Information management systems concepts
   D. Model of information management systems

II. Current Methodologies
   A. Methodology framework structured approach
      - From project planning/proposal to testing
   B. Soft systems methodology
   C. Object-oriented methodology (UML)
   D. Other advanced methodologies

III. Application of CASE tools
   A. Use of ORACLE software
   B. Use of Rational software