Course Title:	Information Systems Modeling	Course code: 731464
Course Level :3		Course prerequisite (s) and/or co requisite (s): 731332
Lecture Time : (section 1) 02:10 – 03:00		Credit hours :3

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Mr. Issa Qabaja	Lecturer	305 IT	12:00-13:10 (Sun+Tues+Thurs), 12:30- 13:30 (Mon+Wed)	immq@yahoo.com

Course module description:

The concept of information Systems Modeling. Topics covered include the principles of Information System Modeling, techniques for modeling, Object Oriented Modeling, and the diagrams used in modeling including Use Case, Class Diagram, Sequence Diagram, Activity diagram and others. Data Modeling is also discussed. Students will used the object oriented modeling in implementing a real world information systems. Different tools will be used in this course including SmartDraw and rational

Course module objectives:

This unit is designed to provide students with an understanding of the use of information systems modeling within information systems development. Critical comparisons are made of the various approaches to information systems modeling. Topics include philosophical foundations of information systems modeling; approaches to information systems modeling - data modeling, process modeling, event driven modeling, object-oriented modeling; information systems modeling in practice - the process of information systems modeling; quality in information systems modeling;

Course/ module components
- **Text Books (title , author (s), publisher, year of publication)**

  1. Grady Booch, Rumbaugh, Jacobson, **The Unified Modeling Language User Guide**,Addison Wesley,1999

Teaching methods:

Duration: 16 weeks, 48 hours in total
Lectures: 30 hours, 2 per week
Labs: 10 lectures
Assignments and Tutorials: 5

Learning outcomes:
- **Knowledge and understanding**
  - To provide a brief introduction to general issues of Information Systems Modeling
  - To provide students with a clear understanding of the different modeling techniques.
  - To introduce students to the role of information systems modeling in information systems development
- **Cognitive skills (thinking and analysis).**
  - To explain the stages and process different modeling techniques.
  - To understand the strengths and weaknesses of particular information systems modeling techniques
- **Communication skills (personal and academic).**
  - Practical and subject specific skills (Transferable Skills).
  - To learn IS Modeling techniques through the use of different tools (e.g. SmartDraw and Rational)

Assessment instruments
- Short reports and/ or presentations, and/ or Short research projects: One report after 10th week of the semester 5 marks
- Quizzes. Two quizzes, 5 marks total.
- Home works: five home works during the semester
- Final examination: 50 marks

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**20%**
Second examination	**20%**
Final examination: 50 marks	**40%**
Reports, research projects, Quizzes, Home works, Projects	**20%**
Total	**100%**

* Make-up exams will be offered for valid reasons only with consent of the Dean. Make-up exams may be different from regular exams in content and format.

Practical Submissions
The assignments that have work to be assessed will be given to the students in separate documents including the due date and appropriate reading material.

Documentation and Academic Honesty

Submit your home work covered with a sheet containing your name, number, course title and number, and type and number of the home work (e.g. tutorial, assignment, and project).

Any completed homework must be handed in to my office by 15:00 on the due date. After the deadline "zero" will be awarded. You must keep a duplicate copy of your work because it may be needed while the original is being marked.

You should hand in with your assignments:
1- A printed listing of your test programs (if any).
2- A brief report to explain your findings.
3- Your solution of questions.

For the research report, you are required to write a report similar to a research paper. It should include:
- **Abstract**: It describes the main synopsis of your paper.
- **Introduction**: It provides background information necessary to understand the research and getting readers interested in your subject. The introduction is where you put your problem in context and is likely where the bulk of your sources will appear.
- **Methods (Algorithms and Implementation)**: Describe your methods here. Summarize the algorithms generally, highlight features relevant to your project, and refer readers to your references for further details.
- **Results and Discussion (Benchmarking and Analysis)**: This section is the most important part of your paper. It is here that you demonstrate the work you have accomplished on this project and explain its significance. The quality of your analysis will impact your final grade more than any other component on the paper. You should therefore plan to spend the bulk of your project time not just gathering data, but determining what it ultimately means and deciding how best to showcase these findings.
- **Conclusion**: The conclusion should give your reader the points to "take home" from your paper. It should state clearly what your results demonstrate about the problem you were tackling in the paper. It should also generalize your findings, putting them into a useful context that can be built upon. All generalizations should be supported by your data, however; the discussion should prove these points, so that when the reader gets to the conclusion, the statements are logical and seem self-evident.
- **Bibliography:** Refer to any reference that you used in your assignment. Citations in the body of the paper should refer to a bibliography at the end of the paper.

Protection by Copyright

1. Coursework, laboratory exercises, reports, and essays submitted for assessment must be your own work, unless in the case of group projects a joint effort is expected and is indicated as such.

2. Use of quotations or data from the work of others is entirely acceptable, and is often very valuable provided that the source of the quotation or data is given. Failure to provide a source or put quotation marks around material that is taken from elsewhere gives the appearance that the comments are ostensibly your own. When quoting word-for-word from the work of another person quotation marks or indenting (setting the quotation in from the margin) must be used and the source of the quoted material must be acknowledged.

3. Sources of quotations used should be listed in full in a bibliography at the end of your piece of work.

Avoiding Plagiarism.

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.

2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.

3. Direct quotations from an earlier piece of your own work, if not attributed, suggest that your work is original, when in fact it is not. The direct copying of one's own writings qualifies as plagiarism if the fact that the work has been or is to be presented elsewhere is not acknowledged.

4. Plagiarism is a serious offence and will always result in imposition of a penalty. In deciding upon the penalty the Department will take into account factors such as the year of study, the extent and proportion of the work that has been plagiarized, and the apparent intent of the student. The penalties that can be imposed range from a minimum of a zero mark for the work (without allowing resubmission) through caution to disciplinary measures (such as suspension or expulsion).

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	**Concepts and definitions of IS Modeling.**	
(2)	**Business Case and Enterprise Modeling**	
(3)	**The role of modeling techniques in systems development.**	
(4)	**Background to Object Oriented Modeling and UML.**	Chapter 2, Text Book *Assignment 1*
(5)	**UML diagrams.** **Use Case.**	Chapter 5 – 10 Text book and chapter 4 – 7 reference 1 *Assignment 2*
(6) First exam	**Class Diagram: Classes & Associations**	
(7) **(8)**	**Class Diagram: Classes and Associations** **Class Diagram: Aggregation, Composition and Generalization.**	Chapter 5 – 10 Text book and chapter 4 – 7 reference 1 *Assignment 3*
(9)	**Component Diagram.**	Chapter 25 Text book, chapter 8 reference 1
(10)	**Interaction Sequence Diagram.**	Chapter 18 Text book, chapter 10 and 10 reference 1.
(11) Second exam **(12)**	**Activity Diagram.**	Chapter 19 Text book, chapter 11 reference 1 *Assignment 4*
(13) **(14)**	**Other UML diagrams.**	Chapter 20 – 25 Text book, Chapter 12 – 15 Reference 1 .
(15)	**Process modeling.** **Event driven modeling.**	Chapter 20 Text book. *Assignment 5*
(16)	**Final Exam**	

Expected workload:

On average students need to spend 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books

1- Simon Bennet, John Skelton, Ken Lunn, **Schaum's Outlines UML**. Mc Graw Hill, 2001.
2- Joseph Schmuller, **Sams teach yourself UML in 24 hours**. Macmillan Publishing Co., 1999.
3- Boggs,Wendy, **Mastering UML with Rational Rose.** San rancisco: Sybex, 1999.
4- Ivar Jacobson, Grady Booch, James Rumbaugh, **The Unified software development process**. Reading, Massachusetts: Addison-Wesley, 1998**.**

Journals
IEEE Transactions on Software Engineering

Websites
http://www.agilemodeling.com/essays/umlDiagrams.htm
http://dn.codegear.com/article/31863