



Economics for S/W Development Course Specifications

Faculty: Faculty of computer and informatics

Department: Information System

Program(s) on which the course is given: Bachelor Degree in Computer & Information Sciences

Major or Minor element of program : Information System

Department offering the program : Information System

Department offering the course : Information System

Academic year / Level : Fourth Year / B.Sc.

Date of specification approval : 25/9/ 2009

A. Basic Information

Title: Economics for S/W Development **Code:** HUM 417

Lectures: 3 hrs/week **Practical:** --- **Tutorial:** ---

Credit Hours: --- **Total:** 3 hrs/week

B. Professional Information

5.1 Overall Aims of Course

is to explore those software attributes that can be quantified and used as metrics in the treatment of software products. Specifically: software reliability models; software resource estimation models (Cost of development deployment and maintenance in effort and support facilities); schedule estimation and planning; economic justification studies and strategies; and software quality measures are among software metrics that we will explore. A second objective is to present a comprehensive treatment of software system test and integration approaches using a real-world application project.

5.1 Intended Learning Outcomes of Course (ILOs):

a. knowledge and understanding

Students who complete the course will have the ability to:

- a1. Explain practical software estimation techniques
- a2. Illustrate analytical models tailored to the software development
- a3. Illustrate performance models, cost-effectiveness models, software production functions, decision criteria.
- a4. Be familiar with software project planning and control, economic analysis of software.
- a5. Technology investments.

b. Intellectual skills

Students who complete the course will have the ability to:

- b1. analyze different models used in software development projects
- b2. conclude appropriate implementation methods for various software projects analysis

C. Professional and practical skills

Knowledge of the concepts and material presented in this course will provide the students with practical know-how to:

- c1. Use knowledge to estimate the cost involved in software projects
- c2. Be aware of the efforts and risks in software development
- c3. Design costs and risk analysis
- c4. Estimate how much each proposed software technical decision will cost, and how much it will return.
- c5. Weigh the time frames for a software decision's costs and benefits against each other to reveal when there might be a more important factor than schedule.
- c6. Attach a value to quality and produce a rational answer to the question, "How much testing is enough?"
- c7. Account for risk and uncertainty in software technical decisions, such as when considering a new technology.
- c8. Communicate your decisions in a way that speaks to the all-important bottom line.



c9.

D. General and transferable skills:

Knowledge of the concepts and material presented in this course will provide the students with practical know-how to:

- d1. Present cost analysis of software projects
- d2. Appreciate importance of economic factors in software projects.

e. Attitude:

- e1- Illustrate the use of example, analogy, and counter-analogy in ethical argument.
- e2- Demonstrate an ethical behavior toward software copyrights.
- e3- Relationship Emphasis a successful with other students.
- e4- Learn how to make relation with other, and the limit of this relation.
- e5- Explain the nature of privacy and how it is protected by the Data Protection.
- e6- Know the culture of other peoples.
- e7- Discuss the legal background of copyright in national and international law.

Contents:

Topic	No. of hours	Lecture	Tutorial/ Practical
Return on Software: Maximizing the Return on Your Software Investment	3	3	--
Break-Even Analysis	3	3	-
Optimization Analysis	3	3	-
Optimization Analysis	3	3	-
Benefit-Cost Analysis	3	3	-
Basic Estimation Concepts	3	3	-
General Estimation Techniques	3	3	-
General Estimation Techniques	3	3	-
Allowing for Inaccuracy in Estimates	3	3	-
Decision Making Under Risk	3	3	-
Decision Making Under Risk	3	3	-
Decision Making Under Uncertainty	3	3	-
Decision Making Under Uncertainty	3	3	-
Decisions Based on Multiple Attributes	3	3	-