EASTERN MEDITERRANEAN UNIVERSITY
COURSE OUTLINE – ISYS524

COURSE CODE ISYS524  COURSE LEVEL Graduate
COURSE TITLE Object Oriented Analysis and Design
COURSE TYPE Area Core
LECTURER(S) Mustafa Riza, Alireza Sarrafi (Assistant)
CREDIT VALUE (3,1) 3  ECTS VALUE 6
PREREQUISITES None
COREQUISITES None
DURATION OF COURSE 3 lecture hours
WEB LINK http://brahms.emu.edu.tr/mriza

CATALOGUE DESCRIPTION
This course starts with a review of the traditional development process of information systems. Then the Object Oriented paradigm is introduced and moved forward to UML and Unified Process. There the object-oriented paradigm will be applied to all phases of Information Systems Development. Object Oriented Analysis workflow, Object Oriented Design workflow, as well as the workflows and phases of the Unified Process will be outlined and discussed in detail. For a sample problem object oriented analysis and design will be applied for the generation of the necessary documents to the development of a web based project.

AIMS & OBJECTIVES
The main aim of this course is to provide students a basic understanding how to manage the design and development process of a huge software project. Therefore the basic ideas of the unified process and its object oriented approach are going to be transferred to the students. With the use of basic case studies the abstract concepts are going to be applied and trained, so that the students are able to apply this software development process to smaller projects in order to put hands on.

GENERAL LEARNING OUTCOMES (COMPETENCES)
On successful completion of this course, all students will have developed knowledge and understanding of:
- What is a software life cycle
- What is a use-case driven process
- What is an architecture centric process
- What are the work flows in the unified process.
- What are the phases of the unified process
- What documents are related to each phase.
- What are the work packages that have to be completed in each phase
- UML Diagrams

On successful completion of this course, all students will have developed their skills in:
- How to plan and manage small to medium sized software development projects
- Generating the necessary documents and specifications according to the process
- Use UML Diagrams for the description of use cases, business models, business cases, etc.
- Determine the needs of a client and how to prepare a questionnaire in order to determine the correct needs
- Understanding the business case and the business model of the client in order to provide the optimal information system.

1 The estimated workload was determined by the usage of the following formula: [13 x 3.5h (contact hours)+ 13 x 3h (number of hours preparation per week)] / [26h/Credit (which is the average in EU)] =Round(3.25)=3
GRADING CRITERIA
A  The Student has shown that she/he has a thorough understanding and knowledge of the subject and has developed the skills in order to apply the concepts with maximum minor errors.
B  The student has shown that she/he has a thorough understanding and knowledge of the subject and has developed the skills in order to apply the concepts with minor errors.
C  The Student has shown that she/he has some deficiencies in the understanding and knowledge and the skills developed were not sufficient to solve the given problems completely.
D  The Student has shown that she/he a basic understanding and knowledge of the subject and could only partly apply these to given problems.
D-  The student has shown that she/he has a very basic understanding and knowledge, but could not apply this to given problems.
F  The student has shown that she/he has not put enough efforts to develop knowledge and understanding of the subject.

RELATIONSHIP WITH OTHER COURSES

LEARNING / TEACHING METHOD
A combination of teaching and project-based learning is chosen as teaching method for this course.

ASSIGNMENTS
Assignments will be given weekly as homework to give the student the chance to review and apply the concepts discussed in the class.

METHOD OF ASSESSMENT
30% Midterm Exam
40% Final Exam
30% Project
Bonuses to be announced

ATTENDANCE
Attendance is compulsory. A student not attended exams and 20% of the classes will receive NG grade. Students are strongly encouraged to attend exams on exam date. One general make-up exam will be given at the end of the semester after the finals. Any student not attended exam on time and provided reasonable excuse within three days following the exam will be able to attend make-up exam.

TEXTBOOKS

INDICATIVE BASIC READING LIST
Object Oriented Modelling and Design with UML, M. Blaha, J. Rumbaugh, Prentice Hall (2005)

EXTENDED READING LIST

SEMESTER OFFERED
2011-2012 Fall Semester
CONTENT & SCHEDULE
Lectures will be held on Tuesday’s (16.30 – 19.20 am) in AS G04. The lecture topics within the semester are as in the following schedule:

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPICS</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>The Traditional Software Development Process</td>
</tr>
<tr>
<td>3</td>
<td>The Object Oriented Paradigm, Iteration and Incrementation,</td>
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<tr>
<td>4</td>
<td>The Requirements Workflow: Determining the clients needs, Domain Model, Business Model, initial Requirements</td>
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<tr>
<td>5</td>
<td>Religious Holyday</td>
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<tr>
<td>6</td>
<td>Requirements Workflow (contd), Analysis Workflow: class diagrams, functional model, dynamic model</td>
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<tr>
<td>7</td>
<td>Analysis Workflow: boundary classes, control classes, use-case realization, entity classes, incrementating class diagrams, Risk</td>
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<tr>
<td>8</td>
<td>Design Workflow: traditional vs. object oriented design, formats of attributes, allocation of operations to classes,</td>
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<tr>
<td>9</td>
<td>Workflows and phases of the Unified Process: Workflows, Phases, the two dimensional model.</td>
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<tr>
<td>10</td>
<td>Midterm</td>
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<tr>
<td>11</td>
<td>More on UML</td>
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<tr>
<td>12</td>
<td>Computer Aided Software Engineering, Teams</td>
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<tr>
<td>13</td>
<td>Testing, Non-execution based testing, execution based testing</td>
</tr>
<tr>
<td>16</td>
<td>Final Exams</td>
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</tbody>
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PLAGIARISM
This is intentionally failing to give credit to sources used in writing regardless of whether they are published or unpublished. Plagiarism (which also includes any kind of cheating in exams) is a disciplinary offence and will be dealt with accordingly.)