



COURSE DESCRIPTION

1. Information about the programme

1.1 Institution of higher education	Alexandru Ioan Cuza University of Iasi
1.2 Faculty	Faculty of Economics and Business Administration
1.3 Department	Department of Accounting, Information Systems and Statistics
1.4 Field of study	Business Informatics
1.5 Level	Master
1.6 Study programme/ Qualification	Software Development and Business Information Systems

2. Information about the course

2.1 Course name	Enterprise Systems Development Methodologies						
2.2 Course coordinator	Prof. Florin Dumitriu, Ph. D.						
2.3 Seminar coordinator	Florin Cardasim						
2.4 Year of study	II	2.5 Semester	II	2.6 Type of assessment	Ep	2.7 Discipline status	C

* C – Compulsory / E - Elective

3. Total estimated time (hours allocated to didactic activity per semester)

3.1 Total number of hours per week	3	of which: 3.2 lecture	2	3.3 seminar/lab	1
3.4 Total number of hours in the curriculum	42	of which: 3.5 lecture	28	3.6 seminar/lab	14
Time distribution					hours
Study of the handbook, coursebook, bibliography and notes					30
Additional research in the library, online and on the field					15
Preparation of seminars/labs, homeworks and projects					50
Tutorials					5
Assessment					8
Other activities.....					
3.7 Total number of self-study hours	108				
3.9 Total number of hours per semester	150				
3.10 Number of credits	6				

4. Prerequisites (if applicable)

4.1 curriculum-based	• Object Oriented Programming, Object Oriented Analysis and Design
4.2 competence-based	• Web Services Development, UML

5. Conditions (if applicable)

5.1. for lectures	• Lecture rooms shall be provided with video projector • When required, homework have to be published before the lecture
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5.2. for seminars/labs	• The IT department will ensure proper install of the required software modelling tool • Students are invited to bring and use their own laptop; • Labs will have enough computers for students not owning a laptop
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6. Assimilated specific competences

Professional competences	• C1.2 Identification of the methodological and practical features and limits of business information systems analysis, design and testing methods within functional and technological requirements and constraints (0.5 credits) • C1.5 Development of analysis, design, implementation and testing of an information system based on real-world case studies and compare various solutions (0.5 credits) • C4.2 Identification of technically and economically feasible solutions for data, applications and services integration using existing methodologies and tools (0.5 credits) • C5.1 Acquiring knowledge on methodologies and standards for planning, implementation and monitoring of software projects, the governance of technologies, services and IT systems within organizations (1 credit) • C5.5 Elaborate a research project that identifies the trends and challenges within the field of software projects and IT services management (1 credit) • C6.1 Understanding the tools and standards for business process modeling, as well as methodological and technical tools for automating business processes (1 credit) • C6.2 Identification and orchestration of information processes in business using BPM (Business Process Management) tools (0.5 credits) • C6.5 Case study development concerning modeling, design and implementation of business processes using BPM tools (0.5 credits)
Transversal competences	• CT2 – The ability to coordinate project teams and manage informational projects

7. Discipline objectives (provided by the assimilated specific competences grid)

7.1 The general objective of the discipline	• To apply the right process and tools for automation and new approaches in software development
7.2 Specific objectives	• Understand software development methodologies and how to choose the best fit software development process • Organize, model and automate business processes • Integrate de services in a business oriented system • Generate code starting from system model

8. Content

8.1 Lecture	Teaching methods	Observations
Part 1 Software development methodologies		





Software crisis	Lecture, group discussions	2 hours
Principles of Agile Software Development	Lecture, group discussions	2 hours
Extreme Programming Method	Lecture, group discussions	2 hours
Scrum Method	Lecture, case study, group discussions	2 hours
Other Agile Software Development Methods	Lecture, group discussions	2 hours
Rational Unified Process	Lecture, case study, group discussions	2 hours
Part 2 Process Oriented Enterprise Systems Development		
Introduction to Business Process Management	Lecture, case study, group discussions	2 hours
Process Modeling with BPMN	Lecture, case study, group discussions	6 hours
Business Process Management life-cycle	Lecture, experiment, case study	4 hours
Part 3 Model Driven Development		
Bibliography ○ Cockburn, A. (2002). Agile Software Development, Pearson Education, Addison-Wesley ○ Marlon Dumas, Marcello La Rosa, Jan Mendling, and Hajo A. Reijers. (2018). Fundamentals of Business Process Management (2nd. ed.). Springer Publishing Company, Incorporated ○ Kruchten, P. (2004). The rational unified process: an introduction. Addison-Wesley Professional. ○ OMG (2014). BPMN V2.0 specification, available at http://www.bpmn.org/ ○ OMG (2014). BPMN V2.0 by example, available at http://www.bpmn.org/ ○ Truyen, F. (2006). The Fast Guide to Model Driven Architecture The Basics of Model Driven Architecture. URL: http://www.omg.org/mda/presentations.htm, January. ○ Schuh, P. (2005). Integrating Agile Development in the Real World, Charles River Media, Inc ○ Stiehl, V.,(2104) Process-Driven Applications with BPMN		
8. 2 Seminar/lab	Teaching methods	Observations
Discuss available project requirements for each team	Group discussion	2 hours





BPMN modeling	Study case	2 hours
Business Process implementation with BPM platform (Activiti)	Study case	2 hours
First assessment	Project evaluation and presentation	2 hours
Software development with agile methods/practices	Study case, group discussions	4 hours
Second assessment	Project evaluation and presentation	2 hours
Bibliography OMG (2014). BPMN V2.0 by example, available at http://www.bpmn.org/ Truyen, F. (2006). The Fast Guide to Model Driven Architecture The Basics of Model Driven Architecture. URL: http://www.omg.org/mda/presentations.htm , January. Rademakers, T. (2012). Activiti in Action: Executable business processes in BPMN 2.0. Manning Publications Co., ***, Activiti tutorial		

9. Corroboration of the discipline content with the expectations of epistemic community representatives, professional associations as well as of representative employers in the programme related field.

The content is in-line with similar courses at top universities such as Open University, as well as with the recommendations of OMG and IEEE (SWEBOOK). Also, the content is based on the best and newest practices in software development industry and the content of laboratory activities has been carried out with the help of IT employers' representatives.

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Share of final grade
Project on Software Development Methodology	Clean, complete and well documented solutions regarding agile software development.	Homework	40%
Project on Business Process Management	Clean, complete and well documented solutions based on business process implementation, using BPMN standard and a BPM engine.	Homework	60%
10.6 Minimum performance standard			
- Students work gradually at the team project - The grade for each project should be greater than or equal to 5			

Date of completion
24.09.2017

Lecture Coordinator
Prof. Florin Dumitriu, Ph. D.

Seminar Coordinators
Florin Cardasim





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Date of approval within the department

Head of Department
Prof. Florin Dumitriu, Ph.D.



ALEXANDRU IOAN CUZA UNIVERSITY OF IASI

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

DEPARTMENT OF ECONOMICS AND INTERNATIONAL RELATIONS