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	Accounting, Business Informatics and Statistics
1.4 Field of study	**Business Administration**
1.5 Level	**Master**
1.6 Study programme/ Qualification	**Software Development and Business Information Systems**

2. Information about the course

2.1 Course name			**Software Quality Assurance**				
2.2 Course coordinator			**Prof. dr. Alexandru TUGUI**				
2.3 Seminar coordinator			**Prof. dr. Alexandru TUGUI**				
2.4 Year of study	**I**	**2.5** Semester	**II**	**2.6** Type of assessment	**P**	**2.7** Course status	**C**

** C – Compulsory / E - Elective*

3. Total estimated time (hours alloted to teaching activities per semester)

3.1 Number of hours per week	**3**	of which: **3.2 l**ecture	**2**	**3.3** seminar/lab	**1**
3.4 Number of hours in the curriculum	**42**	of which: **3.5 l**ecture	**28**	**3.6** seminar/lab	**14**
Time distribution					
Study of the textbook, coursebook, bibliography and lecture notes					20
Additional research in the library, online and on the field					15
Preparation of seminars/labs, homework, projects, portfolios and essays					50
Tutorials					15
Assessment					8
Other activities.....					0

3.7 Total number of self-study hours	**108**
3.8 Total number of hours per semester	**150**
3.9 Number of credits	**6**

4. Prerequisites (if applicable)

4.1 Curriculum-based	**DB Administration**
4.2 Competence-based	**Basic skills of programming**

5. Conditions (if applicable)

5.1 For lectures	Lecture room should be provided with video projector
5.2 For seminars / labs	Computer lab with SILK; Web Stress, Load Impact, Test IT

6. Specific competencies

Professional competencies	C1.4 Selection of the method, methodology, and tools for system analysis, design and test, according to the human, financial and time organizational resources and in conformity with the economic, functional and technical requirements (3.5 credits) C5.2 Development of an organizational framework for the IT projects and services, according to the needs of stakeholders/customers (0.5 credits) C6.4 Manage business processes and related services in organization for a maximum impact on organizational performance (1.0 credits)
Transversal competencies	CT1 – The ability to communicate and collaborate in teams of different professionals (0.5 credits) CT2 – The ability to coordinate project teams and manage informational projects (0.5 credits)

7. Course objectives (provided by the specific competencies grid)

7.1. Main Objective	The students will become familiar with the concept of Software Quality Assurance and Software Testing
7.2. Specific Objectives	On completion of the course, the students will be able: • to test unit and system • using the testing documents • to use black and white testing • to manage the process of testing

8. Content

8. 1 Curs	**Metode de predare**	**Nr. curs**
Fundamentele testării	Ce este testarea	4
	Necesitatea testării	
	Principiile testării	
	Procesul de testare	
Testarea și SDLC	Modele ale SDLC	
	Modele ale STLC	
	Nivelurile testării	
	Tipurile testării	

	Testarea mentenantei	
Tehnici de testare	Categorii de tehnici de testare	
	Tehnici de testare Black-Box	
	Tehnici de testare White-Box	
	Tehnici de testare bazată pe experiență	2
Managementul testării	Organizarea testării	
	Estimarea și planificarea testării	
	Monitorizarea și controlul testării	
	Gestiunea configurațiilor	2
	Riscurile in testare	
	Managementul defectelor	
Cursuri Practice	Selenium IDE	
	TestLink	4
	Postman (test)	
Evaluări practice	Proiect Rapid testare manuala	
	Proiect Testare Automată	2
	Proiect Testlink	

8.1	**Lectures**	**Teaching methods**	**Observations (Lectures)**
1.	Fundamentals of testing	PPT Presentation, Interactive discussions	4
2.	Testing and SDLC	PPT Presentation, Interactive discussions	2
3.	Techniques of testing	PPT Presentation, Interactive discussions	2
4.	Testing Management	PPT Presentation, Interactive discussions	2
5.	Practical lectures	Study case	2
6.	Practical Assesments	PPT Presentation, Teams discussions	2

Bibliography
Main readings:

Agarwal, B.B., Tayal, S.P., Gupta M. (2010), Software engineering and testing, Jones and Bartlett Publishers
Boehm, B.W. s.a (1978), Caracteristics of Software Quality, North Holland Pub.
Dasso, A., Funes, A. (2006), Verification, Validation and Testing in Software Engineering, Ideea Group Publishing
Galin, D. (2004), Software Quality Assurance. From_Theory_to_Implementation, Pearson
Schulmeyer, G. (ed.) (2008), Handbook of Software Quality Assurance, Fourth Edition, Artech House,
Jorgensen, P. (1995), Software Testing: A Craftsman's Approach, CRC Press
Voas, J., Miller, K., (1995), Software testability: The new verification. IEEE Software 12(3), 17-28
Riley, T., Goucher, A. (Edts), (2010), Beautiful Testing, O'Reilly Media.

Additional readings:

Ian Millington, John Funge , Artificial Intelligence for Games, 2009
Khosrow-Pour, M. (2006), Advanced Topiscs in Information Ressources Management, Vol. 5, Ideea Group Publishing
Offutt, J. Untch, R. (2000), Mutation 2000: Uniting the Orthogonal. In Proceeding of Mutation 2000: Mutation Testing in the Twentieth and the Twenty First Centuries, San Jose, CA, pp. 45-55
Paulk, M.C. (1994), Capability Maturity Model, Addinson-Wesley

Reilly, F.R., Schweihs, R.P (1999), Valuing Intangible Assets, McGraw-Hill, NY
Sisco, M., IT Management Development Series, MDE Enterprise, 2001
Vliet, H. (2000), Software Engineering. Principles and Practice, John Wiley & Sons, NY
*** http://www.secat.com/download/download.shtml
*** ISO Standards, Information technology -- Systems Security Engineering -- Capability Maturity Model (SSE-CMM®), http://www.iso.org

8.2	Seminars / Labs	Teaching methods	Observations (hours & readings)
1.	Project Manual Testing ● Requierements (S. 2/4) ● STP (S. 4/8) ● Testing cases (S. 5/10) ● Report and final assesmnet (S. 7/14)	Laboratory	6
2.	Java – IntelliJ IDEA (S. 3/6)	Laboratory	2
3.	Project Automation Testing (S.6/12)	Laboratory	2
4.	Project assesment (1 h of S2-4-5-7)	Laboratory	4

Bibliography

Dasso, A., Funes, A. (2006), Verification, Validation and Testing in Software Engineering, Ideea Group Publishing
Galin, D. (2004), Software Quality Assurance. From_Theory_to_Implementation, Pearson
Schulmeyer, G. (ed.) (2008), Handbook of Software Quality Assurance, Fourth Edition, Artech House,
Jorgensen, P. (1995), Software Testing: A Craftsman's Approach, CRC Press
Voas, J., Miller, K., (1995), Software testability: The new verification. IEEE Software 12(3), 17-28
Vliet, H. (2000), Software Engineering. Principles and Practice, John Wiley & Sons, NY
*** http://www.secat.com/download/download.shtml
*** ISO Standards, Information technology -- Systems Security Engineering -- Capability Maturity Model (SSE CMM®), http://www.iso.org

9. Corroboration of the course content with the expectations of community representatives, professional associations and representative employers from the programme's related field

The content of this discipline has been decided upon by taking into account both the curricula of some prestigious Western Universities and the demands of the economic environment provided by potential employers, either in the public or in the private IT companies.

10. Assessment

Type of activity	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in final grade (%)
10.4 Lectures	Theoretical Test and Project	Test	
		Project	
10.5 Seminars/ Labs	Practical Project	Project	

10.6 Standard minim de performanţă 20%: Theoretical Test 45%: Project: manual testing 35%: Project: automation testing			
10.6 Minimum performance standard			
The final grade must be superior or equal with 4.50 points.			

Date	Course Coordinator	Seminar Coordinator
21.09.2022	Prof. dr. TUGUI Alexandru	Prof. dr. TUGUI Alexandru

Date of approval

Head of Department
Prof. dr. DUMITRIU Florin