

Software Systems Verification and Validation

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Software Systems Verification and Validation

"Tell me and I forget, teach me and I may remember, involve me and I learn."

(Benjamin Franklin)

Outline

- **Class Management**
- Teachers
- Class schedule
- Grading
 - Overall activity
 - Seminar activity
 - Laboratory activity



Class Management

- Microsoft Teams
- Join
 - Microsoft Team: SSVV_2022_2023
 - Code: **p1wm40c**
- **2022-2023 – SSVV – face to face**
 - Lectures
 - Seminars
 - Laboratories

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Teachers

- Lecture: Assoc. Prof. Vescan Andreea
- Laboratory:
 - Associate Teacher Iudean Bogdan
 - bogdan.iudean[at]ubbcluj.ro
 - Associate Teacher Tiutin Cristina
 - cristina.tiutin[at]ubbcluj.ro
 - Associate Teacher Galbîn-Năsui Andreea
 - andreea.galbin@yahoo.com, [redacted]@ubbcluj.ro
 - Assoc. Prof. Vescan Andreea
 - andreea.vescan[at]ubbcluj.ro
- Seminar:
 - Assoc. Prof. Vescan Andreea

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Class schedule

Software Systems Verification and Validation (tentative schedule)				
Week	Date	Lecture	Seminar	Laboratory
1	27 feb – 3 mar	Inspection	Inspection	Inspection
2	6 -10 mar	Testing. BBT		
3	13-17 mar	WBT	BBT	BBT
4	20-24 mar	Levels of testing, Pipeline Bogdan Iudean		
5	27-31 mar	Invited Lecture EVOZON	WBT	WBT
6	3-7 apr	Invited Lecture Altom (pending)		
7	10-14 apr	Agile	Levels	Levels
Vacation	14 -23 apr			
8	24-28 apr	Symbolic exe.; Model checking		
9	1-5 may	Correctness		
10	8-12 may	Invited Lecture Connatix	Web?	Web
11	15-19 may	Soft skills	All	Bachelor Thesis testing
12	22-26 may	Exam preparation		

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Grading

- $F = 20\% L + 20\% S + 50\% E (+ 1p)$
 - L=Laboratory; S=Seminar; E=Written;
 - Bonus points! See the homepage of the course!
- Conditions to participate at the final exam
 - There is no restriction regarding the participation at the written examination regarding obtained marks at L, S.
 - Attendance lab (5 out of 6) -90%
 - Attendance sem (4 out of 6) – 75%
 - Council of the Faculty of Mathematics and Computer Science
 - 28 September 2016
 - <http://www.cs.ubbcluj.ro/hotararea-1893-28-09-2016-a-consiliului-facultatii-privind-modificarea-regulamentului-de-functionare-al-fmi/>
 - Motivation of absences
 - 11 October 2016
 - Decision regarding the motivation of the absences of the students
 - <http://www.cs.ubbcluj.ro/hotare-privind-motivarea-absentelor-studentilor-nivel-licenta/>
 - Students will present the documents to motivate absences from the seminar/laboratory within one week from the date of absence.
 - If the motivation comes after more than a week, then apply to the dean's office.
- L/S work may not be redone in the retake session.
- Students from Previous Years to 2022-2023 - All the above rules apply to students from previous years (except attendances).
- Conditions to pass/complete the SSVV discipline:
 - $F \geq 5$ final grade.

https://www.cs.ubbcluj.ro/files/curricula/2022/syllabus/IE_sem6_MLE5014_en_avescan_2022_6911.pdf

Grading - Gamifying Education

<https://ieeexplore.ieee.org/document/8166715>

<https://ieeexplore.ieee.org/document/8658524>

	Given points	Side Quests (Lab Assignments)	Social Quests (Sem Assignments)	Epic Quests (Final Exam)	XP intervals	Grade
Normal session	300 XP Feedback	600 XP (in-class 25 XP + take-home 75 XP for each lab)	600 XP (300XP SLR+Video presentation + 100 XP for each Portfolio activity)	Up to 1500 XP	[1400,1500]	5
					[1501,1800]	6
					[1801,2100]	7
Retake session	Points obtained in the didactic activity period (labs and seminar and bonus activity cannot be redone in the normal/retake session).			Up to 1500 XP	[2101,2400]	8
					[2401,2700]	9
					Over 2700	10

Final exam – you must come (be present) to final exam in order to compute the grade!

Bonus points = 300 XP (1p)

Participating in Education related Research study

Information to be provided after the first lecture

Bonus points = 600 XP

Research paper (See available topics in Teams – after the first lecture)

Maximum 3 teams.

Topic by teacher + 2 members/team + deliverables

Paper submitted to journal for review (before 26 May 2023)

Remark: If you are interested in this activity, the deadline for enrollment (send email) is 10 March 2023 (week 2).

Grading - Seminar

- Attendance: 4 out of 6 required
 - 20% of the final grade
 - You can change the date of your scheduled seminar if you exchange your “place” with another student.

Seminar structure

Assignment 1 – 10 minutes – discussion on a given topic (the teacher is an observer)

Assignment 2 – 60-70 minutes – assignments on a given topic

Assignment 3 – 10 minutes – quiz about required reading and seminar discussions.

Sem 1	Sem 2	Sem 3	Sem 4	Sem 5	Sem 6
Inspection	BBT	WBT	Levels Exploratory T.	Web RIMGEN	All
		100XP Portofolio About Inspection	100XP Portofolio About Test Case Design	100XP Portofolio About Exploratory T.	300 XP – SLR Report +video+peer review

Grading – Seminar (2)

Portofolio activities

- **1. Portofolio about Inspection**
 - Details provided in Lecture 1
 - To be submitted in Seminar 3
 - Team: 3 persons/team
- **2. Portofolio about Test Case Design**
 - Details provided in Lecture 3
 - To be submitted in Seminar 4
 - Team: 3 persons/team
- **3. Portofolio about Exploratory Testing**
 - Details provided in Lecture 7
 - To be submitted in Seminar 5
 - Team: 3 persons/team

Grading – Seminar (3)

Conduct a Systematic Literature Review on a provided research topic.

- SLR (Systematic Literature Review) – Report pdf – 150 XP
- Video presentation + Peer review – 150 XP
- References
 - Barbara Kitchenham, Procedures for Performing Systematic Reviews, 2004
 - Barbara Kitchenham, Guidelines for performing Systematic Literature Reviews in Software Engineering, 2007
- **Team: 3 persons/team**
- **Tasks (48h:12=4h/week for the team)**
- **Task a) Report pdf**
 - 01. Search and save the title (doi) of the articles (minimum 30 articles) (6h)
 - 02. Read abstracts and reduce from 30 to 10 articles (6h). **The papers will be provided by the teacher after you send your list of 10 articles.**
 - 03. Read each of the 10 papers and produce 1 paragraph/paper (approach, used method, dataset, obtained results) (3h*10articles=30h)
 - 04. Summarizing table with the 10 articles (6h)
 - 05. Report containing
 - Explain the methodology applied (all the steps and findings regarding various characteristics of the selected articles).
 - The 10 paragraphs, one for each paper.
 - Summarizing table.
- **Task b) Pecha Kucha type Presentation**
 - Time for the Recorded presentation - 5 minutes
 - Presentations will be played during the last seminar.
 - Peer review minimum 3 presentations during the last seminar.

Grading - Laboratory

- Attendance: 5 out of 6 required
 - 20% of the final grade
 - You can change the date of your scheduled laboratory if you exchange your “place” with another student.

Laboratory structure

Assignment 1 – 10 minutes – current lab discussion, problem assignment

Assignment 2 – 40 minutes – in-class problem solving and delivery

Assignment 3 – 40 minutes – delivery of the previous lab (exception first lab)

Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6
Inspection	BBT	WBT	Levels	Web	All (Bachelor Thesis)
Assignment 1 (L1)	Assignment 2 (L2)	Assignment 3 (L3)	Assignment 4 (L4)	Assignment 5 (L5)	Assignment 6 (L6)
	L1_Delivery1	L1_Delivery2 L2_Delivery1	L2_Delivery2 L3_Delivery1	L3_Delivery2 L4_Delivery1	L4_Delivery2 L5_Delivery1 L6_Delivery1 (in-class only)

Grading – Laboratory (2)

- Each Lab Assignment
 - In-class assignment
 - 25 XP
 - Take-home assignment
 - 75 XP
- Work in teams – Recommended: 2 members per team (maximum 3 allowed (one team in a semigroup) if one students does not have a partner in his/her own semigroup).
- No more than two lab problems will be delivered in one lab meeting. An extra lab problem is delivered **only if time allowed**.
- Delay in lab submissions (take-home only) – One third points from that lab grade.
- Maximum 2 weeks delay in submission of the homework assignment.
- Each time you deliver a laboratory - the Deliverables of the in-class and take-home assignments must be uploaded in Teams.
- 3 or 4 maximum retake students per semigroup