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Robust Software

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Mestrado em Cibersegurança

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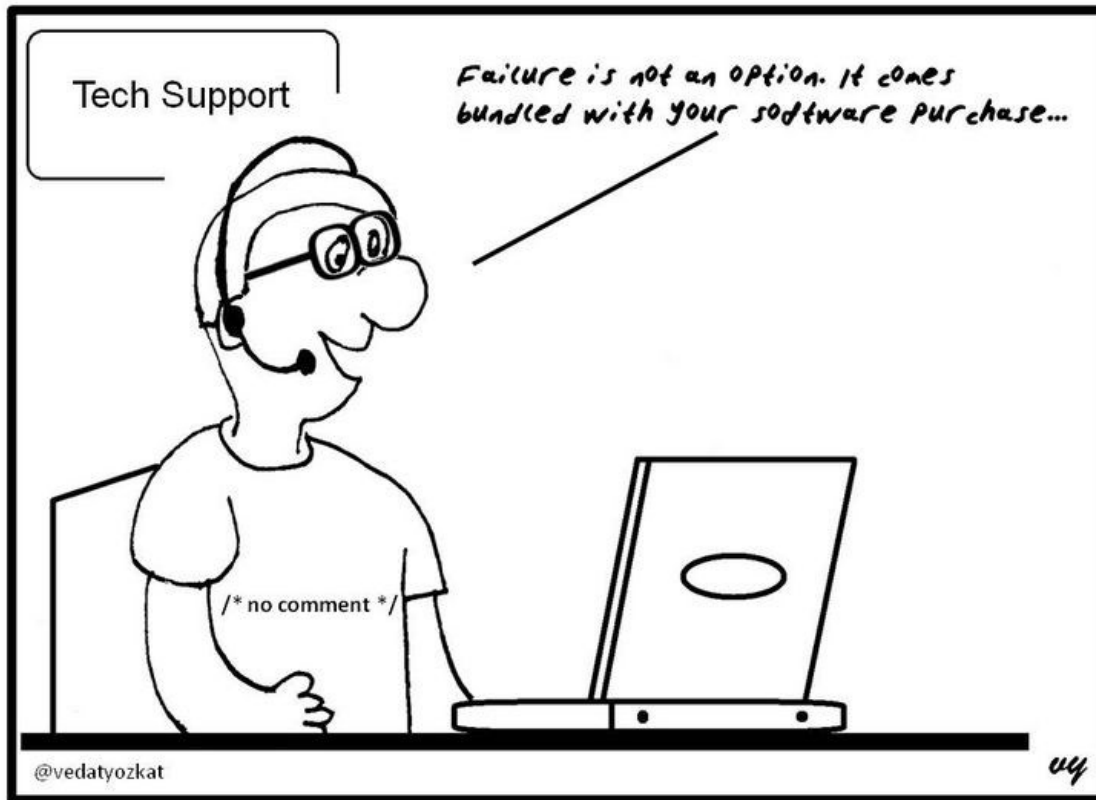




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WHEN YOU HEAR THIS:



[Adobe Flash Shutdown Halts Chinese Railroad for Over 16 Hours Before Pirated Copy Restores Ops \(thedrive.com\)](https://thedrive.com)

Objectives

- To know techniques for developing robust software.
- To evaluate and test the security of software.
- To avoid typical errors in development.
- To know static and dynamic analysis techniques.
- To be able to develop and operate applications with security requirements.
- To know international standards.



Topics

Secure software design principles

Software security lifecycle

Software quality attributes

Security requirements

Common software attacks

Safe programming to avoid common errors (CWE)

Actions traceability

Static analysis techniques



Topics

Fuzzy dynamic analysis techniques (fuzzing)

Security tests (black box and white box) and validation

Safe development and operations techniques (DevSecOps)

Specific aspects of common languages

Side-channels

Safety Standards and systems certification

Relations between safety and security

Exercises



Method

- Classes (theoretical part)
- Student Exploration / Exercises (Groups of 3)
- Class discussions

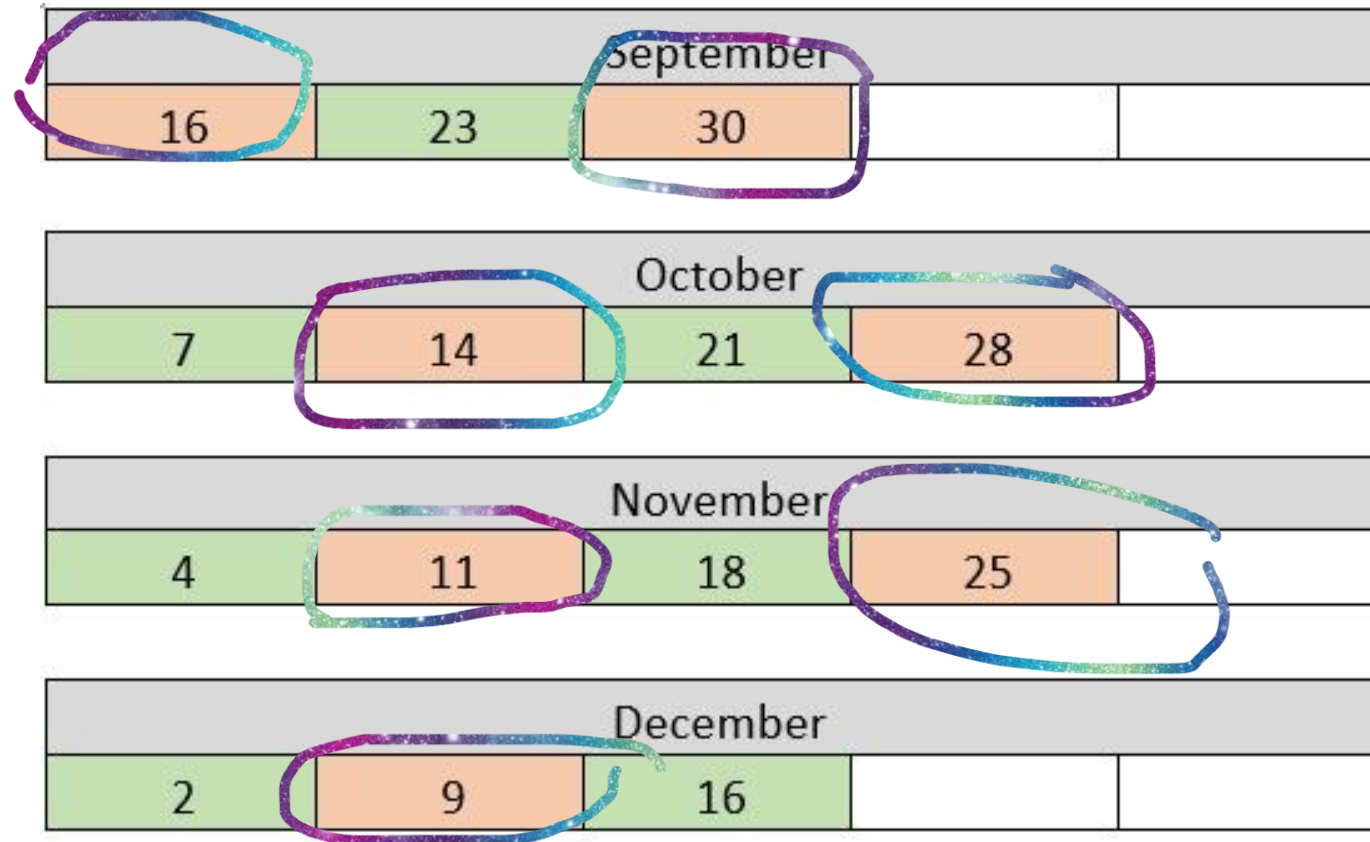
- UA Classes
- 7 Classes: Every 2 weeks/Saturdays (9-11, 11-13 and 14-16)*
- Of course, there is a break in the middle (remind me of that!)
- *canteen opens at 13:00

Schedule



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Schedule

- Classes:

- **1/2** - 16-09-2023
- **3/4** - 30-19-2023
- **5/6** - 14-10-2023
- **7/8** - 28-10-2023
- **9/10** - 11-11-2023
- **11/12** - 25-11-2023
- **13/14** - 9-12-2023

Morning: Theoretical
Afternoon: Practical / Team Work

Calendário de Exames por Disciplina ou Departamento

Pesquisa por departamento	Pesquisa por disciplina
<input type="text" value="Selecione um departamento"/>	<input type="text" value="Introduza o(s) código(s) da(s) disciplina(s) a pesquisar, separados por ;"/>
<input type="button" value="Pesquisar Por Departamento"/>	<input type="button" value="Pesquisar Por Disciplina"/>

Dia	Hora	Sala	Código	Discip.	Tipo Insc	Ex.	Dep.	Nº	Alte rada
07-09-2023	15:00	_	41779	SOFTWARE ROBUSTO	NM	DZ	DET	0	
Legenda: 1 - 1ª Chamada; 2 - 2ª Chamada; RE - Exame em época de Recurso; DZ - Exame em Época Especial									

- Final Exam:

14/01/2024 14:00 /
01/02/2024 14:00

Evaluation

- Exercises / Practical Exploration Work : 50% of the final grade
 - 4 or 5 exercises (individual + team work)
- Exam: 50% of the final grade



7 Rules

- #1: Be on time
- #2: Don't answer your phone
- #3: No texting
- #4: No web browsing (unless specifically asked or topic related)
- #5: Respect each other
- #6: Discuss the problem, not the person
- #7: Be active, take notes, ask questions!



Q&A



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