POLITÉCNICO DE SANTARÉM

Cloud Computing

Code: ERAGT60 Acronym: CC
Scientific Area: Computer Sciences

Occurrence: 2024/25 - 2S

Teaching Area: *Informática*

Courses

Acronym	Nº de Estudantes	Plano de Estudos	Academic Year	Credits	Horas Contacto	Total Hours
ERSGT	4	Curso Erasmus	1º	5		

Hours Actually Taught

ERA-1-D

Theoretical and Practical: 56,00

Teaching - Weekly Hours

Theoretical and Practical: 0,00

Type	Teacher	Classes	Hours
Theoretical and Practical	Totals	1	0,00
	Artur Manuel Sancho Marques - ESGT		0,00

Teaching - Responsabilities

Teacher	Responsabilidade
Artur Manuel Sancho Marques - ESGT	Responsável

Learning outcomes and their compatibility with the teaching method (knowledge, skills and competencies to be developed by students)

The approved student is expected to:
- understand the concept of "cloud computing", its service models (Iaas, Paas, SaaS), deployment models (public, private, hybrid), infrastructure technologies, file technologies, and selected development approaches (Serverless, Microservices, Cloud Native, DevOps);
- to know about business and technology aspects that support choices between different cloud offers, including case studies;
- to be able to develop/make available (parts of) solutions, depending on aspects such as the public or private nature of the cloud, data and traffic needs, computational needs, interoperability and openness, realizing distributed applications in some elected architecture.

Syllabus

"Cloud Computing" concepts
- What is the "Cloud"?
- Service Models (IaaS, PaaS, SaaS)

- Deployment Models (public, private, hybrid)
- Infrastructure technologies (bare-metal, VMs, containers, aspetos de segurança)
- Cloud-storage technologies (File, Block, Object, CDNs)
"Cloud Native" development
- Developer, provisioning, runtime and orchestration layers
Cloud Apps development
- Using some programming language for runtime (e.g. Python)
- To explore some provider's (e.g. AWS, GPC) solutions

Demonstration of the syllabus coherence with the curricular unit¿s learning objectives

The contents introduce, elaborate and exemplify concepts. There are case-studies of business needs and other activities, solved by cloud-based solutions. This should establish the concepts and facilitate an understanding of how and what problems the cloud can solve (and create).
The exact cloud resources available condition the software development and deployments processes, so it is important to practice them.
The ability to develop and make available (parts of) cloud-based solutions emerges from practicing development and deployment in concrete programming languages that consume the effectively available services.

Teaching and learning methodologies specific to the curricular unit articulated with the pedagogical model

Presentations, examples and case studies.
Hands-on development/deployment, using the selected technologies.

Assessment

Assessment:
Project proposed by the student and agreed with the teacher (P)
Written test (T)
Final grade = 0.4 * P + 0.6 * T

Demonstration of the coherence of teaching and evaluation methodologies between the learning objectives of the curricular unit

The presentations, examples and case studies, introduce, illustrate and then render the concepts concrete, respectively, helping in their understanding.
The hands-on development/deployment, using the elected cloud solutions, should translate to (parts of) cloud apps/solutions development/deployment skills.

Bibliography (Mandatory resources)

Lachance, D. (2020). CompTIA Cloud Essentials+ Certification Study Guide, McGraw-Hill Education.
Fraser, S. and T. Ziadé (2021). Python Microservices Development: Build efficient and lightweight microservices using the Python tooling ecosystem, 2nd Edition.
AWS. (2025). Amazon Web Services. from https://aws.amazon.com/
Google. (2025). Google Cloud Platform. from https://cloud.google.com/