Course description

General information		
Course leader	**Raphael CHRIQUI, Maxime BOURGEOIS**	
Course title	**DevOps Level 1 - Docker**	
Study programme	**Title of Expert in Information Technology**	
Course status	**Graduate Program**	
Year	2	
Number of credits and mode of teaching delivery	ECTS student workload coefficient	2
	Number of hours (L+E+S)	(6+8+42) 56

1. COURSE DESCRIPTION

1.1. Course objectives

The module "DevOps Level 1" focuses on Docker, a tool designed to make it easier to create, to deploy and to run applications by using containers.

1.2. Conditions for enrolment in the course

- Have a basic understanding of networking and of Linux.

1.3. Expected learning outcomes of the course

LO1: Explain the fundamentals of containerization platform Docker.

LO2: Migrate and deploy an existing application to Docker.

LO3: Implement application feature using framework tied to Docker.

1.4. Course content

The lectures are structured on two days.

Lecture 1:

- DevOps

- Why Docker is great for DevOps?

- What is Docker?

- How do you use Docker and what are the good practices and pitfalls?

- What is docker-compose and how to use it ?

Lecture 2:

- What is Continuous Integration and how to set it up?

- How to troubleshoot Docker?

- What is coming next in DevOps?

The project consists of three instructions:

1. Dockerise a project containing a website (front), an API (back) and a database.

2. Set up a CI on a Gitlab or Github.

3. Add a caching mechanism to your app.

1.5. Teaching delivery modes:	☒ lectures ☒ seminars and workshops ☐ exercises ☐ remote learning ☐ field work	☒ independent work ☐ multimedia and network ☐ laboratory ☒ mentoring ☐ other _____
1.6. Comments		The course material is taught interactively with a Q&A time. The teachers are available for questions during the project time.

1.7. Student obligations

STUDENT ATTENDANCE
Class attendance is mandatory in the percentage prescribed by the Studies and examination regulations.

PASSING EXAM
Each groups of students must submit their results to the teachers and give an oral presentation based on their results. The results are reviewed by the academic staff during an oral examination. A justification of the project work can be explained by the students.

1.8. Monitoring[1] student work

Class attendance		Activity during class		Seminar paper		Experimental work	
Written exam		Oral exam	30 %	Essay		Research	
Project	70 %	Continuous assessment of knowledge		Student report		Practical work	

Portfolio							

1.9. Assessment and evaluation of student work during classes and the final exam

The students are assessed on the project results and on the presentation as well as the ability to explain their work.

The assessment is based on several criteria:

- Does the project contain all the elements required?
- Does the project work?
- Does the project is correctly connected?
- Is the content of the project qualitative?
  - Is the deployment production ready and following the industry standards?
  - Is the project maintainable and scalable?
- Are there any extra-elements added on the project?

The project evaluation is split in two parts; 30% of the grade is related to the presentation and the explanation and 70% related to the project achievements.

CONCRETE REVIEW OF EVALUATION METHODS

The maximum number of points that a student can earn in a course is 100. Grades are calculated according to the following criteria table within which the distribution of passing grades in terms of the number of points is applied.

Points	Grade
0,00 - 50,00	(E) unsatisfactory
50,01 - 58,00	(D) sufficient
58,01 - 75,00	(C) good
75,01 - 92,00	(B) very good
92,01 - 100,00	(A) excellent

The method of accumulating points is determined in this course in accordance with the elements of scoring as follows:

Criterion	Maximum points
Project	70
Presentation	30
TOTAL	100

1.10.   Required reading (at the moment of submitting the joint study programme report)

1.11.   Additional reading (at the moment of submitting the joint study programme report)

Docker Inc. "Docker docs", 2020. https://docs.docker.com/get-started/overview/

1.12.   Number of copies of required reading in relation to the number of students who currently attend a course

Title	Number of copies	Number of students

1.13. Methods of quality monitoring that ensure the acquisition of knowledge, skills and competencies.

The content of each modules is continuously revised to teach the students on the most up-to-date notions and concepts of IT. Indeed, the range of skills and knowledge in this sector is constantly getting broader, with a larger perspective of working in many different fields.

To ensure the quality of the teaching, a Steering Committee supervises the Quality Management System. The evolution of the teaching content is revised and validated by the Development Council. The teachers as well as the administration staff are evaluated by the students themselves. Finally, the teaching content is analysed and determined by evaluating the skills during the internships, by the partner companies.