Course description

General information		
Course leader	**Jonathan NAU**	
Course title	**Application Development**	
Study programme	**Title of Expert in Information Technology**	
Course status	**Joint Study Program**	
Year	1	
Number of credits and mode of teaching delivery	ECTS student workload coefficient	10
	Number of hours (L+E+S)	239 (3+0+236)

1. COURSE DESCRIPTION

1.1. Course objectives

The module "Application Development" focuses on the most used programming languages and ecosystems in today's industry. The students learn how to program with the following languages: Java, C#/.NET, Javascript. For each stack, they also learn how to use the build tools (Gradle, Junit, NPM, Nuget, …), as well as how to use some of the main libraries (Netty, Protobuf…).

1.2. Conditions for enrolment in the course

- Have basic notions of Application Development.
- Have a basic understanding of three-tier architecture.

1.3. Expected learning outcomes of the course

LO1: Suggest appropriate development environment for mobile application development on given mobile platform.
LO2: Use tools and process to build and test the projects.
LO3: Consume the APIs through web services.
LO4: Evaluate and explain user experience and the user interface while developing a web application.
LO5: Elaborate concepts of the chosen language.
LO6: Use contemporary build tools and dependencies managers.
LO7: Implement a solution by using a web service.

1.4. Course content

The module 'Application Development' consists of three projects:
1. Build a client application (either mobile or desktop) via Universal Windows Platform (UWP) or Android.
   The project consists of creating a client application for a well-known image hosting website using its API. It requires to know the basics of the chosen development stack and the specific aspects of the Android/UWP development.

2. Build and use a web service. The objective is to learn some of the development stacks used in the development of web applications and services.

3. Build a service like IFTT, a software platform which connects apps, devices, and services from different sources.

   It should be capable of defining the simple instruction chains, which are composed of modules, and being executed when invoked by a specific action. The modules depend on external services. It requires implementing all the inherent logic to authenticate and to use a programming interface via a server which allows the retrieval of data from these services. The students learn how to manage the logic of action and reaction modules. The students work on creating web and mobile clients via the Android or .NET frameworks to study the different user experience.

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	Epitech pedagogy is based on the project-based learning approach which consists of learning by doing. Therefore, it requires the students to be autonomous in his work and to being supervised by the academic staff.

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		Essay		Research	

Project	100 %	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 results of the three projects.

Every grade of the projects is independent from each other, dividing in three different projects.

- Project Epicture – 2 ECTS
- Project Dashboard – 2 ECTS
- Project AREA – 6 ECTS

All the three projects are done in groups.

The students are assessed on the number of the features implemented and the quality of the implementation.

For the three projects, the students are evaluated on the oral exam on the project (100%), called "review" – with a presentation, demonstration, and a code review, in front of the supervisor.

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	100
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)

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.