Reactive project plan

Project data

Project title:		JAVASCRIPT WEB BACK-END APPLICATION
Professional sector:		ICT - WEB SOFTWARE DEVELOPMENT
EQF level of the correspondence course:		5
Qualification obtained at the end of the course:		WEB DEVELOPER - BACKEND DEVELOPMENT WITH JAVASCRIPT
Topics:		BACKEND WEB DEVELOPMENT WITH JAVASCRIPT
Total project duration (weeks)		12
Planned teacher commitment (hours):		0 (LECTURES-REVIEWS HELD BY COMPANY REPRESENTATIVE)
Planned student commitment (hours):		35 (+28 PROPAEDEUTIC MICROCOURSE)
Planned commitment for the company (hours):		35 (+28 PROPAEDEUTIC MICROCOURSE)
Planned start of the project:		Mid-March 2024
Name of institution (school)		JOBS ACADEMY
Enterprise involved:		GIACOMO BELLO, SOLE PROPRIETORSHIP (https://www.belloinfo.it/)
The plan was developed	company (name and surname contact person):	GIACOMO BELLO, SOLE PROPRIETORSHIP (https://www.belloinfo.it/)
	school (name and surname teacher):	JOBS ACADEMY, DIEGO BERNINI (SOFTWARE AREA COURSE LEADER)

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Project presentation

Problem the project aims to solve ('why')

Why is the project important? What problem does it answer? What is its importance for the company? How will it help the company, how will it improve something, why is it important to have staff with the necessary professional skills to carry out the activities described in the project?

JavaScript is a language that is increasingly being used in the market for the realisation of Web software applications, particularly at the backend level with NodeJS technology.
Junior developers often lack solid competence in this language, particularly at the back-end level.
The aim of the project is to consolidate and increase the skills of the students - future Web developers - in this technology by means of the prototype realisation of a Web application (in terms of the backend subsystem), the implementation phase of which will be supervised directly by a representative of a company in the sector, who will act as a teacher-tutor-mentor.

Specific objective of the project ('what')

What will the students have to do? A brief summary of the activities to be carried out in the project.

The students, divided into groups of at least 2 participants, will propose their own project proposal concerning a web application. They will be able to make proposals relating to their own interests and passions, so as to result in a genuine reality task. The only constraint is the use of JavaScript technology with NodeJS at the backend level.
They will have 35 classroom hours, with the company representative present, to prototype the project and be able to count on his technical support and continuous revision in order to increase and consolidate practical skills. The subject of the project will not be the entire web application, but "only" the backend part.
Prior to the project activity, the students will have 28 hours of workshop lessons with the company lecturer in order to learn the basics of the JavaScript language with NodeJS.

Tools and equipment needed ("with which tool")

What equipment will be needed to perform the tasks in the project?

Personal laptop by students; NodeJS development environment; Internet connection

Implementation environment ('where')

Where will the project activities take place?

JAC classroom for classroom activity hours; extra-curricular activity at home

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Occupational health and safety regulations (if applicable)

On company premises, at school, etc.

For in-presence activities, the usual regulations to which Jobs Academy responds are met

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Project Plan

Presentation of the project team

Objectives of the project, composition of the team, list of students involved, planned division of labour (by way of example, you can enter the functions you indicated in the student application form, such as: organiser, time manager, expert, etc.).

Students will be divided into groups of at least 2 participants.
Students will work in a manner inspired by the AGILE - SCRUM working methodologies widely used in modern web software development.
Within the group, each student will have specific technical tasks and all members of the group should be involved in the communication and presentation of their work.

Working methods, communication, evaluation

Present the following briefly:

- How will communication between project members be managed?
- How will the activities carried out be documented?
- How will interim results be evaluated and student feedback collected?
- Which IT platform will be used to implement the project?

The project will occupy 35 classroom hours in presence; however, Microsoft Teams will be used for asynchronous interaction and document sharing.
Since the project activity is the realisation of a software application at the backend level, there will be an immediate (incremental) release of the software realised, managed through the GIT version control system via the GitHub service).
The teacher-company representative will follow the work in the classroom (a total of 35 hours): the various intermediate reviews will allow both continuous feedback to the students and a final evaluation.

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Results, products, performance indicators (indicators)

Quantitative and qualitative indicators showing that the project results were delivered as planned. At least 2-3 products/outputs delivered by students during the project are required.

	Product title/output	Description	Responsible student	Format (xlsx, ppt, pdf, software, app, mp4 ...)	Indicator	Evaluator (teacher, company, team, expert, etc.)
1.	APPLICATION CONCEPT	PRESENTATION (PDF FORMAT OR SIMILAR) PRESENTING THE IDEA OF THE WEB APPLICATION TO BE REALISED	ALL STUDENTS IN THE GROUP	PDF / PPT / other presentation format	CREATIVITY AND ORIGINALITY OF THE IDEA FEASIBILITY OF THE IDEA	COMPANY in correlation with the reference TEACHER
2.	APPLICATION BACKEND CODE - INTERMEDIATE MILESTONE	RELEASE OF WORKING APPLICATION BACKEND CODE (EVEN WITH EXTREMELY MINIMAL FUNCTIONALITY) FROM AN INTERMEDIATE MILESTONE (APPROXIMATELY AFTER 17-20 CLASSROOM HOURS)	ALL STUDENTS IN THE GROUP	WEB-ACCESSIBLE SOFTWARE	PERFORMANCE OF FUNCTIONS STRUCTURE AND QUALITY OF THE CODE	COMPANY in correlation with the reference TEACHER
3.	APPLICATION BACKEND CODE - FINAL RELEASE	RELEASE OF THE BACKEND CODE OF THE WORKING APPLICATION WITH THE FINAL FUNCTIONALITIES	ALL STUDENTS IN THE GROUP	WEB-ACCESSIBLE SOFTWARE	PERFORMANCE OF FUNCTIONS STRUCTURE AND QUALITY OF THE CODE	COMPANY in correlation with the reference TEACHER

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Knowledge, skills, responsibilities and autonomy required

The first column lists the activities envisaged by the project (min. 3-4). The other columns indicate the knowledge and skills required to carry out these activities and the level of autonomy required of the student to carry them out (specify whether the activities can be carried out independently by the students or require the assistance of an expert).

Activities/ milestone	**Required knowledge**	**Required skills**	**Level of responsibility and autonomy required**
T1 CONCEPTION AND PROPOSAL	Web system languages and technologies; structure of a web application	Devising and proposing a design proposal for a web application	AUTONOMOUS WITH COMPANY LECTURER SUPPORT
T2 INCREMENTAL DEVELOPMENT TO REACH INTERMEDIATE MILESTONE	JavaScript with NodeJS; REST API	Knowing how to implement the backend of a web application with JavaScript and NodeJS with a REST API approach	AUTONOMOUS WITH COMPANY LECTURER SUPPORT
T3 DEVELOPMENT TO ACHIEVE FINAL RELEASE	JavaScript with NodeJS; REST API	Knowing how to implement the backend of a web application with JavaScript and NodeJS with a REST API approach	AUTONOMOUS WITH COMPANY LECTURER SUPPORT

Missing knowledge and skills (to be included in the micro-course)

The identification of missing competences is preceded by a diagnostic entrance assessment, which teachers carry out using the method usually used in their institution (oral examination, test, interview, etc.).

The table must include the same activities as the table above, this time specifying which of the required knowledge and skills are currently missing

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because they are not included in the course curriculum. These knowledge and skills will require the teacher to provide a micro-course of 'upskilling' to be acquired by the students.

Activities	Missing knowledge	Missing skills	Level of responsibility and autonomy required
JAVASCRIPT LANGUAGE BASICS WITH NODE JS (by means of 28 hours of workshop lessons held by the company from mid-January to mid-March, before the start of the project)	USE OF THE JAVASCRIPT LANGUAGE WITH NODE JS	REALISATION OF WEB BACKENDS WITH JAVASCRIPT AND NODEJS	LECTURES GIVEN BY THE COMPANY LECTURER FROM MID-JANUARY 2024 TO BEFORE THE START OF THE PROJECT

Activity-based teaching plan with description of learning outcomes

The teaching plan must include a table for each project activity containing details on:

- **Learning outcomes** (professional, project management, digital)
- **Methods** (more innovative methods than face-to-face teaching, used to achieve the expected objectives)
- **Monitoring, evaluation and feedback** methods during and at the end of the activity (formative evaluation is the very essence of the project method).

Learning outcomes fall into three categories:

1. **Professional learning outcomes: professional** knowledge, professional skills, level of autonomy in work.
   Instrument: EQF (Annex 1)
2. **Transversal (soft) project management knowledge, skills and competences that the project will develop**
   Tool: EQF (Annex 1) and table of transversal knowledge and skills to be developed using the project methodology (Annex 2)
3. **Digital competences**: technological competences demonstrated in the use of digital tools. To describe digital competences, we use the Digital Competence Framework 2022 version DigComp 2.2.

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Monitoring, evaluation, feedback: When and why evaluate in the project? (see Annex 3)

What to evaluate?

- Professional knowledge: can you explain, can you formulate? Professional skills: do you know how to use equipment? Do you know how to solve the problem?
- Project management knowledge: what is a milestone? What is a product? Why is documentation necessary? What agreements are needed?
- Soft skills: how effective is our team? How is my performance? Were there conflicts and, if so, were we able to manage them? Were I able to convince others? Was the team able to solve the problems that arose?

When to evaluate?

During the activities and at the end of the project.

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Activities:	T1 CONCEPTION AND PROPOSAL		
Description of activity:	Initial moment when each group defines its own web application project to be realised.		
Learning outcomes	**Knowledge**	**Skills**	**Responsibility and autonomy**
Professional skills:	Structure and organisation of a web application Basic elements of an application presentation	Knowing how to define your own web application proposal Knowing how to present your own web application proposal	Carry out and present a creative and feasible application proposal (relying on review - approval by the business teacher)
Project management knowledge and soft skills:	Managing group dynamics in order to reach a common proposal	Communicating effectively	
Digital competences:	Use of multimedia presentation tools		
Working methods, tools and equipment	Group work; personal laptop and presentation software tools		
Monitoring, evaluation, feedback			
During the implementation of the activity	Monitoring and feedback from the company lecturer		
At the end of the activity	Approval of the proposed project (with any modifications to be accepted)		

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Activities:	T2 INCREMENTAL DEVELOPMENT TO REACH INTERMEDIATE MILESTONE		
Description of activity:	Realisation of a prototype of the proposed web application - intermediate release (minimum feature set)		
Learning outcomes	**Knowledge**	**Skills**	**Responsibility and autonomy**
Professional skills:	JavaScript language with NodeJS; REST API	Knowing how to realise backend web applications with JavaScript and NodeJS	Programming functions defined at the beginning of the project Troubleshooting Remodelling of objectives in itinere
Project management knowledge and soft skills:	Working basis according to the AGILE approach and SCRUM methodology	Knowing how to plan work Knowing how to communicate with the auditor	
Digital competences:	Use of specific software development tools (including at least programming environment and GitHub)		
Working methods, tools and equipment	Software development mode inspired by the AGILE approach and SCRUM; personal laptop; software development tools		
Monitoring, evaluation, feedback			
During the implementation of the activity	Monitoring and feedback from the company lecturer during the execution of the activity		
At the end of the activity	Intermediate qualitative assessment (intermediate work status)		

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Activities:	T3 DEVELOPMENT TO ACHIEVE FINAL RELEASE		
Description of activity:			
Learning outcomes	**Knowledge**	**Skills**	**Responsibility and autonomy**
Professional skills:	JavaScript language with NodeJS; REST API	Knowing how to realise backend web applications with JavaScript and NodeJS	Programming functions defined at the beginning of the project Troubleshooting Remodelling of objectives in itinere
Project management knowledge and soft skills:	Working basis according to the AGILE approach and SCRUM methodology	Knowing how to plan work Knowing how to communicate with the auditor	
Digital competences:	Use of specific software development tools (including at least programming environment and GitHub)		
Working methods, tools and equipment	Software development mode inspired by the AGILE approach and SCRUM; personal laptop; software development tools		
Monitoring, evaluation, feedback			
During the implementation of the activity	Monitoring and feedback from the company lecturer during the execution of the activity		
At the end of the activity	Evaluation in thirtieths of the activity carried out, taking into account the results and what was observed by the company lecturer in the classroom reviews		

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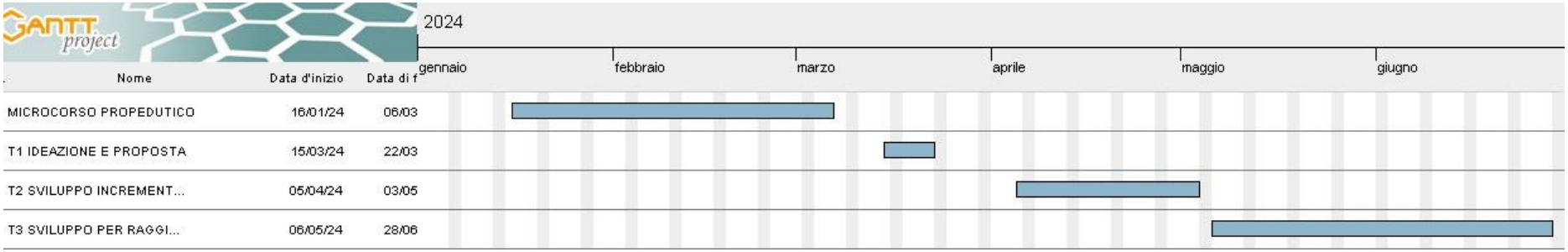
Gantt Diagram



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