

IES Dos Mares

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To the Human Resources Manager,

“IES Dos Mares” Secondary School is a public educational institution located in San Pedro del Pinatar (Murcia), a little village on the south-east of **Spain**, on the shores of the “Mar Menor” Salty Lake and the Mediterranean Sea. Secondary Education, Baccalaureate, and several **vocational qualifications** related to **Information Technologies and Computing**, Pharmacy, and Pre-Primary Education are taught at our institution.

We have been granted the **Erasmus Charter for Higher Education 2021-2027¹** (ECHE), awarded by the European Commission. Among some other actions, this European Programme allows **students mobility for traineeships in enterprises within the European Union**.

In our educational institution, this action is **aimed at students of the Higher Level Vocational Education and Training (VET) cycle in the Development of Web Applications**. This is a two-year degree (2000 hours educational program) aimed at training professionals capable of developing, implementing, and maintaining web applications. Embedded in the degree’s curriculum there is a **400 hours traineeship in a company** that can be carried out in a European country thanks to the Erasmus+ program.

We, the IT Department at IES Dos Mares, are contacting several companies that could be interested in collaborating with us as the **receiving organizations for our student’s traineeships**, and that is the reason for addressing this letter to you. We’ve been successfully sending students for traineeships to companies in the EU since 2016. These previous experiences have shown us the high degree of satisfaction obtained by the companies that have collaborated with us in the training of our students and that is why we encourage you to join this initiative, with **no cost for your company**.

In the attached documentation, you will find some information about the conditions in which the traineeships would be carried out, the terms in which your company could collaborate and the professional profile of our students. We hope that this information is complete and useful. If any clarification is needed, or to collaborate with our organization in the realization of the traineeships of our students, you can contact us at:

- Gonzalo Fernández Hernández
Erasmus+ Coordinator at IES Dos Mares
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- Luís Ramón Egío Vallejo
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Thanks in advance for your attention and collaboration.

Yours faithfully

Gonzalo Fernández Hernández
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IES Dos Mares

¹ Erasmus Charter for Higher Education 2021-2027 at <https://iesdosmares.com/centro/programas/erasmus/>

Description of the traineeship

The Higher Level Vocational Education and Training (VET) cycle in the Development of Web Applications is a two-year degree (2000 hours educational program) aimed at training professionals capable of developing, implementing, and maintaining web applications. Embedded in the degree's curriculum there is a **400 hours traineeship in a company**.

The **general objective of this traineeship** in a company is to **complement the acquisition of the professional competence obtained in the educational institution** by carrying out a set of training activities at a real workplace. This way, the student can acquire the **knowledge of the productive organization** corresponding to his professional profile and the **system of socio-labor relations of the workplace**, in order to facilitate their future professional insertion. The traineeship also allows us to **evaluate the most relevant aspects of the professional competence acquired by the students** and, in particular, accredit those aspects of the competence required in the job that cannot be verified in the educational institution due to demanding real production situations.

The **Erasmus+ program** allows this traineeship in a company to be carried out in a European country, offering legal cover for it. Specifically, the program's **KA131-HED** action key does it. A complete description of the program can be read at the Erasmus+ Programme Guide 2022².

The **most relevant aspects** to take into account for the realization of the traineeship by the companies that want to adhere to this initiative are:

- The traineeship should have a number of **working hours of 400 hours**, beginning no sooner than **March the 13th** and ending no later than **June the 16th**. The current period of the traineeship, along with the actual work schedule, **should be agreed upon among the parties before the beginning of the traineeship**, assuring that the 400 working hours are met. If the student is attending language classes during the mobility, these hours can be counted in the 400 hours of work, as long as the company certifies the 400 hours of work at the company.
- A **Learning Agreement** should be established among the parties before the beginning of the traineeship. This agreement should include a detailed **description of the program** of the traineeship, a description of the **expected learning outcomes** (knowledge, skills, and competencies to be acquired by the end of the traineeship), a description of the **monitoring plan**, and a description of the **evaluation plan**. This agreement should be signed by the supervisor at the company, the responsible person at the sending institution, and the trainee. Also, a **Traineeship Certificate** should be issued by the company within 5 weeks after the end of the traineeship.
- **The company should name a supervisor for the traineeship**. This person will be responsible for signing the Learning Agreement, supervising the trainee during the traineeship, and signing the **Traineeship Certificate at the end of the traineeship**. This supervisor should keep some contact with the sending institution in order to carry out the monitoring and the evaluation plan as specified in the Learning Agreement.
- The relationship between the student and the company is purely educational, so **the company does not have to pay any salary, nor does it imply any employment relationship**. If the company is going to provide any financial support or any contribution in kind to the trainee for the traineeship, it should be specified in the Learning Agreement.
- **The sending institution will provide medical insurance, accident insurance, and liability insurance to the trainee**. The company does not have to provide any of this. If the company is going to provide any insurance to the trainee, it should be specified in the Learning Agreement.

² Erasmus+ program guide 2022 at <https://erasmus-plus.ec.europa.eu/es/node/2699>

Student's Skills and professional profile

In order to increase the employment opportunities of our students and facilitate their insertion into the labor market, we give eminently practical orientation to teaching at our institution. To this end, our teachings are driven by realistic practical cases and small projects in which our students can apply the contents learned in each unit of the course.

In Spain, access to a Higher Level Vocational Education and Training (VET) cycle is only possible after graduating in Baccalaureate, that is, meeting the same requirements for admission to University. Therefore, all of our students are **over eighteen**. All this results in **highly mature and motivated students** that make the most of the training received, which leads to a **high professional qualification** at the end of the degree.

By the end of the degree, our students in Development of Web Applications will have acquired the **General Competence** with regard to developing, implementing, and maintaining web applications, irrespective of the model used and using specific technologies, guaranteeing secure access to data and complying with the accessibility, usability and quality criteria required by established standards³.

During the educational training period as **full-stack programmers**, our students in the Development of Web Applications have carried out numerous programming practices, covering all aspects and phases of Web development, using **multiple technologies, languages, and frameworks**:

- Our students have learned the **fundamentals of structured programming and object-oriented programming**, using **Java** as the programming language on **NetBeans** IDE. They have learned to design test cases for their programs and have used the **JUnit framework** for testing.
- Additionally, our students have learned the **fundamentals of database systems**, being able to manage the **entity/relationship model** and its conversion to the **relational model**. They can perform **complex SQL queries**, being **MariaDB/MySQL** the DBMS used in class.
- With regard to **Web Design**, our students are able to design web interfaces following the principles of **usability** and **accessibility**, using **HTML5**, **CSS3 (including flex and grid)**, and **Sass** preprocessor. To carry out the design tasks, they have practiced with the **Bootstrap** framework.
- As **frontend programmers**, our students have been programming in **JavaScript**, using **JQuery** to provide interactivity on the client-side, **AJAX (Fetch) with JSON** for communication with the server-side or external APIs, and making use of the **VUE.JS** framework.
- As **backend programmers**, our students have been programming in **Python**, they have used the **Django framework** and they have implemented services accomplishing the **API REST** specification.
- Our students can install and configure their development environment, installing and configuring **web servers (Apache and Nginx on Linux)**, **application servers**, and Database Management Systems necessary, both in a **traditional environment**, and in a container environment with **Docker**, as well as perform both the traditional **deployment to shared hosting and VPS** and **deployment to PaaS environments** and **CaaS (Kubernetes)** in a **cloud environment (AWS)**.
- Likewise, our students have made intensive use of **GIT/GitHub** as a version control system and know the fundamentals of **Continuous Integration**, **Continuous Delivery**, and **Continuous Deployment**. Our students also know the **SCRUM framework** of **AGILE methodology**.
- Our students are able to install, deploy and configure **WordPress CMS**, having developed a corporate website using the **WooCommerce** plugin for the eCommerce part of it and having been initiated in **WordPress plugins development**. They have also worked with the integration of Mashups (Maps, Facebook, Flickr, etc.) in their own websites.

³ Complete description of the course in Development of Web Applications at the Europass Diploma Supplement (in English) at <https://www.todofp.es/dam/jcr:7c3d42db-83bf-4abb-9d81-cd4f41fe1a1a/n-tsdesarrolloaplicacionesweben-pdf.pdf>