

Project title and number: ELVETE - Employer-Led Vocational Education and Training in Europe.

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LLP logo and disclaimer



Partner name and country: AICA – Associazione Italiana per l'Informatica ed il Calcolo Automatico - Italy

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Main activities/sectors: [Ducati Motor Holding S.p.A.](#) is an Italian motorcycle manufacturer founded in 1926 that has its headquarters in Bologna; Ducati Corse is part of it, which is the department that manages the competitions of the official teams of Ducati Motor Holding SpA, within Ducati Corse are designed and built race bikes and created new software for the electronic management of the motorcycle.

Size of company: The Ducati group employs over 1.000 employees, of which the majority is organic at the parent company.

Sales of motorcycles Ducati have spread worldwide and are made primarily through its subsidiaries. The main markets, in order, are: Italy, USA, France and Japan; Italy and the United States thus account for almost 50% of the total turnover.

Website: www.ducati.com

Contact person and role: - **Dr.ssa Elena Ugolini** "Fisica in Moto" Coordinator - Fondazione Ducati

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When interview took place: 06 October 2014

How did you select the company: Ducati Motor Holding S.p.A and its ["Physics in motion"](#) (Fisica in Moto Laboratory) was recommended by Mr. Claudio Gentili, Director of Confindustria for Education- (the Italian employers' federation and

chamber of commerce) during the first Elvete meeting in Rome held with AICA representative on the 8th of April 2014.

Who carried out the interview: Francesca Alfano –AICA project researcher

Information on the implementation of the selected programme/project:

Ducati Foundation offers to students two educational experience: **“Fisica in Moto Summer School”** and **“Fisica in Moto laboratory”**.

“Fisica in Moto laboratory” is an innovative educational physics laboratory (http://www.ducati.it/fisica_in_moto.do) dedicated to high school students created through the collaboration of **the Fondazione Ducati** and **the Liceo Malpighi** (Malpighi High School) in Bologna.

The purpose of the laboratory, the only one of its kind, is **to build a bridge between schools and businesses through the experience of science and technology museums.**

The laboratory **“Fisica in Moto”** addresses **14-19 years old students, it does not want to replace classroom teaching, but complements and supports, making the physics principles and concepts more familiar and easier to understand.**

With specially designed interactive equipment inside the laboratory, it is possible to do physical experiments regarding the physics principals studied at school and discover the link between these and the design of a Ducati MotoGP motorcycle.

To effectively learn, students must be passionate about what is in front of them. This is why students are invited to **use interactive equipment and experiment,** question and then discover how fascinating and tangible the formulas that they normally see printed on the pages of textbooks actually are.

To achieve this goal, the laboratory is structured in three rooms: a special Ducati workshop, an innovative scientific laboratory and the Ducati Corse room, where students challenge each other in a real Physic MotoGP. The laboratory is located inside the Ducati factory to emphasize the link between theory and practice.

The training objective of this first room is to stimulate curiosity and questions. Ducati does not want to provide preconceived answers, but rather **help students discover, through experience and observation**, explanations of various phenomena that occur.

The second room is an innovative scientific laboratory where it is possible to **learn more about the characteristics of the principles of physics** using five pieces of equipment that have been custom-designed by Ducati's engineers and highly qualified suppliers.

After concluding the experience through the three different rooms of the laboratory, **a visit to the Ducati factory** is scheduled **to give students the chance to see, first hand, how the principles of physics are transformed through the work of technicians and factory workers** into bikes that are admired on streets throughout the world.

Use of the laboratory is free for schools.

The other program, the **"Fisica in Motor Summer School"**, is supported by the **Scientific Degrees National Plan** (<http://www.progettolaureescientifiche.eu/>), **promoted by the Ministry of Education, University and Research in collaboration with Confindustria and the National Conference of Deans of the Faculty of Science and Technology.**

The summer school offers, to a group of deserving students with outstanding scientific predispositions, the opportunity to experience the **theoretical study and practical application of physics** with the motorcycle, directly within the company.

Fisica in Motor Summer School is a three days training experience during the month of July and involves **25 students**. During the school, the students are divided into groups, and participate to the following activities:

- Lectures and seminars with experts in the field of physics of the motorcycle
- Seminars university orientation
- Educational workshops and modeling
- Visit to the Museum and Factory

The students are selected across Italy, within the students enrolled in the fourth and fifth year of secondary school degree and that in the school year in progress acceded to the activities of the PLS (Scientific Degrees Plan) in the area of "Physics" and / or "Mathematics and Statistics".

During the summer school, company tutors, and teachers, of the University of Modena and Reggio Emilia, supervise the students.

Objectives of the Summer School:

- Deepening the principles of mechanics and thermodynamics with applications to the motorcycle;
- Introduce the basics of modeling in science;



- Provide tools for problem solving with examples applied to the world of the motorcycle;

- Offer opportunities to meet with teachers and personalities in the field of scientific disciplines.

Registration is free. The costs of room and board for students will be borne by the organization, except travel expenses to be borne by the participants.

At the end of the Summer School the students receive a certificate of participation.

Relationship company-training agency/VET provider and management of incoming students:

Both "Fisica in Moto Laboratory and Summer School" proposals have been drawn directly from Ducati, but have been realized thanks to the contribution of teachers of the Liceo Malpighi of Bologna and the University of Modena and Reggio Emilia, and still they participate in particular in the activities of the Summer School.

In the case of the laboratory, at the time of booking, support material is provided to the teacher, to be developed in the classroom.

Joint design/planning of training path:

Every year customer satisfaction questionnaires are submitted to teachers who bring their classes in the laboratory, in order to identify the critical aspects and strengths of the structure made available.

SWOT Analysis:

Strengths

The Fisica in Moto laboratory is **promoted by private-public agreements** (the Ministry of Education, University and Research, Confindustria, and Ducati Foundation).

Both projects are inserted as part of the National Scientific Degrees Plan, which allows for visibility throughout Italy through a widespread network of relationships.

Unique experience in its kind in Italy also because it includes a visit to a company recognized worldwide.

Gratuitousness of both the laboratory and the Summer School.

Weaknesses

As weaknesses can be seen the short duration of the Summer School.

Opportunities

The network of institutes and companies involved in the National Scientific Degrees Plan can be an opportunity for further developments.

Threats

Ducati Foundation would like to be able to host more than the actual limit that is 8000 schools per year.

We are not aware of any kind of evaluation regarding the impact of the participation in the laboratory has had on the student.

Students' Skills:

This experience can be seen as guide orientation for the student to increase the interest in scientific issues and pursuit physical studies.

Cooperation company-VET institute/training agency on other projects/initiatives:

Ducati Motor Holding SpA is involved in a brand new project called **DESI (Dual Education System Italy)** together with **Automobili Lamborghini SpA** and the **technical institute “Aldini Valeriani Sirani” of Bologna**, launched in the years 2014/2015 and 2015/2016.

DESI is a two-year training program, made in agreement with the Region of Emilia Romagna and the Ministry of Education, dedicated to 48 young candidates to be held by alternating periods of training in two technical institutes, Aldini Valeriani and Belluzzi-Fioravanti, and periods of training on the job at the Training Center of two large companies such as Ducati Motor Holding SpA and Automobili Lamborghini SpA.

Key messages and recommendations:

- There has been a close cooperation between companies, colleges and university to create the laboratory and the teaching materials
- Fisica in Moto laboratory is an opportunity for every class of student that is interested in experience science and technology museums
- Fisica in Moto is part of the Scientific Degree Plan.