

Engineering Abroad: Getting the Most out of the Experience

A Study Abroad Experience in France

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Introduction

Studying abroad provides an opportunity for a student to experience both a new school with new teaching styles, as well as a different culture and language. As companies become more and more globalized, an experience abroad serves to better prepare students for today's growing multicultural workplace.

A Different Perspective

French schooling gives American students a different perspective on education.

Homework vs Tests

- Tests, projects, and labs are used to measure understanding, instead of homework.
- Self-motivation is needed to learn the material since homework is not used to cover the material.

Time Off From School

- The school calendar included two 2-week vacations during the spring which allowed ample time to rest in the middle of the semester.
- Vacation also allowed for travel to other countries, which allowed students to experience other cultures.

Hands-On Approach

Students studying at ENSEA (Ecole Nationale Supérieure de l'Electronique et de ses Applications) are given the opportunity to work with lab equipment that is not normally integrated into classes at the University at Buffalo. Two classes in which we were able to take full advantage of this hands-on experience were energy systems and communication systems. These classes had a lab component which was not present in the UB counterparts. The labs applied the knowledge that was taught in the classrooms, giving a practical look at the theory that was covered.

Energy Systems

The Energy Systems laboratory was equipped with multiple DC/AC generators and motors, as well as a bench top station with access to 480 V. The labs revolved around the characterization of a transformer and the application of theory in order to construct a theoretical model of it. Figure 1 presented below is one such characterization. These experiments served to reinforce and expand on the theory taught in class.

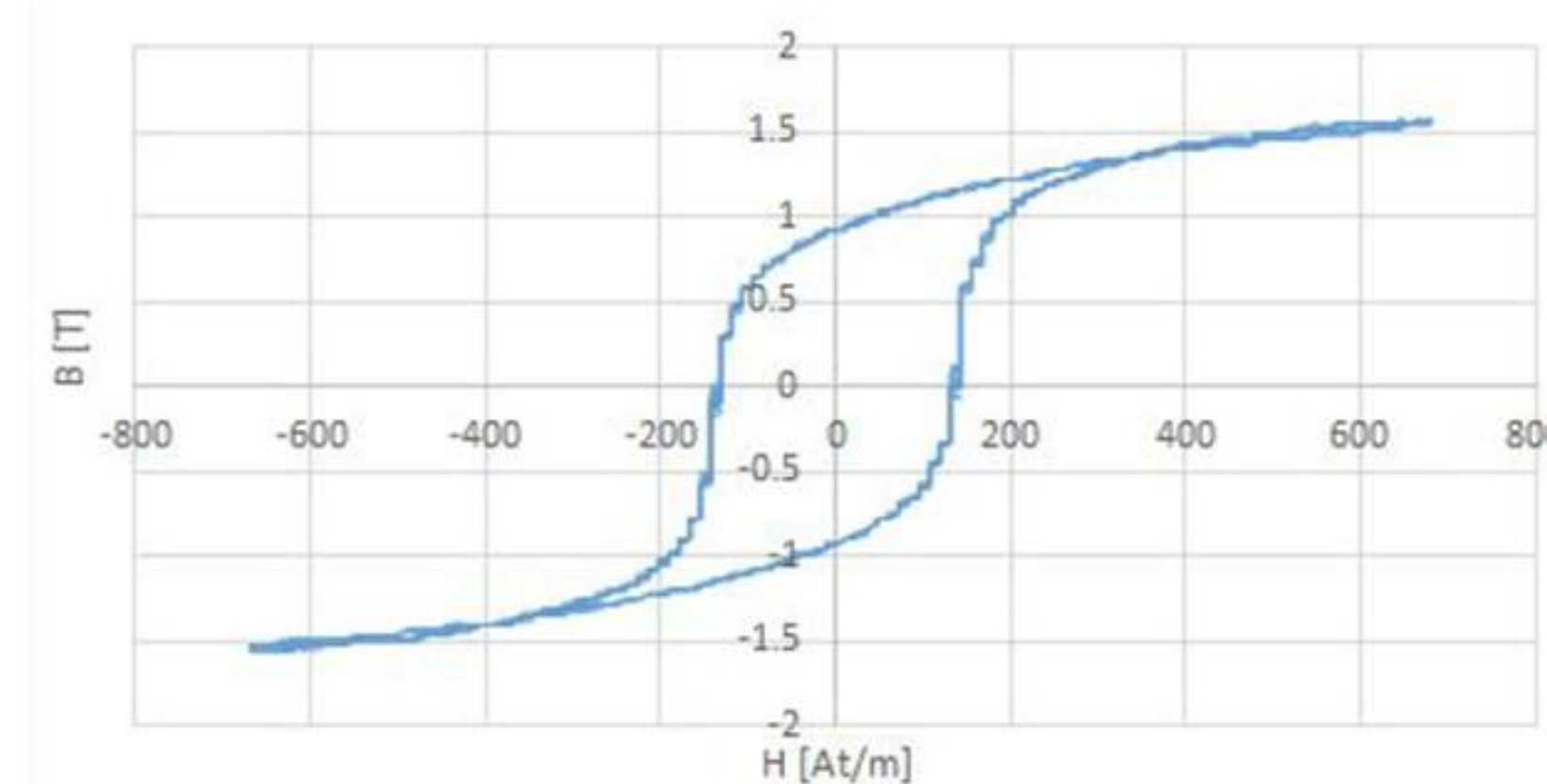


Figure 1: Hysteresis Curve

Communication Systems

The communication systems class put a big emphasize on the theory. However, the laboratory was very practical in its presentation of the material. Figure 2 below shows one of the labs in which an FM receiver was built from scratch and then used to tune to and listen to local FM radio. The project demonstrated an application of theory from class.

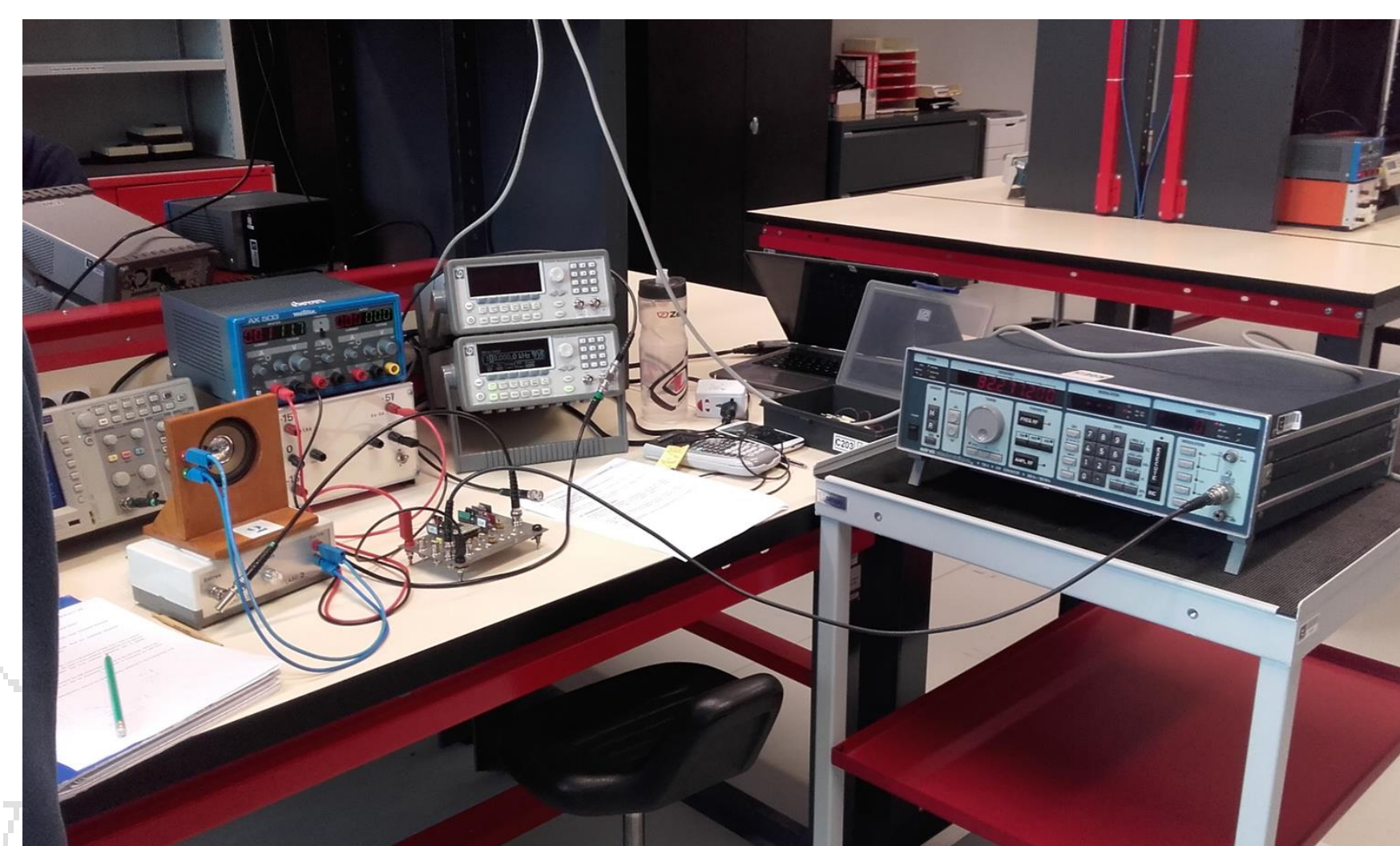


Figure 2: FM Receiver

Making Connections

Our time abroad allowed us to get acquainted with France and make new friends along the way. We had the privilege of meeting wonderful professors and fellow students from ENSEA who were more than willing to show us around and help us get settled in. We also had the opportunity to meet people from countries outside of France as well on our travels throughout Europe.



Figure 3: The UB, University of Michigan, University of Pittsburgh, and ENSEA students on top of the Arc de Triomphe.

Travelling Abroad

With the time off from school, we had the chance to travel to many different countries outside of France. Cities that we travelled to included Bern, Vienna, Venice, Rome, Florence, Warsaw, Prague, and London.



Figure 4: (From left to right) Andrew Wilkinson, Michael Szymkowski, Tomasz Pietruszka, and Kevin McMahon standing near Big Ben in London, England

Life Abroad

Living in another country is much different than living in the United States. The etiquette, language, and culture of another country takes some getting used to. Dealing with different situations abroad helps students develop skills that will help them in the workplace.

CULTURE AND ETIQUETTE

- People in different countries have a different idea of what is or is not acceptable to them. It is important to keep this difference in mind. Students must have the ability to adapt their own behavior in these situations.

LANGUAGE

- Going to a country without knowing the language can be a struggle. The experience teaches students a lot about how to better communicate with others.

Thinking On Your Feet

The ability to adapt to uncertain situations is something that cannot be taught, but has to be experienced. While abroad, there are many instances in which you have to make split-second decisions. There are many logistics behind planning on what countries to go to and what to see in them. Even then, things don't always go your way (rain, overnight trains, strikes, etc.). When lost, it is important to have the courage to ask someone for help (even if it is in another language), remain calm, and persevere.

Conclusion

There are many reasons students should study abroad. Students need to recognize how valuable a study abroad program is, not only for the opportunity to travel and see the world, but also to build and improve upon personal and academic skills that will be vital for students' success in today's world.