DEAR PARTNERS,

Greetings from São Bernardo do Campo!

We bring you some updates from our university and an interview with an international student about the routine at FEI, including the challenges of studying abroad.

We appreciate our partnership and we are looking forward to working with you again in the upcoming year.

Merry Christmas and a Happy New Year!

EXPLORE OUR GRADUATE PROGRAMS

FEI has graduate programs with innovative proposals, that promote integration with fundamental areas of the industry. The objective of the programs is to train masters and doctors who not only develop research and scientific knowledge in the academic environment, but also in the companies and industries in which they work or wish to work.

The programs follow the trend in developed countries, where aligning master's and doctorate theory with professional practice has become a great alternative for those who wish to expand their knowledge, based on research, and use it at work.

INOVAFEI

INOVAFEI is an institutional event, which recognizes the most innovative degree final project/work from undergraduate students in all courses: Administration, Computer Science and Engineering. Traditionally, INOVAFEI is organised every semester and is divided into three stages: the first is the exhibition of all FEI Degree Final Projects, in the second part there is a virtual evaluation and in-person expositions during a week, finally, the awards ceremony.

This semester the event was held on December 13th, 15th and 19th with fifty two (52) innovative projects presented, including: three (3) Automation and Control Engineering, five (5) Automotive Mechanical Engineering, six (6) Chemical Engineering, one (1) Civil Engineering, six (6) Computer Science, five (5) Electrical Engineering, six (6) Materials Engineering, thirteen (13) Mechanical Engineering, six (6) Production engineering and one (1) Robotics Engineering.

The event is open to the community, allowing companies and professionals to interact with students and learn about the projects developed. Discovery more about INOVAFEI and all projects since June 2022 at the website: https://fei.edu.br/inovafei/index.html

UNDERGRADUATE COURSES: RESULTS OF NATIONAL EVALUATIONS AND RANKINGS

ENADE 2022

The results of ENADE (National Student Performance Examination) were released on October 31st. Only 5.5% of higher education courses in Brazil achieved grade 5 in the assessment (considered the highest grade), and FEI Administration course is one of them. In this edition were evaluated courses in 26 areas, such as Administration, Accounting and Journalism. Regarding FEI, just the Administration course participated in the assessment.

RUF FOLHA

The RUF Folha 2023 (Folha University Ranking), released on November 13th, evaluated more than 2,200 higher education institutions. Historically, the ranking carries out an assessment of all active universities in Brazil, considering five aspects (research, teaching, market, internationalization and innovation) from national and international data and two surveys.

Find below the performance of FEI courses ranked by RUF Folha:

<table>
<thead>
<tr>
<th>Course</th>
<th>Brazil (Private Institutions)</th>
<th>State of São Paulo (Private Institutions)</th>
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<tbody>
<tr>
<td>Electrical Engineering</td>
<td>1st</td>
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<td>Mechanical Engineering</td>
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<td>Production Engineering</td>
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<td>1st</td>
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<td>Automation and Control Engineering</td>
<td>3rd</td>
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<tr>
<td>Chemical Engineering</td>
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<tr>
<td>Civil Engineering</td>
<td>Among top 20</td>
<td>Among top 10</td>
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<tr>
<td>Computer Science</td>
<td>Among top 20</td>
<td>Among top 10</td>
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<td>Administration</td>
<td>Among top 50</td>
<td>Among top 20</td>
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</table>
FEI PROFESSOR AND STUDENTS HAVE BEEN AWARDED BY AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

Professor Ph.D. Ricardo Belchior Torres, Coordinator for the Graduate Program (Master Degree) in Chemical Engineering at FEI, was honored Advisor of the Year by AIChE (American Institute of Chemical Engineers). Historically, this is the first time that a Brazilian professor has received the award and the second time that a Chemical Engineering professor from a non-American educational institution has been named to the honor.

The ceremony took place during the 2023 AIChE Annual Student Conference, between November 3rd and 6th, in Orlando, United States. In addition to being coordinator for the Graduate Program (Master Degree) in Chemical Engineering, professor Ricardo Belchior Torres also coordinates FEI’s student chapter: AIChE FEI. The professor traveled to the United States with eleven members of the Institution's Chapter. AIChE FEI was Brazil's representative at the 25th Chem-E-Car Competition.

AIChE FEI was also awarded by the American Institute of Chemical Engineers with the Outstanding Student Chapter Award 2022-2023 – one of the most important international award in the student category. “This award is the result of a lot of work from each of the Chapter members. The activities carried out and the AIChE FEI projects led to this achievement. We are already a reference in Latin America and we will continue working to place our Chapter as a global reference”, highlighted professor Ricardo Belchior Torres.

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“It's great, so go for it!! The people are super nice, so don't hesitate to go talk to them. If you need help, there is always someone who will be there for you”.

Describe your life as an international student at FEI:

As an international student, I obviously attend classes. Besides, I do evening classes here, which does not exist in my university in France so at first it was not easy. Then, at the beginning, there were three other French people with me, and we were going to spend weekends here and there to discover a little bit of the country, the culture, meet new people. Now, I'm more interested in meeting people in college and building new friendships.

What are the main challenges you encountered in Brazil and at FEI?

I think the biggest challenge is the language difference. So, to follow the classes was a bit complicated at first, but it didn't take me very long to understand. Even if talking is more complicated sometimes.

What advice can you give to international students who are interested in studying at FEI?

It's great, so go for it!! The people are super nice so don't hesitate to go talk to them. If you need help, there is always someone who will be there for you. I would say that finding shared apartments with Brazilians allows you to integrate quickly as a student. I think that speaking Portuguese helps to meet people, but you will learn to speak very quickly so do not worry about that. And most importantly, enjoy!!

LIFE AS AN INTERNATIONAL STUDENT AT FEI

Since February, Abigahel Content, an engineering student from the Institut Catholique d'Arts et Métiers - Icam, has been at the FEI University participating in the Double Degree Program.

At Toulouse Campus, Abigahel has always been involved in various activities, including welcoming Erasmus students and helping with their integration into the university. Another prominent activity in the student's curriculum was the church project: 'As part of the renovation of the Toulouse Campus, a project team was created to work on the site's future chapel. Our objective was to define a body of specifications and carry out the work of assembling the space’, she explains.

The choice to leave family and friends behind and move to a different country is one of the biggest decisions that international students need to make. Abigahel told us about her experience and how she is dealing with the challenges.

Why did you choose Brazil as your exchange destination?

I am here in Brazil thanks to my school. It allows us (students) to go abroad to do part of our school studies thanks to partnerships between universities. I've already traveled for two years all over the American continent without going to Brazil. When it was time to choose my destination, I remembered the atmosphere and the welcome we had been able to receive with my family. I wanted to get that back.

How did you find out about FEI? What are the reasons to choose FEI?

Honestly, I didn't know FEI before coming here, but I remember calling graduates from my school who did the exchange a few years ago to get some information and they liked it a lot, so I didn't really hesitate to come.
FEI PROFESSOR PARTICIPATES IN INTERNATIONAL RESEARCH PROJECT

Research in the area of Applied Physics in Engineering has played a crucial role in the development of advanced technologies, especially in the fields of Radiation Physics, Atomic and Nuclear Physics, Electrical Engineering, Automation and Control, and Materials. At the FEI University, professors and students are dedicated to studies from aerospace and defense to reactors and nuclear medicine, as well as challenging environments such as particle accelerators.

FEI’s participation in the international NUMEN (NUclear Matrix Elements for Neutrinoless double beta decay) project, involving multidisciplinary collaborations between physicists and engineers from global institutions, stands out as a significant initiative. In this research, Double Charge Exchange (DCE) nuclear reactions are investigated in the LNS/INFN (Laboratori Nazionali del Sud, Catania, Italy). This project has important repercussions on neutrino physics and possible modifications and extensions of the Standard Model of elementary particles.

The collaboration allows the transfer of knowledge and technology, with an emphasis on training in the areas of instrumentation, detectors, effects of ionizing radiation on materials and advanced electronics, in addition to basic physics studies. Professor Ph.D. Marcilei Aparecida Guazzelli from the Department of Physics participated in two recently experiments: in Orsay (France) and in Legnano (Italy).

The experiment in Orsay lasted one week and was conducted in the Tandem accelerator at the ALTO Laboratory (Linear and Tandem Accelerator of Orsay) at the Laboratoire de Physique des 2 infinis Irène Joliot-Curie. The infrastructure was coordinated by the NUMEN project in Catania, Italy, and was proposed by researcher José Roberto Brandão, from the Physics Institute of the University of São Paulo (USP). It also included the participation of researchers from Brazil, France, Italy and Greece.

“My participation in the experiment was focused on studying the development of the Gamma Ray Spectrometer, known as GNUMEN, which will soon be used in the analysis of double charge exchange nuclear reactions. To carry out this Basic Physics research, it was essential to develop specialized instrumentation, including radiation and particle detectors, advanced materials capable of tolerating the effects of radiation, in addition to the improvement of advanced and resistant electronics”, explains the professor.

Regarding the experiment in Legnano, the professor emphasizes that the type of field-effect transistor Metal-Oxide-Semiconductor Field Effect Transistors (MOSFETs) are susceptible to suffering destructive radiation effects, such as Single-Event Burnout (SEB) and Single-Event Gate-Rupture (SEGR), when operating in severe radiation environments, such as outer space. To assess the risk of these device failure modes, scientists and engineers have been testing these transistors in ground-level facilities, preferably using heavy ion beams delivered by particle accelerators.

“The objective, in this specific case, is to investigate by experiment the effects of destructive radiation induced by heavy ions in DMOS (Doublediffused Metal-Oxide-Semiconductor) and UMOS power transistors of similar classification. The first objective is to compare the susceptibility of these different transistor technologies to the particle-induced destructive failure mode, SEB. Secondly, based on the experimental data, the accuracy of the currently available predictive models for the worst-case response will be evaluated”, highlighted professor Guazzelli.

The experiment was approved and carried out between December 2nd and 8th, at the TANDEM ACCELERATOR of the Legnaro National Laboratories in Padova, Italy. It included the collaboration of Brazilian and Italian students and researchers. Also, these experiments are related to one of FEI’s area of research, involving undergraduate students, master’s and doctoral projects.

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