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Integration Week 2023

Portugal

European Master Course in Advanced Structural Analysis and Design using Composite Materials

November 20 to 24, 2023

Universidade do Minho
Universitat de Girona
Università degli Studi di Napoli Federico II
INSA
Université Toulouse III Paul Sabatier

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CONTENT

GUIMARÃES

ORGANIZING COMMITTEE

José Sena Cruz, **UMinho**
Marco Di Ludovico, **UNINA**
Cristina Barris, **UdG**
Bruno Castanié, **INSA/UT3**
Luís Correia, **UMinho**
Rita Oliveira, **UMinho**
Valeria Peluso, **UNINA**

VENUE

The integration week will be hosted at the University of Minho, with activities taking place at two different locations: (1) Azurém Campus and (2) Couros Campus. All activities will be held at Azurém Campus, except for the afternoon of November 20th when welcome activities will be conducted at Couros Campus.

(1) Azurém Campus

The Azurém Campus is situated in the city of Guimarães, close to the historic city center. It houses the School of Engineering, along with most of its programs, as well as the School of Architecture and select programs from the School of Sciences and the Institute of Social Sciences. The Azurém Campus also offers a range of amenities, including a main library, several specialized libraries, a cafeteria, a grill restaurant, three bars, a medical center, a sports complex, and reprographic services.

Azurém Campus is located in the historic city of Guimarães, Portugal, in the Braga District. This city, often referred to as the "Cidade Berço" (Cradle City), holds a crucial place in Portuguese history, with its historic center recognized as a UNESCO World Heritage Site. Guimarães successfully combines its rich heritage and preservation of historical treasures with the dynamism and entrepreneurship of a modern city. The Battle of São Mamede, fought on its outskirts in 1128, played a pivotal role in Portugal's formation. Explore this captivating city and its history during the integration week.

Campus Address:
Campus de Azurém, Alameda da Universidade, 4800 - 058 Guimarães, Portugal
GPS Coordinates: [latitude: 41° 27' 6.85'' N - longitude: 8° 17' 33.19'' W]
View on Map


Azurem campus. Fotos by + *Guimarães*

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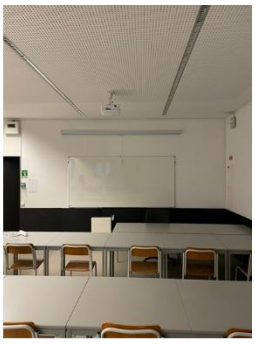
(2) Couros Campus

The Couros Campus is home to the Advanced Postgraduate Training Center, accommodating master's and doctoral students, as well as the undergraduate program in Theater. It also houses the UNU e-gov Operational Unit and the Institute of Design, which hosts the Product Design undergraduate program, with plans for additional specialization courses in this field. The Guimarães Science Center is nearing completion, and the restoration of the old Jordão Theater and Avenida Garage complex provides space for university projects in the performing and visual arts. This is the campus of creativity, open to interaction between UMinho and society.
This is the campus where FRP++ students have their coursework.





Couros campus. Fotos from *'Jornal online da UMinho'.*

Couros, a region in Guimarães, has earned its place on the UNESCO World Heritage List as an extension of the Historic Center of Guimarães. The recognition came after years of effort by the municipality to demonstrate the historical and cultural significance of this area. It's worth noting that Guimarães' Historic Center had already been a UNESCO World Heritage Site since December 13, 2001.

This region was once a bustling hub of leather processing and manufacturing in the 19th and early 20th centuries, marked by traditional techniques and manual labor. Today, it retains traces of that era, including open-air drying facilities, dyeing tanks, and repurposed factory buildings like the Youth Hostel, the Institute of Design, and the Guimarães Science Center. The significance of Couros extends beyond its local importance; it's a treasure that adds to Portugal's 17 UNESCO World Heritage Sites.

Campus Address:
Campus de Couros, Rua da Ramada, n.º 52 a 68, 4810 - 445 Guimarães, Portugal
GPS Coordinates: [latitude: 41° 26' 24'' N - longitude: 8° 17' 27.9'' W]
View on Map


Historic 'Ilha do Sabão' - once housing leather manufacturing workers, now a charming tourist accommodation owned by a local leather entrepreneur family (left) and a Glimpse into Leather Tanning Artistry in Couros (right) by *National Geographic*

GETTING TO THE UNIVERSITY OF MINHO

The University of Minho, our event venue, is conveniently accessible from various transportation hubs. Whether you're arriving from the **Francisco Sá Carneiro International Airport** or other parts of Portugal, here's how you can reach the University of Minho with ease:

By bus

For a convenient bus option, you can take a bus to Guimarães from Francisco Sá Carneiro International Airport with GET Bus service. The journey takes approximately 50 minutes, and their website (https://www.getbus.eu/en/) provides detailed information.

By train

Guimarães is connected to Portugal's modern train network. There's an all-stop service between Porto and Guimarães, taking around 60 minutes and costing approximately 3 euros. You can catch a train from São Bento or Campanhã Stations in Porto. For train ticket details, schedules, and other information, visit the CP website (https://www.cp.pt/passageiros/en).

The airport is well-connected to Porto's central railway station, Campanhã, via Metro Line E (violet line) of "Metro do Porto" (https://en.metrodoporto.pt/). The journey takes approximately 25 minutes, with trains departing every 20 minutes. Tickets can be purchased from the automatic ticket machines at the Metro station or at the Airport information desk. Remember to validate your ticket by scanning it at the yellow machines in the stations. The Airport Station is conveniently located just in front of the arrivals area at Francisco Sá Carneiro Airport, connected to the two existing roadways via an underground passage.

By taxi

If you prefer taking a taxi from Porto Airport to Guimarães, the journey takes approximately 45 minutes, and the fare is around 60€.

By motorway

Guimarães is easily accessible by motorway. From Porto Airport, you can reach Guimarães in about 40 minutes by taking the A3 and A7 motorways. If you're coming from Braga, it's only a 15-minute drive on the A11 motorway. Other destinations, like Vigo, Spain (90 minutes), and Lisbon (3 hours to the south), are also accessible via motorways A11, A3, and A1.

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Getting to Your Accommodation in Guimarães

Upon your arrival in Guimarães, choosing a taxi or rideshare service like Uber for the final leg of your journey is a convenient option. Whether you're arriving at the Railway Station or the Bus Station, you can expect the taxi or Uber fare to the University of Minho or the nearby Halls of Residence to be approximately 5€.

However, it's worth noting that your accommodation and the University of Minho are within walking distance, offering a pleasant and cost-effective alternative. The Azurém Campus, for example, is a short 22-minute walk from the Bus Station, making it easily accessible on foot.

THE HOTEL

We are excited to welcome you to Guimarães for your integration week, and your accommodation will be at the **B&B HOTEL Guimarães**, which is conveniently located just a 4-minute walk from Azurém Campus.

B&B HOTEL Guimarães is ideally situated, offering a 15-minute walk to Guimarães Castle and a quick 20-minute stroll to the historic city center. If you prefer to drive, you can reach the city center in just 5 minutes. The hotel is also a short 20-minute walk from the city's bus station, making it easy to explore the city.

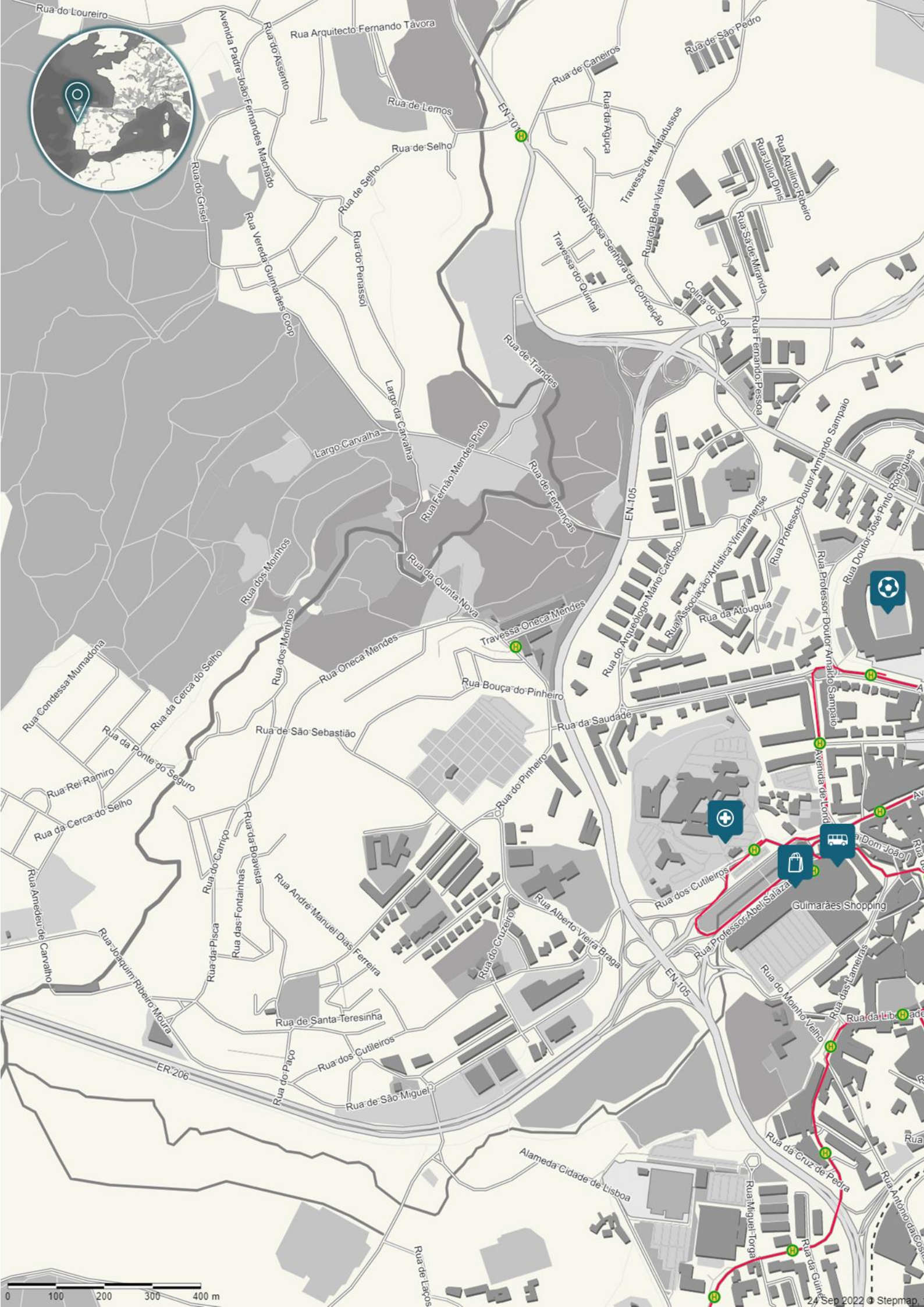
Hotel Address:
Rua Rómulo de Carvalho, n.º 340, 4800 - 019 Guimarães, Portugal
GPS Coordinates: [latitude: 41° 27' 8.33'' N - longitude: 8° 17' 43.47'' W]
View on Map

Fotos by *Tripadvisor*

OVERALL PROGRAMME

Period	DAY 1 20/11	DAY 2 21/11	DAY 3 22/11	DAY 4 23/11	DAY 5 24/11
Morning	Traveling to reach Guimarães – Check-in at the hotel	Assignment 1 of Unit FRP++6 – Final steps	Visit to the facilities of *UMINHO*	Soft skills presentation	Traveling to return to the hosting Institution of the Course work
			NDT Experiments	Keynote Lecture II	
		Keynote Lecture I		Closing Ceremony	
Afternoon		Assignment 1 of Unit FRP++6 – Wrap-up	Technical in field visit to the Company ENERCON	Cultural guided visit to downtown	
	Wellcome Reception	Assignment 1 of Unit FRP++6 – Presentation			

Note: *the lunches from 21/11 to 23/11, the dinner on 22/11 and all the coffee-breaks will be supported by the EMJM FRP++.*


Rua do Loureiro
Avenida Padre João Fernandes Machado
Rua do Assento
Rua Arquitecto Fernando Távora
Rua de Lemos
EN-101
Rua de Selho
Rua de Selho
Rua do Grisel
Rua Vereda Guimarães Coop
Rua do Penassol
Rua de Caneiros
Rua da Aguça
Rua de São Pedro
Travessa de Matadussos
Rua da Bela Vista
Rua Nossa Senhora da Conceição
Travessa do Quintal
Rua Júlio Dinis
Rua Aquilino Ribeiro
Rua Sá de Miranda
Colina do Sol
Rua Fernando Pessoa
Rua de Trandes
Largo da Carvalha
Largo Carvalha
Rua Fernão Mendes Pinto
Rua de Fervenças
EN-105
Rua Professor Doutor Armando Sampaio
Rua Doutor José Pinto Rodrigues
Rua Professor Doutor Arnaldo Sampaio
Rua Associação Artística Vimaranense
Rua do Arqueólogo Mário Cardoso
Rua da Atouguia
Rua dos Moinhos
Rua da Quinta Nova
Travessa Oneca Mendes
Rua Oneca Mendes
Rua Bouça do Pinheiro
Rua da Saudade
Rua de São Sebastião
Rua do Pinheiro
Rua Condessa Mumadona
Rua da Cerca do Selho
Rua da Ponte do Seguro
Rua Rei Ramiro
Rua da Cerca do Selho
Rua do Carriço
Rua da Boavista
Rua das Fontainhas
Rua André Manuel Dias Ferreira
Rua Alberto Vieira Braga
Rua do Cruzeiro
Rua dos Cutileiros
Rua Professor Abel Salazar
Guimarães Shopping
Avenida de Londres
Rua Amedeu de Carvalho
Rua Joaquim Ribeiro Moura
Rua da Pisca
Rua das Lameiras
Rua do Moinho Velho
Rua de Santa Teresinha
Rua dos Cutileiros
ER-206
Rua do Paço
Rua de São Miguel
Alameda Cidade de Lisboa
Rua da Cruz de Pedra
Rua Miguel Torga
Rua de Laços
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24 Sep 2022 © Stepmap

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DETAILED PROGRAMME

DAY 1	**20TH OF NOVEMBER 2023**
	Arrival at Guimarães + chech in at the hotel
18h30 – 19h00	*Welcome@Couros*
19h00 – 20h30	*Ice breaker (with light meal)*
DAY 2	**21ST OF NOVEMBER 2023**
08h30 – 10h30	*Assignment 1 of FRP++6: Final steps*
10h30 – 11h00	*Coffee-break*
11h00 – 12h00	*Keynote Lecture 1: Albertino Arteiro (University of Porto)*
12h00 – 13h30	*Lunch*
13h30 – 15h30	*Assignment 1 of FRP++6: Wrap-up*
15h30 – 16h00	*Coffee-break*
16h00 – 18h30	*Assignment 1 of FRP++6: Oral Presentation*
DAY 3	**22ND OF NOVEMBER 2023**
09h00 – 12h00	*Visit to the UMinho Structural Labs and NDT experiments*
12h00 – 13h00	*Lunch*
13h00 – 14h30	*Trip Guimarães - Viana do Castelo*
14h30 – 17h00	*Visit to ENERCON*
17h00 – 18h30	*Trip Viana do Castelo - Guimarães*
19h30 – 21h30	*Dinner*
DAY 4	**23RD OF NOVEMBER 2023**
09h00 – 11h00	*Soft skills*
11h00 – 11h30	*Coffee-break*
11h30 – 12h30	*Keynote Lecture 2: Filipe Dourado (S&P Clever reinforcement Ibérica)*
12h30 – 13h00	*Closing Ceremony*
13h00 – 14h30	*Lunch*
14h30 – 17h30	*Visit to the downtown*
DAY 5	**24TH OF NOVEMBER 2023**
	Traveling to return to the hosting Institution of the Course work

VISIT TO ENERCON GMBH

On November 22, 2023, you'll have the unique opportunity to visit Enercon's facilities in Viana do Castelo. **Enercon Gmbh** is a leading name in the renewable energy sector, and their Viana do Castelo site is primarily responsible for the manufacturing of wind turbine blades using FRP composites.

The visit is scheduled from 14:30 to 17:00 and promises to be an insightful experience. Enercon's commitment to sustainable energy solutions and their focus on wind energy innovations align with the global shift towards cleaner and more efficient power generation.

Source: https://afaplan.com/projecto?id=208

This visit offers a valuable opportunity to witness firsthand the manufacturing processes and innovations driving the wind energy sector's resurgence. It's a chance to learn more about the challenges and opportunities facing the European wind energy industry, particularly in the face of international competition and the need for fair policies that support domestic production.

As you explore Enercon's operations in Viana do Castelo, you'll gain a deeper understanding of the critical role that "made in Europe" manufacturing plays in maintaining energy independence and creating sustainable solutions for the future.

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KEYNOTE LECTURES

Albertino Arteiro
Faculty of Engineering of the University of Porto
Portugal

Albertino Arteiro is currently Associate Professor at the Materials and Technological Processes Group of the Department of Mechanical Engineering (DEMec) of the Faculty of Engineering – University of Porto.
He received a Master's Degree in Mechanical Engineering - Specialisation in Structural Engineering and Machine Design - from the Faculty of Engineering - University of Porto in 2012, and a Doctoral Degree in Mechanical Engineering (cum Laude) from the same University in 2016, during which he was a Visiting Student Researcher at the Department of Aeronautics and Astronautics of Stanford University. He was awarded the Best PhD Thesis by the Portuguese Association of Theoretical, Applied and Computational Mechanics (APMTAC).
He was appointed Assistant Professor in 2019 and Associate Professor in 2023. He was awarded with the Young Researcher Award Prof. João Martins in Applied and Computational Mechanics 2021 by APMTAC, and he is currently a member of the ECCOMAS (European Community on Computational Methods in Applied Sciences) Young Investigators Committee.
His research interests include characterisation, design, analysis and manufacturing of new classes of composite systems and composite materials modelling at different length-scales in support of virtual testing and certification by analysis.

Filipe Dourado
S&P Clever reinforcement Ibérica - Simpson Strong-tie
Portugal

Filipe Dourado is a seasoned professional in the field of structural engineering and materials innovation. He earned a Master's Degree in Structures Design from the Engineering Institute of Lisbon (I.S.E.L.) in 1994. Throughout his career, Filipe has made significant contributions to the construction industry.
His journey includes pivotal roles such as managing projects related to demolitions and material recycling for the World Expo 98 and spearheading concrete structure repair and reinforcement efforts. His leadership extends to corporate management, where he served as the General Manager of Repair and Reinforcement Products for Portugal and Spain at Degussa.
Since 2005, Filipe Dourado has been at the helm of S&P Clever Reinforcement Ibérica Lda as Chief Executive Officer, overseeing operations in Portugal, Brazil, Spain, and Portuguese-speaking African countries. His commitment to the development of innovative Pultrusion Composite production in Europe has set new industry standards. Additionally, Filipe actively participates in advancing Fiber Reinforced Polymer (FRP) technologies, sharing his expertise as part of the FRP++ program, where he contributes to drafting course materials and supports emerging talents in their job-seeking endeavors. With his deep experience and impactful contributions, Filipe Dourado remains a respected figure in the construction materials industry and FRP technology domain.

SEMINAR: SOFT SKILLS

Rita Oliveira
University of Minho
Portugal

Rita Oliveira is an experienced professional in human resources with a focus on talent acquisition and development. In her seminar on soft skills, she will provide valuable insights and practical tips to help students create an effective CV that will stand out to potential employers.
The seminar will start with an overview of the purpose of a CV and what employers are looking for when reviewing CVs. Rita will then discuss the different sections of a CV and how to structure them effectively, highlighting the importance of tailoring the CV to the specific job and employer. She will provide examples of different types of CVs, including chronological, functional, and combination formats, and offer guidance on when each type might be most appropriate.
Rita will also discuss how to highlight relevant skills and accomplishments in the CV, including the use of action verbs and quantifiable results. She will provide guidance on how to address gaps in employment or changes in career direction, and how to handle sensitive information such as health issues or age.
Throughout the seminar, participants will have the opportunity to ask questions and receive feedback on their own CVs. By the end of the seminar, participants will have a better understanding of how to create a compelling CV that will make them stand out in the competitive job market.

NDT EXPERIMENTS

Luís Correia
University of Minho
Portugal

Luís Correia, a postdoctoral researcher at ISISE (Institute of Research in Structural and Construction Engineering), holds a PhD in Civil Engineering from the University of Minho (2018). His research specialization focuses on the durability and long-term behavior of reinforced concrete members strengthened with FRP (Fiber-Reinforced Polymer) materials. Luís is actively engaged in various aspects of civil engineering, including experimental design, meticulous execution, and detailed analysis.
During your visit to the University of Minho, you will have the opportunity to witness a series of Non-Destructive Testing (NDT) demonstrations at the LEST (Structures Lab). These demonstrations are a crucial part of the Master's in Composites program and provide students with practical insights into the application of NDT techniques, particularly in the context of composites and civil engineering. Luís Correia, with his experience and knowledge, will be conducting these NDT tests, offering valuable hands-on experience to enhance your understanding of this vital aspect of civil engineering.

ASSIGNMENT 1 OF UNIT FRP++6

November 21st will be dedicated to Assignment 1 of Unit FRP++6. Therefore, during the morning the groups will meet to conclude the assignment and prepare the presentation. In the afternoon each group will have 20 minutes of presentation following by 10 minutes of discussion.

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FRP++

Advanced structural analysis and
design using composite materials