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Certificate Course - Digitalizing Mobility

Summary

- ✓ 2nd Edition Course dates: November 05 – 29, 2024
- ✓ Course duration: 3+1 week (40 hours blended lessons, 35 hours self-study work)
- ✓ Language: English
- ✓ Location: TU Berlin – EUREF-Campus, Berlin
- ✓ Certification: TU Berlin Certificate of Professional Education (3 ECTS)
- ✓ Assessed and Graded
- ✓ Format: Blended learning
- ✓ Lecturers: Gabriele Grea, Dr. Massimo Moraglio, other experts/guest speakers (tba)
- ✓ Price: 2000 € incl VAT; 1071 € incl VAT for NGO, TU Berlin alumni, public authorities etc.
(* see target group)

Introduction

The Certificate Course Digitalizing Mobility is designed for those seeking innovative solutions to the challenges of digitalization in the transportation sector.

The course places a strong emphasis on presenting the main trends of digitalization, the similarities of its application in the different fields of transport, and the latest developments, as digital twins and AI. Through close exchange with the lecturers and expert guest speakers, participants will gain specialist's knowledge, whilst also working intensively on their own, practical project all along the course.

In short, this course is the key to advancing your professional development and shaping an innovative future in the transportation sector. Be ready to gain new insights and to unleash your creative abilities into the digital transformation of mobility!



Learning goals

After successful completion of the course, participants will be able to:

- ✓ Outline real-world cases, gleaned from European managers and policy makers
- ✓ Analyze and use current and future trends in ICT and mobility in different sub-fields
- ✓ Evaluate application fields, potentialities (and bottlenecks) of digitalization
- ✓ Formulate successful, future-oriented thinking about digitalization of the transport industry
- ✓ Design and present an individual project in the course

Content

The course will tackle current themes through the lens of business, tech, policy and a user's perspective. The course includes a mix of lectures, hands-on exercises, so to provide participants with a holistic learning experience. Participants are encouraged to actively engage in discussions and apply learned concepts to real-world scenarios. Methodologically, the course will be developed around an individual case-study for each participant, with a final presentation in the last day. This will empower the participants to develop their own idea, seeking how to manage and organize the digitalization in mobility though a problem-based learning environment.

After an overview about the role of ICT in transport (looking at digitalization in the context of 'business as usual' and disruptive innovations), the course will dive into the following key thematic points:

- ✓ Vehicle, infra and railway management with IT-driven predictive maintenance
- ✓ Digital twin and AI in transport systems
- ✓ MaaS Sharing/ flexible transport
- ✓ CCAM and city logistics



Assessment

Assessment task title	Individual Project on Digitalization in Mobility
Assessment rationale	<p>The project assessment will let the participants to develop their own project in the field of digitalisation in mobility aligning it with the inputs gained during the course, thus developing critical thinking, understanding the trends and learning from other transport sub-fields experience.</p> <p>The participants need also to design and appraise solutions and be able to communicate and defend their choice.</p>
Assessment pre-requisites	<p>As background for the work and development for the personal project, the participants need to build up their own knowledge (week 1 to 3, via literature reading, video, searching for similar projects). In order to pick up the appropriate case, in week 1 and 2 the main lecturers will nudge the participants to choose their own project.</p> <p>If any participant has no clue, the main lecturers will provide cases.</p>
Assessment criteria	<ul style="list-style-type: none">- clear understanding of mobility trends (offering examples)- alignment to digitalisation innovation (giving evidence)- capacity to assess and overcome barriers (presenting solutions)- resilience to future disruption (offering adaptation elements)- developing a clear and professional presentation to peers- capacity to defend the statements.
Assessment support	<p>From week 1 day 1 (and all along the first three weeks of the course) the participants will receive (in written and in each of the online sessions), clear indication about the expected goals of the assessment.</p> <p>From week 1 day 1, the participants will be encouraged to contact, via mail, any moment in the 4 weeks of activities, any of the two leading lecturers (or both) so to clarify any element, doubt, or issue.</p>
Possible assessment outcome	<p>Assessments will receive one of the following outcomes:</p> <ul style="list-style-type: none">• Pass• Not yet passed
What happens if you do not achieve a pass grade?	<p>If you have not met threshold requirements for a pass grade, you will be provided with one further opportunity to complete this assessment following feedback.</p>

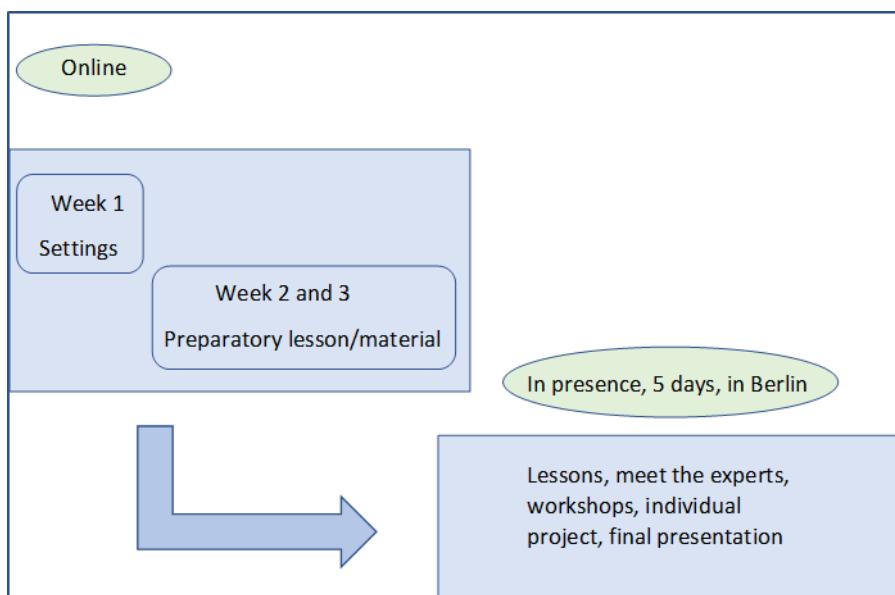


Duration

The professional course is a blended 4-week course, three online and one in presence in Berlin, for a total of 75 hours.

Online and self-study (3 weeks)

The course content is divided into two main phases, for a total of 4 weeks. The first phase is online with self-study for three weeks followed by a week in presence, in Berlin.



While the self-study you will be accompanied by the lecturers in virtual sessions (2 hours per week). Here you find a summary of the content and virtual sessions:

- In week 1, on Tuesday November 05, 2024 (16:00-18:00 CET) beyond the kick-off, the students will be introduced to the course goals and expectations. They will learn the requirements for the individual projects, pick up on case (or ask for one to the main lecturers) and begin to develop their concepts.
- In week 2, the students will begin the preparatory lessons and materials, and on Tuesday November 12, 2024 (16:00-18:00 CET) meet the experts who will support them throughout the course. Participants will present their concept for the individual project, and receive feedback from the course lecturers to refine and fine tune their idea. Once this is done, they will begin to develop it.



- In week 3, students will continue the online readings and activities, and developing and drafting their individual projects. They will prepare for the in-person unit of the course, meeting the lecturers on Tuesday November 19, 2024 (16:00-18:00 CET).

The diagram below provides a breakdown of the self-study:

Online and Self-Study	With the lecturers	Week 1	Week 2	Week 3
		Course presentation		
		Presenting goals and expectations		
			Presenting individual project	
			Presenting the experts	
	Individually	Getting ready for the in-presence week		
		Content inputs		
		Thinking about individual project		
			Developing draft of individual project	
		Reading and online activities		



Week in presence in Berlin

The second phase consists of 1-week, in-person, at the EUREF-Campus. This week will comprise lessons, meeting the experts, workshops, and completing and presenting the individual work.

1. On Day 1, students will meet in Berlin at lunchtime, will have a tour de table, review the course agenda, outlines and objectives. The day will include also a studio-like work on the individual project and a brief presentation by participants to provide a project update to showcase "Where we stand".
2. The inputs on Day 2 include "ITC in transport: success stories (and not)", "Digitalization and PT, new market, new players" and a "Meet the experts"-session. After lunch, we will have a Micro excursion to ZeeMo Base (Vehicle2Grid center at the EUREF-Campus), a slot devoted to studio-like work on the individual project and a lesson on "Business models and digital mobility".
3. Day 3 starts with a "Meet the experts"-session, followed by a lesson on "Data protection and public governance" and the Round Table. After lunch, the students will have another "Meet the experts" and a slot devoted to studio-like work on the individual project, followed by a lesson on "Smart mobility in a smart city: new approaches to regulation and market".
4. Day 4 comprises two sessions "Meet the experts" as well as inputs on Smart city/smart Citizens. After lunch we will have the final slot devoted to studio-like work to fine tune the individual project followed by inputs on "IT in mobility trends and scenarios".
5. Finally, on Day 5, students will have the last lesson about "For all, but not for everyone? ITC, social and demographic", followed by the final presentation by the participants of their individual projects, as developed by them in the past four weeks.

The diagrams below provide a more detailed breakdown of the content and activities:



	Day 1 Monday 25 November 2024	Day 2 Tuesday 26 November 2024	Day 3 Wednesday 27 November 2024	Day 4 Thursday 28 November 2024	Day 5 Friday 29 November 2024
09:30		ITC in transport: success stories (and not)	Meet the experts	Meet the experts	For all, but not for everyone? ITC, social and demographic
10:30		Digitalization and PT, new market, new players	Data protection and public governance	Smart city / smart citizens	Individual project presentation, assessments, self- assessment (70% of the final grade)
11:30		Meet the experts	Round table	Meet the experts	
13:00	Lunch	Lunch	Lunch	Lunch	
14:00	Review the agenda, outlines and objectives	Micro excursion to ZeeMo Base (Vehicle2Grid center)	Meet the experts	Working cases Updating the case, presenting, discussing	
15:00	Working cases Participants presenting where they stand. (30% of the final grade)	Working cases Updating the case, presenting, discussing	Working cases Updating the case, presenting, discussing		
16:00 16.30		Business models and digital mobility	Smart mobility in a smart city: new approaches to regulation and market	IT in mobility trends and scenarios	

Methodology

This course includes a mix of lectures, interactive workshops, hands-on exercises, case studies, and individual projects to provide participants with a holistic learning experience. Participants are encouraged to actively engage in discussions and apply learned concepts to real-world scenarios. The course content is subject to updates based on the latest developments in the field of digitalized transport, like Digital twins, AI, digital support for DRT and MaaS.

It does this through problem-based learning and teaching, providing real-world current and future thinking from experts in the field, and hands-on experience in individual projects. This framework aims to cultivate creativity, critical thinking, problem-solving skills and an outside-the-box lens when addressing the mobility challenges associated with ICT in the transport industry.

We also put great importance on the current experience and examples coming from the industry. The workshops with managers and policy makers working in the transport and mobility field will encourage the exchange of ideas, experiences and best practices and foster potential opportunities for future partnerships and collaborations.

Target group

The Certificate Course Digitalizing Mobility is designed for those seeking innovative solutions to the challenges of digitalization in the transportation sector: Mobility stakeholders such as energy, mobility and IT company managers, public transport operators, city entities, policy makers, NGOs.

*All course participants have access to a reduced course fee, as a result of the support of the European Union initiative EIT Urban Mobility.

Participants of non-governmental organizations, non-profit organizations, government authorities, as well as TU Berlin alumni receive a discount price of 1071 € (incl. VAT). Please contact us for a discount code to book the reduced course price.

All other participants pay 2000 € (incl. VAT) for the course (standard course fees at the TU Berlin Academy for a course of this duration are 3390 €).

To book a course, please click in the course [Digitalizing Mobility](#) on "add to cart".

This course is recognized as Bildungszeit according to paragraph § 10 (5) of the Berliner Bildungszeitgesetz (BiZeitG).



Prerequisites

- ✓ English level of at least B2
- ✓ Laptop/PC + headset with microphone

Dates

This certificate course comprises a phase of guided self-study, followed by a phase of intensive, in-person sessions in Berlin. While the self-study three virtual classroom sessions will be offered which are expected from 16:00 – 18:00 (CET).

Course schedule:

- ✓ November 05, 2024 (virtual classroom session), 2 hours
- ✓ November 12, 2024 (virtual classroom session), 2 hours
- ✓ November 19, 2024 (virtual classroom session), 2 hours
- ✓ November 06 - 24, 2024 independent learning (reading, case study, videos)
- ✓ November 25 - 29, 2024 on-site in Berlin (expected hours Monday from 14:00 - 18:00 (CET), Tuesday – Thursday from 09:30 – 17:30 (CET) and on Friday from 09:30 – 13:00 (CET))

Cooperation

This course is supported by EIT Urban Mobility, an initiative of the European Institute of Innovation & Technology (EIT), a body of the European Union. The aim is to positively change the way people move around in cities in order to make them more liveable. You can find more information at eiturbanmobility.eu

This support enables participants to access a special, reduced fee for this TU Berlin Academy course.

Joint Data Processing with EIT KIC Urban Mobility S.L: The TU Berlin Academy, TUBS GmbH collaborates with EIT KIC Urban Mobility S.L in organizing the course „Digitalizing Mobility: Practices, Trends, Solutions”. When conducting the learning activities with EIT KIC Urban Mobility S.L, the TU Berlin Academy (TUBS GmbH) acts as a Joint Data Controller together with EIT KIC Urban Mobility S.L. In order to fulfil this purpose, we process personal data as described in our privacy policy. Any questions related to ensuring privacy rights in the context of joint continuing education may be addressed to the TU Berlin Academy (see contact details in the privacy policy).

Lecturers

GABRIELE GREA ([Linkedin-Profil](#))

Gabriele Grea is scientific consultant and Researcher in the field of transport and territorial economics. His activity concerns in particular the themes of smart and sustainable mobility, infrastructures and territorial development. He has carried on projects in the fields of urban mobility, regional, urban and infrastructures planning, energy policies and ICT for transport and mobility.

He has been involved in a range of R&D Projects funded by the European Commission (Horizon 2020, 7th and 6th Framework Programme, Interreg, Marco Polo, DG TREN-DG MOVE Projects) since 2002. He is an Expert Fellow at the Department of Institutional Analysis and Public Management of Bocconi University in Milan, where he is lecturer in Urban Mobility Management and Smart Cities; and sustainable and intelligent mobility in the Master Course MEMIT (Master in Economics and Management of Transportation, Logistics and Infrastructure). In addition, he teaches business modelling for sustainable mobility at Technische Universität Berlin, in the MBA in Sustainable Mobility Management.

DR. MASSIMO MORAGLIO ([Linkedin-Profil](#))

Dr. Massimo Moraglio is an Academic Coordinator of the MBA Sustainable Mobility Management at the Technische Universität Berlin. His research focuses on technology and its wide effects on economic, social, and cultural fields, exploring its long-term trends. He gives attention to the crucial topics of sustainability, justice, and environmental studies, focusing on transitions, futures, and cultural shifts.

Through his work in academia and consultancy, he built a wide network with industry managers, public agency officers, and NGO advocates. He has acquired and managed many research grants from national and international (both private and public) funding schemes, opening meaningful international dialogue on issues of long-term assessment of technology and its transition toward a smart and sustainable future.

His publications number 120+, encompassing books (as an author, editor, and co-editor) and articles in international journals. He has co-organized and participated in 60+ national and international conferences.

Booking and contact

Register here: <https://www.academy-tu.berlin/en/courses/short-courses>

Should you have any questions, please contact the TU Berlin Academy Team at:
+49 30 4472 0232 or via email: info@academy-tu.berlin.

We hope to see you in Berlin - or online - very soon!





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Q&A for the Certificate Course “Digitalizing Mobility”

1. Who is the target audience for the course?

The course is designed for mobility stakeholders, including energy, mobility, and IT company managers, public transport operators, city entities, policy makers, and NGOs.

2. What are the dates and duration of the course?

The course runs from November 05 to 29, 2024, for a total duration of 4 weeks, consisting of 40 hours of blended lessons and 35 hours of self-study work.

3. Where will it take place?

The in-person elements of the course will be held at the TU Berlin's EUREF-Campus in Berlin.

4. What certification will participants receive?

Upon successful completion of the course, participants will receive the TU Berlin Certificate of Professional Education, including recognition of 3 ECTS credit points.

5. Is the course recognized for Bildungsurlaub?

Yes, it is! The course is recognized as Bildungszeit according to paragraph § 10 (5) of the Berliner Bildungszeitgesetz (BiZeitG).

6. What language options are available?

The course will be run multiple times, in either English or German language. Please contact the team for more details: info@academy-tu.berlin

7. Who are the course lecturers?

The main lecturers include Gabriele Grea and Dr. Massimo Moraglio.

Expert guest speakers (from industry, policy making and academia) will also be part of the teaching body.

8. What are the course fees? Are there any discounts available?

The course fee is 2000 € including VAT. However, a special discounted price of 1071 € including VAT is available for participants who are employed by non-government organisations, TU Berlin alumni, and employees of public authorities. Depending on availability, participants may also receive additional discounts through initiatives such as the European Union's EIT Urban Mobility program.

9. What are the learning goals?

Participants will gain an understanding of trends in transport digitalization, define application fields and potentialities for digitalization, learn from real-world cases, and develop future-oriented thinking about the digitalization of the transport industry, service, and governance.

10. What is the course content focused on?

The course covers various aspects of digitalization in mobility including vehicle, infra and railway management with IT-driven predictive maintenance, digital twin and AI in transport systems, MaaS sharing/flexible transport, and CCAM and city logistics.

11. How is the course structured?

The course is delivered through a blend of lectures, hands-on exercises, workshops and individual projects. It includes three weeks of self-study followed by a week of in-person sessions in Berlin.

12. What are the prerequisites for participating?

Participants should have an interest in the course topic and possess English or German language skills (depending on the course language), equivalent to the level of at least B2, according to the European Framework. Participants also require access to a laptop/PC with a headset and microphone.

13. What support is provided for participants during the course?

Participants receive guidance from lecturers through virtual sessions during the self-study phase, as well as in-person sessions during the week in Berlin.



14. How can participants reserve a place?

Participants can book the course through the TU Berlin Academy website by adding it to their cart. Register [here: https://www.academy-tu.berlin/en/shop/digitalizing-mobility](https://www.academy-tu.berlin/en/shop/digitalizing-mobility)

15. I can't participate on the scheduled dates. Are there any other options?

Yes! The TU Berlin Academy can develop a special, tailored edition of the course to be delivered to small groups based on their individual needs. Contact the team for details at info@academy-tu.berlin

16. How is personal data handled?

Personal data is handled in accordance with the privacy policy of the TU Berlin Academy and EIT KIC Urban Mobility S.L., who jointly organize the course.

17. Who do I contact for further information?

Participants can contact the TU Berlin Academy Team via phone at +49 30 4472 0232 or email at info@academy-tu.berlin

More at the [course page: https://www.academy-tu.berlin/en/shop/digitalizing-mobility](https://www.academy-tu.berlin/en/shop/digitalizing-mobility)

