Forschungscampus Mobility2Grid – Symposium 2016
Sustainable Mobility Management – Shaping the future of mobility management! Lehre für Mobilitätsplanung mitgestalten!

DOKUMENTATION

Symposium 2016 Forschungscampus Mobility2Grid
im Rahmen der Aktivitäten von Themenfeld 5 Bildung und Wissenstransfer

AZ 03SF0519

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Inhalt

1 Symposium

Auf dem EUREF-Campus in Berlin-Schöneberg erforscht und realisiert der Forschungscampus Mobility2Grid, gefördert vom Bundesministerium für Bildung und Forschung (BMBF) im Rahmen der Initiative „Forschungscampus: öffentlich-private Partnerschaft für Innovationen“, nachhaltige und finanzierbare Lösungen für eine auf Erneuerbaren Energien basierende Versorgung mit Strom, Wärme und Verkehr. Die Elektrifizierung des Verkehrs bietet dabei eine besondere Chance, Energie- und Verkehrssysteme gemeinsam zu erforschen und Synergien zu nutzen. Insgesamt 36 Einrichtungen aus Wirtschaft und Wissenschaft sind an dem Projekt beteiligt und arbeiten in sechs Themenfeldern und einem Querschnittsfeld zusammen. Dachorganisation ist der Mobility2Grid e.V., koordiniert wird das Gesamtprojekt durch die Technische Universität Berlin.

Als eine Aktivität im Rahmen des Themenfeldes 5 „Bildung und Wissenstransfer“ des Forschungscampus Mobility2Grid findet in der Hauptphase von 2016 bis 2020 jährlich ein Symposium als Informationsveranstaltung statt. Das Symposium greift aktuelle Themen und Projektergebnisse des Forschungscampus Mobility2Grid auf und trägt zur Diskussion darüber bei.

Im Zentrum des ersten Symposiums, das am 05.10.2016 im Kreis von rund 60 Personen auf dem EUREF-Campus veranstaltet wurde, stand das Thema Bildung. Unter dem Titel „Sustainable Mobility Management – Lehre für Mobilitätsplanung mitgestalten!“ wurde die Konzeption des neuen MBA „Sustainable Mobility Management“ vorgestellt. Anknüpfend an den Erfolg der bereits auf dem EUREF-Campus laufenden TU-Studiengänge „European and International Energy Law“ (Master of Business Law), „Energy Management“ und „Building Sustainability“ (beide MBA) soll das neue Angebot Studierenden aus Unternehmen sowie öffentlichen und zivilgesellschaftlichen Organisationen effektive Strategien und Lösungen für eine moderne und nachhaltige Mobilitätsplanung vermitteln. Das interdisziplinäre Studienangebot fokussiert Verkehr und Transport im nachhaltigen Mobilitätsmanagement. Neben der Vorstellung der Konzeption des Studienganges war es das vorrangige Ziel des Symposiums, diese Konzeption mit Expertinnen und Experten und Teilnehmerinnen und Teilnehmern zu diskutieren und ihre Anregungen partizipativ in die weitere, bedarfsgerechte und praxisorientierte Ausgestaltung des Studiengangs aufzunehmen.

Die vorliegende Dokumentation des Symposiums stellt Programm, beteiligte Expertinnen und Experten und ihre Beiträge, Teilnehmerinnen und Teilnehmer sowie Ergebnisse aus den Diskussionsgruppen vor. Das Symposium war international ausgerichtet, in der Veranstaltung wurde Deutsch und Englisch gesprochen, daher liegt ein Teil der Dokumentation (in Kapitel 4 und im Anhang) in Englisch vor.

Allen Beteiligten sei an dieser Stelle ganz herzlich für ihr Engagement und ihren Beitrag zum Gelingen des Symposiums gedankt!

2 Ablauf

Mittwoch, 05.10.2016

10:30 Ankommen, Check-In

11:00 Begrüßung
Prof. D. Göhlich; Prof. H.-L. Dienel, Technische Universität Berlin

11:10 **Lektionen lernen – vergleichbare Studiengänge**

- Der internationale weiterbildende Masterstudiengang „Europäische Bahnsysteme“ an der FH Erfurt
  Prof. M. Gather, Fachhochschule Erfurt University of Applied Science
  (Folien des Beitrags in Anhang 1)
- Executive Master of Arts in Mobility Innovations | eMA MOBI
  Prof. W.H. Schulz, Zeppelin Universität Friedrichshafen
  (Folien des Beitrags in Anhang 2)

11:50 **Konzept MBA „Sustainable Mobility Management“**

Prof. H.-L. Dienel, Technische Universität Berlin
(Folien des Beitrags in Anhang 3)

12:15 **Bedeutung MBA „Sustainable Mobility Management“**

K. Kebeck, Deutsche Gesellschaft für Internatione Zusammenarbeit GIZ
(Folien des Beitrags in Anhang 4)

12:30 Imbiss

13:00 **Diskussionsgruppen zum Studiengang**
(Ergebnisse in Kapitel 4)

14:00 **MBA „Energy Management“**

Prof. J. Müller-Kirchenbauer, Technische Universität Berlin
(Folien des Beitrags in Anhang 5)

14:30 **MBA „Building Sustainability“**

K. Karohs, Technische Universität Berlin
(Folien des Beitrags in Anhang 6)

14:45 Fragen und Antworten zu den Studiengängen

15:00 Kaffee und Führung über den EUREF-Campus

16:00 Ende des Symposiums

3 Teilnehmerinnen und Teilnehmer

Alphabetisch sortiert:

	Alexandrakis	Julian	TU Berlin
	Anastasiadou	Irene	TU Berlin
	Balzer	Frank	nexus Institut
	Bleuler	Reto	TU Berlin
Dr.	Böhm	Birgit	TU Berlin
	Böttcher	Nicole	TU Berlin
	Brandt	Edmund	TU Brandenburg
	Czernomoriez	Olaf	Deutsche Energiesysteme GmbH
	Deider	Philipp	TU Campus EUREF
Prof. Dr.	Dienel	Hans-Liudger	TU Berlin
	Dienel	Elisabeth	
	Einacker	Ingo	TUBS GmbH
	Emmerich	Barbara Susanne	IFBK
	Engel-Ziegler	Ulrike	DB Engineering & Consulting GmbH
Dr.	Fava	Valentina	TU Berlin
	Fouladinasab	Kaveh	TU Berlin
Prof. Dr.	Gather	Matthias	Erfurt University of Applied Sciences
Prof. Dr.	Göhlich	Dietmar	TU Berlin
	Gräbener	Sven	TU Berlin
	Gross	Verena	TU Berlin
	Hebert	Phillip	TU Campus EUREF
	Henseler	Christoph	TU Berlin / nexus
	Hoffmann	Christian	InnoZ
	Hofmann	Markus	Netzwerk Institute
	Jaeger	Florian Ansgar	Siemens Corporate Technology
	Kaiser	Franziska	Mobility2Grid e.V.
	Karohs	Karoline	TU Berlin
	Kebeck	Kristina	GIZ
	Kellermann	Robin	TU Berlin
	Kohansal Nodehi	Maryam	ZTG TU Berlin
Prof. Dr.	Kratzer	Jan	TU Berlin
	Kreklau	Simone	TU Berlin
	Kremer	Frieder	TU Berlin

	Krzywzdsinki	Martin	Wissenschaftszentrum Berlin für Sozialforschung
	Lauth	Enrico	TU Berlin
Dr.	Levina	Olga	FZI
	Manthey	Andreas	TU Berlin
	Meißner	Thomas	Berliner Agentur für Elektromobilität eMO
	Milani Medeiros	Rafael	TU Berlin ZTG
	Moraglio	Massimo	TU Berlin
	Müller	Reinhard	EUREF AG
Prof. Dr.	Müller-Kirchenbauer	Joachim	TU Berlin
Prof. Dr.	Richter	Thomas	TU Berlin
	Sakatis	Theo	TU Berlin
Prof. Dr.	Schulz	Wolfgang	Zeppelin University Friedrichshafen
	Schulz	Eckhard	IFV Bahntechnik
Dr.	Simon	Dagmar	Wissenschaftszentrum Berlin für Sozialforschung
	Steffens	Juliane	TUBS GmbH
	Suchanek	Jan	TUBS GmbH
	Thüm	Jana	TU Berlin
	Ullmann	Rolf	Stromnetz Berlin GmbH
	Vornhusen	Christoph	Bencon Energies
Dr.	Weber	Henrike	TU Berlin
	Weicker	Tonio	TU Berlin
	Welke	Jörg	Berliner Agentur für Elektromobilität eMO

4 Ergebnisse der Diskussionsgruppen

4.1 Gruppe „Management“

Moderation: Julian Alexandrakis

What contents would you like to see for the MBA Sustainable Mobility Management in the area *Management*?

Generally:

- Management of a very complex system
- Ecosystems and Interaction

In detail:

- People Management
- Health Management
- Intercultural Management
- Specific Industry related competences
- Interactions
- Open mind

Soft Skills

important for international students and lecturers

- Process Management
- SCM
- Enabling sustainable decisions & decision making processes
- Technology Management
- Industry/ies
- Efficient Structures
- Process Organisation
- Controlling

Economic approaches

that should be integrated in certain modules

- (digital) Business Models
- Data Analytics (V2X)
- Infrastructure Value Levels
  - Applications/Devices
  - Programm/Operation
  - Platform/Investment

Applications

that should be integrated in certain modules

- Finance Management
- Regulation/Governance
- Political Engineering
  - Shaping sustainable Frameworks
  - Tripple Helixx
  - $ ☺

Governance Perspective

that should be integrated in certain modules

4.2 Gruppe „Sustainability“

(Moderation Karoline Karohs)

Welche Inhalte wünschen Sie sich für den MBA Sustainable Mobility Management im Bereich *Nachhaltigkeit*?

Berufsbilder: Management? Planung?

Was müssen Absolvent_innen wissen? Basics (und) wie (diese) in der Anwendung nutzen?

- Basics vermitteln: aus den Bereichen Mobilität und Nachhaltigkeit
    - ASI [Avoid > Shift > Improve]
    - Verkehrssysteme (technisch)
    - Städtewachstum
    - Emissionen

- Verkehrswende → Definition?
- Kritischer Umgang mit dem Nachhaltigkeitsbegriff; Reflexion
- Stakeholder
- Ökoeffizienz

- Indikatoren (für Nachhaltigkeit)
- Grenzen des Nachhaltigkeitskonzepts

- NH durch Unternehmens-/ Organisationsstrukturen implementieren – „Mainstreaming“ durch Prozessgestaltung
- NH:
    - Leitbild
    - Strategie
    - Operativ
- Change Management … und wer bezahlt? Und wer macht’s?

- Freies Themenmodul
- Erfahrungen der Studierenden nutzen
- Exkursion
- Best Practice
- Internationale Case-Studies

4.3 Gruppe „Smart Mobility“

Moderation: Dr. Massimo Moraglio/Dr. Christian Hoffmann

What contents would you like to see for the MBA Sustainable Mobility Management in the area *Smart Mobility*?

- Smart M. (Smart Mobility) as a reminder of current M. inefficacies
- Focus Customer: Save Transport (mobility) for everyone: individual, public, general
- Tran(s)formation! To Smart Mobility
- What (ICT) Infrastructure is needed for Smart Urban Mobility
- New Mobility Concepts: Connectivity, Bike-Car-Sharing, Minibusses, Mobility-Hubs, …
- Impact on grid?
- Smart Mobility should be addressed besides cities
- Smart M. as a network among other networks
- Smart M. as a social process
- Addressing Smart M. as a societal consensus
- How smart are becoming urban mobility?
- Smart Mobility as a sociotechnical ensemble: Theories, Concepts & Models for analysis
- Addressing different scales of smart mobility beyond technology
- Recognizing potential counter-effects of smart mob.: exclusions, 2-speed-worlds
- Critical approach towards “smartness”
- Car to x communication technical solutions
- Use Cases + analyze Users Needs
- Application of international case studies
- Different perceptions of mobility/mobility solutions?
- Mobility trends: What data are available (also data quality)
- Changing behavior in urban mobility
- Policy and ideas transferring between developed and transition countries

Smart Mobility:		

Use Cases:
• International best practice perspectives
• User
• Pol(itic)
• Transformation
• Transition
• Companies
	• Sociotechnical
	• Infrastructure: Energy, ICT, Car to X
		• Meets lot of Modules
		
		• Teach:
		  ○ Case Studies
		  ○ Literature/Discussion

4.4 Gruppe „Engineering and technical Developments“

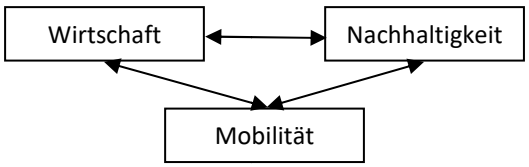
Moderation: Sven Gräbener/Burkhard Eberwein

Welche Inhalte wünschen Sie sich für den MBA Sustainable Mobility Management im Bereich *Engineering and Technical Developments*?

Zur Unterfrage “In welcher Tiefe müssen technische Inhalte vermittelt warden, sodas Nachhaltigkeit in verschiedenen Dimensionen (ökologisch, ökonomisch, sozio-technisch) mit Mobilität in Zusammenhang gebracht werden kann?“

- Technische Inhalte kein Fokus (im MBA Sustainable Mobility Management)
- Rückwirkungen auf die Stadt von Morgen von Trends/Technologien
- Betrieb/Planung von Verkehrssystem
- Systemsicht auf Verkehr(s)wende

Zur Unterfrage “Sollten einzelne technologische Trends (Digitalisierung, Elektromobilität, Industrie 4.0, …) eher im Detail als use case zur Vermittlung von Modellen und Methoden betrachtet werden oder als Überblick und dafür möglichst vollständig und langfristig kartiert? Was hilft den MBA Studenten besser für ihre zukünftige Laufbahn?



- Strategie in komplexen Strukturen

Übergeordnet:

- Welches Wissen möchte ich vermitteln? MBA !?!
- Zielgruppen → notwendige Grundlagen?
- Interdisziplinarität
- Studenten: Angebot ↔ Nachfrage

4.5 Empfehlungen für den MBA aus dem Plenum im Verlauf der Veranstaltung

(Clusterung der Empfehlungen erfolgte erst im Nachhinein für die Dokumentation.)

Zielgruppendefinition beachten:

- klare Zielgruppenbegrenzung für den MBA
- Zielgruppendefinition bestimmt auch die Modulinhalte
- Zielgruppe: Welche soll angesprochen werden? Man sollte nicht ausländischen Studierenden das deutsche Knowhow vermitteln, da es oft nicht übertragbar ist, sondern übertragbares Knowhow vermitteln
- Gemischte Studierendengruppen sind, so die Erfahrungen aus anderen internationalen MBAs, besonders bereichernd
- In den Eingangskursen könnten je nach Voraussetzung der Studierenden auch Unterschiede gemacht werden, z.B. Studierende mit technischem BA müssen sozialwissenschaftliche Kurse und Studierende mit sozialwissenschaftlichem BA müssen technische Kurse absolvieren. Gemischte Eingangskurse, in denen sich die Studierenden gegenseitig die Kenntnisse vermitteln, sind andererseits für das Teambuilding sehr gut.

Ansprüche an internationalen, englischsprachigen MBA berücksichtigen:

- Bei englischsprachigem, internationalem MBA müssten auch die Dozenten z.T. international sein, um etwas zu bieten
- Englischsprachigkeit ist bei Vermittlung des rechtlichen Rahmens teilweise schwierig aufgrund der Gültigkeit von rechtlichen Rahmenbedingungen (Regulierung ist in Deutschland und Europa anders als in anderen Ländern, daher Übertragbarkeit und Relevanz für internationale Studierende ggfs. nicht so hoch)
- Auch für ausländische Studierende ist es ggfs. interessant, keinen Vollzeit MBA zu machen, da sie dann noch Sprachkurse machen und jobben können

Vernetzte und systemische Herangehensweise auf verschiedene Ebenen vermitteln:

- Vernetzt denken
- urbane Verkehre und Fernverkehre verstehen, europaweit, Verständnis für (bisher nicht funktionierende Schnittstellen zwischen den nationalen Systemen vermitteln
- Systemisches im MBA beachten: Betriebskonzept, aber auch Endgeräte/Endprodukte/Gesamtlösungen für die Kunden sind wichtig, Lenkung und Vorbereitung der Planung sind fast wichtiger
- Urbane Mobilität: Lernen, dass Umfeld zu berücksichtigen und Anregungen aus dem Umfeld aufzunehmen
- Gestaltungs- und Implementationsebene: Instrumente anschauen, best practice, Marketing, Ökonomie und Planungsinstrumente
- MBA auch normativ, mit einer theoretischen „Schule“ ausgestalten

Governance als Thema beachten:

- Governance, Regulierung, Intelligentes Umgehen mit Vorschriften
- Veränderungen auf den Weg bringen; politische Komponenten integrieren; Wissen, wo Veränderung möglich ist und wo nicht; rechtliche Grundlagen
- In die einzelnen Module rechtliche Aspekte integrieren
- Energiewende: daraus lernen für Governance

Weitere Empfehlungen:

- Soft Skills, Networking, Kommunikation, Strategien
- Umwelt- und Verkehrspsychologe, Modal Shift, Akzeptanz
- Synergiepotenziale zwischen den auf dem EUREF-Campus laufenden Studiengängen nutzen, so dass ggfs. gegenseitig Module anerkannt werden können, um die Wahlmöglichkeiten für Studierende zu erhöhen

Anhang: Folienpräsentationen der Expertinnen und Experten

1. Prof. M. Gather: Der internationale weiterbildende Masterstudiengang „Europäische Bahnsysteme“ an der FH Erfurt
2. Prof. W.H. Schulz: Executive Master of Arts in Mobility Innovations
3. Prof. H.-L. Dienel: Konzept MBA Sustainable Mobility Management
4. K. Kebeck: Bedeutung MBA „Sustainable Mobility Management“
5. Prof. J. Müller-Kirchenbauer: MBA „Energy Management“
6. K. Karohs: MBA „Building Sustainability“

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Der internationale weiterbildende Masterstudiengang „Europäische Bahnsysteme“ an der FH Erfurt

05.10.2016

Übersicht der (Eisenbahn-)Studiengänge

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Fakultät Wirtschaft-Logistik-Verkehr

- **Fachrichtung Verkehrs- und Transportwesen**
  - **Eisenbahnstudiengänge**
    - **Studienformen**
      - **Direktstudium**
        - **Wirtschaftsingenieur Eisenbahnwesen (B.Eng.)**
          6 Semester
          grundständig
      - **Berufsbegleitend**
        - **Wirtschaftsingenieur Eisenbahnwesen (B.Eng.)**
          6 Semester
          -2 Semester durch Anerkennung aus der Berufspraxis
      - **Duales Studium**
        - **Wirtschaftsingenieur Eisenbahnwesen (B.Eng.)**
          6 Semester
          +2 Semester durch Berufsausbildung zum Eisenbahner im Betriebsdienst, Fachrichtung Fahrweg (EiB F)
    - **Berufsbegleitend**
      - **Europäische Bahnsysteme (M.Sc.)**
        4 Semester
- **Fachrichtung Wirtschafts-wissenschaften**

5. B.Eng. für Eisenbahnwesen

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Aufbau:

- Angebot eines dualen Studiums in einer **Kooperation** zwischen der Fachhochschule Erfurt, der DB Netz AG und der Staatlichen Fachschule Gotha
- Gezielte zukunftsweisende Verbindung von Theorie und Praxis
- Abschluss einer eisenbahnspezifischen Berufsausbildung (EiB F) und
  eines wirtschaftlich-technisches Studiums (B.Eng. für Eisenbahnwesen) innerhalb von nur vier Jahren

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES

FACHSCHULE GOTHA
Staatliche Fachschule für Bau, Wirtschaft und Verkehr

DB NETZE

B.Eng. WI für Eisenbahnwesen

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Aufbau:

Eisenbahnwesen

	Dual	Grundständig
Studienformen	**Dual** In der Orientierungsphase mit Berufsausbildung	**Grundständig**
Orientierungs-phase	**2 Jahre**	**1 Jahr**
Studiendauer gesamt	**4 Jahre**	**3 Jahre**
Abschlüsse	• **Eisenbahner im Betriebsdienst** • **Bachelor of Engineering für Eisenbahnwesen**	• **Bachelor of Engineering für Eisenbahnwesen**
	Start ab WS 2006/07 2010 erste Absolventen	Start ab WS 2010/11

Zielgruppen des M.Sc.

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Der Internationale Masterstudiengang
„Europäische Bahnsysteme“
wendet sich an:

Absolvent/-innen
der beteiligten Hochschulen

Interessierte Mitarbeiter/-innen
des Verkehrswesens

Absolvent/-innen
anderer Hochschulen

Zulassungsvoraussetzungen

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

erster **Hochschulabschluss**
oder
Abschluss einer staatlich oder staatlich anerkannten Berufsakademie im Bereich
Eisenbahn- oder Verkehrswesen
(oder vergleichbarer Studiengang)

+

qualifizierte
berufspraktische Erfahrung
von mindestens 2 Jahren

Studienübersicht

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Semester	Qualifikationsnachweis				Summe ECTS
Vorpraxis	**2 Jahre Berufserfahrung = 24 ECTS** **M 0** Grundlagen Management im Eisenbahnwesen				24 ECTS
Beteiligte Partner		fh st.pölten	FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES	zh aw School of Engineering	
1	**Modul P 1** Projekt	**Modul 1.1** Infrastruktur-management I	**Modul 1.2** Betriebsführung und -planung I	**Modul 1.3** Die Bahn als Teil des Gesamtsystems	24 ECTS
2	**Modul P 2** Projekt	**Modul 2.1** Infrastruktur-management II	**Modul 2.2** Betriebsführung und -planung II	**Modul 2.3** Interoperabilität/ EU-Normen	24 ECTS
3	**Modul P 3** Projekt	**Modul 3.1** Bahn und Umwelt	**Modul 3.2** Europäische Verkehrspolitik	**Modul 3.3** Fahrzeuge, Roll-material, Antriebsarten	24 ECTS
4	**Modul M 4.1** Exkursion	**Modul M 4.2** Masterthesis und Kolloquium			24 ECTS
	Insgesamt				120 ECTS

Studienübersicht

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Infrastrukturmanagement I	- Planung von Eisenbahnsystemen - Einführung in CCS - Einführung in Energieversorgungs-anlagen
Betriebsführung und -planung I	- Operative Betriebsführung - Überwachter Übungsbetrieb - Bahnregelbetrieb - Abweichungen vom Regelbetrieb - Leitstellendienst, Kontrolltätigkeit
Die Bahn als Teil des Gesamtsystems	- Grundlagen Verkehrssystem (Verkehrsträger, -mittel, Transportmittel) - Transportkette - Umweltaspekte, Wirtschaftlichkeit - System Eisenbahn

Studienübersicht

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Infrastrukturmanagement II	- Bauplanung, Bauabwicklung, Behördenverfahren - Fahrwegplanung und -erhaltung - Vertiefung Energieversorgungsanlagen
Betriebsführung und -planung II	- Integrierte Transportketten - Informationssysteme im Eisenbahnknoten - Kundenschnittstellen
Interoperabilität/ EU-Normen	- Einführung Interoperabilität - Richtlinien und Normen - Europäische Bahnsysteme - Technische Erfordernisse - Ausblick

Projektseminar

Studienübersicht

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Bahn und Umwelt	- Landschafts- und Raumplanung - Abfallwirtschaft, Nachhaltigkeit und Umweltverträglichkeit - Europäisches Umweltrecht
Europäische Verkehrspolitik	- Grundlagen, Ziele der EU - Homogenität und Interoperabilität - Stand Umsetzung in Mitgliedsstaaten - Bewertung: einheitlich europäischer Eisenbahnraum?
Fahrzeuge, Rollmaterial, Antriebsarten	- Zugförderung - Triebfahrzeuge, Wagen - Wirtschaftlichkeit - Marktkenntnisse, Marktüberblick - Fahrzeugbeschaffung und -einsatz

Termine: Zeitplan 1.+2. Sem.

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Semester		Termine	Standort
Einführungswoche	allg. Hinweise, Ablauf, Orga, Prüfung M0, Einführung Module	Okt 15	folgt
	Selbststudium (11.10.2015-01.11.2015)		
1. Semester	M 1.1 Infrastrukturmanagement I	02.-07.11.2015	FH St. Pölten
	Selbststudium (08.11.2015-13.12.2015)		
	M 1.2 Betriebsführung und -planung I	14.-19.12.2015	FH Erfurt
	Selbststudium (20.12.2015-14.02.2016)		
	M 1.3 Bahn als Teil des Gesamtsystems	15.-20.02.2016	ZHAW
	Selbststudium (21.02.2016-03.04.2016)		
2. Semester	M 2.1 Infrastrukturmanagement II	04.-09.04.2016	FH St. Pölten
	Selbststudium (10.04.2016-08.05.2016)		
	M 2.2 Betriebsführung und -planung II	09.-14.05.2016	FH Erfurt
	Selbststudium (15.05.2016-19.06.2016)		
	M 2.3 Interoperabilität/EU-Normen	20.-25.06.2016	ZHAW
	Selbststudium (26.06.2016-11.09.2016)		

Legende

- St. Pölten
- Erfurt
- Winterthur
- alle

Termine: Zeitplan 3.+4. Sem.

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Verkehrs- und Transportwesen

3. Semester	M 3.1 Bahn und Umwelt	12.-17.09.2016	FH St. Pölten
	Selbststudium (18.09.2016-06.11.2016)		
	M 3.2 Europäische Verkehrspolitik	07.-12.11.2016	FH Erfurt
	Selbststudium (13.11.2016-08.01.2017)		
	M 3.3 Fahrzeuge, Rollmaterial, Antriebsarten	09.-14.01.2017	ZHAW
	Selbststudium (ab 15.01.2016)		
	Prüfungen 3. Semester (falls notwendig)	Dez. 2016/Jan. 2017	wird noch bekannt geg.
	Selbststudium		
4. Semester	Exkursion	24.-28.04.2017	verantwortlich FH Erfurt
	Selbststudium		
	Bearbeitungszeit Masterthesis	01.03.2017-26.07.2017	
	Abgabe Masterthesis	26.07.2017	
	Kolloquien	28./29.09.2017	wird noch bekannt geg.
	Abschlussveranstaltung	29./30.09.2017	wird noch bekannt geg.

Legende

- St. Pölten
- Erfurt
- Winterthur
- alle

Gebühren und Anmeldung

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Studiengebühr: 12.800 Euro (3.200 Euro/Semester)

- jeweils vor Semesterbeginn zu zahlen
- ohne: Kosten für Exkursion, Fahrt, Übernachtung, Lehrmittel

Anmeldung:

Anmeldeformular und vollständige Bewerbungsunterlagen

Termine

© SBB

Bewerbungsschluss: 01.06.2017

Einführungswoche: Oktober 2017

Gesamtdauer des Studiums: Oktober 2017 bis September 2019

Präsenztage gesamt: ca. 67 Tage

Präsenzwochen pro Semester: ca. 3 Wochen,
… davon: je 1 Woche in St. Pölten, in Erfurt und in Winterthur

© RhB

Organisatorische Hinweise

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

Bewerbung und Immatrikulation:

an der FH Erfurt oder FH St. Pölten möglich

Auswahlverfahren:

falls … Bewerberzahl > Studienplatzzahl

Übernachtungsmöglichkeiten:

„Tipps“ werden von den Hochschulen zusammengestellt

Kontaktdaten, Informationen

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES
Verkehrs- und Transportwesen

- weitere **Informationen** unter: **www.master-bahnsysteme.eu**

  bzw. über: **weiterbildung@fh-erfurt.de**

- **Ansprechpartnerin:**

  Frau Dr. Brit Arnold
  +49 361-6700 680

zeppelin universität

zwischen
Wirtschaft Kultur Politik

THE ZEPPELIN UNIVERSITY

13 education programs

Bachelor College

Bachelor of Arts in „Sociology, Politics & Economics | SPE“
In Kooperation mit: Berkeley

Bachelor of Arts in „Politics, Administration & International Relations | PAIR“
In Kooperation mit: Berkeley

Bachelor of Arts in „Communication & Cultural Management | CCM“
In Kooperation mit: Goldsmiths University of London

Bachelor of Arts in „Corporate Management & Economics | CME“
In Kooperation mit: Copenhagen Business School Handelshøjskolen

Graduate School

4 Vollzeit Master of Arts GEMA, PAIR, CCM, CME
(forschungsorientiert 4 Semester)

Teilstrukturiertes Promotionsprogramm
(3 - 4 Jahre)

Executive Education

Executive Master of Arts in Mobility Innovations | eMA MOBI

Executive Master of Arts in Leadership Excellence | eMA LEE

Executive Master of Arts in Business & Leadership for Engineers | eMA BEL

Executive Master of Arts in Digital Pioneering | eMA DIP

Executive Master of Arts in Family Entrepreneurship | eMA FESH

MORE ON ZEPPELIN UNIVERSITY

The ZU | Executive Education

What makes our master special?

| Impact Education

| Link of HR and company development by real projects from your own company

| For lateral thinkers

| The focus of our efforts are the experiences and questions of the participants

| We support the building of interdisciplinary networks

| We enable intersectoral experiences

| Turning to…

| … to the dynamic and complex, exciting and stimulating questions of our time.


LACROSSE SPIELPLAN

We aim at educating mobility experts, who are able to think out of the box of their own profession and grasp the complexity of open and interconnected transport markets.

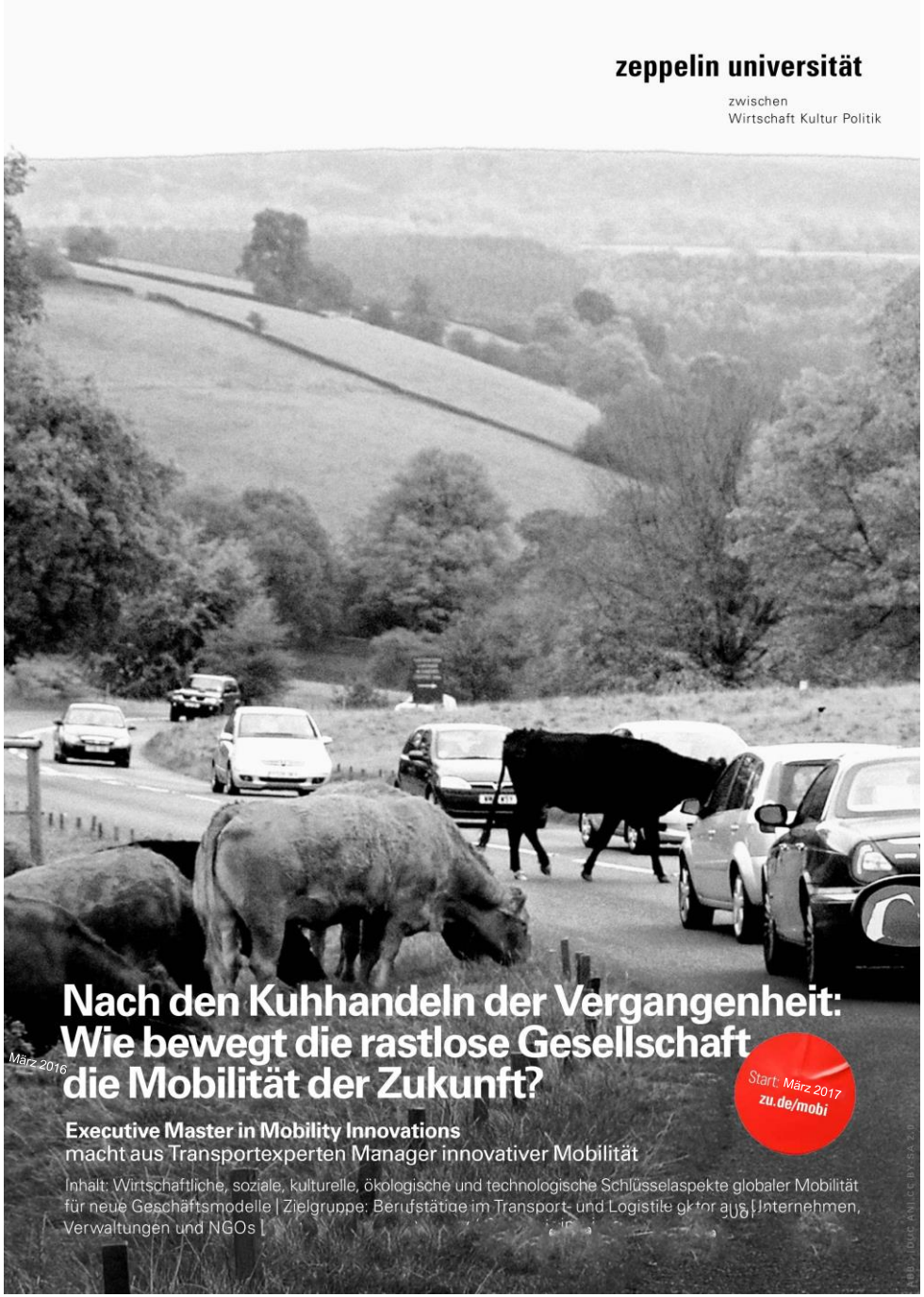
- How can new business models be developed and integrated into a saturated market?
- What are the future trends in the transport (passengers) and logistics (goods) sectors - globally, regionally and nationally?
- How can we manage mobility challenges such as environmental and resource constraints, infrastructure or funding – and how can change be addressed & managed?
- What paradigm shifts can be observed and how do they lead to new mobility and transport business models?
- How can we overcome barriers between different transport sectors, modes and operators in order to make transport and logistics more efficient?

KEY AREAS

1. **Mobility & Transport Research:** What are human needs and habits regarding mobility, what are infrastructural and regulatory requirements, how can transport and logistics be efficiently organized and what is the scope of improvement?

2. **Market Trends & Technological Innovations:** How can change be initiated (normative change and market based) and what are new technological developments to enable that change?

3. **Business Model Innovation & Implementation:** How do trends become paradigm shifts and how can these paradigm shifts lead to new business models?




zeppelin universität
ZF campus

„The Executive Master in Mobility Innovations fills a gap in the German academic scene by training experts from the areas of transport, travel, infrastructure, and industry to think and work in a connected, interlinked, and interdisciplinary way.“

Holger Taubmann | Senior Vice President Distribution, Amadeus IT Group

EXECUTIVE MASTER OF ARTS

Mobility Innovations | MOBI

The Program at a glance

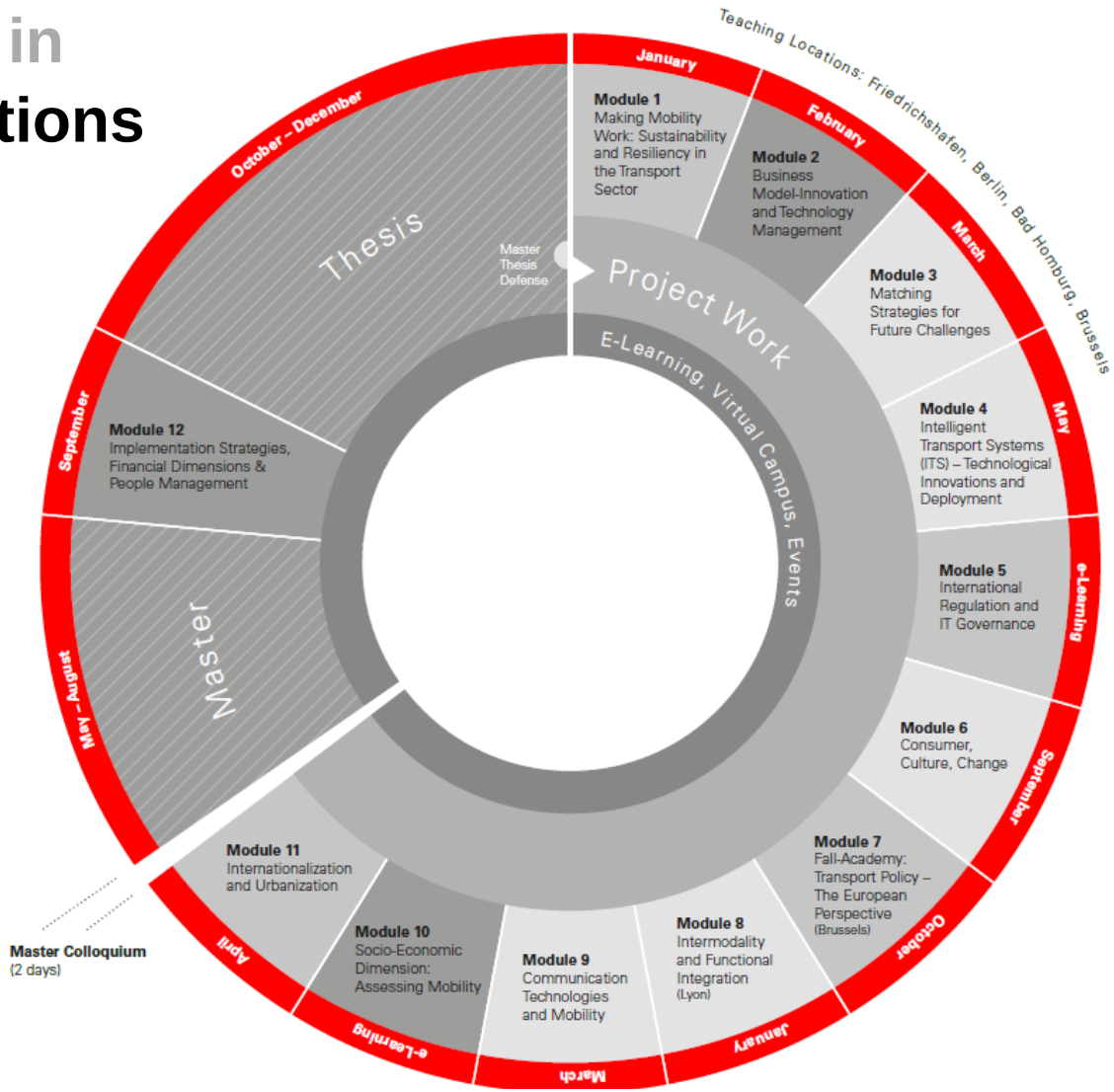
| 24 month executive program
| 10 presence modules at 5 working days
| 2 online modules as self-learning elements
| One module in cooperation with the Laboratoire d'Economie des Transports, taking place in Lyon
| 1 week policy academy in Brussels
| Teaching locations are Friedrichshafen, Berlin, Karlsruhe, Brussels, Lyon
| Degree: Master of Arts in Mobility Innovations (90 ECTS)
| Maximum of 25 participants
| The program language is English | Exams can be taken in English or German
| Next start: March 2017

Executive Master in
Mobility Innovations

Credit Points

Modules 1–12	48 CP
Project Work	12CP
Presentations	2CP
Methods and academic writing	2CP
Master Thesis	26 CP
total	90 CP

1 CP = 25 study hours,
30% contact hours, 70% self study



Mobility & Transport Research
(Module 1, 5, 7, 11)

Market Trends & Technological Innovations
(Module 3, 4, 6, 8, 9)

Business Model Innovation & Implementation
(Module 2, 10, 12)

Mobility & Transport Research

Module 1
Making Mob
and Resilien
Prof. Dr. Wo
Zeppelin Uni

| Introductio
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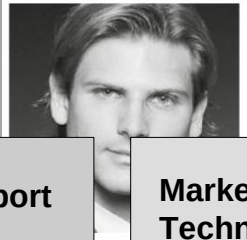
| Mobility, T
| The conce
resiliency

Business Model Innovation & Implementation



Market Trends & Technological Innovation

Mobility & Transport Research

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Market Trends & Technological Innovation

Mobility & Transport Research

Market Trends & Technological Innovation

Market Trends & Technological Innovation

Module 9
Communication Technologies and Mobility
Prof. Dr. Horst Wieker,
University of Applied Sience, Saarland

| Communications technologies as a business model enabler
| Technological development of communications technology

Business Model Innovation & Implementation

Module 10
Socio-Economic Dimension: Assessing Mobility
Prof. Dr. Wolfgang H. Schulz,
Zeppelin University

| Business studies and economics
| Economic Resource Assessment
| Cost-Benefit Analyses

Mobility & Transport Research

Module 11
Internationalization and Urbanization
Prof. Dr. Alexander Eisenkopf,
Zeppelin University

| Emerging economies, new markets and international trade
| Mega cities and urban mobility
| Multilocal lifestyles and (globalized) working environments

Business Model Innovation & Implementation

Module 12
Implementation Strategies, Financial Dimensions & People Management
Prof. Dr. Wolfgang H. Schulz,
Zeppelin University

| Entrepreneurship and start-up implementation
| Decision analysis, accounting, controlling, project management
| Interdisciplinary human resource management

ENTRY REQUIREMENTS

- A first university degree or equivalent
- At least 12 month of working experience in a relevant field
- Good English language skills are required and will be tested in an English-Language Test
- Successful admission process, including personal interview

APPLICATION

How to apply?

1 Kick-off

| Sign up for application process
| Access to online-application

2 Online-Bewerbung

| CV
| 12 unanswerable questions
| Previous grades

3 Auswahl-tag

| 1 English test
| 2 conversations with selection Committee

TUTION FEES

The overall tuition fee for the Executive Master in Mobility Innovations is 24,900 € (6,225 € per semester). This fee covers:

| all courses, seminars and colloquia

| the organization of the Learning Journey to Brussels and the courses taking place in Lyon

| access to university facilities (e.g. library, electronic databases, W-LAN, email, intranet, university access card, e-learning environment)

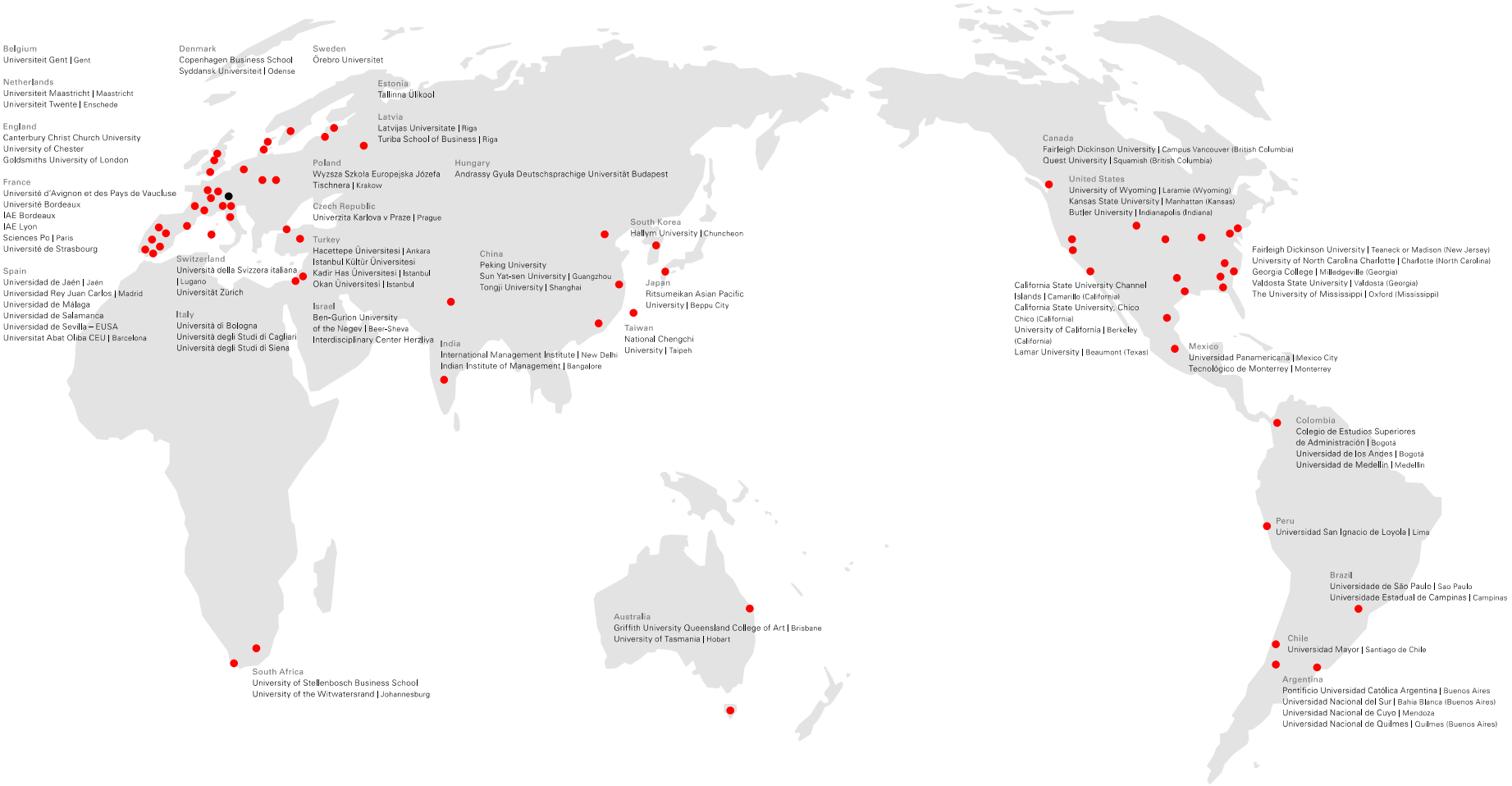
| transcripts of records

| membership to sports club VFB Friedrichshafen and StudentLounge

| the possibility to take part in cultural activities (e.g. university choir, orchestra, theater)

| access to study spaces, sports facilities and beach area at the lake campus.

80 INTERNATIONALE PARTNERUNIVERSITÄTEN

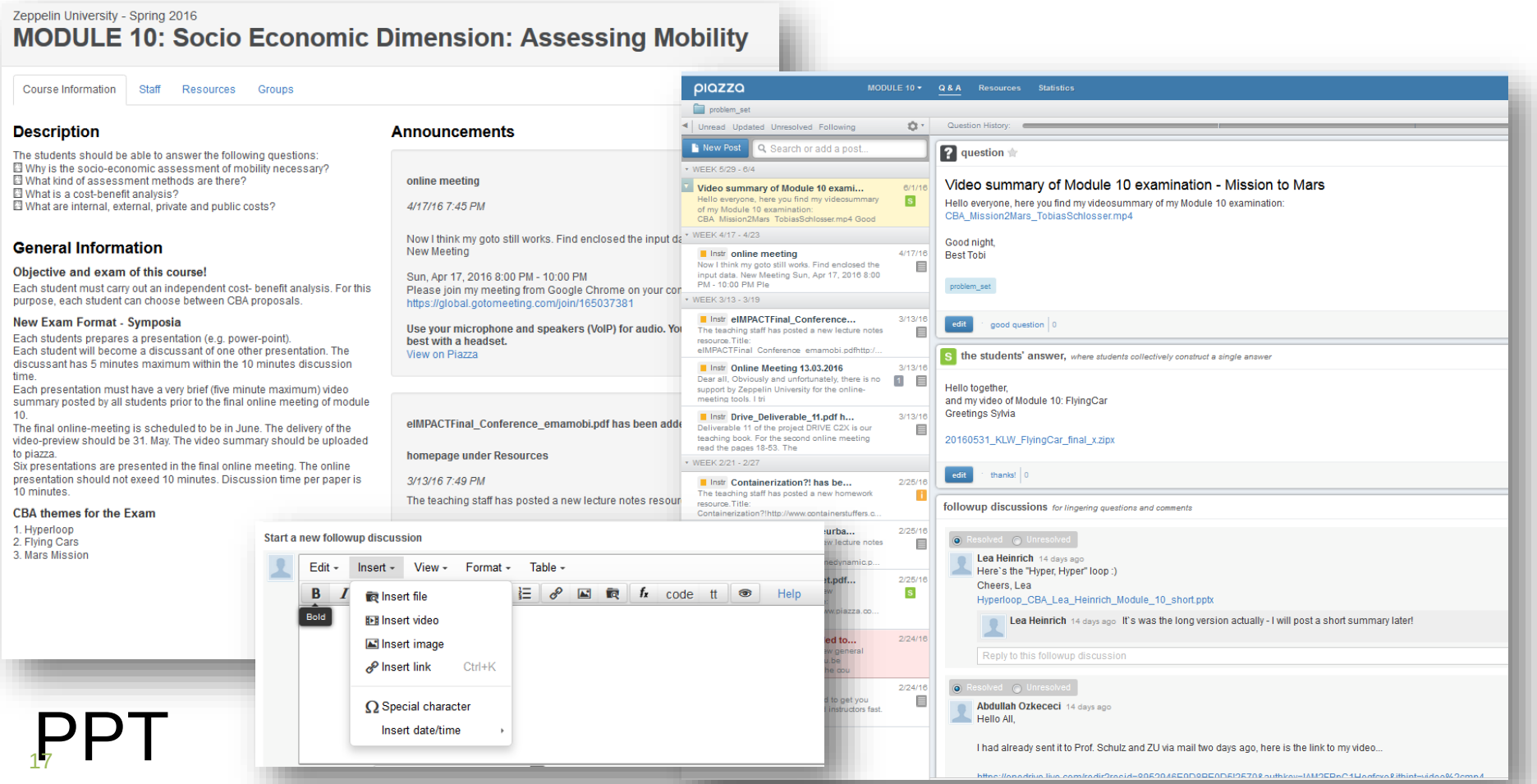



zeppelin universität
3

Piazza

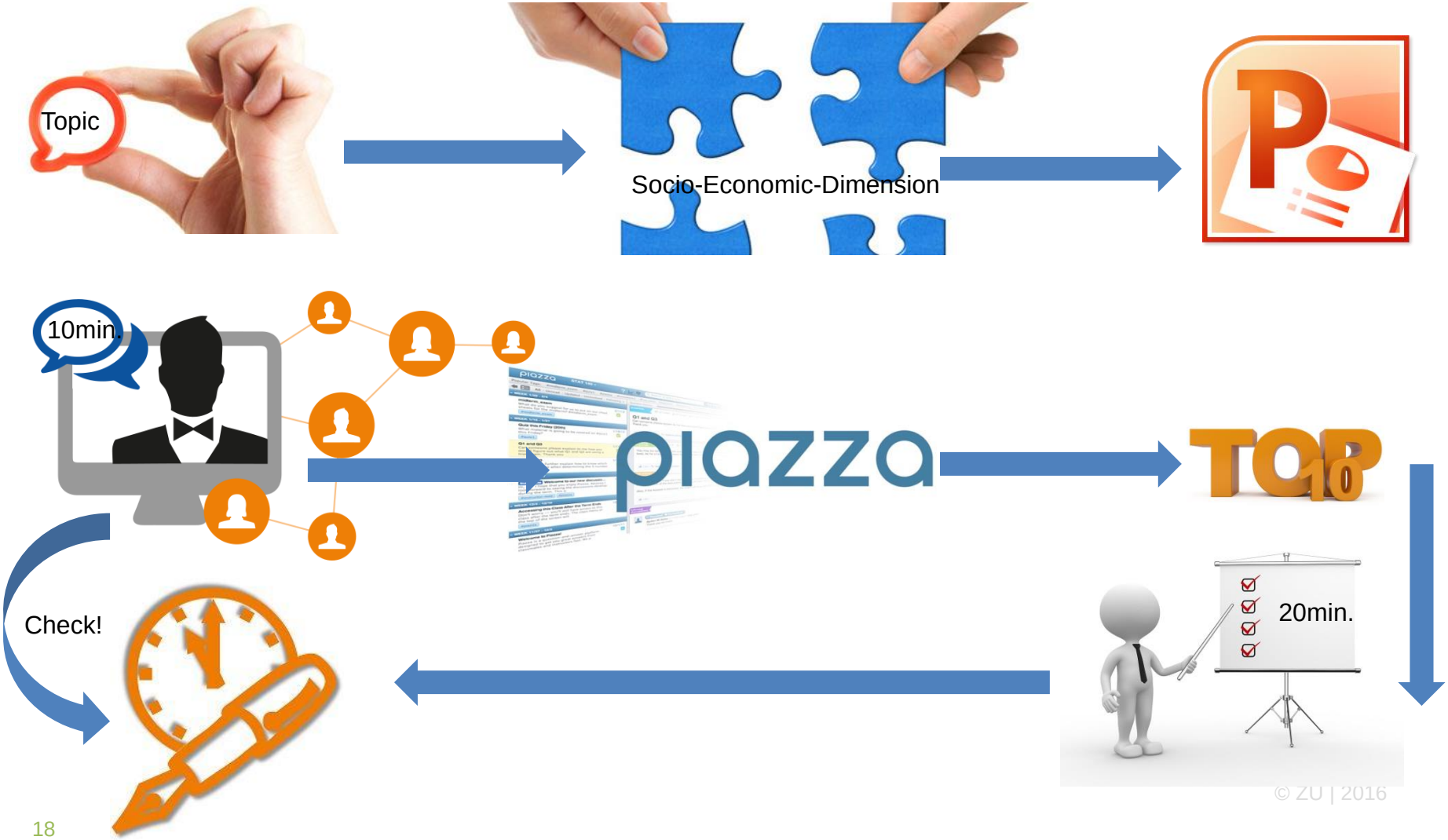
Impressions

The Tool



PPT

Overview



LEITUNG

Univ.-Prof. Dr. Wolfgang H. Schulz
Akademischer Programmleiter | Executive Master „Mobility Innovations“

Tel: +49 7541 6009 – 1236
E-Mail: wolfgang.schulz@zu.de

BERATUNG

Brigitte Lutz
Programmmanagerin | Executive Education

Tel: +49 7541 6009 – 1236
E-Mail: brigitte.lutz@zu.de


zu.de

MBA

Sustainable Mobility Management

Concepts and Outline

Prof. Dr. Hans-Liudger Dienel, Technische Universität Berlin

FORSCHUNGS CAMPUS
öffentlich-private Partnerschaft für Innovationen

GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung

Why Sustainable Mobility at EUREF campus

The European transport industry is thus a main contributor to European wealth.

Automotive industry alone basics facts:

- Employing over 2 million people but responsible for some 12 million jobs.
- Investing more than € 20 billion a year in R&D.
- Annual turnover of € 780 billion.
- Added value of over € 140 billion.
- Import/export surplus of over € 60 billion.

Why Sustainable Mobility at EUREF campus

- The impact of the transport realm does not stop at the political, social or economic levels.

- The transport sector is a growing source of CO2 emission, creating pollution, and also harming human health (car accidents alone caused about 100 million deaths in the past century).

Why Sustainable Mobility at EUREF campus

- We should also mention that there is an energy issue, as the transport sector is heavily dependent on fossil fuels, and thus a great contributor to the dependency of Europe on fossil fuel imports.

Why Sustainable Mobility at EUREF campus

- We should also mention that there is an energy issue, as the transport sector is heavily dependent on fossil fuels, and thus a great contributor to the dependency of Europe on fossil fuel imports.

- Additionally, we face the need of new infrastructural investments in order to keep our transport systems functioning properly, investments that Europe today finds difficult to provide.

Sustainable Mobility AIMS

MBA ***Sustainable Mobility Management aims to:***

- The course takes an inter- and multidisciplinary approach;
- an integrative design across disciplines, developing a range of different theories and perspectives;
- Develop their potential in delivering sustainability and development, problems based.
- Cross-cut diverse spheres: economic, social, environmental, political at different levels, ranging from municipal to global.

Sustainable Mobility CONCEPTS

MBA ***Sustainable Mobility Management provides:***

- A critical approach.
- A social science-based perspective on sustainability studies.
- An appraisal of the latest thinking in mobility studies, transport debate, urban planning and project development and management.

A practice-driven MBA

MBA ***Sustainable Mobility Management aims to:***

The theory and practice-driven approach gives students both a conceptual understanding and the skills needed to tackle theoretical and practical problems, covering the stages of strategy development, analysis and implementation, complex decision-making and project management.

Employment opportunities

- The students who will complete the MBA will have the possibilities for careers abroad or in Germany, within national or international companies or organisations, as well as with national, regional or municipal public authorities.

- Potential sectors of employment encompass, but are not limited to, vehicle and sustainable transport service design engineer; infrastructure or transport service, operator/administrator; transport network planner, developer, marketer or regulator; auditor or manager of sustainable development policy in a company or public and private institutions.

Studienverlaufsplan

WiSe 2017-2018	SoSe 2018	WiSe 2018-2019
Project Management (in Mobility) 6 LP	Mobility Trends and Futures 9 LP	Managing Smart and Green Mobility 6 LP
Mobility: Actors and Practices 6 LP	Managing Transition: Governance and Policies 6 LP	Thesis 18 LP
Fundamental of Transport Systems 6 LP	Lecture Series 6 LP	
Infrastructures Engineering and Operations 6 LP	Compulsory electives	
	Innovation and Technology Management 12 LP	
Macro-Economics and Business Models of Sustainable Mobility 6 LP	Managing ICT and Mobility 6 LP	
	Mobility and Development 6 LP	
30 LP	30 LP	30LP

Module´s Desciptions

First Semester

Name of Module	*Credit Points*
Project Management (in Mobility)	**6**

1. Qualification Aims

This module presents the foundations of strategic management and discusses management methods concerning today's challenges in transport and mobility.

The main aim is to offer to the students a solid grasp on managerial solutions able to tackle the transition toward sustainable mobility.

2. Key points

- International Project Management and Business Environments;
- Fundamentals of management and business administration;
- Project management and scheduling;
- Leadership and Conflict Management;
- Management of sustainable transport;
- Design and management of transport services (support private and public players in developing an innovative and relevant transport service);
- Green supply chains, from business plan to business model.

Module´s Desciptions

First Semester

Name of Module	*Credit Points*
Mobility: Actors and Practices	**6**

1. Qualification Aims

This module introduces and deepens student's knowledge of the fundamentals of mobility, of transport systems and of sustainable mobilities theories, concepts and approaches. The focus is to recognise mobility as a socio-technical system.

The main aim is to offer to the students a panorama of the social/economic/technological tensions and critical points as emerging in the implementation of the transition toward sustainable mobility.

2. Key points

- Mobility, climate change and social values;
- Analysis of travel and transport systems;
- Mobility and transport modes and actors;
- Mobility inequalities;
- Mobility diversities and accessibilities;
- The concepts of Motility and Sessility;
- Social networks, temporal rhythms, spatial distribution;
- Travel networks, community and identity;
- Travel, crime, risk and security;
- Urban, peri-urban and not-urban mobilities.

Module´s Desciptions

First Semester

Name of Module	*Credit Points*
Fundamental of Transport Systems	**6**

1. Qualification Aims

The module offers the fundamental of transport systems, including (but not limited to) the description and analysis of energy source, propulsion, efficiency and (different) rationales of transport regimes.

It aims to provide an understanding of the structure and technical potentials and limitations of transport systems and how those can be used to address sustainability.

2. Key points

- Intertwined elements in transport system;
- Energy chain;
- Energy sources;
- Propulsion fundaments and comparison;
- Waste and recycling issues.

Module´s Desciptions

First Semester

Name of Module	*Credit Points*
Infrastructures Engineering and Operations	***6***

1. Qualification Aims

The module introduces the description, analysis and modelling of elements that are relevant to transport engineering and operations, including but not limited to infrastructural socio-technical aspects, planning, traffic management and prevision.
It aims to provide an understanding of the structure and dynamics of complex systems and how system dynamics models can be used to address systems problems primarily in the field of transport.

2. Key points

- Key concepts underpinning quantitative techniques used in transport analysis;
- Fundamental concepts of probability can be used to represent travel behaviour
- Concepts and techniques for the acquisition, processing, description and presentation of quantitative information.
- Application of causal loop techniques enabling to communicate ideas and model structures effectively;
- Transport Demand and its Modelling
- Providing an understanding of the nature of travel demand and how to model it;
- Land-use models; activity-based models; stated preference methods.

Module´s Desciptions

Second Semester

Name of Module	*Credit Points*
Sustainable Mobility: Marco-economics and Business Models	**6**

1. Qualification Aims

Financial tools and practice to achieve sustainable mobility. Develop familiarity of current and innovative economic, political and financial issues surrounding transport investment. Traditional and innovative business models.

2. Key points

- Transport investment and cycle;
- Source and limits of financial resources available for sustainable mobility;
- Concept of infrastructural cycle and long term investment;
- Critical review of mega infrastructure theory, decision-making and international practice;
- Critical appraisal of mega Infrastructures as Agents of Change;
- Examples and case studies from road and rail.
- Traditional business model;
- Innovative business model;
- Sharing economies and crowd-funding.

Module´s Desciptions

Second Semester

Name of Module	*Credit Points*
Mobility Trends and Futures: People, Technologies and new models	**9**

1. Qualification Aims

The module seeks to provide an understanding of the mobility trends, so to ultimately allow the student to grasp the complexity of open and interconnected transport futures.

The main aim is to understand societal and technological shifts and changes, including forecasting basics, the concept of disruptive innovation versus mobility inertia.

2. Key points

- Forecasting basics;
- Wild card and weak signals concepts;
- Long term vision of mobility;
- Current trends and possible scenarios;
- Similarities and differences between emerging and mature economies;
- Social shifts and innovation: new consume pattern, new lifestyle;
- Critical appraisal of technological innovations and its effects;
- The role of telecommunication;
- The importance of new business models.

Module´s Desciptions

Second Semester

Name of Module	*Credit Points*
Managing Transition: Governance and Policies	**6**

1. Qualification Aims

The module seeks to explore the transition to sustainable mobility by different scenarios, pathways, and policy options, thus offering tolls for its management.

The main aim is to understand the complexity of (any) transition and its socio-political, technological and economic components. The focus is the governance tools available as well as the role played by not-political actors.

2. Key points

- Mobility policy making and governance;
- Supranational, national and local decision making processes;
- Stakeholder engagement; ethical and political considerations in mobility policy;
- Transitions management; managing responses to policies and stimulating innovation;
- Environmental Policy and Governance: proliferation of 'new' environmental policy instruments;
- Blurring roles for State-market-civil society;
- Cross-cutting issues and future directions;
- Reduced authority for policy makers and experts;
- Future directions in environmental policy governance.

Module´s Desciptions

Second Semester

Name of Module	*Credit Points*
Lecture Series	**6**

1. Qualification Aims

The main aim is to offer an overview of the state-of-the-art regarding sustainable mobility debate and trends.

2. Key points

Experts from the industry, academia and research centres involved in the transition toward sustainable mobility will present different opinions, case-studies and perspectives. In this vein, besides the teaching of the other modules, the students will be able to have a more complex and variegated definitions of the problems and the potentialities of such a transition.

Module´s Desciptions

Third Semester

Name of Module	*Credit Points*
Managing Smart and Green Mobility	**6**

1. Qualification Aims

The module introduces some of the key sustainability debates and literature, developing an understanding of the tensions and synergies between environmental, social and economic objectives.

The students will be thus provide with both the skills to conceptualise sustainable transport regimes as well as the ability to implement those systems.

2. Key points

- Mobility sustainability in the context of wider sustainability debates;
- Perspective of smart mobility from the viewpoint of social sciences;
- Existing tensions and synergies between, for example, environmental and economic sustainability, environmental and social sustainability;
- Strategies for achieving and implementing transport sustainable development (finance, institutions, policy etc.) in different contexts;
- Applications and issues of smart technologies;
- Sustainable urbanism: how sustainability is understood and applied to different urban 'fields'.

Module´s Desciptions

Third Semester

Name of Module	*Credit Points*
Master Thesis	**18**

1. Qualification Aims
The thesis allows students to highlight their abilities in researching a topic scientifically and deliver scientific results in a limited period. Once registered for the thesis, students have four months to conclude.

2. Content
Individual topics

Module´s Desciptions

Compulsory Electives

Name of Module	*Credit Points*
Innovation and Technology Management	**12**

1. Qualification Aims
In this module, students look at innovations, team building, management processes, administrative, financial or theoretical issues in a specific practical context.

2. Key points
The module will focus on: • Innovation management; • Technically, economically and socially sustainable implementation of innovations; • Team building and team management; • Innovation assessment; • Systematic modelling; • Agile methods; software; synergy; innovation pathways; venture teams; • Temporary task forces; • Inter-organisational teams.

Module´s Desciptions

Compulsory Electives

Name of Module	*Credit Points*
Managing ICT and Mobility	**6**

1. Qualification Aims
The main aim is to offer innovative understandings of the current and future practices of transport systems in highly digitalized business and social environments. The students will be exposed to the disruptive consequences of ICT in the mobility field with a focus to future scenarios.

2. Key points
• ICT growth and role; • The complex relationship between ICT and mobility; • Substitution effect; hybridisation of ICT and transport system; • ICT as a enhancer of mobility offers; • ICT as a game changer in the transport industry; • ICT in logistic • ICT in passenger transport system; • Driverless vehicles: Trends and obstacles; • Smart city/smart mobility: Trends and obstacles; • ICT, Peer-to-peer service and sharing economy; • ICT and sustainable mobility; • Case-studies analyse.

Module´s Desciptions

Compulsory Electives

Name of Module	*Credit Points*
Mobility and Development	**6**

1. Qualification Aims
The main aim is the recognition of the features which distinguish the transport sector issues in developing countries and emerging economies from those of the industrialised world. This will allow participants to assess the applicability of different analytical techniques in varying institutional and economic contexts, and to appraise the likely effectiveness of policy instruments.

2. Key points
• Practises, social actors and role of mobility across mature and emerging economies; • Sustainable transport as regional and national issues; • Economic, financial, institutional and demographic characteristics of developing countries and their significance for transport sector policies • Different degrees of globalisation and urbanisation; • Regulatory policies, management and finance; • Infrastructure financing, incl. the contribution of the private sector; • Environmental, safety and security policies; • The role of transport facilities in the implementation of the economic development; • Knowledge (reciprocal) exchanges; barriers to the transfers.

Thanks for your attention!

Relevance of Sustainable Mobility Management

Forschungscampus Mobility2Grid – Symposium 2016

October 5th 2016

Kristina Kebeck
kristina.kebeck@giz.de

Humans love to move, travel, discover…

by different ways and modes…

In most cities, mobility is dominated by personal motorized transport.

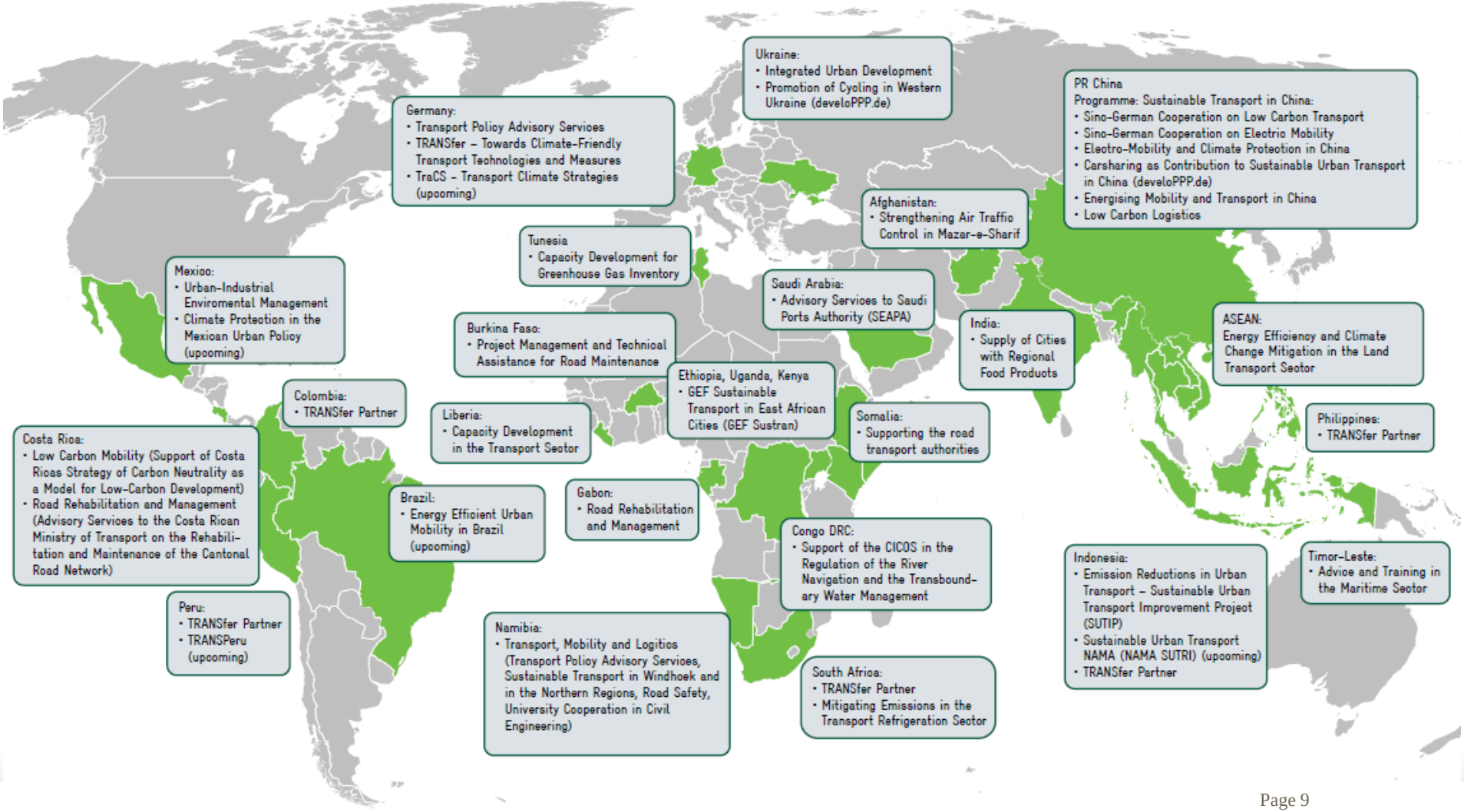
Many people choose cars to move around…

Road transport is a major contributor to air pollution and climate change…

There still is a rising demand for Private Motorization….

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Ongoing GIZ Transport and Mobility Projects



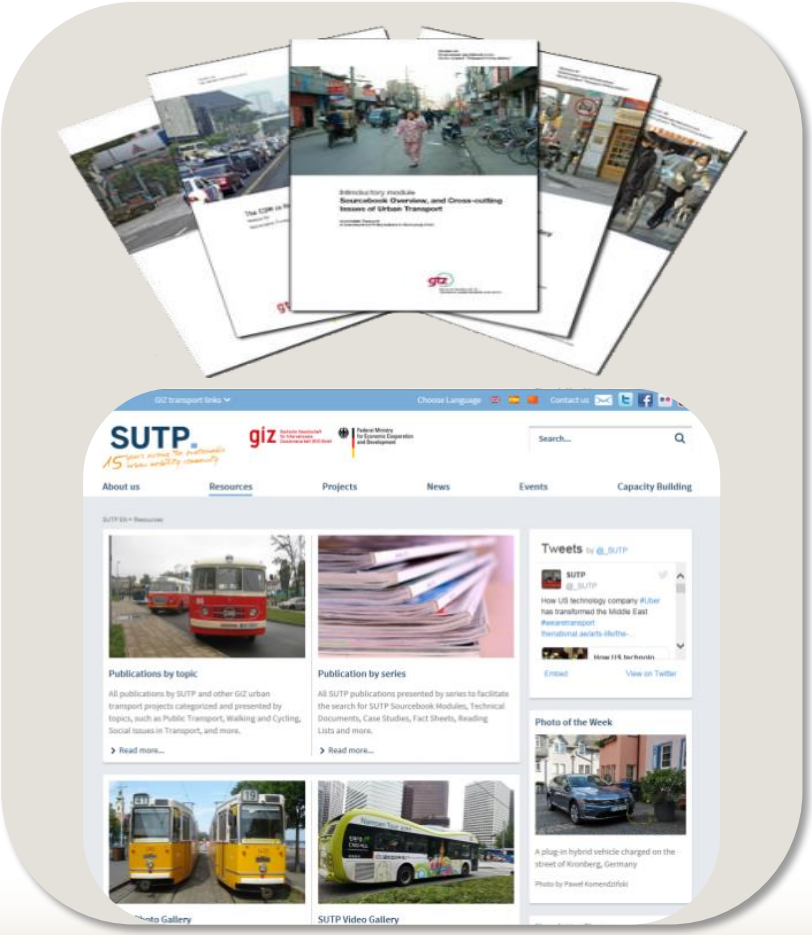
Our Guiding Principles - The ASI Approach:

- AVOID or reduce the need to travel through smart planning

- SHIFT to more environmentally friendly modes of transport

- IMPROVE the efficiency of transport modes and vehicle technologies

Knowledge Sharing

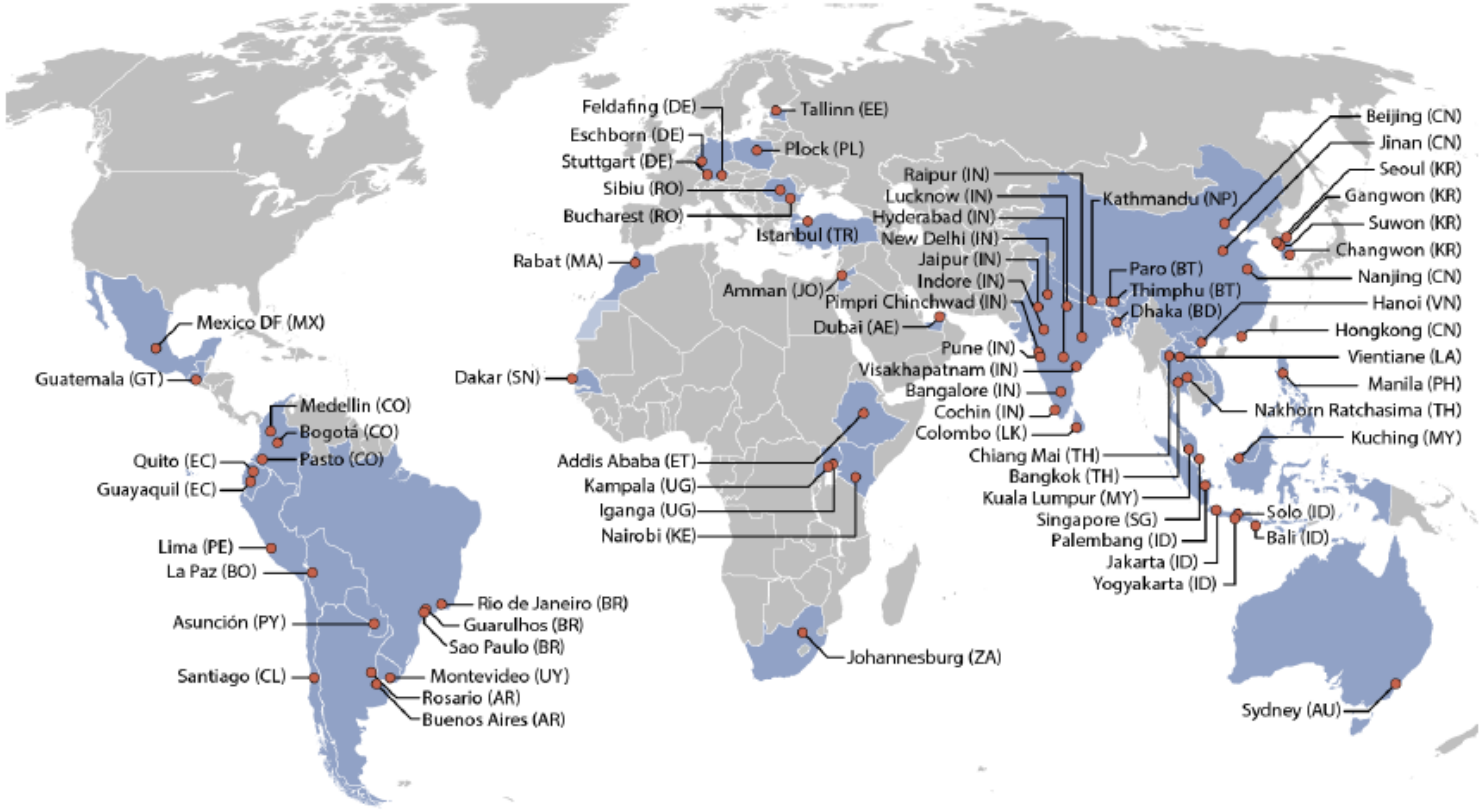


GIZ Sourcebook on Sustainable Urban Transport

GIZ Transport Publications

Capacity Development

- Training courses held by GIZ SUTP (until September 2016)
- GIZ-SUTP conducted **more than 140 courses** that included **more than 5000 participants** across all continents



Key Challenges

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

… in Transport

- Congestion, Pollution, Health Risks, Climate Burden
- Lack of Transport Options
- Excess of Transport Demand
- Insecure Funding

…in Institutions

- Transport is Closely Linked with other Areas
- Vested Interests in Transport
- Need for Reforms
- High Staff Turnover

…in People

- Broken Link between Students, Professionals and Decision-makers
- Weak Link between Professionals (Alumni) and Universities
- Lack of Appropriate Resource Material
- Limited Peer-to-Peer Networking

New Approach in Knowledge Management, Life-long Learning, Networking and Outreaching Needed

Address the Key Challenges

…in People

- **Broken Link between Students, Professionals and Decision-makers**
- **Weak Link between Professionals (Alumni) and Universities**
- **Lack of Appropriate Resource Material**
- **Limited Peer-to-Peer Networking**

Relevance of new Master Program on Sustainable Mobility Management

Tasks of MBA Sustainable Mobility Management

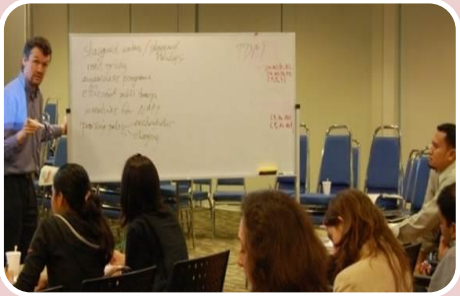
Link between Students, Professionals and Decision-makers	Involve Experts (national & international)
Link between Professionals (Alumni) and Universities	Include all Actors: Academia, Practitioners, Politicians, NGO´s…
Provide Appropriate Resource Material	Material in a modular form, based on existing best practices
Include Peer-to-Peer Networking	Strengthen Networking Options

Think globally

Take local circumstances and requirements into account

Provide first hand experience and best practices

How could GIZ be involved in the MBA Sustainable Mobility Management?



Further accompany as regards content of study program

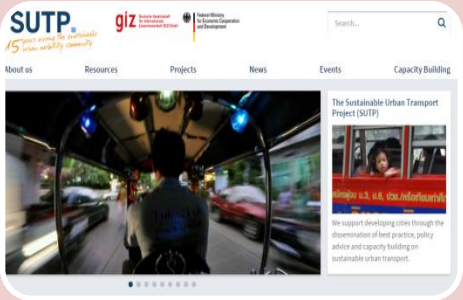
Include material from our SUTP series

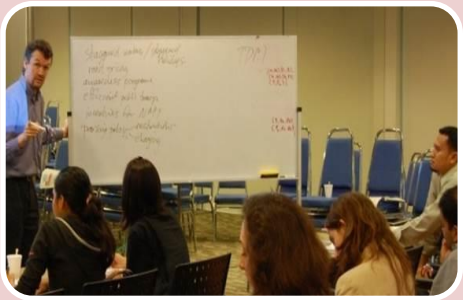
Disseminate Resources

Share Experiences and Best Practices

Promote the program internationally via SUTP and GPSM

Our Service Lines





Advisory Services & Implementation

→ Facilitate changes

Developing and Disseminating Resources

→ Changes in transport policy

Sharing Experiences and Best Practices

→ Increase capacity of staff

CAPSUT – Capacity Building in Sustainable Urban Transport

http://www.sutp.org/en/

CAPSUT.
Capacity Building in Sustainable Urban Transport

International platform, dedicated to capacity building in sustainable urban transport

GPSM – German Partnership for Sustainable Mobility

http://www.german-sustainable-mobility.de/

German Partnership for Sustainable Mobility

Sustainable Mobility – Made in Germany

A guide for sustainable mobility and green logistics solutions and knowledge from Germany


Shaping our future into sustainable transport and mobilty is key...
925876






Thanks
for your
attention!

Kristina Kebeck
kristina.kebeck@giz.de

Imprint

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Disclaimer

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GIZ does not, however, guarantee the accuracy or completeness of information in this presentation, and cannot be held responsible for any errors, omissions, or losses which emerge from its use.

Sources

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MBA "Energy Management" und MBL "European and International Energy Law"

Forschungscampus Mobility2Grid Symposium 05.10.2016

Univ.-Prof. Dr.-Ing. J. Müller-Kirchenbauer, TU Berlin

Who‘s who

- Die Universität: Technische Universität Berlin

  "The internationally renowned Technische Universität Berlin is located in Germany’s capital city at the heart of Europe. Our academic activities are focused on achieving sharply-defined goals: building a distinctive profile for our university, ensuring exceptional performance in research and teaching, providing our graduates with excellent qualifications and a modern approach to university administration. … "

- Durchführung: TUBS GmbH – TU Berlin Science Marketing

  100% Tochter der TU Berlin

- Location: TU Campus EUREF gGmbH

  Bereitstellung der Räumlichkeiten für Lehrveranstaltungen auf dem EUREF-Gelände

Studiengangleitung

MBL Energy Law

Prof. Dr. Dr. Dres. h.c. Franz Jürgen Säcker

MBA Energy Management

Prof. Dr.-Ing. Joachim Müller-Kirchenbauer

Administration

Sandra Lubahn

Administration *(Verwaltung)*

Akademische Betreuung

MBA Energy Management

Sarah Drewning

Supervisor *(Betreuung)*

Wiss. MA.

Jan Suchanek

Supervisor *(Betreuung)*

Wiss. MA.

MBL Energy Law

Eleni-Aristea Alevizou

Supervisor *(Betreuung)*

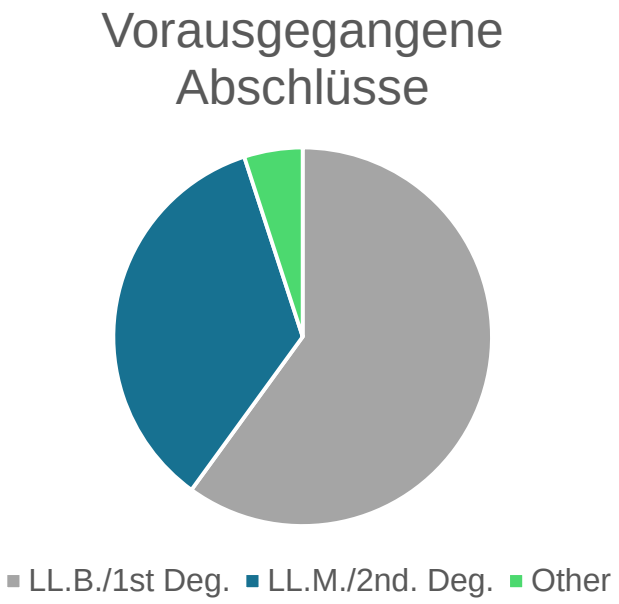
Wiss. MA.

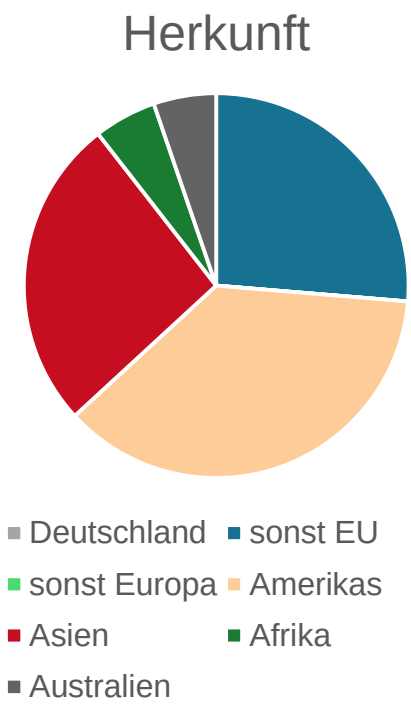
Xenia Zwanziger

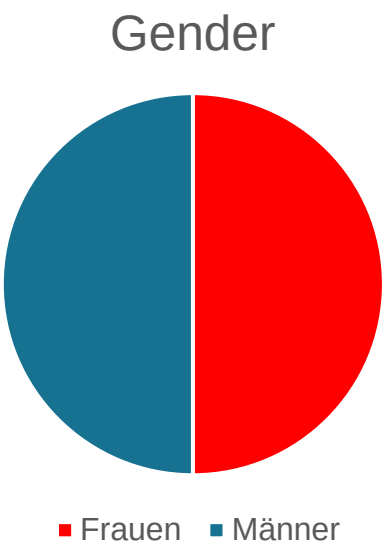
Supervisor *(Betreuung)*

Wiss. MA.

MBL Energy Law 2015-16

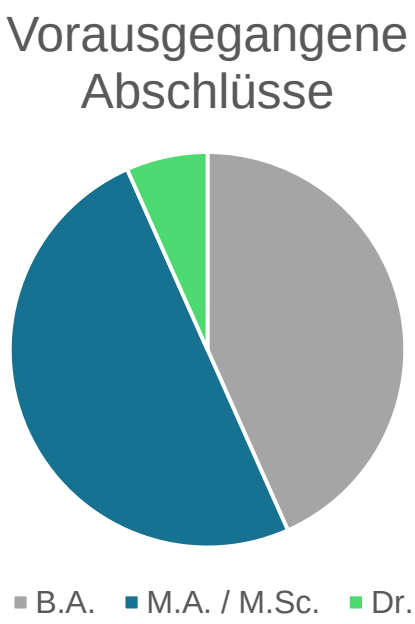


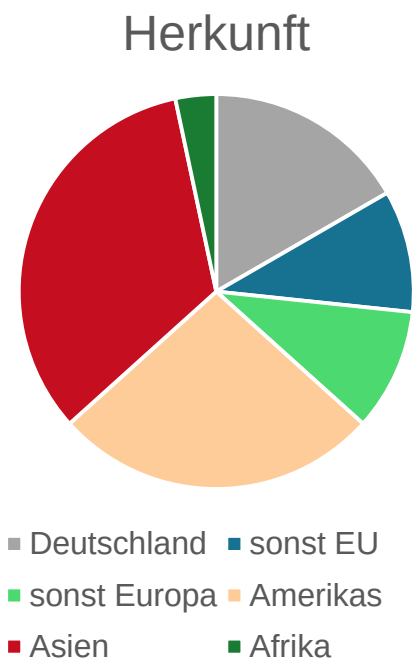


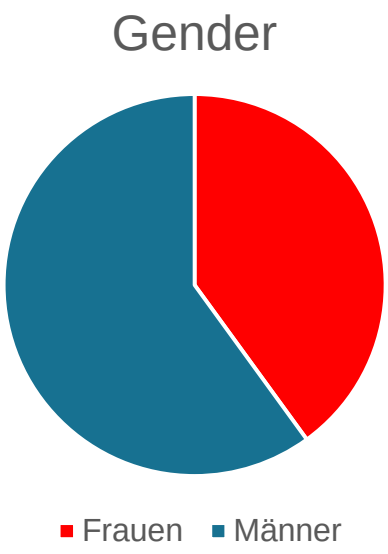


- Internationale Studierendenschaft
- Sehr gute Vorkenntnisse
- Einschlägige Berufserfahrung

MBA Energy Management 2015-17



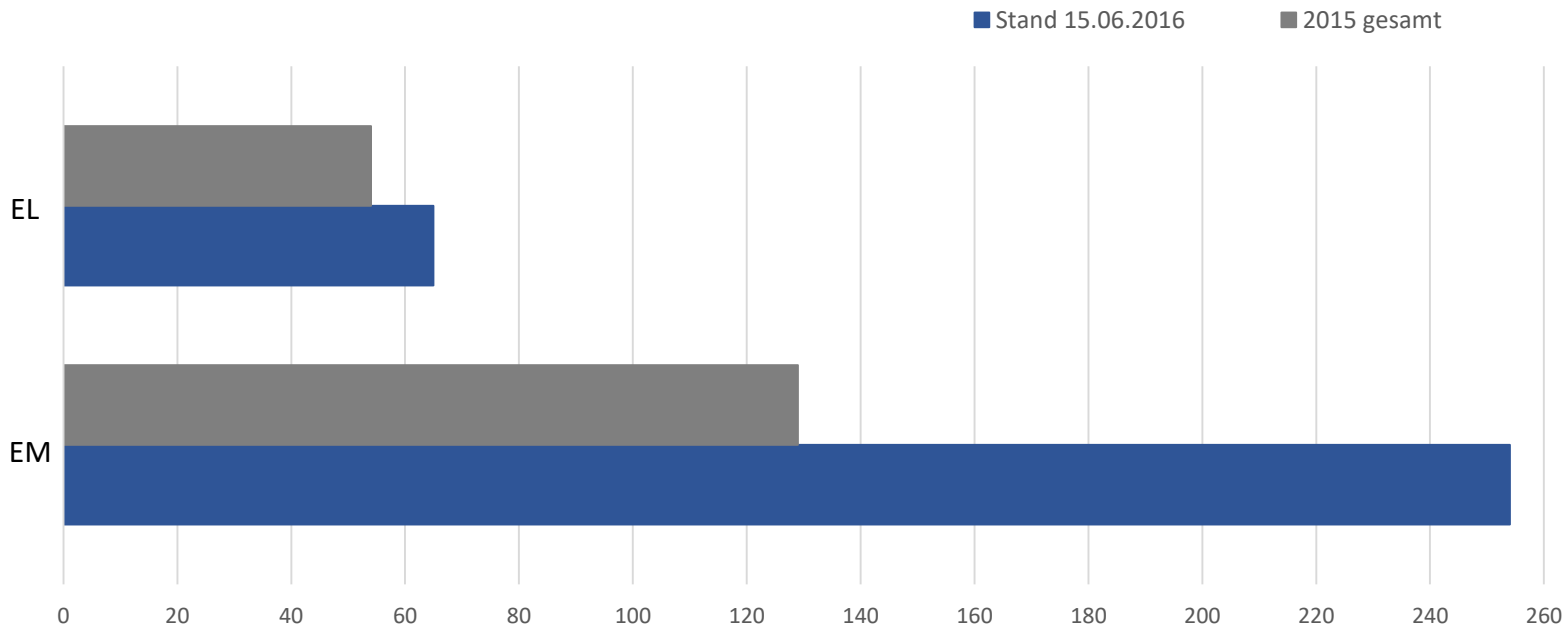




- Internationale Studierendenschaft
- Sehr gute Vorkenntnisse
- Einschlägige Berufserfahrung

Bewerber für Studienstart 2016

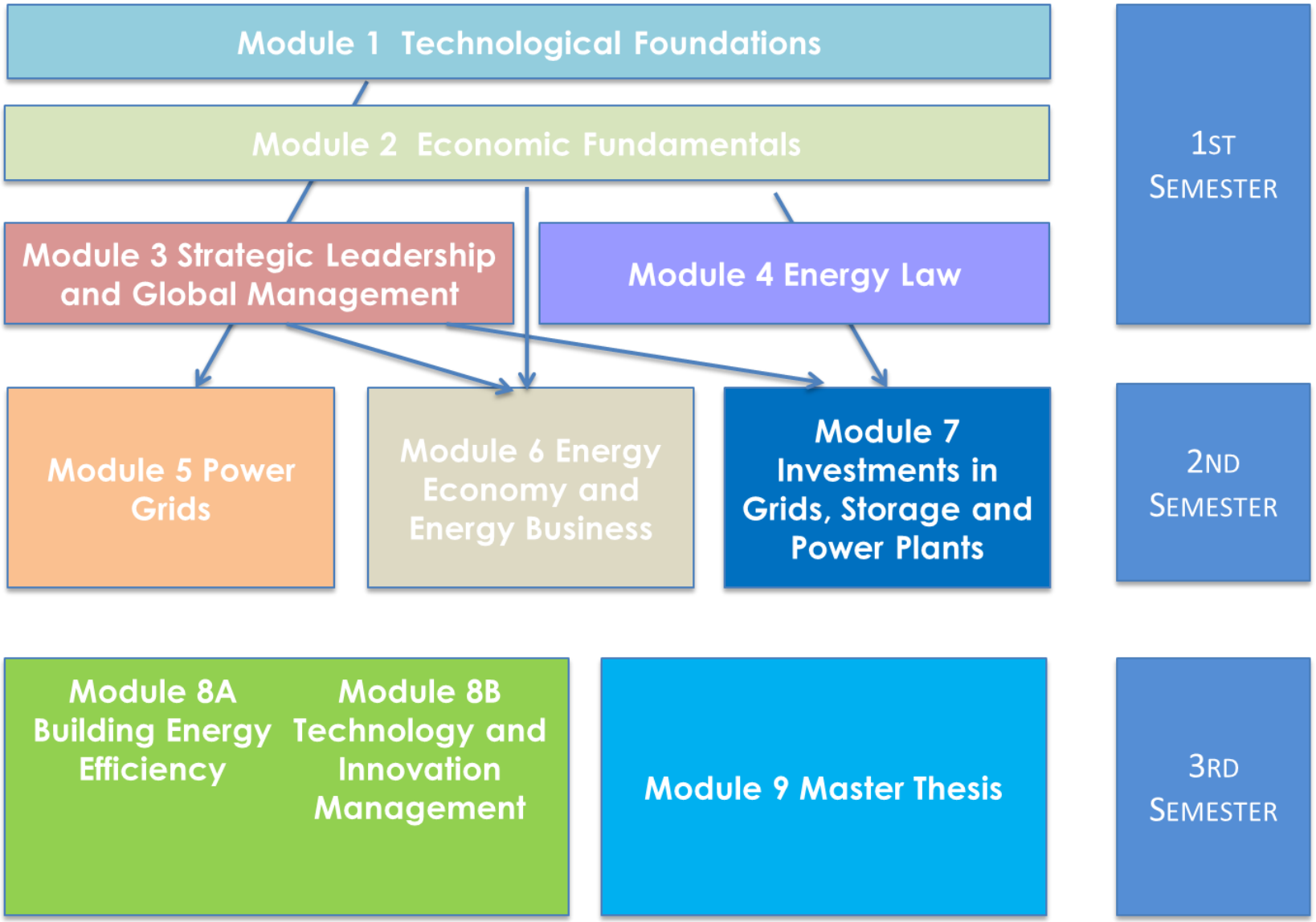
Bislang eingegangene Bewerbungen in diesem Jahr
im Vergleich zu insgesamt eingegangenen im Vorjahr



Bewerbungsfristen endeten am 31. Mai (MBA) / 15. Juni 2016 (MBL)

→ Studiengänge laufen erfolgreich
→ Hohes Potenzial für weitere positive Entwicklung

Modulstruktur MBA "Energy Management"



Kernteam MBA (Modulverantwortliche)

Prof. Dr.-Ing. Joachim Müller-Kirchenbauer
Akademischer Leiter

Technological Foundations	Modul 1
Energy Economy and Energy Business	Modul 6
Building Energy Efficiency	Modul 8A

Prof. Dr. Georg Erdmann

Energy Economics,	Modul 2
Energy Economy and Energy Business	Modul 6

Prof. Dr. Dodo zu Knyphausen-Aufseß

Strategic Leadership and Global Management	Modul 3

Prof. Dr. Dr. Dres. h.c. Franz Jürgen Säcker

Energy Law	Module 4

Kernteam MBA (Modulverantwortliche)

Prof. Dr.-Ing. Kai Strunz
Power Grids — Module 5

Prof. Dr. Christian von Hirschhausen
Investment in Grids, Storage, and Power Plants — Module 7

Prof. Dr. Jan Kratzer
Entrepreneurship and Innovation Management — Module 8B

+ rund 20 weitere Lehrbeauftragte von anderen Universitäten, aus führenden Unternehmen, Regulierungsbehörden etc.

Programm

Standard Schedule MBA Energy Management

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00						
9:30	Peer Groups & Individual Study	Peer Groups & Individual Study	EM TUTORIALS	Peer Groups & Individual Study	EM LECTURE	EM LECTURE
11:30						
13:00						
14:00	Peer Groups & Individual Study	Peer Groups & Individual Study	EM Visitations	Peer Groups & Individual Study	EM LECTURE	EM LECTURE
17:00						

Vorlesungen aufgezeichnet:	*Online-Teilnahme möglich*
3. Semester:	*Online-Module / blended learning*
Masterarbeiten:	*Internationale Themen*
Extracurriculare Veranstaltungen:	*Vernetzt im Sektor*

Internationale Einbettung

- Internationale Diskussionen – Energiewende im globalen Kontext
- Internationalisierungsstrategie der TU Berlin
- Alumnimanagement der TU Berlin
- Hohe Nachfrage
- International vergleichsweise günstig (€4.000 / Semester)
- Internationale Kooperationsmöglichkeiten:
  - University of Alberta (Canada)
  - San José State University (USA)
  - University of Cranfield (UK)
- Sehr positives Feedback von Studierenden wie Lehrkräften

Feed-back sehr positiv (EvaSys & Testimonials)

„The broadness of its carefully selected content makes this program perfect for student's career growth into global business leadership and policy making in the energy sector. It is truly multicultural and provides additional opportunities through close collaboration with both transnational and startup energy companies. Technical University Berlin is a world class scientific academic environment, allowing interdisciplinary initiatives, encouraging team work with experts' supervision, offering frequent and relevant seminars and excursions to boost practical experience. Students enjoy superb and individual support from both the academic and administrative staff."

MBA Participant, Nigeria

	sehr gut	gut	befriedigend	ausreichend	ungenügend
Lecturer 1	4	12	3	1	0
Lecturer 2	11	11	2	0	0
Lecturer 3	18	5	1	0	0
Lecturer 4	13	9	2	1	0
Lecturer 5	6	10	10	0	1
Lecturer 6	13	8	6	1	0
Lecturer 7	6	11	5	2	0
Lecturer 8	18	4	0	0	0
Lecturer 9	8	12	2	1	0
Lecturer 10	10	12	1	0	0
Lecturer 11	4	7	5	5	0

Evaluation MBA Module 1-3

„I am very excited to study on the Energy Management master program 2015-2017 at Technical University in Berlin! This program constitutes a great opportunity for young experts to deepen academic knowledge in the sphere of energy and management and further develop both their theoretical and professional skills. Most of all, the international orientation fascinates me about the program: today's managerial challenges in energy sector demand globalized solutions. A multinational master's studies such as the Energy Management master empowers students to take responsibility in multinational teams in an international context."

MBA Participant, Russia

„Now in this first semester of the Master Program in Energy Management at TU Berlin, I am thrilled and excited to meet and work with people from all around the world with diverse backgrounds in a very friendly and challenging environment. … The courses are great with excellent internationally recognised professors from academic as well as industrial backgrounds. I thoroughly enjoy the highly interactive sessions, and the supervisors put in a great effort at creating a relaxed environment for the students to get acquainted with all aspects of the subject. I am eagerly looking forward to the next semesters and can highly recommend this program!"

MBA Participant, India

Building Sustainability (MBA)

Management Methods for Energy Efficiency

Karoline Karohs, M.Sc.

TU Berlin

Forschungscampus Mobility2Grid – Symposium 2016

Why is the building sector relevant?

- 2050: the urban population will be larger than the current, total world population
  - Infrastructure – resources
  - CO_2 emissions

Source: Unsplash

Gear urban development towards limiting the demand for energy

Compile decarbonization roadmaps for all cities

Long term: plan new cities exclusively emission-free; ensure sustainable management of materials and material flow

Increase incentives for passive energy-saving in city-district development and construction

Equip cities with the necessary decision-making powers or strengthen these powers

Strengthen informal settlements and city districts and incorporate them into urban development

Urbanization surge up to 2050 – six development risks of global change | Goals | Measures and approa

Provide buildings and spatial structures to create urban quality of life, e.g. easily accessible, safe spaces with niches for different user groups to allow interaction and relaxation

Strengthen rental markets with high standards of tenant protection

Create affordable housing

Decelerate urbanization surges; polycentric spatial design instead of conventional rural-urban migration

Create inclusive city districts (people-oriented, climate-compatible)

Establish locally adapted planning systems

Win over relevant urban actors for efforts to improve the quality of life of urban poverty groups

Source: WBGU (2016): Humanity of the move: unlocking the transformative power of cities. Summary. Berlin: WBGU.

Curriculum

<table>
<tr><th>1st Semester</th><th>2nd Semester</th><th>3rd Semester</th></tr>
<tr><td rowspan="2">Project Management
9 ECTS</td><td>Real Estate Economics
6 ECTS</td><td>Lifecycle Management
6 ECTS</td></tr>
<tr><td colspan="2" rowspan="2">Compulsory electives:
- Technical:
Integration of Renewable Energies - 6 ECTS,
Smart Buildings - 6 ECTS
- Management:
Innovation and Technology Management - 12 ECTS</td></tr>
<tr><td>Energy Performance of Buildings
9 ECTS</td></tr>
<tr><td>Introduction Project
6 ECTS</td><td rowspan="2">Interdisciplinary Project
12 ECTS</td><td rowspan="3">Master Thesis
18 ECTS</td></tr>
<tr><td rowspan="2">Building and Urban Area Structures: Modifications for Sustainability and Energy Management
6 ECTS</td></tr>
<tr><td>Energy-Efficient Societies
6 ECTS</td></tr>
<tr><th>30 ECTS</th><th>30 ECTS</th><th>30 ECTS</th></tr>
</table>

Development and realization

- Developed with the feedback from students and teachers from previous M.Sc. program
- Teaching at and with the EUREF-Campus
- Teachers from academia and practice – integration in a lecture series and various study projects
- Target group: engineers, architects, urban planners, scholars of building technology
- Strong interest by persons from India and Iran

Thanks for your attention!

- Questions about the Master programs