

Breda University of Applied Sciences

Academy: ABEL

Program: Built Environment

Address:

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 The Netherlands

Contactpersoon

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1. Important dates

Monday, 6 February, 2023	Start of Semester 2 courses
Monday, 20 February – Friday, 24 February, 2023	Spring break
Monday, 1 May – Friday, 5 May, 2023	May holiday
Friday, 23 June, 2023	Last day of Semester 2 courses
Monday, 3 July – Friday, 14 July, 2023	Year 2 Semester 2 re-sit period
Monday, 17 July, 2023	Start of summer vacation

2. Program

	Title	ECTS	Semester
Year 2 S2			
	LAB 4 – High Density Urban Hub	10	2
Chosen 1	Specialization 3: Urban Design	5	2
	Specialization 3: Mobility	5	2
	Specialization 3: Urban Planning	5	2
Chosen 1	Profiling: Process & Participation	5	2
	Profiling: Design & construct	5	2
	Profiling: Advanced traffic modelling	5	2
	Profiling: Advanced Visualization	5	2
	Profiling: Architecture	5	2
	Profiling: Sustainability in BE	5	2
	Profiling: Trends & transitions	5	2
	Profiling: Mobility & land use	5	2
	Profiling: Academic literacy and	5	2
Total ECTS	Semester		

OSIRIS-code: BBEE2.LAB4.HH-01

Course name: LAB4 High density urban hub

Study load: 10 EC (=280 hours)

Coordinator: Jeroen Weppner

Lecturer(s): Jolijn van Baarsen - van den Berg, Luiz de Carvalho Filho, Tomas Mahu, Michiel Mulderij, Stephen Narsoo, Thomas Oorschot, Jeroen Weppner, Tim van Wershoven, Diaan van Westhuizen

Summary: *From a global perspective an increasing amount of people are moving towards cities. This puts a huge pressure on housing on the one hand, but also on maintaining and improving a sustainable, safe and accessible environment on the other hand. In this Lab you will elaborate on the complexity of densification in an high density urban area from a strategic to an operational level.*

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Innovate	Manage and	Integral approach
		II	I	II		II				II

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. understand the complexity of an urban development process;	<i>Integral approach</i>
2. demonstrate the ability to organize and communicate the proposed plans with stakeholders considering participation/ collaboration/ cocreation;	<i>Communicate and collaborate</i>
3. identify key drivers and key obstacles per stakeholder analysis through interviews and through spatial analysis;	<i>Realize</i>
4. demonstrate the ability to translate a given vision into variants and create a detailed design/proposal based on a Multi-criteria analysis (MCA);	<i>Design</i>
5. reflect on the variant selection in a mixed-specialism group;	<i>Integral approach</i>
6. demonstrate the ability to consider maintenance and realization of the proposal;	<i>Maintain</i>
7. present the main outcomes in a professional way to (external) stakeholders.	<i>Communicate and collaborate</i>

Content description:

In this study component the following content is covered:

Mobility

- hub function analysis (butterfly model)
- traffic and transport networks analysis
- modal shift and split analysis and prognosis

- trend analysis
- future user analysis incl designing nudges
- multi-criteria analysis / variation studies
- 3d GIS / AutoCAD
- mobility plan
- public space design
- urban hubs and inter-modality
- transfer and connections: destinations (functions)

Urban Design

- multi-criteria analysis / variation studies
- 3d GIS / AutoCAD
- graphic techniques for impressions
- mass study
- public space design
- sketch-up for study models and impressions
- urban design plan
- urban hubs and inter-modality
- densification strategies

Urban Planning

- land development financial calculations
- participation ladder
- stakeholder analysis
- trend analysis
- multi-criteria analysis / variation studies
- writing a legal paragraph
- writing a zoning plan
- 3d GIS / AutoCAD
- graphic techniques for impressions
- urban hubs and inter-modality
- development and maintenance legislation
- densification strategies
- environmental safety

Language: English

Teaching activity: Group work
Individual independent learning
Student presentations

Examination: Group assignment 30%
Group assignment 20%
Individual assignment 50%

Mark: Marks, F, MO

Required literature: --

Required other materials: ArcGIS, SketchUp, AutoCAD (Mob)

OSIRIS-code: BBEE2.MO3.MS-01 (**specialisation**)

Course name: MO3 Mobility services and organisation

Study load: 5 EC (=140 hours)

Coordinator: Jeroen Weppner

Lecturer(s): Ineke Spapé, Jeroen Weppner

Summary: *Sustainability is often linked to a decrease of (car) ownership, and a increase of (car, bicycle or scooter) sharing opportunities. But what how are these services organised? And what is the role of governmental and commercial organisations? In this course we will explore the vlaue of an increasing sharing society on the urban and rural challenges.*

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
		II						I	

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to: *Competency*

1. Distinguish the variety of sharing facilities and illustrate them in key characteristics of products and services;

Design

2. regulate the roles and interests of governmental organisations, commercial organisation and consumers;

Manage and innovate

3. Specify the governmental responsibilities in realisation, maintenance and development of 'traditional' mobility services;

Manage and innovate

4. Comment on a commercial business case, focussing on the development, maintenance and innovation;

Manage and innovate

5. Translate consumer demands and preferences towards a potential product characteristics;

Design

6. Critisize the opportunities and threats of rules and regulations;

Manage and innovate

7. develop a (simple) business case for your own sharing facility.

Design

Content description:

In this study component the following content is covered:

- governmental and commercial focused mobility services;

- the relationship between government, private companies (supplier) and consumer (demands);

- (common) rules and regulations, concession grants and parking regulations;

- Customer needs and preferences;

- business cases and use cases;

- current and forecasted policy on (shared) mobility services and technological innovations.

Language: English

Teaching activity: Instruction and demonstration
Group work
Individual independent learning

Examination: Group assignment 30%
Individual assignment 70%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE2.UD3.SPS-01 (**specialisation**)

Course name: UD3 Spatial processes and systems

Study load: 5 EC (=140 hours)

Coordinator: Michiel Mulderij

Lecturer(s): Luiz de Carvalho Filho, Michiel Mulderij

Summary: *Will self-driving cars be the norm in 10 years? Will the sharing economy overtake private ownership? Are we going to work from home more and will we therefore need less office space? Are we moving away from natural gas for heating? Will agriculture become high-tech or more nature inclusive? These are some of the many questions with an impact on the future organization of our living environment. At the same time, we do not know how these trends will develop.*

In UD3 Spatial processes and systems, you will learn how to design with uncertainties. You will be equipped with story telling techniques to expand your professional communication skills.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
						II	II		

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	Competency
1. identify uncertainties in a project;	Specify
2. analyze trends and developments in the built environment;	Research
3. predict possible consequences of trends and developments in the built environment;	Initiate and steer
4. formulate scenarios based on trends and developments in the built environment;	Specify
5. produce design solutions that can adapt to various scenarios;	Design
6. communicate about uncertainties in infographics;	Communicate and collaborate
7. narrate about design using story telling techniques .	Communicate and collaborate

Content description:

In this study component the following content is covered:
- history of urbanism: structures & ways of thinking, phylosophy, art and architecture;
- the basics of urban systems: trends & developments, causality (if this, than that);
- scenarios & strategy: spatial consequences, story telling.

Language: English

Teaching activity: Instruction and demonstration
Group work
Individual independent learning

Examination: Individual assignments 50%
Individual assignments 25%
Individual assignments 25%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE2.UP3.WM-01 (**specialisaton**)

Course name: UP3 Water management

Study load: 5 EC (=140 hours)

Coordinator: Marcel van Wietingen

Lecturer(s): Stephen Narsoo, Marcel van Wietingen

Summary: *This study component examines the role of water management within the process of spatial development.*

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Steer	Initiate and innovate	Manage and approach	Integral approach
	I	I				I				

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to: *Competency*

1. name and recognize the underlying aspects of water management;
2. make the connection between the changing climate and water management;
3. make a connection between the Dutch landscape and water management;
4. understand the multi governance of water management and the different actors;
5. understand the actual question concerning spatial planning, related to water management;
6. translate the theory of water management to concrete spatial development.

Content description:

In this study component the following content is covered:

- climate change, - adaptation and -mitigation;
- urban water management;
- different actors concerning water management;
- water safety, -quality and -quantity;
- water governance – legislation and -policy;
- environmental quality;
- legal security.

Language: English

Teaching activity:	Instruction and demonstration Group work Individual independent learning
Examination:	Group assignment 30% Written exam 70%
Mark:	Marks, F, MO
Required literature:	Water Governance in the Netherlands; OECD Report 'Deltaprogramma 2023 (download)
Required other materials:	--

OSIRIS-code: BBEE.P4-6.PRP-01 (**profiling**)

Course name: PRO Process & Participation

Study load: 5 EC (=140 hours)

Coordinator: Daniëlle Mourits

Lecturer(s): Loek Hellebrekers, Eefje van den Hoogen, Daniëlle Mourits

Summary: This module focuses on the user of the physical living environment in a residential area: the residents. In what ways can they themselves participate in the development of a liveable neighborhood? Students are introduced to different participation methods and learn to apply them in practice. Together with residents, they look for tools that residents can use themselves. They also enter into discussions with other stakeholders, such as the municipality.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Innovate	Manage and approach	Integral approach
			II			II				

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. Choosing and applying appropriate communication tools to effectively convey professional information to residents, municipality and other target groups involved in developing a liveable neighborhood;	<i>Communicate and collaborate</i>
2. Identifying relevant stakeholders in order to achieve change aimed at quality of life;	<i>Communicate and collaborate</i>
3. Being able to collaborate constructively with residents and other relevant parties on spatial-social assignments at neighborhood level;	<i>Communicate and collaborate</i>
4. Drawing up an implementation plan with concrete proposals/measures and activities;	<i>Realize</i>
5. Evaluating applied methods and learning from them for the follow-up process;	<i>Monitor</i>

Content description:

In this study component the following content is covered:
- Participation methods at different scales
- In-depth stakeholder analysis
- Application of participation methods to a specific case (neighbourhood level)
- Target group-oriented use of communication tools
- Reflection and evaluation of applied participation method(s)

Language: English

Teaching activity: Instruction and demonstration
Group work
Formative assessment

Examination: Group assignment 100%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE.P4-6.DEC-01 (**profiling**)

Course name: PRO Design & construct

Study load: 5 EC (=140 hours)

Coordinator: Rien Smalheer

Lecturer(s): Jolijn van Baarsen - van den Berg, Joost van de Pas, Rien Smalheer

Summary: *"This module is the most realistic one of the whole educational programme."*

"Now I understand the importance of proper designing and Project work."

These are just two reactions of students and graduates of our education.

This module deals with a realistic case from the municipality of Breda, where the public domain (space/infrastructure, etc.) needs to be changed. The challenges are plenty: designing and repurposing public space, designing functional infrastructure, weighing expected cost with desired/required quality, etc. How do you tackle functional and practical design objectives according to specifications, in cooperation with various specialisms, with each person having their own project-role to produce a coherent total concept that the/your client will want to choose over that of your competition? A complete challenge you will not easily forget!

The product, a total spatial concept, of your project group has to compete with that of other groups to ultimately obtain the order. You are in to win it.

This module is for deepening and broadening your Design skills. It will also teach you how to combine these with some general (civil) engineering parts to get a feeling for the realisation phase.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
	II					II			

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. oversee, understand and follow through on a large(r) project;	<i>Communicate and collaborate</i>
2. set up and produce several parts to the project, like designs, phasing/staging plans, etc.;	<i>Specify</i>
3. apply different types/forms of contact between client(s) and consultant(s), formal and informal;	<i>Specify</i>
4. contrast different tactics to procure/win integral projects (in tender/bidding phases);	<i>Integral approach</i>
5. being a specialist as a part of a multidisciplinary project team;	<i>Integral approach</i>
6. cooperate internally, in the project team (5-role model), as well as cooperate externally, with the client;	<i>Communicate and collaborate</i>

7. make choices within varying margins of uncertainty based on expected costs and benefits (the Economically Most Beneficial Offer). *Specify*

Content description: In this study component the following content is covered:

- design of urban area;
- level separated junctions;
- 3D design;
- EMBO (Economically Most Beneficial Offer; EMVI);
- BIM (Building Information Modelling and Management);
- staging, traffic and stakeholder management with operational (traffic) safety;
- contracting (different forms; also buying knowledge);
- tender process.

Language: English

Teaching activity: Instruction and demonstration
Group work
Individual independent learning

Examination: Group assignment 60%
Written exam 40%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE.P4-6.ATM-01
 Course name: PRO Advanced traffic modelling
 Study load: 5 EC (=140 hours)
 Coordinator: Elly Khademi
 Lecturer(s): Elly Khademi, Sjors Martens

Summary: *In your studies you have learned how to evaluate traffic on a city and regional scale. But what about situations that do not exist yet? Crossings, events, new building projects; all these elements will raise questions about future traffic and its processing. To do this, traffic modelling is one of the main skills in the current mobility climate that can give predict or simulate future situations. This simulation is often done through modelling in computer programmes or using mathematical formulas to predict future flows.*

In this module you will be introduced to Micro and Macro models. Micro models simulate traffic on a crossing scale - you are able to see individual vehicles driving over a network you created according to pre-set parameters. Macro models rely on great mathematical input to be able to predict effects on a network when a change occurs (like a closed off exit). The two types of models each have their own application and limits. In this module you will use them to evaluate a more complex traffic light regulation you will design, and to give advice on a larger infrastructural project. If you want to look into the future, this is your module.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
	II				II				

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	Competency
1. Explain the differences between various Micro and Macro models of transportation;	Specify
2. Specify and incorporate the elements of effective transportation planning in a simulation programme;	Specify
3. Explain the entire spectrum of decision support transport Micro and Macro models;	Specify
4. Explain and apply the basic knowledge of traditional Macro (4-step) models.	Design
5. Design a network in a micro simulation programme (VISSIM);	Design
6. Test future traffic situations through a model study using both Micro and Macro modelling;	test and evaluate
7. Describe the elements of a vehicle-dependent traffic light regulation;	Specify
8. Design a vehicle dependent traffic light regulation in the associated programmes;	Design

9. Evaluate the designed-vehicle dependent traffic light regulation using micro modelled simulations; *test and evaluate*

Content description: In this study component the following content is covered:

- Microsimulation theory and software (VISSIM)
- Macrosimulation theory and software (VISUM)
- The 4-step model of travel demand inducing
- Types of Transport Models
- Model Calibration and Validation and The Future of Transport Modelling
- Vehicle-Dependent traffic light regulations
- Detector and Processing software (COCON, ATB)

Language: English

Teaching activity: Instruction and demonstration
Group work
Individual independent learning

Examination: Individual Assignments 25%
Individual Assignment 25%
Group Assignment 50%

Mark: Marks, F, MO

Required literature: Hollander, Yaron. Transport Modelling for a Complete Beginner. CTthink!, 2016.

Required other materials: BUas computers with PTV software

OSIRIS-code: BBEE.P4-6.ADV-01 (**profiling**)

Course name: PRO Advanced visualisation

Study load: 5 EC (=140 hours)

Coordinator: Tomas Mahu

Lecturer(s): Ron van den Heuvel, Tomas Mahu, Joost van de Pas

Summary: *Visualization plays a crucial role in persuading certain points of view, train of thought, designs, and ideas. A visualization immediately speaks to the imagination and tells a specific story. Today, the power of visualization is increasingly appreciated and used in many ways. From "stills" to "videos" and from posters to AR/VR models, everything is used to convince people of a certain idea/point of view.*

Within our profession your visualizations are combined places, environments and the (future) users. As a professional you will have to talk to them, clarify certain findings and translate this into something new. Visualizing can help with that.

In this course we learn how to deal with new visualization techniques, and we give an extensive introduction on how they can be applied. We create the right content and process it into a (moving or non-moving) final product. All this to communicate an idea/design clearly and convincingly.

Storytelling, Composition & Ambiance are of paramount importance in this course.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Innovate	Manage and innovate	Integral approach
		II				II				

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. Generating ideas/solutions and/or providing insight into issues/problems by visualizing them in an innovative and substantiated way (read; readable for others).	<i>Design</i>
2. Choosing the right communication tools at a professional level for the intended communication.	<i>Communicate and collaborate</i>
3. In a professional manner, in complex situations, actively seek cooperation with those involved/target groups.	<i>Design</i>
4. Building a storyline in which certain choices/premises are substantiated clearly and powerfully.	<i>Communicate and collaborate</i>

Content description:

In this study component the following content is covered:
- Choosing and creating the right content i.r.t. a plan/design/idea
- Working with Adobe CC
- Working with 3D visualization programs
- Working with Video Edits
- Working with Render programs

Language:	English
Teaching activity:	Instruction and demonstration Student presentations Group work
Examination:	100% groupwork
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	- 3D program (Sketchup/REVIT) - Render program (n.t.b) - Adobe package CC - Camera (Photo & Video)

OSIRIS-code: BBEE.P4-6.ARC-01 (**profiling**)

Course name: PRO Architecture

Study load: 5 EC (=140 hours)

Coordinator: Ed Ravensbergen

Lecturer(s): Luiz de Carvalho Filho, Ed Ravensbergen

Summary: *In this study component you will learn more about architecture. How are buildings designed? Which design philosophies can be described? What is the relation between the design on the scale of the buiding and on the scale of the city or the landscape? These issues will be adressed working on the assignment: making and presenting your own design for a buiding in a specific context.*

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Steer	Initiate and innovate	Manage and innovate	Integral approach
		II				II				

competency level (I-III):

Learning objective(s): Upon completion of this study component you are able to: *Competency*

1. recognize and use important concepts and terms from architecture *Research*

2. recognize and understand different architecture typologies and their functional requirements *Specify*

3. make an architectural plan analysis of an existing building, illustrated in the form of drawings and described in your own words *Research*

4. to use this acquired knowledge and insights to conduct a typology study for a building *Design*

5. to develop an architectural concept based on a program and typology and location study *Design*

6. to develop the concept according to one's own insight into an architectural sketch design for a specific building at a concrete location, which meets the given program and its functional requirements *Design*

7. to make a reproduction of a building in the form of a scale model *Communicate and collaborate*

8. design and present a building using Sketch-up *Design*

9. to explain and argument the sketch design orally with a visual presentation *Communicate and collaborate*

10. evaluate the design as related to its urban context and its role within the public domain *Monitor*

Content description: In this study component the following content is covered:

- the relationship between architecture and urban planning

- the use of architectural concepts related to: architects and design philosophy, building concept and typology, facade and construction, functions and routing, relationship with the public domain

- applying different drawing and presentation techniques

- making a scale model of a building

- oral and written (digital) presentations

- the plan analysis

- the building concept

- the sketch design

- Sketch-up as a design and presentation tool

- basic techniques 3d visualization

- the (slide) presentation

Language: English

Teaching activity: Instruction and demonstration
Individual independent learning
Formative assessment

Examination: Individual assignment 75%
Group assignment 25%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE.P4-6.SUB-01 (**profiling**)

Course name: PRO Sustainability in BE

Study load: 5 EC (=140 hours)

Coordinator: Rana Habibi

Lecturer(s): Rana Habibi, Daniëlle Mourits, Stephen Narsoo

Summary: *Sustainability is a broad concept that is called to attention in every plan at every scale level. An important theme within this is the energy transition. This module focuses on the question 'How do you organize a future-proof neighborhood?'. In addition, we are working towards an improvement proposal that addresses the application of the theme of energy transition, anchoring in legislation and innovative forms of maintenance. Improvement requires change, both in terms of content and behaviour. So both are covered.*

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
				II					II

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. Formulate future-proof solutions in the field of energy transition at neighborhood level, in which you make integral proposals	<i>Integral approach</i>
2. Identifying required behavioral changes aimed at various stakeholders in sustainability at neighborhood level	<i>Integral approach</i>
3. Analyzing existing (digital) spatial plans	<i>Research</i>
4. Embedding sustainability proposals in the Environmental Plan	<i>Maintain</i>
5. Providing innovative forms of maintenance aimed at sustainability at neighborhood level	<i>Maintain</i>

Content description:

In this study component the following content is covered:

- Energy transition
- Behavioral change
- Legislation ('Omgevingsvisie' and 'Omgevingsplan')
- Innovative maintenance

Language: English

Teaching activity: Instruction and demonstration
Group work
Formative assessment

Examination: Group assignment 100%

OSIRIS-code: BBEE.P4-6.TRT-01 (**profiling**)

Course name: PRO Trends & transitions

Study load: 5 EC (=140 hours)

Coordinator: Michiel Mulderij

Lecturer(s): Michiel Mulderij, Maurizio Scarciglia

Summary: *In 1896 the first two cars were introduced in the Netherlands. Forty years later the Dutch roads served 100.000 cars and today, just 80 years later, we have already more than 8.3 million private cars in the Netherlands. It is evident that the car has completely disrupted the use of the street and the way we plan our cities. Horses were displaced. Pedestrians and cyclists were pushed to the margins.*

The gradual increase in car-ownership is one of the most prominent examples of a trend causing major transitions in our built environment. However, a similar story can be told about first the exodus to the suburb and later the gentrification of our cities, the emergence of remote working, increasingly smaller family nuclei and the list goes on.

In this module you will explore trends in our society that have caused transitions in our BE. You will also study current trends and reflect on how these trends may affect our BE in the future. This knowledge and understanding will help you as a mobility specialist, urban planner and urban designer alike, to better grasp and respond to the constant changes in our society.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
					II		II		

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. analyze historic data (GIS) to identify historic transitions in society and the built environment;	<i>Monitor, test and evaluate</i>
2. extrapolate historic transitions in society and the built environment to identify current trends and societal urgencies;	<i>Initiate and steer</i>
3. identify threats and opportunities for future development and translate these into a brief;	<i>Initiate and steer</i>
4. process research outcomes into a story telling product, that includes text and graph(ic)s;	<i>Communicate and collaborate</i>
5. reflect and conclude how societal urgencies and transitions can inform spatial planning and design.	<i>Initiate and steer</i>

Content description:

In this study component the following content is covered:

- data collection from various sources;
- data processing;
- monitoring social trends and societal urgencies;

- data analysis techniques;
- data visualization;
- storytelling;
- spatial strategies.

Language: English

Teaching activity: Instruction and demonstration
Group work
Formative assessment

Examination: Individual assignments 100%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE.P4-6.MOL-01 (**profiling**)

Course name: PRO Mobility & land use

Study load: 5 EC (=140 hours)

Coordinator: Paul van de Coevering

Lecturer(s): Paul van de Coevering, Mark van Eijk

Summary: *Mobility and urbanization are intertwined on many and different dimensions. In fact, these seemingly separated worlds are more as one than you might expect. Therefore, planning for and interventions in the urban environment should be intertwined thoroughly.*

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
		II							II

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	<i>Competency</i>
1. describe the interaction between mobility and land use, as well as main concepts and principles for spatial mobility policies;	<i>Integral approach</i>
2. indicate the relevance of spatial and infrastructural interventions for the accessibility, liveability and economy of urban regions;	<i>Integral approach</i>
3. determine robust principles behind successful use of spatial mobility policies (best practices);	<i>Design</i>
4. weigh which principles and tools are effective for current challenges on the cutting edge of mobility and land use;	<i>Integral approach</i>
5. design a good structure for process coordination and governance to enhance collaboration between all governments and disciplines involved;	<i>Manage and innovate</i>
6. apply theoretical knowledge, the robust principles, governance and tooling effectively in a topical case.	<i>Integral approach</i>

Content description:

- In this study component the following content is covered:
- the mutual dependence between mobility and land use and the key role of accessibility;
 - robust principles for urban compaction, mixing functions, multimodal/inclusive design and accessibility planning;
 - planning concepts like Transit Oriented Development, Bicycle Oriented Development, urban compaction, location policies and retail policies;
 - Daily Urban Systems and location selection processes (mobility and land use cycle);

- multimodal urbanization (balance between accessibility, economy and liveability);
- stakeholders, governance and planning processes;
- current challenges, like housing, urban transformation and downsizing of inner city infrastructure for car traffic.

Language: English

Teaching activity: Instruction and demonstration
Group work
Individual independent learning

Examination: Group assignment 50%
Individual assignment 50%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

OSIRIS-code: BBEE.P4-6.ALR-01 (**profiling**)

Course name: PRO Academic literacy and research

Study load: 5 EC (=140 hours)

Coordinator: Zhan Goosen

Lecturer(s): Luiz de Carvalho Filho, Zhan Goosen, Diaan van Westhuizen

Summary: *Research allows us to test ideas and assumptions in a structured way. It is for this reason that research, more specifically scientific research, develops a body of knowledge that is always refined, based on the rejection or confirmation of ideas and beliefs.*

Based on the knowledge you have gained in KB5 and the research skill line, this PRO module aims to build on those basics of good research in a formal approach and scientific manner.

Focus competencies:

Research	Specify	Design	Realize	Maintain	Monitor, test and evaluate	Communicate and collaborate	Initiate and steer	Manage and innovate	Integral approach
II	II								

competency level (I-III):

Learning objective(s):

Upon completion of this study component you are able to:	Competency
1. demonstrate an understanding of the importance of scientific research;	Research
2. identify and apply the necessary steps in a research project and process;	Research
3. construct a research report with appropriate content for your discipline/topic;	Specify
4. plan and structure your research project effectively;	Initiate and steer
5. use language appropriately and effectively in written academic work;	Communicate and collaborate
6. evaluate and justify information and ideas obtained from sources;	Monitor, test and evaluate
7. show the ability to recognize different research methods;	Research

Content description:

In this study component the following content is covered:
- scientific literature research approach;
- academic reading & writing styles;
- setting up scientific research project;
- report structuring;
- reliability and validity of literature, and data sources;
- research strategies & planning;
- effective and correct referencing style (APA);
- applying quantitative and qualitative knowledge to inform empirical discoveries;

- functions of research (observing, generalizing, reasoning, re-evaluation).

Language:	English
Teaching activity:	Instruction and demonstration Individual independent learning Formative assessment
Examination:	Group assignment 30% Individual assignment 70%
Mark:	Marks, F, MO
Required literature:	Academic Writing: A Handbook for International Students Author: Stephen Bailey Publication Information: Fifth edition. London: Routledge. 2017
Required other materials:	--



Games



Media



Hotel



Facility



Built Environment



Logistics



Tourism



Leisure & Events



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