Built Environment

Course catalogue International Spatial Development

Year 2020-2021

DISCOVER YOUR WORLD

Breda University
OF APPLIED SCIENCES

Foreword

This course catalogue gives you an overview of your study programme. You will find the following content:
• the annual schedule, examination periods, holidays, etc;
• an overview of all the study components, including workload;
• learning objectives and content for all the study components;
• an overview of the competences;
• an explanation of the competences and the three levels.

Teaching methods

In your study programme, you will be exposed to four teaching methods: projects, courses, training sessions, and mentoring.
• In the **projects/labs** you will work together with fellow students in a project group on a large professional assignment. You will acquire knowledge and learn to apply this knowledge in a professional context, operating as a professional in training. The lecturer will coach the groups of students as a project leader.
• In the **courses** you will acquire profession-relevant knowledge by attending lectures and actively working on assignments. The lecturer will have the role of teacher and expert supervisor.
• In the **training sessions** you will acquire skills. These sessions are held in smaller groups, in which the lecturer will act as instructor and expert.
• Your **mentor** will be your personal coach. He or she will keep track of your academic development. You will have regular contacts with your mentor.

Years 1 and 2

The first year is called the propaedeutic phase and it consists of three trimesters of twelve weeks each. The trimesters are usually filled with 1 project and several courses and training sessions. Each academic year comprises sixty ECs study credits.

The main phase of the study programme will start in year 2. This year too consists of 3 trimesters of twelve weeks each. This year will further prepare you for the third and fourth years, which is when learning in practice will be an important component.

Years 3 and 4

The third year of study consists of three trimesters. As a third-year student you will switch between working in practice and studying at BUAS. Two out of the three trimesters you will be doing a work placement. During the other trimester you will attend classes.
You are to find a work placement yourself. Obviously, you will be supported in this process by the placement coordinator. More detailed information can be found in the placement handbook.

The fourth year consists of two semesters. The first semester will be your chosen minor. In the second semester you will work on a graduation project for an industry client. This project is also something that you need to acquire yourself. More detailed information can be found in the graduation handbook.

TER

All relevant rules can be found in the Teaching and Examination Regulations (TER) 2020-2021. In the academic year of 2020-2021, a transitional arrangement will apply. This transitional arrangement will be announced after the board of examiners has approved and officially adopted this arrangement. The transitional arrangement will apply to students who started a project, a course, etc. last year, but have not yet completed it.

We wish you an enjoyable and successful year!

On behalf of the management team of Built Environment and Logistics.,

Debbie Dermout – Director Built Environment and Logistics.
This Course catalogue is part of the Teaching and Examination Regulations(TER) 2020-2021.

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Jaarplanning ISD 2020-2021

Week	Monday	Friday	Year 1		Year 2		Year 3		Year 4 regular		Year 4 not regular	Monday	Friday	Week
			class:		class:		class:		class:		class:			
34	8/17/2020	8/21/2020	Summer holiday		Summer holiday		Summer holiday		Summer holiday		Summer holiday	8/17/2020	8/21/2020	34
35	8/24/2020	8/28/2020	Intro college 27-08		Intro lecture (zij)		Summer holiday/delayed internship presentations		Exam August		Summer holiday	8/24/2020	8/28/2020	35
36	8/31/2020	9/4/2020	Introduction		Summer holiday		Internship 1/delayed internship presentations		Summer holiday		Graduation Internship 1 - January Group	8/31/2020	9/4/2020	36
37	9/7/2020	9/11/2020	Academic week 1		Academic week 1		Internship 2		Academic week 1		Graduation Internship 2 - January Group	9/7/2020	9/11/2020	37
38	9/14/2020	9/18/2020	Academic week 2		Academic week 2		Internship 3		Academic week 2		Graduation Internship 3 - January Group	9/14/2020	9/18/2020	38
39	9/21/2020	9/25/2020	Academic week 3		Academic week 3		Internship 4		Academic week 3		Graduation Internship 4 - January Group	9/21/2020	9/25/2020	39
40	9/28/2020	10/2/2020	Academic week 4		Academic week 4		Internship 5		Academic week 4		Graduation Internship 5 - January Group	9/28/2020	10/2/2020	40
41	10/5/2020	10/9/2020	Academic week 5		Academic week 5		Internship 6		Academic week 5		Graduation Internship 6 - January Group	10/5/2020	10/9/2020	41
42	10/12/2020	10/16/2020	Academic week 6		Academic week 6		Internship 7		Academic week 6		Graduation Internship 7 - January Group	10/12/2020	10/16/2020	42
43	10/19/2020	10/23/2020	Autumn Holidays		Autumn Holidays		Internship 8		Autumn Holidays		Graduation Internship 8 - January Group	10/19/2020	10/23/2020	43
44	10/26/2020	10/30/2020	Academic week 7		Academic week 7		Internship 9		Academic week 7		Graduation Internship 9 - January Group	10/26/2020	10/30/2020	44
45	11/2/2020	11/6/2020	Academic week 8		Academic week 8		Internship 10		Academic week 8		Graduation Internship 10 - January Group	11/2/2020	11/6/2020	45
46	11/9/2020	11/13/2020	Academic week 9		Academic week 9		Internship 11		Academic week 9		Graduation Internship 11 - January Group	11/9/2020	11/13/2020	46
47	11/16/2020	11/20/2020	Academic week 10		Academic week 10		Internship 12		Academic week 10		Graduation Internship 12 - January Group	11/16/2020	11/20/2020	47
48	11/23/2020	11/27/2020	Academic week 11/TEST WEEK		Academic week 11/TEST WEEK		Internship 13		Academic week 11 / TEST WEEK		Graduation Internship 13 - January Group	11/23/2020	11/27/2020	48
49	11/30/2020	12/4/2020	Academic week 12/TEST WEEK		Academic week 12/TEST WEEK		Internship 14		Academic week 12		Graduation Internship 14 - January Group	11/30/2020	12/4/2020	49
50	12/7/2020	12/11/2020	Academic week 1		Academic week 1		Presentations		Academic week 13	Register resits minor	Graduation Internship 15 - January Group	12/7/2020	12/11/2020	50
51	12/14/2020	12/18/2020	Academic week 2	Register resits	Academic week 2	Register resits	SIMgame Academic week 1		Academic week 14	Register resits minor	Graduation Internship 16 - January Group	12/14/2020	12/18/2020	51
52	12/21/2020	12/25/2020	Christmas Holidays		Christmas Holidays		Christmas Holidays		Christmas Holidays		Christmas Holidays	12/21/2020	12/25/2020	52
53	12/28/2020	1/1/2021	Christmas Holidays		Christmas Holidays		Christmas Holidays		Christmas Holidays		Christmas Holidays	12/28/2020	1/1/2021	53
1	1/4/2021	1/8/2021	Academic week 3	Register resits	Academic week 3	Register resits	Academic week 2		Academic week 15		Graduation Internship 17 - hand-in	1/4/2021	1/8/2021	1
2	1/11/2021	1/15/2021	Academic week 4		Academic week 4		Academic week 3		Academic week 16 /RESIT WEEK		Graduation Internship week 18/preperation	1/11/2021	1/15/2021	2
3	1/18/2021	1/22/2021	Academic week 5	Resits trim 1 /Yr 1	Academic week 5	Resits trim 1 /Yr 2	Academic week 4		Academic week 17 / project final		Exam January	1/18/2021	1/22/2021	3
4	1/25/2021	1/29/2021	Academic week 6	Resits trim 1 /Yr 1	Academic week 6	Resits trim 1 /Yr 2	Academic week 5		Academic week 18 / project final			1/25/2021	1/29/2021	4
5	2/1/2021	2/5/2021	Academic week 7	Resits trim 1 /Yr 1	Academic week 7	Resits trim 1 /Yr 2	Academic week 6		Academic week 19 / project final			2/1/2021	2/5/2021	5
6	2/8/2021	2/12/2021	Academic week 8		Academic week 8		Academic week 7		Graduation Internship 1 - June Group			2/8/2021	2/12/2021	6
7	2/15/2021	2/19/2021	Spring Break		Spring Break		Spring Break		Graduation Internship 2 - June Group			2/15/2021	2/19/2021	7
8	2/22/2021	2/26/2021	Academic week 9		Academic week 9		Academic week 8		Graduation Internship 3 - June Group			2/22/2021	2/26/2021	8
9	3/1/2021	3/5/2021	Academic week 10		Academic week 10		Academic week 9		Graduation Internship 4 - June Group			3/1/2021	3/5/2021	9
10	3/8/2021	3/12/2021	Academic week 11/TEST WEEK		Academic week 11/TEST WEEK		Academic week 10		Graduation Internship 5 - June Group			3/8/2021	3/12/2021	10
11	3/15/2021	3/19/2021	Academic week 12/TEST WEEK		Academic week 12/TEST WEEK		Academic week 11/TEST WEEK		Graduation Internship 6 - June Group			3/15/2021	3/19/2021	11
12	3/22/2021	3/26/2021	Fieldtrip		Fieldtrip		Academic week 12/TEST WEEK		Graduation Internship 7 - June Group			3/22/2021	3/26/2021	12
13	3/29/2021	4/2/2021	Academic week 1		Academic week 1		Internship 1		Graduation Internship 8 - June Group			3/29/2021	4/2/2021	13
14	4/5/2021	4/9/2021	Academic week 2		Academic week 2		Internship 2		Graduation Internship 9 - June Group			4/5/2021	4/9/2021	14
15	4/12/2021	4/16/2021	Academic week 3	Register resits	Academic week 3	Register resits	Internship 3	Register resits	Graduation Internship 10 - June Group			4/12/2021	4/16/2021	15
16	4/19/2021	4/23/2021	Academic week 4	Register resits	Academic week 4	Register resits	Internship 4	Register resits	Graduation Internship 11 - June Group			4/19/2021	4/23/2021	16
17	4/26/2021	4/30/2021	Academic week 5		Academic week 5		Internship 5		Graduation Internship 12 - June Group			4/26/2021	4/30/2021	17
18	5/3/2021	5/7/2021	May Holiday		May Holiday		Internship 6		Graduation Internship 13 - June Group			5/3/2021	5/7/2021	18
19	5/10/2021	5/14/2021	Academic week 6	Resits trim 2 /Yr 1	Academic week 6	Resits trim 2 /Yr 2	Internship 7	Resits trim 2 /Yr 3	Graduation Internship 14 - June Group			5/10/2021	5/14/2021	19
20	5/17/2021	5/21/2021	Academic week 7	Resits trim 2 /Yr 1	Academic week 7	Resits trim 2 /Yr 2	Internship 8	Resits trim 2 /Yr 3	Graduation Internship 15 - June Group			5/17/2021	5/21/2021	20
21	5/24/2021	5/28/2021	Academic week 8	Resits trim 2 /Yr 1	Academic week 8	Resits trim 2 /Yr 2	Internship 9	Resits trim 2 /Yr 3	Graduation Internship 16 - June Group			5/24/2021	5/28/2021	21
22	5/31/2021	6/4/2021	Academic week 9		Academic week 9		Internship 10		Graduation Internship 17 - hand-in			5/31/2021	6/4/2021	22
23	6/7/2021	6/11/2021	Academic week 10		Academic week 10		Internship 11		Graduation Internship 18/preperation			6/7/2021	6/11/2021	23
24	6/14/2021	6/18/2021	Academic week 11/TEST WEEK		Academic week 11/TEST WEEK		Internship 12		Exam June			6/14/2021	6/18/2021	24
25	6/21/2021	6/25/2021	Academic week 12/TEST WEEK	Register resits	Academic week 12/TEST WEEK	Register resits	Internship 13		Exam June			6/21/2021	6/25/2021	25
26	6/28/2021	7/2/2021	study week	Register resits	Study week	Register resits	Internship 14		Exam June			6/28/2021	7/2/2021	26
27	7/5/2021	7/9/2021	RESIT WEEK		HERTEST WEEK		Presentations					7/5/2021	7/9/2021	27
28	7/12/2021	7/16/2021	Week for finalization		HERTEST WEEK		Presentations		14/7 Graduation ceremony			7/12/2021	7/16/2021	28
29	7/19/2021	7/23/2021	Summer holiday		Summer holiday		Summer holiday					7/19/2021	7/23/2021	29
30	7/26/2021	7/30/2021	Summer holiday		Summer holiday		Summer holiday					7/26/2021	7/30/2021	30
31	8/2/2021	8/6/2021	Summer holiday		Summer holiday		Summer holiday					8/2/2021	8/6/2021	31
32	8/9/2021	8/13/2021	Summer holiday		Summer holiday		Summer holiday					8/9/2021	8/13/2021	32
33	8/16/2021	8/20/2021	Summer holiday		Summer holiday		Summer holiday					8/16/2021	8/20/2021	33
34	8/23/2021	8/27/2021							Exam August			8/23/2021	8/27/2021	34
35	8/30/2021	9/3/2021	Introduction		Intro lecture (zij)		Internship 1					8/30/2021	9/3/2021	35
36	9/6/2021	9/10/2021	Academic week 1		Academic week 1		Internship 2					9/6/2021	9/10/2021	36

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International Spatial Development 2020 - 2021: year 1

Trimester 1

Name	Osiris-code	ECTS	Page
LAB1: Explore your Environment	BISD1.LAB1-18P	6	10
Introduction into Built Environment	BISD1.ISD1-18C	3	11
Facts, Figures & Tools for BE	BISD1.TOOLS1-19T	4	12
Visualisation	BISD1.VIS1-18T	2	13
Government & Society	BISD1.GOV1-18C	2	14
Prof. Communication & Cross Cultural Awareness 1	BISD1.PCAC1-18T	2	15
	Subtotal	**19**	

Trimester 2

Name	Osiris-code	ECTS	Page
LAB2: Design with a Dutch Touch	BISD1.LAB2-19P	6	17
Planning systems & Instruments	BISD1.GOV2-18C	3	18
Statistics	BISD1.STATIS-18C	3	19
Living in Cities	BISD1.ISD2-18C	2	20
Toolbox Urban and Traffic design	BISD1.TOOLS2-18T	2	21
Handdrawing & Adobe Illustrator	BISD1.VIS2-18T	2	22
Prof. Communication & Cross Cultural Awareness 2	BISD1.PCAC2-18T	2	23
	Subtotal	**20**	

Trimester 3

Name	Osiris-code	ECTS	Page
LAB3: SUMP	BISD1.LAB3-18P	6	25
The Urban System: Landuse & Mobility	BISD1.ISD3-18C	3	26
Modelling: Introduction	BISD1.TOOLS3-18C	3	27
Autocad I	BISD1.VIS3-18T	2	28
European Cooperation	BISD1.GOV3-18C	2	29
GIS Basics	BISD1.GIS1-19T	3	30
Mentoring 1	B1.MENTOR1-18	2	31
	Subtotal	**21**	
	Total	**60**	

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International Spatial Development 2020 - 2021: year 2

Trimester 1

Name	Osiris-code	ECTS	Page
LAB4: Transformation of Built Environment	BISD2.LAB4-18P	6	35
Functions & Transitions	BISD2.ISD4-18C	3	36
Financial Aspects of Spatial Development	BISD2.TOOLS4-18T	2	37
Photoshop 2D	BISD2.VIS4-18T	2	38
Quantitative Research	BISD2.RES1-18C	2	39
Environmental Psychology	BISD2.HUMAN1-18C	2	40
Indesign & Portfolio development	BISD2.MAN1-18T	2	41
	Subtotal	**19**	

Trimester 2

Name	Osiris-code	ECTS	Page
LAB5: Water in Built Environment	BISD2.LAB5-18P	6	43
Climate, Geography and Water	BISD2.ISD5-18C	3	44
3D-Visualisation	BISD2.VIS5-18T	3	45
Qualitative Research	BISD2.RES2-18C	2	46
Process Management & Stakeholder Part.	BISD2.MAN2-18T	2	47
Free elective 1	BIP2-FREE1-01	1	48
Free elective 2	BIP2-FREE2-01	1	49
Mentoring 2	B1.MENTOR2-18	3	50
	Subtotal	**21**	

Trimester 3

Name	Osiris-code	ECTS	Page
LAB6: Smart Cities	BISD2.LAB6-18P	6	52
Big Data Analysis	BISD2.TOOLS5-18T	3	53
Urban Sociology	BISD2.HUMAN2-18C	3	54
Smart Cities & Communities	BISD2.ISD6-18C	2	55
Augmented and Virtual Reality	BISD2.VIS6-18T	2	56
Project Management	BISD2.MAN3-18T	2	57
Political Philosophy	BISD2.GOV4-18C	2	58
	Subtotal	**20**	
	Total	**60**	

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International Spatial Development 2020 - 2021: year 3

Trimester 1

Name	Osiris-code	ECTS	Page
Internship 1	BIP3.IS1-19	20	62
	Subtotal	**20**	

Trimester 2

Name	Osiris-code	ECTS	Page
Energy Transition	BISD3.LAB7-18P	6	64
Storytelling	BISD3.VIS7-18T	3	65
Applied Research	BISD3.RES3-18C	3	66
Energy Management	BISD3.ISD7-18C	2	67
Entrepreneurship	BISD3.ENT-18T	2	68
SimGame	BBE3.SIMUL-18C	1	69
Free elective 1	BIP3.FREE1-18	1	70
Free elective 2	BIP3.FREE2-18	1	71
Free elective 3	BIP3.FREE3-18	1	72
	Subtotal	**20**	

Trimester 3

Name	Osiris-code	ECTS	Page
Internship 2	BIP3.IS2-19	20	74
	Subtotal	**20**	
	Total	**60**	

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International Spatial Development 2020 - 2021: year 4

Semester 1

Name	Osiris-code	ECTS	Page
Modern Business in a Changing World	BCW.20MINOR	30	76
Crowd Safety in Hubs & Events	ACS.20MINOR	30	77
Urban Retrofitting	BUR.20MINOR	30	79
Externe Minor ABEL	BEXT.20MINOR	30	`

Semester 2

Name	Osiris-code	ECTS	Page
Graduation Thesis	B4.SC-18*	30	81

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International Spatial Development

Year 1

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International Spatial Development 2020- 2021: year 1

	Initiating and supervising	Designing	Specifying	Realising	Controlling	Monitoring, assessing and evaluating	Conducting research	Communicating and cooperating	Managing and innovating	Working integrally

Trimester 1

	Initiating and supervising	Designing	Specifying	Realising	Controlling	Monitoring, assessing and evaluating	Conducting research	Communicating and cooperating	Managing and innovating	Working integrally
Visualisation		1	1					1		
LAB1: Explore your Environment	1	1	1				1			1
Introduction into Built Environment			1			1	1	1		
Facts, Figures & Tools for BE		1	1					1		
Government & Society	1								1	1
Prof. Communication & Cross Cultural Awareness 1								1		

Trimester 2

	Initiating and supervising	Designing	Specifying	Realising	Controlling	Monitoring, assessing and evaluating	Conducting research	Communicating and cooperating	Managing and innovating	Working integrally
Handdrawing & Adobe Illustrator		1	1					1		
LAB2: Design with a Dutch Touch		1	1				1	1		
Living in Cities	1	1	1							
Toolbox Urban and Traffic design		1					1			
Prof. Communication & Cross Cultural Awareness 2								1		
Planning systems & Instruments	1						1			
Statistics							2			

Trimester 3

	Initiating and supervising	Designing	Specifying	Realising	Controlling	Monitoring, assessing and evaluating	Conducting research	Communicating and cooperating	Managing and innovating	Working integrally
LAB3: SUMP	1	1						1		
The Urban System: Landuse & Mobility	2		2				2			2
Modelling: Introduction	1			1			1	1		
Autocad I		1								
GIS Basics			1			1	1			
European Cooperation		1						1	1	
Mentoring 1								1	1	

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International Spatial Development

Year 1

Trimester 1

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OSIRIS-code:	BISD1.LAB1-18P
Course name:	LAB1: Explore your Environment
Study load:	6 EC (=168 hours)
Coordinator:	Jolijn van Baarsen - van den Berg
Lecturer(s):	Jolijn van Baarsen - van den Berg, Serah-Ingrid Calitz, Vishal Dubey, Zhan Goosen, Peter Sanders, Hidde Westerweele
Learning objective(s):	Upon completion of this study component you are able to: - explore your environment focused on spatial planning, mobility and design; - understand the influence of your future profession on the built environment; - do research by design in an area in Breda; - get to know each other and learn to cooperate in a project.
Content description:	In this study component, the following content is covered : - the area of attention lies north of the central station of Breda. This former industrial area will change in the near future because of the influences of new developments in the direct vicinity of the railway and bus station; - you will explore the field of the built environment by research, field trips and design; - develop a spatial vision for the future of area; - elaborate the vision into a detailed urban and mobility plan; - design your own future for Havenkwartier; - in this project you will get acquainted to themes related to ISD: (research by) design, sustainable mobility and flexible use.
Language:	EN
Teaching activity:	Studio
Examination:	Group assignment 50% Individual assignment 50% Process (obligatory) 0%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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OSIRIS-code:	BISD1.ISD1-18C
Course name:	Introduction into Built Environment *)
Study load:	3 EC (=84 hours)
Coordinator:	Michiel Mulderij
Lecturer(s):	Serah-Ingrid Calitz, Michiel Mulderij
Learning objective(s):	Upon completion of this study component you are able to:

- reproduce the history of BE (introduction);
- distinguise the influence of urban planning in the five themes of ISD;
- recognize the challenges for big cities and the future of built environment;
- use the information of the lectures for your own research

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

- citystructure, urban planning and typolgies;
- history and cultural heritage;
- international context;
- reserach techniques;
- oral and written communication.

Language:	EN
Teaching activity:	Lecture, Training
Examination:	Written exam 50%
	Group assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

*) Course is suitable as free elective

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OSIRIS-code:	BISD1.TOOLS1-19T
Course name:	Facts, Figures & Tools for BE
Study load:	4 EC (=112 hours)
Coordinator:	Rien Smalheer
Lecturer(s):	Elly Khademi, Barbara van Schijndel, Rien Smalheer
Learning objective(s):	Upon completion of this study component you are able to:

- choose between the most commonly used tools of the engineer of Spatial Development;
- apply these tools to research and develop solutions regarding the lab assignment;
- explain about urban typologies and how to categorize them;
- insight in analytic tools for the BE (traffic counting, urban planning, functional design), applied in the LAB;
- knowledge about core indicators for BE (standard measurements, volumes etc).

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

- every week a different tool for design and spatial analysis will be explained and illustrated. These are commonly used tools in our professional area such as;
- population analysis;
- layer approach;
- Lynch analysis;
- standard measurements;
- scaling and mapping;
- desining a roundabout;
- rounding an arc;
- SWOT analysis;
- functional analysis.

Language:	EN
Teaching activity:	Training, Lecture
Examination:	Individual assignment 70% Written exam 30%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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OSIRIS-code: BISD1.VIS1-18T

Course name: Visualisation

Study load: 2 EC (=56 hours)

Coordinator: Tomas Mahu

Lecturer(s): Serah-Ingrid Calitz, Joris Klein, Tomas Mahu

Learning objective(s): Upon completion of this study component you are able to:
- use graphic components for easier data exploration, explanation and communication;
- communicate clearly and effectively using imagery;
- receive, give and share visual information;
- identify the importance of visual information and how people process this information;
- present data effectively to target groups;
- define the required qualities for a good visualisation;
- make substantiated choices for usage and design of visualised data.

Content description: In this study component, the following content is covered :
- imagery and visual thinking;
- out of the box thinking and operating;
- recognising the possibilities in configuration and design of (data)visualisation;
- an understanding of visualising and how this tells a clear and un ambiguous message;
- visual storytelling;
- basic principals of (data)visualisation;
- data-analysis using illustrative components;
- different visualisation formats and techniques;
- the essentials of functional and effective design.

Language: EN

Teaching activity: Training

Examination: Individual assignment 100%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

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OSIRIS-code:	BISD1.GOV1-18C
Course name:	Government & Society
Study load:	2 EC (=56 hours)
Coordinator:	Zhan Goosen
Lecturer(s):	Zhan Goosen
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s): Upon completion of this study component you are able to:
- better understand as to why such a thing as government exists and how it relates to society;
- understand the concepts and relevance of 'Government' and 'Society';
- know the history of development of different types of government and systems of governance;
- understand the interaction between government and society;
- know and understand different levels of government (hierarchy);
- learn different ways that governments cooperate with various institutions and civilians;
- understand the different roles government can have in society;
- gain a basic understanding of policy processes.

Content description: In this study component, the following content is covered :
- the principles behind government;
- how government has evolved (history);
- both philosophical and practical questions regarding government;
- hierarchy in government;
- collaboration and cooperation between governments;
- the different roles that may be found in government (and semi-government);
- policy and policy making.

Language:	EN
Teaching activity:	Lecture
Examination:	Written exam 80% Group assignment 20%
Mark:	Project
Required literature:	--
Required other materials:	--

OSIRIS-code:	BISD1.PCAC1-18T
Course name:	Prof. Communication & Cross Cultural Awareness 1
Study load:	2 EC (=56 hours)
Coordinator:	Leigh Stevens
Lecturer(s):	Leigh Stevens, Letty Zhu
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s): Upon completion of this study component you are able to:
- describe the relationship between culture and communication;
- summarize, compare, and evaluate standard frameworks for understanding culture;
- explain aspects of verbal and nonverbal communication that may differ between people of different cultures;
- summarize the role of cultural patterns, verbal and nonverbal codes in the development of IC interpersonal relationships;
- generate a list of obstacles to competent intercultural communication, with possible solutions;
- exhibit communication skills that demonstrate (improved) competence in intercultural communication contexts;
- develop and improve upon Academic Writing Skills in English in the context of the course subject.

Content description: In this study component, the following content is covered :
- understanding of own communication strengths and weaknesses in the context of culture;
- reflection of own communication style and the impact it has on others (how one is perceived across cultures);
- communication and Culture worldwide;
- development and Improvement of academic writing skills.

Language:	EN
Teaching activity:	Training, Lecture
Examination:	Individual assignment 60% Group assignment 40% Project
Mark:	Marks, F, MO
Required literature:	James Neuliep. Intercultural Communication: A Contextual Approach. 6th Revised edition. Sage (ISBN 9781071807675)
Required other materials:	--

Breda
University
OF APPLIED SCIENCES

International Spatial Development

Year 1

Trimester 2

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD1.LAB2-19P
Course name:	LAB2: Design with a Dutch Touch
Study load:	6 EC (=168 hours)
Coordinator:	Jolijn van Baarsen - van den Berg
Lecturer(s):	Jolijn van Baarsen - van den Berg, Serah-Ingrid Calitz, Vishal Dubey, Zhan Goosen
Learning objective(s):	Upon completion of this study component you are able to: - analyse a site by making drawings; - gather systematically relevant information out of given texts; - design based on spatial analysis; - design within a different climate and culture; - design for different target groups; - design on different scales; - design by making models.
Content description:	In this study component, the following content is covered : - African megacity; - the lab assignment is situated in a megacity in Africa in one of the most rapid growing countries and upcoming economies of the world. You will design a sustainable plan for a neighbourhood in this megacity; - research: in a team you will research the current social and spatial issues of the neighbourhood and its context by making analytical drawings and reading relevant texts; - masterplan: in a team you will define an argued solution for this specific case which will result in a Master plan; - developmentplan: individually you will elaborate a part of the location into a Development plan.
Language:	EN
Teaching activity:	Studio
Examination:	Group assignment 50% Individual assignment 50%
Mark:	Project
Required literature:	--
Required other materials:	--

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OSIRIS-code:	BISD1.GOV2-18C
Course name:	Planning systems & Instruments *)
Study load:	3 EC (=84 hours)
Coordinator:	Zhan Goosen
Lecturer(s):	Zhan Goosen
Learning objective(s):	Upon completion of this study component you are able to: - understand different approaches to spatial planning and easily get familiar with the planning system of several different countries; - recognize the purpose and general system behind spatial planning; - do research and analyses and thereby gain abstract insight into how to improve planning systems around the world.
Content description:	In this study component, the following content is covered : - different planning systems; - the purpose or aim of them; - the government behind them, the hierarchy and relation to different levels of government and their respective planning tools; - some history of planning; - civil / legal protection in spatial planning; - procedures.
Language:	EN
Teaching activity:	Training, Lecture
Examination:	Individual assignment 50% Group assignment 50%
Mark:	Project
Required literature:	--
Required other materials:	--

*) Course is suitable as free elective

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD1.STATIS-18C
Course name:	Statistics
Study load:	3 EC (=84 hours)
Coordinator:	Elly Khademi
Lecturer(s):	Elly Khademi
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s): Upon completion of this study component you are able to:
- apply and interpret the basic concepts of descriptive statistics;
- apply the basic concepts of probability;
- distinguish between and apply discrete and continuous probability distributions;
- apply binomial, Poisson, and normal distributions to calculate probabilities;
- apply and interpret correlation and regression analysis using Excel;
- apply forecasting techniques.

Content description: In this study component, the following content is covered :
- descriptive Statistics/ data analysis including graphical presentations, measures for average, dispersion, and shape for probability distributions;
- probability calculations;
- expected values and combinatorial theory;
- binomial distribution;
- poisson distribution;
- normal distribution;
- forecasting including trend curves, correlation and regression.

Language: EN

Teaching activity: Training

Examination: Written exam 80%
Individual assignment 20%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD1.ISD2-18C
Course name:	Living in Cities *)
Study load:	2 EC (=56 hours)
Coordinator:	Serah-Ingrid Calitz
Lecturer(s):	Serah-Ingrid Calitz, Vishal Dubey
Learning objective(s):	Upon completion of this study component you are able to:

- recognize different types of cities and identify the interaction between their history and global trends and influences so that you can relate that to your development processes;
- identify and reproduce urban planning principles and connect these with the people living in cities;
- understand the life of people in terms of housing and emotional engagement with their living environment;
- identify the interaction between global influences and local living environments > hard skills versus soft skills;
- empathize with different situations so you will be able to operate in the best way for everybody who's involved in urban development processes.

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

This course is a follow up of ISD1 with a particular focus on the micro and and macro, local and global influences shaping 21st century urban life. Topics include:
- economy based planning;
- social and informal urbanism;
- sustainable development;
- political issues and community building;
- living with water, dealing with climate change

Language:	EN
Teaching activity:	Lecture
Examination:	Written exam 50%
	Group assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

*) Course is suitable as free elective

Breda University
OF APPLIED SCIENCES

OSIRIS-code: BISD1.TOOLS2-18T

Course name: Toolbox Urban and Traffic design

Study load: 2 EC (=56 hours)

Coordinator: Rien Smalheer

Lecturer(s): Serah-Ingrid Calitz, Levi Lanser, Rien Smalheer

Learning objective(s): Upon completion of this study component you are able to:
- to apply your deepened knowledge and skills on different aspects of traffic and urban typology as a tool for design.

Content description: In this study component, the following content is covered :
- traffic systems;
- traffic calculations;
- dimensions;
- urban typologies;
- drawing techniques;
- modelmaking.

Language: EN

Teaching activity: Training, Lecture

Examination: Individual assignment 100%

Mark: Marks, F, MO

Required literature: graft. architecture activism. Birkhäuser De Gruyter (ISBN 9783035610239)

Required other materials: --

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OSIRIS-code:	BISD1.VIS2-18T
Course name:	Handdrawing & Adobe Illustrator
Study load:	2 EC (=56 hours)
Coordinator:	Tomas Mahu
Lecturer(s):	Serah-Ingrid Calitz, Tomas Mahu
Learning objective(s):	Upon completion of this study component you are able to: - express yourself visually using hand drawing techniques; - make perspective drawings from different angles; - use Adobe Illustrator to support the development of your drawings; - convert drawings to vector images; - independently create artwork using Adobe Illustrator.
Content description:	In this study component, the following content is covered : - visual communication; - the most commonly used tools in Adobe Illustrator; - the most commonly used tools for drawing; - making readable handdrawings and illustrator artwork; - digitalizing handsketches to vector based images; - how to make an image communicate in a self- explanatory manner; - the most commonly used digital formats; - implementing perspectives, stroke weights, colors, gradients, abstracting and other imagery; - improving perception; - composition analysis.
Language:	EN
Teaching activity:	Training
Examination:	Individual assignment 50% Individual assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD1.PCAC2-18T
Course name:	Prof. Communication & Cross Cultural Awareness 2
Study load:	2 EC (=56 hours)
Coordinator:	Leigh Stevens
Lecturer(s):	Leigh Stevens, Letty Zhu
Learning objective(s):	Upon completion of this study component you are able to: - exhibit communication skills that demonstrate (improved) competence in intercultural communication contexts; - further develop Academic Writing skills in English in the context of the course subject; - understand of ones own leadership strengths and areas of development; - give and receive 'effective' feedback - Learn how to develop rapport and trust (across cultures); - successfully confront others, deal with resistance, differences of opinion and engage in conflict situations; - adapt and connect to people who hold different views and beliefs (individual and cultural); - understand the basic research skills.
Content description:	In this study component, the following content is covered : - skilled based activities to challenge, engage and develop leadership skills; - communication compentencies; - basic research skills in regards to culture and communication; - development of knowledge from PCAC 1.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Group assignment 60% Individual assignment 40%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

International Spatial Development

Year 1

Trimester 3

Breda
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OSIRIS-code:	BISD1.LAB3-18P
Course name:	LAB3: SUMP
Study load:	6 EC (=168 hours)
Coordinator:	Hidde Westerweele
Lecturer(s):	Vishal Dubey, Peter Sanders, Ineke Spapé, Hidde Westerweele
Learning objective(s):	Upon completion of this study component you are able to:

- Repeat the differences between traditional transport planning and Sustainable Urban Mobility Planning (SUMP), in a way that becomes clear what the advantages of SUMP are compared to traditional transport planning.
- Express your interests regarding the dynamic world of sustainable urban mobility, in a way that becomes clear what triggers your interest in this topic;
- Demonstrate that you are able to work together in a group following the project-based education principles.
- Analyse a city with the HOS- and STEEP method in order to bring insight into the possibilities for sustainable mobility;
- Resume the role of the EU in Sustainable Urban Mobility Planning (SUMP) by using your knowledge from the EU cooperation course and the excursion to Brussels, in a way that becomes clear what the relationship between the EU and SUMP is.
- Apply the steps of the SUMP cycle in a way that you can prepare an urban mobility strategy that builds on a clear vision for the sustainable development of an urban area;
- Construct an implementation plan including three measures to enhance sustainable mobility in a city, in a way that it becomes clear how the city can implement the three measures and what they need to take into account when doing so;

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

- Sustainable Urban Mobility Planning (SUMP)
- Analyzing cities
- Work on solutions and their implementation to stimulate sustainable transport in cities
- Working together on projects (plan of approach and professional meetings)

Language:	EN
Teaching activity:	Project
Examination:	Group assignment 50%
	Individual assignment 50%
	Process (obligatory) 0%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

OSIRIS-code:	BISD1.ISD3-18C
Course name:	The Urban System: Landuse & Mobility
Study load:	3 EC (=84 hours)
Coordinator:	Paul van de Coevering
Lecturer(s):	Paul van de Coevering
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s): Upon completion of this study component you are able to:
- describe the key characteristics and drivers of travel behaviour from a psychological, economical and geographical perspective;
- identify the characteristics and components of traffic systems and the key importance of accessibility for society;
- describe the linkages between different components of transport systems such as land-use and infrastructure;
- evaluate the impact of transportation on the environment and identify the potential of sustainable transportation initiatives.

Content description: In this study component, the following content is covered :
- general introduction into mobility and the transport system;
- the determinants of travel behaviour and behavioural theories;
- the different perspectives on accessibility;
- the role of accessibility for society and the links with land use and the environment;
- traffic safety;
- transport policy;
- appraisal methods for transport policies.

Language:	EN
Teaching activity:	Lecture, Training
Examination:	Written exam 100%
Mark:	Marks, F, MO
Required literature:	Van Wee, B., J.A. Annema and D. Banister. The Transport System and Transport Policy: An Introduction. Edward Elgar Publishing Limited, Cheltenham, UK (ISBN 9781781952047)
Required other materials:	--

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OSIRIS-code:	BISD1.TOOLS3-18C
Course name:	Modelling: Introduction
Study load:	3 EC (=84 hours)
Coordinator:	Elly Khademi
Lecturer(s):	Elly Khademi
Learning objective(s):	Upon completion of this study component you are able to: - explain the general concept of modelling and also different types of models in the basic level for various contexts; - explain and recognize the different standard types of transport models and their application in transport planning and modelling context; - explain the concept of 4-step model in the basic level of transport planning and modelling context; - explain the next generation of travel demand models including discrete choice and activity-based models, and identify the differences with 4-step models in the basic level of transport planning and modelling context; - apply the gain knowledge of modeling an 4-step models for classifying different available transport modeling software in strategic, tactic, and operational level by doing a research. - manage to write an academic standard report and to make standard presentation about their research on transport modeling software.
Content description:	In this study component, the following content is covered : - what is a model and modelling?; - physical, Mathematical and Process models; - why we really use transport model; - transportation Models and Their Application; - introduction to 4-step Model of Travel Demand; - first step: Trip Generation and second step: Trip Distribution; - third and fourth fteps: Modal split and network assignment; - the future of transport modelling.
Language:	EN
Teaching activity:	Lecture
Examination:	Written exam 70% Individual assignment 30%
Mark:	Marks, F, MO
Required literature:	Yaron Hollander. transport modelling for a complete beginner. Ctthink (ISBN 978-0-9956624-1-4)
Required other materials:	--

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OSIRIS-code:	BISD1.VIS3-18T
Course name:	Autocad I
Study load:	2 EC (=56 hours)
Coordinator:	Rien Smalheer
Lecturer(s):	Rien Smalheer
Learning objective(s):	Upon completion of this study component you are able to: to use the drawing program Autocad and Infraworks in a basic way to create accurate professional drawings which are used to communicate in the field of built environment.
Content description:	In this study component, the following content is covered : - several Autocad commands; - layout Autocad; - infrastructure models; - road layouts including marking; - masterplan, development plans.
Language:	EN
Teaching activity:	Training, Training
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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OSIRIS-code:	BISD1.GOV3-18C
Course name:	European Cooperation *)
Study load:	2 EC (=56 hours)
Coordinator:	Nina Nesterova
Lecturer(s):	Don Guikink, Nina Nesterova
Learning objective(s):	Upon completion of this study component you are able to: - understand the role of the EU in the European governance structure; - understand the leading concepts in European cooperation (like subsidiarity, cohesion, solidarity, communal vs intragovernmental, etc); - understand the financial and regulatory mechanisms of the EC related to Built Environment; - understand the EU policies regarding built environment; - know how the EU institutes are organised around built environment; - prepare a simple EU proposal.
Content description:	In this study component, the following content is covered : - organisation of the European Union and the institutes of the EU with the member states, specifically around spatial development; - cooperation principles and structures in the EU and how they work in reality; - production of a proposal on an actual European topic following the procedures of EU project aqcuisition.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Individual assignment 100% Studio
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Other, Collegesheets met verdiepende links, Published on LMS

*) Course is suitable as free elective

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OSIRIS-code:	BISD1.GIS1-19T
Course name:	GIS Basics *)
Study load:	3 EC (=84 hours)
Coordinator:	Barbara van Schijndel
Lecturer(s):	Magali do Patrocínio Gonçalves, Barbara van Schijndel
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s): Upon completion of this study component you are able to:
- explain what Geographical information systems are;
- make thematic maps;
- process data in a geodatabase;
- link external data to a geodatabase;
- use analyse and processing tools.

Content description: In this study component, the following content is covered :
- understanding the working and usefulness of GIS;
- introduction to cartography: coordinate systems, projection methods, communication with maps;
- making thematic maps using given datasources;
- processing geodata in a geodatabase;
- linking external data to a geodatabase;
- using commonly used analyse tools.

Language:	EN
Teaching activity:	Training, Lecture
Examination:	Individual assignment 100% Lecture
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Other, Qgis: open source GIS programm, to be downloaded from qgis.org, Purchase Other, Qgis Libraryguide: link on LMS, Published on LMS Other, step-by-step exercise descriptions and demonstration videos, Published on LMS Other, powerpoints and pr

*) Course is suitable as free elective

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OSIRIS-code:	B1.MENTOR1-18 (ISD)
Course name:	Mentoring 1
Study load:	2 EC (=56 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to: - reflect on your academic career and on yourself as a starting professional; - understand that you are responsible for your own course of study; - use the right study approach and study skills.
Content description:	In this study component, the following content is covered : - introduction to the study programme and the industry; - acquaintance with the industry; - better insight into your qualities and your areas for improvement; - feedback; - independence; - study progress; - planning activities; - learn to study; - self directness; - individual meetings (also non-study related matters); - evaluations.
Language:	EN
Teaching activity:	Training, Fieldtrip, Training
Examination:	Individual assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	Other, Edubook, buas.myedumundo.com, Studie & loopbaan, costs app 40 euro, Purchase

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International Spatial Development

Year 2

Breda
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OF APPLIED SCIENCES

International Spatial Development 2020- 2021: year 2

	Initiating and supervising	Designing	Specifying	Realising	Controlling	Monitoring, assessing and evaluating	Conducting research	Communicating and cooperating	Managing and innovating	Working integrally
Trimester 1										
Photoshop 2D		2	2					2		
Financial Aspects of Spatial Development		2	2							
LAB4: Transformation of Built Environment		2	1				2	2		2
Functions & Transitions						1	2			
Quantitative Research							1			
Environmental Psychology		1						2		1
Indesign & Portfolio development		2	2					2		
Trimester 2										
LAB5: Water in Built Environment		1	2				2	2	2	2
Qualitative Research							2	2		
Climate, Geography and Water			2				2			
3D-Visualisation		2	2					2		
Process Management & Stakeholder Part.	2						2	2		2
Mentoring 2								2	2	
Trimester 3										
Smart Cities & Communities	2						2	2	2	2
Political Philosophy							2			1
LAB6: Smart Cities		1	2				3	2	3	
Big Data Analysis							2			
Augmented and Virtual Reality								2		
Project Management								2	1	1
Urban Sociology	2						3			

International Spatial Development

Year 2
Trimester 1

Breda
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OF APPLIED SCIENCES

OSIRIS-code:	BISD2.LAB4-18P
Course name:	LAB4: Transformation of Built Environment
Study load:	6 EC (=168 hours)
Coordinator:	Loek Hellebrekers
Lecturer(s):	Loek Hellebrekers, Rocco Reukema
Learning objective(s):	Upon completion of this study component you are able to: - research, develop and design a plan on different scale; - research the site spatially, socially and policy oriented; - develop an integrated urban plan based on the outcome of the analyses; - make a financial and development strategy; - cooperate on a project.
Content description:	In this study component, the following content is covered : - The lab is about the transformation of a former industrial site into a dynamic part of the city. - Questions that need to be answered: - What will be the new identity of this area? - How do you make sure this area really does become an integrated part of the city? - How do you deal with the history of the area and the existing buildings? - How will sustainability be realised in the new plan? - What is the development strategy and how can it be financed?
Language:	EN
Teaching activity:	Project
Examination:	Group assignment 50% Individual assignment 50% Training 0%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda
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OF APPLIED SCIENCES

OSIRIS-code: BISD2.ISD4-18C

Course name: Functions & Transitions *)

Study load: 3 EC (=84 hours)

Coordinator: Rocco Reukema

Lecturer(s):   Rocco Reukema

Learning objective(s):   Upon completion of this study component you are able to:
- understand the added value and project risks involved in urban function transitions;
- analyze existing area's that have been undergoing transitions;
- create knowledge about branding, development over time, stakeholders involvement, regulations and strategies;
- apply the knowladge about functions and transitions into the Studio assignment.

Content description: In this study component, the following content is covered :
- gentrification;
- project risk;
- cultural heritage;
- stakeholders analyses;
- branding;
- strategies over time;
- regulations.

Language: EN

Teaching activity: Training, Lecture, Fieldtrip

Examination: Group assignment 70%
Written exam 30%

Mark: Marks, F, MO

Required literature: --

Required other materials: --

*) Course is suitable as free elective

Breda
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OF APPLIED SCIENCES

OSIRIS-code:	BISD2.TOOLS4-18T
Course name:	Financial Aspects of Spatial Development
Study load:	2 EC (=56 hours)
Coordinator:	Marcel van Wietingen
Lecturer(s):	Marcel van Wietingen
Learning objective(s):	Upon completion of this study component you are able to: - understand the financial aspects of a land development plan and to calculate the costs, revenues and phasing of a land development plan; - construct the underlying calculation of a land development plan taking into consideration the various financial aspects in relation to different solutions concerning design and infrastructure.
Content description:	In this study component, the following content is covered : - use of space; - costs; - revenues; - phasing; - cost increase; - interest; - calculation;
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Computer exam 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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OSIRIS-code:	BISD2.VIS4-18T
Course name:	Photoshop 2D
Study load:	2 EC (=56 hours)
Coordinator:	Tomas Mahu
Lecturer(s):	Tomas Mahu
Learning objective(s):	Upon completion of this study component you are able to: - further express youself visually with usage of Adobe Photoshop; - explore the impact of (using) different visual aids; - make an image communicate in a self- explanatory manner; - enhance your insight in depth perception, framing and visual communication; - give direction to and visualize your products.
Content description:	In this study component, the following content is covered : - the most commonly used tools in Photoshop; - analyzing and reproducing effects in light, colour and distortion; - how to create strong compositions; - recognizing and understanding the impact of an image; - non-verbal communication; - the importance of storytelling in a single picture; - bringing dead facts to life.
Language:	EN
Teaching activity:	Training
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD2.RES1-18C
Course name:	Quantitative Research
Study load:	2 EC (=56 hours)
Coordinator:	Elly Khademi
Lecturer(s):	Elly Khademi
Learning objective(s):	Upon completion of this study component you are able to: - design a research project, both conceptual as technical; - select methods/techniques for answering research questions; - design a questionnaire; - conduct a questionnaire; - analyse the quantitative data.
Content description:	In this study component, the following content is covered : - how to set up a research project? (Steps in desiging a quantitative research project); - research strategy: Quantitative research designs (survey and experiment, sample or population, probability sampling and non-probability sampling); - data collection techniques; - quantitative analysis I (descriptive statistics, variables & levels of measurement); - quantitative analysis II (summary measures and SPSS); - quantitative analysis III (inferential or inductive Statistics (estimation: point and interval)); - quantitative analysis IV (inferential or inductive Statistics (hypothesis testing, directional hypothesis, ...)); - quantitative analysis V (inferential or inductive Statistics (2-Sample hypothesis testing: t test and SPSS)); - quantitative analysis VI (inferential or inductive Statistics (F testANOVA and SPSS)); - association between interval-ratio variables (correlation and linear regression).
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Group assignment 100% Studio
Mark:	Marks, F, MO
Required literature:	Ben Baarda. Research. This is it! : guidelines how to design, perform and evaluate quantitative and qualitative research. 2e druk. Noordhoff Uitgevers (ISBN 9789001895464)
Required other materials:	--

OSIRIS-code:	BISD2.HUMAN1-18C
Course name:	Environmental Psychology *)
Study load:	2 EC (=56 hours)
Coordinator:	Robert van Dongen
Lecturer(s):	Robert van Dongen
Learning objective(s):	Upon completion of this study component you are able to: - apply knowledge about the human mind to the way people interact with their environment and vice versa; - understand the basics of the way the human brain works, the link between environment, perception and behaviour; - understand different concepts regarding environmental psychology; - do research on a specific topic and deliver a mini lecture about it.
Content description:	In this study component, the following content is covered : - a basic model about the way the environment interacts with the human mind; - the link between environment, perception and behaviour; - the concepts of preference, orientation and navigation, attention, stress and restoration and personal space; - the connection between health and the built environment; - pro-environmental behaviour.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Written exam 75% Group assignment 25%
Mark:	Marks, F, MO
Required literature:	Steg, van den Berg and de Groot (ed). Environmental Psychology: An Introduction. BPS Blackwell (John Wiley & Sons), Chichester (ISBN 9781119241089)
Required other materials:	Handouts, articles, magazines, divers, Published on LMS

*) Course is suitable as free elective

OSIRIS-code:	BISD2.MAN1-18T
Course name:	Indesign & Portfolio development
Study load:	2 EC (=56 hours)
Coordinator:	Tomas Mahu
Lecturer(s):	Tomas Mahu, Leigh Stevens
Learning objective(s):	Upon completion of this study component you are able to:
	- create different media with usage of the computer program Adobe InDesign;
	- design with the basics in typography, lay-out and overall visual design;
	- develop a good portfolio to showcase your work and to help to demonstrate your skills;
	- understand the importance of your portfolio's content and its presentation and apply this on your own.
Content description:	In this study component, the following content is covered :
	- the most commonly used tools of Adobe InDesign;
	- creating of papersizes, masterpages, margins and guidelines;
	- placing text, images, illustrations and photos in a consistent lay-out;
	- interchangeability of documents and the uniform saving of work- and output files;
	- cropping, rotating, scaling and mirroring of images;
	- understanding, reproducing and creating good design elements;
	- making your portfolio stand out;
	- categorise and selecting content and jargon.
Language:	EN
Teaching activity:	Training
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Handouts, articles, magazines, t.b.g. door docent, Published on LMS

Breda University
OF APPLIED SCIENCES

International Spatial Development

Year 2

Trimester 2

Breda
University
OF APPLIED SCIENCES

OSIRIS-code:	BISD2.LAB5-18P
Course name:	LAB5: Water in Built Environment
Study load:	6 EC (=168 hours)
Coordinator:	Robert van Dongen
Lecturer(s):	Robert van Dongen, Vishal Dubey, Zhan Goosen, Elise van Winden
Learning objective(s):	Upon completion of this study component you are able to: to deal with the complex issue of watermanagement in both urban and rural areas. Apart from inventory, analysis and vision, you will design integral solutions, as well as detailed plans on how to deal with water issues in urban areas.
Content description:	In this study component, the following content is covered : - possible solutions to prevent and accommodate water in cities; - all dimensions of problems with water in cities: flooding, drought, drinking water, sea-level rise, sewerage, pollution; - water management; - climate change; - river catchment areas; - design solutions to deal with water management issues.
Language:	EN
Teaching activity:	Project
Examination:	Group assignment 50% Individual assignment 50% Training 0%
Mark:	P, F, MO
Required literature:	--
Required other materials:	--

OSIRIS-code:	BISD2.ISD5-18C
Course name:	Climate, Geography and Water *)
Study load:	3 EC (=84 hours)
Coordinator:	Marcel van Wietingen
Lecturer(s):	Marcel van Wietingen, Elise van Winden
Learning objective(s):	Upon completion of this study component you are able to:
	- name and recognise the underlying aspects of watermanagement;
	- making a connection between the changing climate and watermanagement;
	- making a connection between the Dutch landscape and watermanagement;
	- understand and explain the different levels of watermanagement in the Netherlands.
Content description:	In this study component, the following content is covered :
	- climate change;
	- global warming;
	- precepitation;
	- landscape;
	- water management.
Language:	EN
Teaching activity:	Lecture
Examination:	Computer exam 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Reader, e-book, OECD: Water governance in the Netherlands, Published on LMS

*) Course is suitable as free elective

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD2.VIS5-18T
Course name:	3D-Visualisation
Study load:	3 EC (=84 hours)
Coordinator:	Joris Klein
Lecturer(s):	Joris Klein, Michiel Mulderij
Learning objective(s):	Upon completion of this study component you are able to:
	- create technically correct, self-explanatory and visual atractive imagery;
	- combine different computerprograms;
	- model, develop and render imagery;
	- translate a concept to a perspicuous storyboard;
	- lay the foundation for complex stationary or moving visuals.
Content description:	In this study component, the following content is covered :
	- developing a storyboard;
	- visual communication;
	- modelling and rendering;
	- creating more complex visual impressions;
	- expanding Photoshop knowledge;
	- implementing and combining graphics software.
Language:	EN
Teaching activity:	Training
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code: BISD2.RES2-18C

Course name: Qualitative Research

Study load: 2 EC (=56 hours)

Coordinator: Nick van Apeldoorn

Lecturer(s): Nick van Apeldoorn

Learning objective(s): Upon completion of this study component you are able to:
- After the course 'Qualitative Research' students have experienced how an organized and structured approach contributes to a methodologically sound execution of research. You know how to structure and prepare research (design & strategy) and will master basic knowledge on quantitative and qualitative research and more in-depth knowledge on qualitative ways of data collection and analysis
- Basic knowledge: understanding the difference between qualitative and quantitative research.
- Define and focus research based on literature study (pre-research) and developing a research design
- Select valid methodologies for data collection based on your research questions and develop a research strategy
- Prepare different qualitative research methodologies for data collection and understand analysis methodology
- Discuss and account for your methodological approach on quality, validity, objectivity, verifiability and reproducibility

Content description: In this study component, the following content is covered :
- design of a qualitative research project;
- understanding of the difference between quantitative and qualitative research;
- qualitative research techniques such as an interview, focus groups and participatory research
- analysis of results and conclusions from research.

Language: EN

Teaching activity: Lecture, Training

Examination: Written exam 50%
Group assignment 50%

Mark: Marks, F, MO

Required literature: Ben Baarda. Research. This is it! : guidelines how to design, perform and evaluate quantitative and qualitative research. 2e druk. Noordhoff Uitgevers (ISBN 9789001895464)

Required other materials: Handouts, articles, magazines, College slides, Published on LMS
Reader, e-book, Werkboeken bij colleges, Published on LMS

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD2.MAN2-18T
Course name:	Process Management & Stakeholder Part.
Study load:	2 EC (=56 hours)
Coordinator:	Loek Hellebrekers
Lecturer(s):	Loek Hellebrekers
Learning objective(s):	Upon completion of this study component you are able to: - understand and implement project, program and process management; - know the differences and the ways to work with these management styles; - implement stakeholder participation within your projects.
Content description:	In this study component, the following content is covered : - projects; - processes; - programs; - participation; - collaboration; - communication.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Group assignment 50% Individual assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BIP2-FREE1-01 (ISD)
Course name:	Free elective 1
Study load:	1 EC (=28 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to: - make a choice for an activity for your personal development; extra on your CV; - develop your skills on a self-chosen topic; - write a plan for your development on self-chosen learning objective.
Content description:	In this study component, the following content is covered : the design and planning of your free electives, under two conditions; 1. for each credit, you must choose an activity that requires 28 hours of work; 2. you have to be able to explain why the activity is a valuable addition to your curriculum. What will you learn and which competencies will you develop? examples; - course at an other education in- or outside NHTV (if you are on ISD you can follow a course at ILT); - assignments and / or study trips, organized by teachers / employees from BUas; - dutch speaking students can also choose courses of the Dutch Free Electives. For more information, see LMS, Info Sources.
Language:	EN
Teaching activity:	
Examination:	Individual assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BIP2-FREE2-01 (ISD)
Course name:	Free elective 2
Study load:	1 EC (=28 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to: - make a choice for an activity for your personal development; extra on your CV; - develop your skills on a self-chosen topic; - write a plan for your development on self-chosen learning objective.
Content description:	In this study component, the following content is covered : the design and planning of your free electives, under two conditions; 1. for each credit, you must choose an activity that requires 28 hours of work; 2. you have to be able to explain why the activity is a valuable addition to your curriculum. What will you learn and which competencies will you develop? examples; - course at an other education in- or outside NHTV (if you are on ISD you can follow a course at ILT); - assignments and / or study trips, organized by teachers / employees from BUas; - dutch speaking students can also choose courses of the Dutch Free Electives. For more information, see LMS, Info Sources.
Language:	EN
Teaching activity:	
Examination:	Individual assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	B1.MENTOR2-18 (ISD)
Course name:	Mentoring 2
Study load:	3 EC (=84 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to:

- learn about skills and interests;
- learn about strong and weak points;
- see possibilities and constraints;
- make a well considered choice for a work placement;
- give feedback;
- share experiences.

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

- feedback;
- PDP; Personal Development Plan;
- identify ambitions, goals and capacities;
- international excursion;
- guest lectures from the workfield (only ISD, attendance rate 85%);
- workplacement preperations;
- individual meetings;
- placement workshops.

Language:	EN
Teaching activity:	Training, Fieldtrip, Training
Examination:	Individual assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

International Spatial Development

Year 2

Trimester 3

Breda
University
OF APPLIED SCIENCES

OSIRIS-code:	BISD2.LAB6-18P
Course name:	LAB6: Smart Cities
Study load:	6 EC (=168 hours)
Coordinator:	Nina Nesterova
Lecturer(s):	Vishal Dubey, Loek Hellebrekers, Elly Khademi, Nina Nesterova
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s):
Upon completion of this study component you are able to:
- explore an example of smart cities and make this abstract topic relevant to ISD
- select valid methodologies to explore smart cities topics and conduct your research
- discuss and account for your findings and decisions on why these measures are smart
- apply the knowledge about smart cities examples in a practical assignment or case
- work as a professional team which is self organizing and responsible
- integrate findings in a group product

Content description:
In this study component, the following content is covered :
- Exploration and research phase
- Problem analysis phase
- Searching for solution phase
- Integration phase
- Final presentation and hand in product

Language:	EN
Teaching activity:	Project
Examination:	Group assignment 50% Individual assignment 50% Training 0%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

OSIRIS-code:	BISD2.TOOLS5-18T
Course name:	Big Data Analysis *)
Study load:	3 EC (=84 hours)
Coordinator:	Elly Khademi
Lecturer(s):	Elly Khademi
Learning objective(s):	Upon completion of this study component you are able to: - explain what is big data, and why it has been so important nowadays; - explain what is open data; - find and apply different source of open data in The Netherlands; - explain and apply basic concepts in research and data analysis; - apply data analysis (descriptive analysis) to answer a research question; - manage to write a standard report and make a proper presentation about data analysis.
Content description:	In this study component, the following content is covered : - what is big data? and what is Open data?; - a common language for research data analysis including: a statement of the research question, research strategy, the instrument (questionnaire, unobtrusive measures), gathering the data, analyzing the data, drawing conclusions regarding the hypothesis; - quantitative data analysis including: getting to know the data bank, identifying the variables, and variable types; - results visualization and interpretation and how do you report research data?
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Group assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Reader, e-book, , Published on LMS

*) Course is suitable as free elective

OSIRIS-code:	BISD2.HUMAN2-18C
Course name:	Urban Sociology
Study load:	3 EC (=84 hours)
Coordinator:	Babet Hendriks
Lecturer(s):	Serah-Ingrid Calitz, Zhan Goosen, Babet Hendriks
Learning objective(s):	Upon completion of this study component you are able to: - have gained an understanding of the nature and background of urban development; - have gained an understanding of the reasons and objectives of community and district development; - have conducted research projects concerning specific urban development projects; be able to analyse a project and to draw up and present a research report (together with a group of students).
Content description:	In this study component, the following content is covered : - acquiring an understanding of the development of modern cities, and more specifically, of communities and districts; - look for an answer to the question of what liveability and citizenship mean to a city/district. In this process, they will consider insights from different views of urban and social development (e.g. organic urban development, or 'temporary use'), under the influence of mobility and new technologies (including digital technologies). For this purpose, the students will draw on insights of urban development theorists, as well as on their own research; - study methods and organisational forms which give shape to urban development, and examine which interventions in communities and districts are either successful or unsuccessful; - understanding of the backgrounds and nature of urban development, and they will be able to analyse an urban development project – in broad outline. Moreover, students will have an understanding of the various methods that are used to manage urban development.
Language:	EN
Teaching activity:	Training
Examination:	Group assignment 50% Individual assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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OSIRIS-code:	BISD2.ISD6-18C
Course name:	Smart Cities & Communities *)
Study load:	2 EC (=56 hours)
Coordinator:	Loek Hellebrekers
Lecturer(s):	Loek Hellebrekers
Learning objective(s):	Upon completion of this study component you are able to: - understand how Smart Cities are defined; - use practical examples within these definitions; - assess the value, use and utility of the characteristics of Smart Cities; - understand the use and utility of big data and IoT, which is used for the implementation of smart city solutions.
Content description:	In this study component, the following content is covered : - smart Cities Introduction; - smart Environment; - smart People; - smart mobility; - smart Living; - smart Government; - Big Data & IoT.
Language:	EN
Teaching activity:	Lecture
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

*) Course is suitable as free elective

OSIRIS-code:	BISD2.VIS6-18T
Course name:	Augmented and Virtual Reality
Study load:	2 EC (=56 hours)
Coordinator:	Serah-Ingrid Calitz
Lecturer(s):	Serah-Ingrid Calitz, Joris Klein
Learning objective(s):	Upon completion of this study component you are able to:

- to model a 3D urban design;
- to creat a design, evaluate and adjust to achieve optimal spatial quality and shading;
- use AR and VR as a design and communication tool;
- become self learning and share your knowledge with fellow students

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

- 3D modeling in a relevant software
- modeling based on spatial quality and shading;
- rendering and plugins to create realistic artist impressions;
- making a 3D walkthrough (VR);
- projecting a 3D model in the 'real world' (AR);
- online tutorials to become self learning and creating a learning community

Language:	EN
Teaching activity:	Training
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

OSIRIS-code:	BISD2.MAN3-18T
Course name:	Project Management
Study load:	2 EC (=56 hours)
Coordinator:	Zhan Goosen
Lecturer(s):	Zhan Goosen, Rien Smalheer
Learning objective(s):	Upon completion of this study component you are able to: - determine management aspects of a project; - make a Risk Analysis and execute Risk Management; - mention organisational aspects; - make a specification of a structure; - make an agumentation with pros and cons on the choice of contract type.
Content description:	In this study component, the following content is covered : - project Management; - IPM model; - stakeholder Management; - risk Analysis; - risk Management; - contracts.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Individual assignment 50% Group assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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OSIRIS-code:	BISD2.GOV4-18C
Course name:	Political Philosophy *)
Study load:	2 EC (=56 hours)
Coordinator:	Robert van Dongen
Lecturer(s):	Robert van Dongen
Learning objective(s):	Upon completion of this study component you are able to: - place the ideas of some 'great thinkers' in the context of current spatial development issues and understand their main views on the topic of government and politics; - put the different GOV-courses in the first two years of ISD into perspective and form your own opinion on the role of government in general, and spatial development specifically.
Content description:	In this study component, the following content is covered : - justifying government and what would our world look like without it; - different ways of organizing government; - liberty and restrictions on liberty; - theories on distribution of property, equality, justice.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Individual assignment 100% Lecture
Mark:	Marks, F, MO
Required literature:	Wolff, Jonathan. An Introduction to Political Philosophy. 3rd Revised edition. Oxford University Press (ISBN 9780199658015)
Required other materials:	--

*) Course is suitable as free elective

Breda University
OF APPLIED SCIENCES

International Spatial Development

Year 3

Breda
University
OF APPLIED SCIENCES

International Spatial Development 2020- 2021: year 3

	Initiating and supervising	Designing	Specifying	Realising	Controlling	Monitoring, assessing and evaluating	Conducting research	Communicating and cooperating	Managing and innovating	Working integrally
Trimester 1										
Internship 1	1	2	2	2	1	2	2	2	1	2
Trimester 2										
SimGame	2	2	2	3	1	2	2	3	2	2
Energy Transition	3						3	3	3	2
Energy Management	3						3			2
Applied Research							3			
Storytelling		2						2		
Entrepreneurship								2	2	
Free elective 1	2								2	
Free elective 2	2								2	
Free elective 3	2								2	
Trimester 3										
Internship 2	2	3	3	2	1	3	3	3	2	3

Breda University
OF APPLIED SCIENCES

International Spatial Development

Year 3

Trimester 1

OSIRIS-code:	BIP3.IS1-19
Course name:	Internship 1
Study load:	20 EC (=560 hours)
Coordinator:	Irene Meeuwesen
Lecturer(s):	Irene Meeuwesen
Learning objective(s):	Upon completion of this study component you are able to: - tackle a practical problem- with control and feedback- to report and present; - admission for internship; You have to arrange your own internship, bearing in mind that the internship and assignment have to be approved by the internship coordinator. The terms and conditions to be admitted to the internship are mentioned in the Teaching and Examination Regulations SLM.
Content description:	In this study component, the following content is covered : - you will be working on the job during 14 weeks and carry out an assignment for the company or institution; - you report the results in a report and explain these results during graduation; - you mention your learning experiences in a process report. Coordinators; - LOG: Irene Meeuwesen / Luuk Koopman; - ISD: Leigh Stevens.
Language:	EN
Teaching activity:	Placement
Examination:	Individual assignment 100%
Mark:	Project
Required literature:	--
Required other materials:	Other, Internship handbook, Published on LMS

Breda University
OF APPLIED SCIENCES

International Spatial Development

Year 3

Trimester 2

Breda
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OF APPLIED SCIENCES

OSIRIS-code:	BISD3.LAB7-18P
Course name:	Energy Transition
Study load:	6 EC (=168 hours)
Coordinator:	Barbara van Schijndel
Lecturer(s):	Barbara van Schijndel
Learning objective(s):	Upon completion of this study component you are able to:
	- explore the spatial consequences of renewable energy on different scales and in different environmental circumstances;
	- find solutions for closing energy cycles at a local scale;
	- translate the local citizens goals towards energy production, consumption, exchange and storage into a research model and an advice;
	- explore the different opportunities for energy production and storage in an international context.
Content description:	In this study component, the following content is covered :
	-
Language:	EN
Teaching activity:	Project
Examination:	Group assignment 50%
	Individual assignment 50%
	Process (obligatory) 0%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD3.VIS7-18T
Course name:	Storytelling
Study load:	3 EC (=84 hours)
Coordinator:	Levi Lanser
Lecturer(s):	Levi Lanser
Learning objective(s):	Upon completion of this study component you are able to: - become aware of and define the audience for whom the story is intended; - develop your understanding and skills in telling a powerful story; - develop your skills in animation technology.
Content description:	In this study component, the following content is covered : - man and story: you will explore how to reach or influence people and you will research the different types of storytelling techniques; - analysis: In this phase we will look at film fragments, discuss and analyse them; - animation: The animation will be a narrative and visual translation of your solution for the lab assignment.
Language:	EN
Teaching activity:	Training
Examination:	Group assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Handouts, articles, magazines, , Published on LMS

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD3.RES3-18C
Course name:	Applied Research
Study load:	3 EC (=84 hours)
Coordinator:	Zhan Goosen
Lecturer(s):	Zhan Goosen
Learning objective(s):	Upon completion of this study component you are able to: - design a research project including conceptual design and technical research design; - apply the knowledge from qualitative research in conducting a research project; - apply the knowledge from quantitative analysis in conducting a research project.
Content description:	In this study component, the following content is covered : - designing a research project step by step; - setting up the research objective and research framework; - research issues and definition of concepts; - research materials, strategies and planning; - applying knowledge in qualitative and quantitative analysis into practice.
Language:	EN
Teaching activity:	Lecture, Project
Examination:	Individual assignment 50% Group assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Handouts, articles, magazines, Research, Published on LMS

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD3.ISD7-18C
Course name:	Energy Management *)
Study load:	2 EC (=56 hours)
Coordinator:	Barbara van Schijndel
Lecturer(s):	Barbara van Schijndel
Learning objective(s):	Upon completion of this study component you are able to:
	- explain the need for energy transition to renewables;
	- describe the different ways of consumption and production or renewables and their spatial impact;
	- take into account the specific needs for energy transportation and storage and their spatial effects;
	- describe different change strategies like trias energetica, LES and die Wende;
	- find examples of succesful integration of renewable energy in the (urban) landscape and examples of energy efficient urban design and explain how they work.
Content description:	In this study component, the following content is covered :
	- energy landscapes: history and the need for change;
	- the spatial impact of transition to renewables;
	- using the Energy Transition Model;
	- energy systems and systems theory;
	- stakeholders, legislation and economics of energy;
	- energy efficient urban design and planning;
	- the positive and negative consequences of different energy transition strategies.
Language:	EN
Teaching activity:	Lecture, Training
Examination:	Individual assignment 100%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	Handouts, articles, magazines, A collection of literature is available on LMS, Published on LMS
	Other, data on energy consumption and production, Published on LMS
	Other, powerpoint slides of the presentations, Published on LMS

*) Course is suitable as free elective

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BISD3.ENT-18T
Course name:	Entrepreneurship
Study load:	2 EC (=56 hours)
Coordinator:	Hidde Westerweele
Lecturer(s):	Leigh Stevens, Hidde Westerweele
Learning objective(s):	Upon completion of this study component you are able to:

Learning objective(s): Upon completion of this study component you are able to:
- discover and develop personal intra/entrepreneurial skills in a team and individually (awareness);
- set up a business plan based on thinking up new concepts that are related to the domain Built Environment;
- discover and identify all aspects related to starting up new business;
- integrate management, marketing, production and financial knowledge in relation to entrepreneurship.

Content description: In this study component, the following content is covered :
- introduction to entrepreneurship / intrapreneurship;
- concept development, idea creation, market exploration;
- setting up a business plan, based on the business model canvas or lean canvas;
- becoming acquainted with the lean Startup and business model canvas-method;
- present orally and in written an elaborated business model.

Language:	EN
Teaching activity:	Training
Examination:	Group assignment 80% Individual assignment 20%
Mark:	Project
Required literature:	--
Required other materials:	--

Breda University
OF APPLIED SCIENCES

OSIRIS-code:	BBE3.SIMUL-18C
Course name:	SimGame
Study load:	1 EC (=28 hours)
Coordinator:	Frank van den Eeden
Lecturer(s):	Frank van den Eeden, Mark van Eijk, Don Guikink, Loek Hellebrekers, Elly Khademi, Daniëlle Mourits, Michiel Mulderij, Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to:

- de complexiteit van ruimtelijke-, mobiliteits, en stedenbouwkundige ontwikkelingen op stedelijk niveau, in het bijzonder met de politiek/bestuurlijke, inhoudelijke, juridische, organisatorische en besluitvormings-technische dimensie daarvan te verklaren;
- te beschrijven hoe diverse actoren besluitvormingsprocessen doorlopen;
- juridisch instrumentarium voor planvorming te hanteren;
- onderhandelingen uit te voeren vanuit een specifiek belang.

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

- de ontwikkeling van een denkbeeldige stad;
- besluitvormingsprocessen;
- onderhandelingen.

Er wordt gebruik gemaakt van een simulatie: gedurende drieënhalve dag verplaats je je in een rol zoals het ambtelijke apparaat, het bedrijfsleven, een bewonersgroepering of een woningcorporatie.

Language:	NL
Teaching activity:	Training
Examination:	Group assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	--

OSIRIS-code:	BIP3.FREE1-18
Course name:	Free elective 1
Study load:	1 EC (=28 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to: - make a choice for an activity for your personal development; extra on your CV; - develop your skills on a self-chosen topic; - write a plan for your development on self-chosen learning objective.

Content description:	In this study component, the following content is covered :
	- the design and planning of your free electives, under two conditions:
	  1. for each credit, you must choose an activity that requires 28 hours of work;
	  2. you have to be able to explain why the activity is a valuable addition to your curriculum. What will you learn and which competencies will you develop?
	
	  Examples:
	- Course at an other education in- or outside NHTV (if you are on ISD you can follow a course at ILT);
	- Assignments and / or study trips, organized by teachers / employees from the NHTV;
	- Dutch speaking students can also choose courses of the Dutch Free Electives.

Language:	EN
Teaching activity:	
Examination:	Individual assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	Reader, e-book, Project Description & Excel Files, Published on LMS

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OF APPLIED SCIENCES

OSIRIS-code:	BIP3.FREE2-18
Course name:	Free elective 2
Study load:	1 EC (=28 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to: - make a choice for an activity for your personal development; extra on your CV; - develop your skills on a self-chosen topic; - write a plan for your development on self-chosen learning objectives.
Content description:	In this study component, the following content is covered : - the design and planning of your free electives, under two conditions: 1. for each credit, you must choose an activity that requires 28 hours of work; 2. you have to be able to explain why the activity is a valuable addition to your curriculum. What will you learn and which competencies will you develop? Examples: - Course at an other education in- or outside NHTV (if you are on ISD you can follow a course at ILT); - Assignments and / or study trips, organized by teachers / employees from the NHTV; - Dutch speaking students can also choose courses of the Dutch Free Electives.
Language:	EN
Teaching activity:	
Examination:	Individual assignment 100%
Mark:	P, F, MO
Required literature:	--
Required other materials:	Reader, e-book, Reader Frans de Jong, Published on LMS

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OSIRIS-code:	BIP3.FREE3-18
Course name:	Free elective 3
Study load:	1 EC (=28 hours)
Coordinator:	Suzanne van Rijswijk
Lecturer(s):	Suzanne van Rijswijk
Learning objective(s):	Upon completion of this study component you are able to: - make a choice for an activity for your personal development; extra on your CV; - develop your skills on a self-chosen topic; - write a plan for your development on self-chosen learning objectives.
Content description:	In this study component, the following content is covered : - the design and planning of your free electives, under two conditions: 1. for each credit, you must choose an activity that requires 28 hours of work; 2. you have to be able to explain why the activity is a valuable addition to your curriculum. What will you learn and which competencies will you develop? Examples: - Course at an other education in- or outside NHTV (if you are on ISD you can follow a course at ILT); - Assignments and / or study trips, organized by teachers / employees from the NHTV; - Dutch speaking students can also choose courses of the Dutch Free Electives.
Language:	EN
Teaching activity:	
Examination:	Lecture 100%
Mark:	Studio
Required literature:	--
Required other materials:	Reader, e-book, Project Description & Excel Files, Published on LMS

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International Spatial Development

Year 3

Trimester 3

OSIRIS-code:	BIP3.IS2-19
Course name:	Internship 2
Study load:	20 EC (=560 hours)
Coordinator:	Irene Meeuwesen
Lecturer(s):	Irene Meeuwesen
Learning objective(s):	Upon completion of this study component you are able to: - after the internship you are able to tackle a practical problem- with control and feedback- to report and present; Admission for internship: You have to arrange your own internship, bearing in mind that the internship and assignment have to be approved by the internship coordinator. The terms and conditions to be admitted to the internship are mentioned in the Teaching and Examination Regulations SLM.
Content description:	In this study component, the following content is covered : - you will be working on the job during 14 weeks and carry out an assignment for the company or institution; - you report the results in a report and explain these results during graduation; - you mention your learning experiences in a process report. Coordinators; - LOG: Irene Meeuwesen / Luuk Koopman; - ISD: Leigh Stevens.
Language:	EN
Teaching activity:	Placement
Examination:	Individual assignment 100%
Mark:	Project
Required literature:	--
Required other materials:	--

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International Spatial Development

Year 4

Semester 1

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OSIRIS-code:	BCW.20MINOR
Course name:	Modern Business in a Changing World
Study load:	30 EC (=840 hours)
Coordinator:	Sannie van Boxtel
Lecturer(s):	Piet Berkers, Sannie van Boxtel, Danielle Dielemans, Erik van Diffelen, Bas Groot, Azadeh Irajifar, Luuk Koopman
Learning objective(s):	Upon completion of this study component you are able to: - successfully plan, execute, and evaluate change initiatives
Content description:	In this study component, the following content is covered : - Change Management - Project Management - Learning & Development - Strategy & Innovation - Behavior
Language:	EN
Teaching activity:	Project, Lecture, Training
Examination:	Studio 50% Lecture 50%
Mark:	Project
Required literature:	J. Kotter. Leading Change. Harvard Business School Publishing (ISBN 9781422186435)
Required other materials:	--

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OSIRIS-code:	ACS.20MINOR
Course name:	Crowd Safety in Hubs & Events
Study load:	30 EC (=840 hours)
Coordinator:	Justin van de Pas
Lecturer(s):	Mark van Eijk, Justin van de Pas
Learning objective(s):	Upon completion of this study component you are able to:

- Clear understanding of important concepts of Crowd Management and application of crowd modelling
- Ability to discuss application of crowd safety management (with concepts such as planning, licensing and operations) and its relevance to the wider legal, organisational, regulatory and risk management framework
- Ability to discuss appropriate risk assessment methodologies for crowd safety, how this impacts on legislation and guidance, and/or which areas of crowd safety need improvement
- Demonstrating understanding of core principles and applications of the tools. Providing some detail of use of models, information they provide and how this assists in the risk analysis of crowd dynamic.
- Clear understanding of important concepts within mobility and urban design by applying and analysing integtal alignment, design and planning processes and urban and spatial design.
- Ability to discuss the application of crowd simulations by analysing crowd simulations, applying measuring and monitoring tools, queing theories and crowd simulations.
- Ability to discuss application of stakeholder analysis, procedures and permits and law and regulations.
- Ability to discuss appropriate risk assessment methodologies for crowd safety, how this impacts on legislation and guidance, and/or which areas of crowd safety need improvement
- Communicate the information about the tools to users and/or team, with the goal to communicate with the audience
- Analysing an event or venue, including four core modelling elements.
- Recognise group behavior and understanding causality
- (Deep) Researching and correct referencing
- The use of clear graphics

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

- Crowd safety backgrounds and dynamics
- Crowd safety, modelling and monitoring
- Crowd safety, design & organization
- Crowd simulations and the use of simulation
- Crowd safety, decisions & response
- Crowd simulations
- (Event) Logistics
- Mobility and Accessibility
- Overtourism

Language:	EN
Teaching activity:	Lecture, Training, Project

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Examination: Group assignment 50%
              Individual assignment 50%
              Process (obligatory)

Mark: Marks, F, MO

Required literature: Still, G.Keith. Introduction to Crowd Science. (ISBN 9780367866709)

Required other materials: --

OSIRIS-code:	BUR.20MINOR
Course name:	Urban Retrofitting
Study load:	30 EC (=840 hours)
Coordinator:	Paul van de Coevering
Lecturer(s):	Paul van de Coevering, Zhan Goosen, Ed Ravensbergen, Ineke Spapé
Learning objective(s):	Upon completion of this study component you are able to: - assess the current situation in your international case study area with the STEEP and SWOT analysis tools; - create integrated concepts with hardware, software and orgware interventions for the redevelopment and revitalization of your case study area which are grounded in theory and are alligned with the results of your SWOT analysis; - create a detailed integrated plan to tackle societal issues related to urban sprawl and car dependency in your case study area; - provide a coherent storyline from the SWOT analysis to concepting and the specific measures; - conduct targeted Urban Guerilla tactics in practice.
Content description:	In this study component, the following content is covered : - in depth analysis of a case study area in North America; - differences in land use and transportation networks between European and Northern American cities; - societal challenges related to urban sprawl and a car dependent culture; - hardware, software and orgware measures and their synergies; - designing and planning from masterplan to detailed street designs; - urban Guerilla tactics and connection with hardware, software orgware measures; - effective presentation skills; poster presentations, videos, brochures and other means of conveying your message.
Language:	EN
Teaching activity:	Project
Examination:	Individual assignment 50% Group assignment 50%
Mark:	Marks, F, MO
Required literature:	--
Required other materials:	--

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International Spatial Development

Year 4

Semester 2

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OSIRIS-code:	B4.SC-18*
Course name:	Graduation Thesis
Study load:	30 EC (=840 hours)
Coordinator:	Irene Meeuwesen
Lecturer(s):	Irene Meeuwesen
Learning objective(s):	Upon completion of this study component you are able to: - to tackle, to report and to present a practical problem as a starting professional.
Content description:	In this study component, the following content is covered : - you have to arrange your own internship and assignment. The internship coordinator measures the assignment on size, complexity and draft. During the graduation process you will work on location; coordinators; - ILE/ILN: André Gijsberts;Irene Meeuwesen - BE: Monique van Herpen.
Language:	EN
Teaching activity:	Graduation
Examination:	Lecture 100%
Mark:	Project
Required literature:	--
Required other materials:	--

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Description competences

01 Initiating and supervising
From a bird's-eye view and a broad market orientation, you point out and list problems for the relevant tasks for society. You can formulate the prerequisites, requirements and objectives. You can describe, monitor and adjust the process.

02 Designing
The design can be a plan, model, memorandum of advice, spatial or technical design. You create the design on the basis of a set programme of requirements, you examine various solutions and variants and make a well-founded choice.

03 Specifying
You create a specification with regard to formulating ambitions, prerequisites and feasibility in such a way that it gets the product moving in the right direction.

04 Realising
You implement a design by preparing, maintaining, monitoring and adjusting its realisation.

05 Controlling
You draw up a control & maintenance plan for preserving the realised quality.

06 Monitoring, assessing and evaluating
You can monitor and assess the achieved results objectively. Afterwards, you can adjust and make proposals for improvement and bring them forward.

07 Conducting research
You can analyze a problem and identify the question.
You can set up, carry out and assess practice-based research as an iterative process.
You make use of suitable methods and techniques and have a critical, investigative and entrepreneurial attitude.

08 Communicating and cooperating
You communicate profession-oriented information to the industry, colleagues and target groups to be determined (customers, commissioners, parties concerned). You can communicate both internally and externally in a way that suits the target group. Communicating comprises the entire spectrum in which information is received, given and shared. You aim at cooperating and constructively liaising with parties concerned and target groups.

09 Managing and innovating
You guide and steer processes to achieve objectives. You are self-directing and can reflect on own performance. You are proactive, take initiative, and can think and work 'out of the box'.

10 Working integrally
On the basis of your own expertise or area of specialisation you can cooperate with people with a different expertise or area of specialisation to find a solution for a complex issue.

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Description of the competence levels

Level	Character of assignment	Character of context	Degree of dependency
I	- Simple - Structured - Applies well-known methods	- Familiar - Simple - Monodisciplinary	- Steering guidance
II	- Complex - Structured - Uses well-known in varying situations	- Familiar - Complex - Monodisciplinary practice-based	- Coaching guidance
III	- Complex - Unstructured - Uses methods in new situations	- Unfamiliar - Complex - Multidisciplinary practice-based	- Independent - Guidance for coaching if necessary

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Games

Media

Hotel

Facility

Built Environment

Logistics

Tourism

Leisure & Events

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