



Master in Geography and Spatial Planning - Master Geography and Spatial Planning

Semester 1

	Lecture (UE)	Exercice (UE)	ECTS
Module 11 - Urban Studies and Spatial Planning - Introductory			7
01-11 - Urban and Spatial Planning Theory and Concepts	24		4
02-11 - Integrative Spatial Planning and Case Studies	30		3
Module 21 - European Territorial Trends and Policies - Introductory			5
03-21 - Introduction to European integration	30		5
Module 31 - Territorial Governance and Policy Analysis - Introductory			3
05-31 - Qualitative Research Methods	30		3
Module 41 - Quantitative Spatial Analysis - Introductory			7
06-41 - Statistics and Econometrics for Geographical Data	60		7
Module 51 - Cartography and GIS - Introductory			8
07-51 - Introduction to Cartography and Geographical Information	28		3
08-51 - Geographical Information Systems: Analysis and Mapping	44		5

Semester 2

	Lecture (UE)	Exercice (UE)	ECTS
Module 22 - European Territorial Trends and Policies - Intermediate			5
09-22 Socio-Economic Development Trends in Europe	30		5
Module 70 - Projects and Practice			8
10-70 Urban Planning Techniques and Projects Appraisal	30		3
11-70 Governance of EU, cross-border and national territorial policies.	40		5

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	Lecture (UE)	Exercice (UE)	ECTS
Module 81 - Research Methods and Seminars - Introduction			7
12-81 Foundations and Trends in Geographical Research	16		2
13-81 Urban Fieldwork (5 days)			5
Module 42 - Quantitative Spatial Analysis - Intermediate (track B)			5
16-42 Exploratory Spatial Data Analysis and Geostatistics (track B) (Optional)	36		5
Module 52 - Cartography and GIS - Intermediate (track B)			5
17-52 WebGIS and Geoprocessing (track B) (Optional)	34		5
Module O0 - Open Course			3
15-32 Concepts and Methods in Governance Research (Optional)	30		5

Semester 3

	Lecture (UE)	Exercice (UE)	ECTS
Module 12 - Urban and Spatial Planning - Intermediate			5
18-12 Cities, Masterplanning and Urban Governance	30		5
Module 62 - Geographical Modelling - Intermediate			4
19-62 Optimal Location and Transport Models		30	4
Module 82 - Research Methods and Seminars - Intermediate			2
20-82 Progress in Planning	16		2
Module 13 - Urban and Spatial Planning - Advanced			5
21-13 Contemporary Approaches to Regional Development	30		5
Module 73 - Environmental Change			4
04-73 Global Environmental Change in the Anthropocene	24		4

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	Lecture (UE)	Exercice (UE)	ECTS
Module 33 - Territorial Governance and Policy Analysis - Advanced (track A)			5
22-33 Introduction to Border Studies in Geography (Optional)	30		5
Module 33 - Territorial Governance and Policy Analysis - Advanced (track A)			5
24-33 Project in Regional Development (Optional)	32		5
Module 63 - Geographical Modelling - Advanced (track B)			10
27-63 Urban and Environmental Economics (Optional)	32		5
Module 43 - Quantitative Spatial Analysis - Advanced (track B)			5
28-43 Project in Spatial Analysis and Modelling (Optional)	20		5

Semester 4

	Lecture (UE)	Exercice (UE)	ECTS
Module 83 - Research Methods and Seminars - Advanced			3
29-83 Master Thesis Workshops	16		3
Module 90 - Master Thesis			27
30-90 - Master Thesis			27



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Semester 1

01-11 - Urban and Spatial Planning Theory and Concepts

Module:	Module 11 - Urban Studies and Spatial Planning - Introductory (Semester 1)
ECTS:	4
Course learning outcomes:	On completion of the module a student should be able to <ul style="list-style-type: none">- differentiate between core notions of conceptual vocabulary used in geography- illustrate their conceptual understanding through concrete examples and thoroughly apply the vocabulary- distinguish between the academic/analytical and the political/normative understanding of the terms.
Description:	The major aim of the module is to provide the students with an in-depth understanding of key terms and concepts used in geography and spatial development. Through the reading of core texts on the notions of space, place, scale, region, and networks, the students will develop a solid conceptual background for further work in the MAGEO programme.
Language:	Anglais
Mandatory:	Oui
Evaluation:	25 % guided reading, 50 % paper report, 25 % class participation
Remark:	Remark: Reading list will be announced in the first session
Professor:	SCHULZ Christian

02-11 - Integrative Spatial Planning and Case Studies

Module:	Module 11 - Urban Studies and Spatial Planning - Introductory (Semester 1)
ECTS:	3
Objective:	The course has three objectives. First, students will acquire a solid knowledge and understanding of: <ol style="list-style-type: none">1. the theoretical and conceptual underpinnings of spatial planning for sustainable development;2. the main characteristics of integrated approaches;3. some of the practical difficulties with respect to the limitations of integrated approaches; and

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4. the sociopolitical and economic implication of local interactions between people and their environment

Second, students will acquire the following skill sets:

1. They will obtain a solid orientation into local urban development processes in Luxembourg;
2. They will be able to recognize and evaluate elements of integrative spatial development schemes across different scales ranging from the global to the local, and reflect on some associated dilemmas in terms of sustainable development and spatial governance.; and
3. They will further refine their skills in speaking, writing, and reading English.

Third, students will be trained in the scientific method

1. The scientific method will be reviewed in detail
2. Students will learn to distinguish scientific from non-scientific modes of analysis
3. They will be trained to apply the social scientific method of investigation to urban geographical questions.

Course learning outcomes:

The course has two objectives.

First, students will acquire a solid knowledge and understanding of:

- a. the theoretical and conceptual underpinnings of spatial planning for sustainable development;
- b. the main characteristics of integrated approaches; and
- c. some of the practical difficulties concerning the limitations of integrated approaches.

Second, students will acquire the following skill sets:

- a. They will learn how to relate sectoral schemes and data to overall frames such as integrated planning;
- b. They will be able to recognize elements of an integrated development scheme; and
- c. They will be able to evaluate an integrative spatial development scheme and reflect on some associated dilemmas in terms of sustainable development and spatial governance.

Description:

In this course, first year Master students will learn about urban transformation processes, as they unfold in Luxembourg. Applying human geographical approaches in urban studies, the class will examine the "who", "what", "where", "why", "when", and "how" of humans and their relationships to each other and to their environments. The central aim is to understand the processes that constitute urban spaces in the 21st century, by (1) analyzing the relationships between society and place, and (2) focusing on social, economic, political processes and how they change over space and time. As the course includes several excursions of Luxembourg, students will be introduced to transformation processes particular to Luxembourg. These include processes of urban growth and decline, municipal development, dilemmas of a small state, and the associated local policy responses of each. Against this background, students will be familiarized with the conceptual fundamentals of sustainable development and achieve an understanding of contemporary integrative approaches in spatial planning and regional development.

The course is structured into two parts:

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- First, students will be taken on a series of fieldtrips that will introduce them to contemporary patterns of spatial development, the specificities that characterize the case of Luxembourg, and expose possible strategies of action. Fieldtrips include excursions to the City of Luxembourg including Kirchberg, Esch-sur-Alzette and Belval, and the Nordstad. (Note: Students should check weather and be prepared with appropriate outdoor wear.)
- Second, a set of lectures (seminar format) will introduce the conceptual underpinnings of sustainable spatial development in the context of contemporary human geography. The fieldtrips will also be discussed, including reflections on the various policy responses that have been observed in Luxembourg and the Greater Region to address issues of spatial governance.

For each class, one student will volunteer to take notes and prepare a report that can be circulated to the rest of the class and to the professor at the following meeting. By the end of the class, each student will have provided one class summary. And, a group work will be required by the end of term. These submissions in combination with evaluation of participation form the basis of the grading.

Students will be provided with a detailed schedule of events and associated readings. To this end, students are also expected to check the FLSHASE Moodle on a regular basis to ensure that they are up to date.

Language:	Anglais
Mandatory:	Oui
Evaluation:	100 % in-course assessment
Remark:	Students will be provided with a detailed course outline and bibliography at the start of the course. Core readings will be made available on the FLSHASE Moodle. For preparation students may begin searching for the following:

Required Readings (as mentioned: will be stored on Moodle)

1. Becker, T., and Hesse, M (2013) Building a sustainable university from scratch: anticipating the urban, regional and planning dimension of the 'Cité des Sciences Belval' in Esch-sur-Alzette and Sanem, Luxembourg. In: König, A. (2013, ed.): Regenerative Sustainable Development of Universities And Cities. The Role of Living Laboratories . Cheltenham: Edward Elgar.
2. Bourne, L. S. (2007): Understanding Change in Cities. *The Canadian Geographer* 51 (2), pp. 121-138
3. Brownhill, S. and Carpenter, J. (2009) Governance and 'Integrated' Planning: The Case of Sustainable Communities in the Thames Gateway, England. *Urban Studies* 46 (2) 251-274
4. Hesse, M. (2015): Technical Note: Five Steps to practicing the scientific method.
5. Pages 1-24 of Ward, K (Ed.) (2014) *Researching in the City* . London: Sage.
6. Stead, D./Meijers, E. (2009): Spatial Planning and Policy Integration: Concepts, Facilitators and Inhibitors. *European Planning Studies* 10 (3), 317-332

Extra Readings

1. Allmendinger, P. & G. Haughton (2009): Critical Reflections on Spatial Planning. In: *Environment and Planning A* 41, 2544-49.
2. Northey, M and Knight, D.B. (2001) *Making Sense: A Student's Guide to Research and Writing* , Oxford: Oxford University Press.



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3. Summerby-Murray, R. (2010): Writing for Immediacy: Narrative Writing as a Teaching Technique in Undergraduate Cultural Geography. *Journal of Geography in Higher Education* 34 (2), 231-245.

Professor: CARR Constance

03-21 - Introduction to European integration

Module: Module 21 - European Territorial Trends and Policies - Introductory (Semester 1)

ECTS: 5

Course learning outcomes: On completion of the course a student should be able to understand and analyse:

- 1) the drivers of the EU integration process,
- 2) the functioning of the EU and
- 3) the territorial expressions of the EU integration process.

The class introduces the students to the other classes of the MAGEO that directly or indirectly address the EU context.

Description: Over the last 70 years, the European integration process has had deep implications on states, economy, society and democracy. The raising Euroscepticism, the Brexit, the debt crisis in Greece, the raising regionalist movements (e.g. Scotland, Catalonia), the migration flows in the Mediterranean Sea and the negotiation on the TAFTA Treaty depict some of the most visible challenges faced by the EU integration model currently face.

Political science, law, geography, spatial planning, and economy are some of the disciplines having developed theories conceptualizing this unique integration process that can neither be defined as an international organization nor as a federal state.

The class takes stock of the academic literature ranging from geography, spatial planning and political science to analyse the specificities of the EU integration process. It relies on a wide range of material (e.g. analytical concepts and tools from academic articles and publications, maps from ESPON and Eurostat, grey literature stemming from the EU institutions, political speeches and press documents). Prior to the class, the students have access to a short list (1 to 5) of key documents through the Moodle platform.

Language: Anglais

Mandatory: Oui

Evaluation: Written exam (70%), presentation (20%) and participation (10%)

Professor: EVRARD Estelle

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05-31 - Qualitative Research Methods

Module:	Module 31 - Territorial Governance and Policy Analysis - Introductory (Semester 1)
ECTS:	3
Course learning outcomes:	<p>On completion of the course a student should be able to:</p> <ul style="list-style-type: none">- demonstrate a solid theoretical background as to methodological approaches- evaluate purposes for which qualitative methods are applicable- reflect on choices of appropriate methods and instruments- prepare and conceive qualitative research schemes- apply different methods- combine qualitative and quantitative approaches in a coherent way- handle the interface between qualitative data collection and its analysis and interpretation
Description:	<p>The main aim of this course is to make students familiar with the conceptual and methodological fundamentals as well as the most frequent research methods in qualitative research. Furthermore, complementarities and interfaces with quantitative methods will be discussed (e.g. triangulation). The course is divided up into the following parts:</p> <ul style="list-style-type: none">- Introduction to Qualitative Research- (Participant) Observation- Interviews and Interview Simulation- Focus Groups and Group Discussions- Text Interpretation and Discourse Analysis- Participatory Research Methods- Handling Qualitative Data
Language:	Anglais
Mandatory:	Oui
Evaluation:	50 % in-course assessment; 50 % homework assignment (short report about one session – summary of approx. 900 words)
Remark:	Literature to be announced
Professor:	SCHULZ Christian, ESSUMAN Gilles Evrard

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06-41 - Statistics and Econometrics for Geographical Data

Module: Module 41 - Quantitative Spatial Analysis - Introductory (Semester 1)

ECTS: 7

Course learning outcomes: On completion of the course a student should be able to:

- describe the key concepts in spatial statistical analysis and the specificities of geographical space and spatial data
- explain and use common univariate statistics and indices for measuring the location, specialisation and concentration of activities across space
- explain and apply standard regression methods and diagnostics and discuss their difficulties when applied to geographical data
- explain the principles and methods used to identify local effects and spatial autocorrelation
- read and discuss detailed results of an empirical research article that deal with spatial data analysis or spatial econometrics
- demonstrate a good command of Ms Excel for standard spreadsheets management, statistics and graphics
- demonstrate a good command of R to handle statistical datasets and perform univariate, bivariate and multiple regressions analyses with good diagnostics.

Description: The course aims at providing an overview of key concepts theories and formalisation in spatial analysis and raising awareness as to the characteristics and difficulties of statistical and econometric analysis with geographical data.

The course starts with a preliminary levelling-up in elementary statistics and data manipulation. Key concepts and definitions in descriptive statistical analysis and inference are reviewed, including standard univariate statistics, transformation of variables, and the theory and application of statistical tests. Practical sessions focus on the use of Ms Excel for data handling, graphical analysis and univariate statistics.

The course then focuses on statistical analysis and standard econometrics applied to geographical data. It is structured into four parts:

First the specificity of geographic space are emphasized and implications for statistical analysis in terms of spatial heterogeneity and spatial dependence are discussed.

Second, univariate statistics are presented for measuring geographical variation, specialisation, concentration or the relative segregation of particular phenomena in space.

The third part is then dedicated to revealing relationships between two or more variables in space. Theory for covariance, correlation and simple and multiple regressions (standard OLS econometrics) are presented as well as the related diagnostics (significance, robustness, heteroscedasticity tests, outliers,...). Problems arising from the geographical nature of data (such as MAUP, spatial dependence) are discussed. Examples are taken from recent econometric papers in urban and economic geography. Logit regression is also introduced since binary and nominal data are rather common cases in geography (land use change,...) as well as in transport research (mode choice,...).

The last part of the course is dedicated to more advanced spatial tools in particular indices of global spatial autocorrelation and local spatial association. The course ends with examples of more advanced spatial econometric models that explicitly embed issues of spatial dependence and spatial heterogeneity (spatial lag and geographically weighted regression models).

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The course is accompanied with a series of practicals in R devoted to data handling and univariate statistics (part 2 and 3) and standard econometric techniques (OLS regression and diagnostics) (part 3).

Language:	Anglais
Mandatory:	Oui
Evaluation:	65 % oral exam, including discussion of a research article; 35 % R exam
Professor:	CARUSO Geoffrey, BOURA Marlène Delphine Fabienne

07-51 - Introduction to Cartography and Geographical Information

Module: Module 51 - Cartography and GIS - Introductory (Semester 1)

ECTS: 3

Course learning outcomes: On completion of the course students should be able to:

- explain the basic theoretical framework for understanding geographic information and creating a thematic map,
- operate the scientific approach to analyse different maps,
- operate the different steps of mapping: symbolization, scale and generalization, principles of colour, cartographic design,
- assess the common methods of data classification (discretisation),
- produce thematic maps using standard software tools.

Description: The course comprises:

- a set of theoretical lectures divided into four parts:
 1. The map as a vector of information;
 2. Design and organization of maps;
 3. Graphic language and geographic data visualization.
 4. New approaches in cartography
- a set of seminars where students will have opportunity to describe and discuss chosen published maps and creating their own thematic maps (choropleth and proportional symbol) using dedicated software tools.

Bibliography

- SLOCUM, T.A u.a. 2005, Thematic Cartography and geographic visualization, Pearson Prentice Hall 2004.
- CAUVIN, C. / ESCOBAR, F. / SERRADJ, A., Thematic Cartography and Transformations, London 2010.
- CAUVIN, C. / ESCOBAR, F. / SERRADJ, A., Cartography and the Impact of the Quantitative Revolution, London 2010.
- CAUVIN, C. / ESCOBAR, F. / SERRADJ, A., New Approaches in Thematic Cartography, London 2010.

Language: Anglais

Mandatory: Oui



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Evaluation: Entry prior to 2019-2020 (S) version: 3 ECTS

Entry from 2019-2020 on: 4 ECTS

Description Component Type Weight Second Session Assessment Component 1
MANDATORY Attendance NON-GRADED Assessment - MANDATORY 0 % NOT available
Assessment Component 2 Written exam End-of-Term Assessment 100% available

Professor: KLEIN Olivier, HELFER Malte

08-51 - Geographical Information Systems: Analysis and Mapping

Module: Module 51 - Cartography and GIS - Introductory (Semester 1)

ECTS: 5

Course learning outcomes: On completion of the course a student should be able to

- explain and apply the basic principles and functions of a GIS
- describe and apply the methods for acquisition, storage and manipulation of spatial data,
- describe and apply standard GIS spatial analysis techniques
- design and apply basic GIS models and relate them to geography and spatial planning objectives
- use the ESRI ArcGIS software suite for vector-based data management, GIS overlay analyses and the aforementioned methods

Description: The course aims at providing definitions and conceptual background in Geographical Information Systems (GIS) and Science (GISc) and relating them to geography and spatial planning. Students will be introduced to the basic structure, principles, functions and modelling with GIS. The students will develop GIS practical skills using ESRI ArcGIS software and relate them to GIS theory and concepts, along the following mixed theory/practice modules:

- Introduction to GIS and ArcGIS
- Mapping basics and symbology
- Querying and joining data
- Spatial and attribute selection
- Projections
- Data collection (GPS) and digitization
- Creating and editing data
- Geoprocessing vector data
- ModelBuilder and multi-criteria evaluation and analysis

Language: Anglais

Mandatory: Oui

Evaluation: 40 % laboratory exam, 30 % GIS and spatial analysis project, 30 % weekly assignments

Remark: Chrisman N. (2003). Exploring Geographical Information Systems - 2nd edition international - 320p, Wiley & sons.

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Maguire D.J., Batty M., Goodchild M.F. (2005). GIS, Spatial Analysis, And Modeling - 496p. ESRI Press
de Smith M.J., Goodchild M.F., Longley P.A. (2007). Geospatial Analysis: A Comprehensive Guide to Principles, Techniques and Software Tools - 414p. Troubador Publishing.
Longley P.A., Goodchild, M.F., Maguire D.J., Rhind, D.W. (2005). Geographic Information Systems and Science , 2nd Edition - 536p. Wiley & Sons
Ormsby T, Napoleon E, Burke R, Groessl C, and Bowden L 2008. Getting to Know ArcGIS Desktop: Basics of ArcView, ArcEditor, and ArcInfo

Professor: JONES Catherine, SCHIEL Kerry

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Semester 2

09-22 Socio-Economic Development Trends in Europe

Module: Module 22 - European Territorial Trends and Policies - Intermediate (Semester 2)

ECTS: 5

Course learning outcomes: Upon completion of the course, students should be able to:

- Describe the current trends and challenges that affect European cities and metropolitan areas.
- Identify the main concepts and theories related to European urban policy and metropolisation and discuss their contribution and relevance.
- Critically assess the ways in which these socio-economic trends are captured and treated in empirical studies.

Description:

The main objective of this MA course is to give students an overview of the current urban and territorial developments in Europe as well as of the resulting urban policy responses with regard to the growing urbanisation and globalisation trends. A specific feature of this course is that it analyses these trends and their associated challenges and policy responses from three different perspectives, namely from an urban policy, a conceptual and an applied perspective.

The aim of the first part of the course is to critically assess which concepts and theories are able to make sense of the trends and changes that can be witnessed in contemporary Europe. It starts at the European and regional level, with a focus on processes such as globalization, metropolisation and cross-border regionalisation. In response to the emergence of the city as unit of analysis, the attention turns to socio-economic developments at the urban scale, including suburbanization, gentrification and urban regeneration.

The objective of the second part of this course is to complement these conceptual considerations with empirical evidence based on case studies and comparative analyses. To achieve this, a great variety of research and studies will be mobilized. The empirical examination of the trends and challenges of urbanization and metropolisation processes in Europe will notably rely on works conducted by ESPON, national planning agencies and European scholars.

The third part of this course explores the rationalities behind European urban policies as well as their context, development paths, operating principles and effects from a critical perspective. Conceptualizing urban policy as being dynamic and malleable urges us to reconsider traditional understandings of and approaches to the role of European urban policies in economic and social development as well as the processes by which these policies develop and define themselves in practice.

Language: Anglais

Mandatory: Oui



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Evaluation: 20% continuous assessment on all parts of the course.
80% written exam on all parts of the course.

Professor: BECKER Tom, SOHN Christophe

10-70 Urban Planning Techniques and Projects Appraisal

Module: Module 70 - Projects and Practice (Semester 2)

ECTS: 3

Course learning outcomes: On completion of the course, students should have a good understanding of selected planning techniques and how to deploy these in making actual forecasts.

Description: The objective of the course is to introduce students to methodologies that are commonly employed in making forecasts for subsequent use in plan-making and policy formulation. By bringing together aspects of both theory and practice, the aim is to familiarise students with the selected techniques and, through worked examples, to demonstrate how these are used by policymakers, rather than simply portraying them as technical constructs.
The course is structured along the following parts:

- The planning process and rationale for the deployment of forecasting and appraisal methodologies.
- A review of population forecasting methodologies (including cohort-survival) and an introduction to methods of estimating housing needs.
- An introduction to land-use and transport planning (including the four-stage traffic forecasting process, and an introduction to gravity models).
- Evaluation techniques (including cost-benefit analysis and multi-criteria analysis).

The course includes a study visit to the European Investment Bank to review -operational- project appraisal methodologies.

Language: Anglais

Mandatory: Oui

Evaluation: Assessment will be based on classroom participation (20%) and completion of an essay approximately 200 words in length (80%)

Professor: FIELD Brian

11-70 Governance of EU, cross-border and national territorial policies.

Module: Module 70 - Projects and Practice (Semester 2)

ECTS: 5

Course learning outcomes: On completion of the course a student should be able to understand and analyse: governance from the point of different disciplines, elements of governance and the major lines of the

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scientific discussion, the particular challenge of governance in the territorial and urban context, conceptual and strategic approach and action within governance structures, and examples of typical governance structures and typical spatial problems to be solved from the EU to the local level, including urban and trans-border dimensions. Knowledge about enforced (through Structural Funds) multilevel governance, its different features, and developments as well as relevant management features.

Students should have acquired a number of skills: to be able to analyse particular governance situations with regard to territorial development and should be able to identify and define options for acting for different actors in different governance constellations, to analyse governance structures (description of the actor/institutions with regard to spatial development phenomena and policy options), - to define strategies for actors to achieve policy objectives and to unblock deadlocked situations, to present the ideas and insights in the format of research papers and of policy-oriented briefings, to be able to act in the framework of EU funded programmes as a means of territorial change processes.

Description:

This course is focusing on making the link between theory and practice of the governance of policy-making of EU, cross-border, and national-territorial policies governance influences on and risks involved in territorial policy-making. Regarding theory, the meaning of governance, in general terms, and the constitutive elements involved in policy are discussed in detail. Following this overview, practical examples and typical governance constellations and situations are highlighted in discussing practical examples of governance constellations. At the end of the course by the example of the Interreg programmes financed under the European Structural and Investment Funds practical instruction is offered about how to participate in EU-funded Programmes and how those activities across national borders contribute to the objectives of European Cohesion policy. It will be demonstrated that result orientation and accountability are important issues when dealing with multilevel governance.

The complexity of reality calls for increasing complexity in governing this reality. Democratic institutions are complemented by a network of consultative bodies, the interdependence of public and private bodies and actors of different sectors and, on different governmental levels, are the subject of growing awareness and are, thus, calling for policy responses. These trends lead to the insight that policymaking is not a matter solely for governments. Thus, a broader approach is emerging considering all actors, their relations, their motivations, and their strategies under the term 'governance'. The course firstly offers an understanding of what governance means, in general terms, and which are constitutive elements for the understanding of governance as a concept.

The course acknowledges that territorial development involves policy processes of, particularly high complexity. All development is territorially bound at some point - even the internet and hyperspace are physically bound to cables, transmitters, and servers somewhere located. Territorial development is the result of resources being used and interactions taking place at certain locations of the territory. Resources and infrastructures are determining factors for the developmental potential of a location or territory. In return, territorial policy-making requires an understanding of the particular challenges to governance with regard to the complexity of territorial development.

The course addresses how governance is working in practice across governmental levels from the EU to the local level. Typical governance constellations are presented as such as EU regional policy, metropolitan area governance, or trans-border development and presented and discussed using many practical examples and cases study material. Finally, the course

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offers an insight into the joint European funding instrument of Interreg programmes supporting cross-border cooperation and territorial development by strengthening the economic, social, and environmental development in the European Union with reference to the EU 2020 strategy.

The course is divided up into the following parts:

1. Introduction: Governance - theoretical Background: definitions, applications to the issue of spatial development.
2. Governance in theory in selected contexts: Economic governance - Governance and New Public Management, Governance in networks, multi-level governance.
3. Governance in the practice of spatial development policies: European level - regional policy and territorial cohesion, National level and regional level horizontal and vertical coordination, Crossing jurisdictions: metropolitan areas, transnational and cross-border spatial development, local level spatial and urban development.
4. The case of Cross-Border Cooperation: Multilevel Governance in practice of European Structural and Investment Fund Programmes of Interreg. The relevance of result orientation and accountability.

Language: Anglais

Mandatory: Oui

Evaluation: 30 % - one presentation with ppt; 50 % - one Full paper in-course assessment including the presentation of papers; 20 % - participation in case study and group work and in discussion

Professor: ESER Thiemo

12-81 Foundations and Trends in Geographical Research

Module: Module 81 - Research Methods and Seminars - Introduction (Semester 2)

ECTS: 2

Course learning outcomes: Once attending this course, the students will

- be made familiar with basic issues of geographical thought,
- be able to situate geographical knowledge in the context of the historical trajectories of the discipline,
- be able to navigate through certain areas in order to focus their own research interest more specifically, prepare for conducting small literature reviews, and write a related paper.

Description: "Geography is intriguing because it is there all around you; the world that is an inextricable part of your everyday life."
Holt-Jensen (2018, p. 17)
"Geography is a fundamental fascination."
Bonnett, A. (2008, p. 1)

The aim of this seminar is to explore the development of geography as a scientific discipline and to learn about the evolution of disciplinary changes (theories, paradigms, styles of thought), as these developments are key to preparing any piece of own work in this particular context.

The underlying challenge includes both a philosophical and practical question. Firstly, it is philosophical in the sense that the overarching rationales for scientific inquiry (in general) and

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disciplinary development (in particular) are deeply entrenched in the knowledge basis we are used to using. The materials that we are expected to digest (presented in textbooks, academic editions, re-search papers, at conferences) did not naturally evolve, as an outcome of the neutral search for objective truth, but also inhibit the nature of academic inquiry as socially driven, if not constructed. Effectively, broader societal, economic, and technical developments have always been important framework conditions for the emergence of scientific disciplines (new discoveries, or the demand for school teachers and for higher education).

This is illustrated by the waves of political turbulence that characterized many academic milieux in the late 1960s, or by the advent of the Internet in the mid-1990s. The same applies to technologies that have advanced the possibilities of scientific exploration in terms of methodology and methods. When early modern computing systems became available starting in the mid-1960s, totally new ways of handling numerical data emerged. These turned out to be so powerful that they became a template label for signifying an entire period in the recent history of geography (aka the 'quantitative revolution'). However, the core disciplinary trajectories also reflect the internal social logics and power issues along-side which knowledge generation may function, which include phenomena such as 'epistemic community'-building (that is, people who share certain views of the subject matter – schools of thought – which become predominant), review and publication politics, and also recruitment and career-building strategies.

Secondly, the task of keeping pace with knowledge generation as a student, teacher, or researcher is also highly practical, in the sense that updating oneself with seemingly ever faster progressing disciplinary progress entails a huge challenge. Keeping oneself informed about what is state-of-the-art in geography and planning seems increasingly difficult. Since the last two decades, this is particularly due to the changes the Internet has brought about for the routines of knowledge fabrication, and even more so, for publication within and beyond academia. The sheer volume of scientific work that is potentially relevant and available online is difficult to oversee, almost impossible to 'control', and sometimes also astonishingly diverse, if not contradictory. In overall terms, this is difficult to deal with, and the wise use of secondary data seems essential here. This is why we devote reading seminars like this one to acquiring effective tactics and strategies, in order to build your own knowledge basis and learn to properly deal with what others did so far.

Keeping knowledge bases under efficient control requires proper but careful use of resources. Nothing starts at zero, but relies on the work that others did previously. For this reason, it is quintessential to consider the actual state of knowledge, before adding to it on the basis of your own research (e.g. in your master thesis or a later PhD). In order to deal with this challenge, different sources of secondary information come into play here, among which the following four categories appear most important: i) entries in encyclopaedias (e.g. the ones on human geography), ii) review articles in academic journals of all kinds, iii) over-view articles in the therefore specialised journal *Geography Compass*, iv) last but not least papers that were published in *Progress in Human Geography*, which are dedicated to presenting the state-of-the-art in the discipline (most notable "progress reports").

In order to reflect and assess the development of the knowledge basis in geography in historical contexts, the course will make particular use of referencing bodies. For that purpose, the first step of students' work will be to reflect up-on disciplinary progress by reading and commenting on entries in the "Dictionary of Human Geography" (now available in the 5th Edition as of 2011, Wiley-Blackwell). For some time the Dictionary was considered to be one of the key sources of disciplinary knowledge, and it still enjoys this reputation today. It comprises about 1,000 entries on all subject matters in the area of human geography, written by 111 experts of the

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discipline. By comparing key entries to the Dictionary from different editions that cover subjects such as 'geography', we will discuss major differences between these phases and thus identify disciplinary progress, however, this is to be defined.

Consequently, the method of the course will consist of the triad of reading, discussing, and writing. For this purpose, short introductions into the discipline's subject matter and approaches will be provided via Moodle. Starting with a short overview given by course instructors on the historical trajectories of the discipline (when, how, by whom were they framed? What were central ideas, as-sumptions, ideologies?), students will have a chance to delve deeper into key entries of the Dictionary and the other sources. Joint exercises will focus on reading, analysing, interpreting, and commenting on the issues presented there.

The students' knowledge about the contents provided in 12-81 will be further enlarged by the 2nd year seminar 20-82 'Progress in Planning' (Semester 3), where related debates will be held as to the development of spatial planning as both a practice and a scientific, engineering-oriented discipline.

Language: Anglais
Mandatory: Oui
Evaluation: 50% guided reading and course presentation; 50% assignment paper (t.b.d.).

Remark: **Required readings:**

- Bonnett, A. (2008), What is Geography? Los Angeles et al.: Sage.
 - Matthews, J.A. and D.T. Herbert (2008), Geography. A Very Short Introduction. Oxford: Oxford University Press.
- and also

- Johnston, R., Gregory, D., Haggett, P., Smith, D. and D. Stoddart, (eds., 1981), Dictionary of Human Geography". 1st Edition, Malden/Oxford: Blackwell. (= applies to selected entries)
- Gregory, D., Johnston, R., Pratt, G., Watts, M. and S. Whatmore (eds., 2009), Dictionary of Human Geography". 5th Edition, Chichester: Wiley-Blackwell. (= applies to selected entries)

Recommended Readings:

- Couper, P. (2015), A Student's Introduction to Geographical Thought. Los Angeles et al.: Sage.
- Holt-Jensen, A. (2018), Geography: History and Concepts. 5th Edition, London and Thousand Oaks: Sage.
- Johnston, R. and J. Sidaway (eds., 2015), Geography and Geographers. Anglo-American Human Geography since 1945. 7th Edition. London: Routledge.

Professor: HESSE Markus

13-81 Urban Fieldwork (5 days)

Module: Module 81 - Research Methods and Seminars - Introduction (Semester 2)
ECTS: 5



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Course learning outcomes:

On completion of the course a student should be able to:

- Identify relevant literature to prepare a site visit, including contemporary conceptual approaches.
- Develop relevant questions structuring an expert meeting.
- Critically reflect upon the acquired information on site.
- Draw comparisons with empirical evidence from other regions/cities.
- Conduct a theory led analysis of field work's findings.

Description:

Visiting a European city region, the major aim of this fieldwork exercise is to acquire a differentiated understanding of spatial development processes and related governance patterns, e.g. with regards to:

- Regional economic restructuring
- Europeanisation of urban and regional planning
- City development and land use management
- Community economies and their transformative potential

The fieldwork includes site visits, expert meetings, and the conception and execution of a local case study.

Language:

Anglais

Mandatory:

Oui

Evaluation:

- 33 % active participation during the fieldwork,
- 67 % elaboration of a case study and presentation and interpretation of its outcomes (video).

Professor:

SCHULZ Christian, CIMA Ottavia

16-42 Exploratory Spatial Data Analysis and Geostatistics (track B)

Module:

Module 42 - Quantitative Spatial Analysis - Intermediate (track B) (Semester 2)

ECTS:

5

Course learning outcomes:

On completion of the course, students should be able to

- relate exploratory and confirmatory statistical approaches for geographical data,
- handle and map geographic data in R (points, areas, flows),
- discuss and perform geostatistical analyses on point pattern,
- discuss and perform spatial autocorrelation analysis, spatial regressions, and geographically weighted regressions,
- discuss and perform regression on flow data.

Description:

This course is a mixed theory and R practice course focused on spatial visualisation, spatial regressions and geostatistics methods applied to points, areas, and flows. The course develops along a set of exploratory and confirmatory approaches, stressing visual methods and mapping, spatial dependence, and heterogeneity. It is complementary with standard confirmatory analyses as undertaken within the course MAGEO-06-41 (Statistics and Econometrics for Geographical Data).

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The first part is dedicated to a set of practicals to using R for input-output and handling of geographic data, for thematic mapping, and liaising back and forth the outputs of statistical analyses with maps.

The second part focuses on point data and geostatistical methods for point pattern analysis, spatial trends (lowess, loess, (co-)variograms) and interpolation (kriging), spatial kernels, and correlations.

The third part concentrates on areal data, including the mapping of local clusters and hot/cold spots and the development of models (regressions) for treating spatial dependence and spatial heterogeneity (Spatial regressions and geographically weighted regression (GWR)).

The fourth part is dedicated to flow data (movement), including the mapping of flows, the estimation of models for in and out movements rated, (migrations), and the estimation of model adapted to origin destination pairs (Poisson models for spatial interaction).

Language:	Anglais
Mandatory:	Non
Evaluation:	20 % weekly R practicals, 80 % project report based on analysing multivariate geographical data related to particular thematic questions (e.g. socio-demographic census data, urban structure, virus spreading,...).
Professor:	CARUSO Geoffrey, KALOGIROU Stamatis, PEETERS Dominique

17-52 WebGIS and Geoprocessing (track B)

Module:	Module 52 - Cartography and GIS - Intermediate (track B) (Semester 2)
ECTS:	5
Course learning outcomes:	On completion of the course students should be able to: Part 1: <ul style="list-style-type: none">• Create, manage and display raster data• Demonstrate the use a variety of raster analysis tools from the Spatial Analyst toolbox• Be familiar with the use of functions for Image Analysis• Work with Raster calculator to undertake map algebra.• Become familiar with the use of NDVI analysis and analyse NDVI values for the university campus• Understand the basics of the machine learning toolbox in ARCGIS to classify extract information from imagery Part 2: <ul style="list-style-type: none">• Become familiar with cloud based GIS tools such as ArcGIS Online, ESRI Story Maps or Mapbox• Understand the fundamental principles of WebGIS• Describe different web GIS formats and tools• Understand the principles of HTML, JS and CSS and how they are used in web-mapping

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- Map data and research outcomes by creating a custom WebGIS
- Understand the principles of web-mapping and its associated technologies
- Understand the basics of Mapbox, creating symbology and R Shiny
- Understand and write code using Leaflet and Javascript.

Description: The course provides an introduction to the topic of web GIS and GIS processing. It is divided into two parts. In the first part of the module students will gain both an understanding of and hands-on practice with advanced geoprocessing and GIS modelling functions using both raster and vector data. We will use ESRI ArcGIS Spatial Analysis functions for analysis and modelling. In the second part of the course, we will introduce students to the fundamental principles of WebGIS. Students will gain practical experience using different web publishing technologies to visualise and display geographic data and modelling outcomes online.

Language: Anglais

Mandatory: Non

Evaluation:

- 30 % participation in weekly geoprocessing practicals
- 30% participation in weekly WebGIS practicals
- 40 % project report including mapping output using ESRI Storymap

Professor: JONES Catherine, SCHIEL Kerry, MÉDARD DE CHARDON Cyrille

15-32 Concepts and Methods in Governance Research

Module: Module O0 - Open Course (Semester 2)

ECTS: 5

Course learning outcomes: On completion of the course a student should be able to:

- Access and apply the most relevant methods of governance research.
- Base their applied research on the conceptual background acquired in qualitative research methods course.
- Conceive an appropriate case study.
- Autonomously conduct this case study within a given time frame.

Description: Following on the qualitative research course (MAGEO-05-31), the main objective of this course is to give the students insights into the applied analysis of governing processes in spatial development. After a methodological introduction and a review of literature-based case studies, a semester project dealing with spatial development in Luxembourg or the Greater Region will be conceived and realised by the students. Various methods will be applied to get differentiated insights into an on-going policy process related to spatial development. A critical reflection of the applied methods will help the students to develop a sound conceptual understanding of how to appropriately conceive a spatial governance study.

The course is structure along the following parts:

- Introduction to methodological concepts of governance research
- Development of a case study idea
- Conception of possible case study designs
- Refinement of research design
- Empirical case study (mixed methods)



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- Methodological reflection

Language: Anglais

Mandatory: Non

Evaluation:

- 20% guided reading,
- 20% conception of a case study,
- 60 % final report (oral, written).

Professor: SCHULZ Christian, ESSUMAN Gilles Evrard

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Semester 3

18-12 Cities, Masterplanning and Urban Governance

Module: Module 12 - Urban and Spatial Planning - Intermediate (Semester 3)

ECTS: 5

Course learning outcomes: On completion of the course, a student should be able to

- orientate in the general discussion of the rationale, justification and trajectories of urban planning,
- make an informed judgement on the gap between contents and procedures of planning on the one hand and its effective outcomes on the other hand,
- identify the various elements of i) physical planning and ii) the political process, i.e. activities addressed as forms of governance.

Description:

The aim of this course is to make students familiar with central concepts and approaches of urban planning, policy and governance, with a particular emphasis placed on the origins, rationale and elements of physical planning. Physical planning is key to the urban process, by determining land use, providing infrastructure and circulation, and by situating facilities in a way that it might support an efficient overall development of places. For this purpose, particular planning instruments have been developed and applied in much of the industrialized world, such as general land-use plans, particular building plans or more comprehensive, strategic framework plans. Also, informal instruments and procedures such as participative planning became quite popular recently.

However, the rationale of planning to steer development (and the related belief in planning to be able to do so) has been challenged by a variety of events, both originating from changes within the planning system and, even more so, of the outside world. A fragmented socio-economic development, processes of individualization, and most notably globalization have been putting a rising pressure on urban and regional places to adapt. Particularly market forces in planning and development and also the increased competitive dynamics among spatial units such as nations, regions and cities turned out to determine planning ambitions. As a consequence, these processes have been shaping the agenda of regulating processes, plans and institutions quite significantly.

Against this background, the course explores urban planning theories, practices and discourses in certain detail. The first part of the course is devoted to giving an overview of the more recent historical development of planning. The respective time span starts by and large at the peak of industrialization (late 19th and early 20th century), leading to recovery planning after World War II and then emphasizing the competing ideal-types of planning since the 1950s/60s: modernist vs. traditional planning, compact vs. dispersed development. Today's master planning of urban expansion, large-scale infrastructure projects or eco-city communities will give most recent insight into the world of planning, yet will also be critically interrogated.



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On this basis, in the second part of the course participants will have the opportunity to work on selected plans – being these designed for developing a building, a 'project', an urban district, selected parts of infrastructure or concerning the future of entire territories. The aim of this exercise is to reconstruct the plans' contents, justification and implementation, leading to a critical assessment of the plans' outcomes and thus of urban planning at all. The course finally discusses more recent approaches to re-assert steering processes in the context of 'governance', that is, the multi-level and cross-sectoral interaction of various public and private agents set in place to achieve political goals.

- A short history of urban and regional planning
- Comprehensive planning and the challenge to integration
- From urban dynamics to evaluating plans, programmes and practices
- Essentials of planning, policy and urban governance
- Case study work on selected plans

Language:	Anglais
Mandatory:	Oui
Evaluation:	25 % guided reading and course presentation; 75 % paper report
Remark:	Selected references

Allmendinger, P., Houghton, G. (2009): Commentary:Critical reflections on spatial planning. *Environment and PlanningA* 41, 2544-2549

Faludi, A. (1970): The planning environment and the meaning of "planning". *Regional Studies*4(1), 1-9

Salet, W. (2014): The Authenticity of Spatial Planning Knowledge. *European Planning Studies*22 (2), 293–305

Scott, A. J. (2013): Emerging cities of the third wave. *City*15 (3-4), 289-321 (with images and captions by Elvin Wyly)

Professor: RAFFERTY Michael, SIGLER Thomas

19-62 Optimal Location and Transport Models

Module:	Module 62 - Geographical Modelling - Intermediate (Semester 3)
ECTS:	4
Course learning outcomes:	On completion of the course a student should be able to - demonstrate a profound knowledge of locational and spatial interactions concepts and theories, - describe and formalize the interactions between land use and transport and relate them to theory

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- relate various modelling approach with each other
- sketch a strategy for applying spatial interaction, transport, land-use and transport interaction, discrete choice or location-allocation models in practice
- assess the strengths, difficulties and weaknesses of these models in practice

Description:

The course aims at revealing the theoretical mechanisms and formalising the main principles underlying the location of human and economic activities in urban and regional settings and the subsequent spatial organisation of flows (mobility patterns). It emphasises how transport costs and mobility interact with the individual decisions of firms and households to settle somewhere and vice-versa, in other words stressing the interaction between land use (location) and transport decisions. The course takes a modelling perspective in order to formally address the theoretical mechanisms at stake and relate them to operational tools developed in geography and transport research, and used in land use and transport planning.

The first part of the course reviews location theory and models where transport costs are treated explicitly. The second part is dedicated to gravity and spatial interactions concepts and models, emphasizing how they can be used in practice for choosing the location of commercial or service activities, the prediction of mobility flows between places, or to question the effects of distance and borders. The third part elaborates on spatial interaction concepts and discrete choice theory to formalise the four steps model as used in transport planning and provide an overview of aggregate and disaggregate land use and transport interaction models (from Lowry to microsimulation models such as Urbansim). The fourth part is an introduction to optimisation techniques starting from the so-called transport problem, then demonstrating the principles of optimal location-allocation models applied to placing public services and infrastructures in space.

Language:

Anglais

Mandatory:

Oui

Evaluation:

100 % written exam

Professor:

MENNICKEN Estelle, THOMAS Isabelle

20-82 Progress in Planning

Module:

Module 82 - Research Methods and Seminars - Intermediate (Semester 3)

ECTS:

2

Course learning outcomes:

Once attending this course, the students will

- be made familiar with the basics of spatial planning related thought, particularly what is understood as 'planning theory' that provides general orientation,
- be able to situate planning knowledge (theoretical, practice-related) in the context of the historical trajectories of the field,

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- be able to navigate through certain areas in order to focus their own research

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interest more specifically, prepare for conducting small literature reviews and write a related paper.

Description:

This seminar is a follow-up to the 12-81 course of Semester 2 that explored the foundations of geography as a scientific discipline. In that course we discussed the evolution of disciplinary changes (theories, paradigms, styles of thought) in geography over some 60 years or more, and we tried to keep pace with the related progress, based on the reading of some key documents. This seminar now deals in a similar vein with spatial planning, which is the second major focus of MaGeo. Planning represents a hybrid 'discipline' that includes major parts of engineering (this is also the degree planners usually obtain from university), and also social sciences that provide the proper understanding of the subject matter that is to be planned. Again, making yourself familiar with these developments is key to preparing any piece of work in the particular context of planning.

The seminar builds part of a triangle of possible engagements with spatial planning, as the contents are first related to the parallel course 18-62 "Cities, Masterplanning and Urban Governance", where 3rd-Semester students learn about some basics of this subject (historical evolution, major trends in practice, plan evaluation); as an assignment for 18-62, they will have to prepare a single case study on a selected plan/framework of their own choice. Participants in that course will also include students from the UL's Master in Architecture, so we may have a chance to get deeper into some details of planners' practical experience. Moreover, in case students opt for the qualitative stream in MaGeo, they will do the 23-13 "Project in Urban Studies", which offers both a chance to explore the related contents in depth, and also to learn and apply the case study method as one important approach to a possible master thesis.

The general aims and objectives of the "20-82 – Progress in Planning"-course are similar to "Foundations and Trends in Geography", which are i) making proper

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use of the existing knowledge basis and ii) keeping pace with its recent evolution, which seems to be a challenge in times where the sheer magnitude of available resources is increasingly difficult to handle."

However, planning has changed since it became institutionalised in the first half of the 20 thcentury, which is both a result of changing external framework conditions (socio-economic shifts, i.e. urbanisation, growth, and the like), and also internal shifts of planners' discourses, perceptions and methods, in response to changing societal and professional norms and ideals. Such changes are well documented in handbooks, readers and journal papers, and they reveal a broad range

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of thoughts as to what this theory is actually about. Anyway: much more than it is the case in geography, which also has its applied branch, the 'proof of the pudding' – here planning theory – is effective practice. Hence our subject matter is only partly the 'theoretical' body of literatures and writings, but also the practice of planning that usually contributes to revising and re-writing this knowledge basis.

Guiding questions of this course that should be answered by way of reflection are as follows: "(1) How do we understand the history of planning? (2) Is planning about means or ends, processes or outcomes, and should it emphasise one or the other? (3) Why should we plan, and when? (4) What are the constraints on planning in capitalist political economies, and how do those vary in different contexts? (5) What are the values that inform, and should, inform planning? (6) Is there a singular, identifiable 'public interest'?" (Fainstein & DeFilippis 2016, 5)

In order to provide robust answers to these questions and to assess the development of the conceptual knowledge basis in spatial planning in historical contexts, the course will make particular use of referencing bodies. For that purpose, the first step of students' work will be to reflect upon disciplinary progress by reading and commenting on selected entries in the "Readings in Planning Theory"



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(now available in the 4th Edition as of 2016, Wiley-Blackwell). This volume appeared first as a "reader" in 1973, then edited by Andreas Faludi, and is one of the key sources of disciplinary knowledge and related progress. Apart from some introduction given by the editors, the book presents a range of already published works from academics and planners. By reading and discussing parts of these seminal works, students will learn to detect key issues and identify disciplinary progress, however this is to be defined.

In the second instance, two distinct sources of periodicals will be used as well: selected papers from the Journal "Planning Theory" (Sage Publishers) and also contributions from the Journal "Progress in Planning" (Elsevier Publishers), both fully accessible from the UL's library system. Key issues to be discussed are central concepts or axioms developed in planning, particularly those which are subject to the rather long but substantial papers on planning issues published in "Progress in Planning".

Consequently, the method of the course will again consist of the triad of reading, discussing and writing. Starting with a short overview given by course instructors on the historical trajectories of the discipline (When, how, by whom were they framed? What were the central ideas, assumptions, ideologies? What were the specific framework conditions that allowed the field to emerge?), students will have a chance to delve deeper into key matters of spatial planning as a hybrid of both science and practice. Afterwards, they will select key papers that claim to represent progress, read them and present a concise synthesis of these pieces.

Language:	Anglais
Mandatory:	Oui
Evaluation:	50 % guided reading and course presentation; 50 % assignment paper
Remark:	Required readings:

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Fainstein, S. and J. DeFilippis, (eds.) (2016), Readings in Planning Theory. London: Wiley.

Selected papers from "Planning Theory" (Sage Publishers) "Progress in Planning" (Elsevier Publishers), own choice.

Recommended Reading: Planners' blog 'Briefing Room' of RTPi – The Royal Town Planning Institute, UK (<https://www.rtpi.org.uk/briefing-room/>)

Professor: HESSE Markus

21-13 Contemporary Approaches to Regional Development

Module: Module 13 - Urban and Spatial Planning - Advanced (Semester 3)

ECTS: 5

Course learning outcomes: On completion of the course a student should be able to:

- Distinguish different models and explanatory approaches for regional development.
- Identify the underlying driving forces and mechanisms.
- Develop relevant research questions on related issues.

Description: In many countries, we currently observe a convergence between spatial planning policies (in the mere technical sense of land use organization and infrastructure coordination) and more comprehensive approaches to regional development, increasingly taking into account sustainability imperatives. This module seeks to make the students familiar with the conceptual fundamentals of regional development, both in its analytical and normative sense. Theoretical approaches from economic geography, regional studies and spatial planning will be introduced and provide the conceptual framework for the students project in Module 24-33. A particular focus will be laid on socio-economic aspects and the institutional co-evolution and the interplay of businesses, governmental and non-governmental actors, and their role in the so-called sustainability transitions.

The course includes the following subparts:

1. Overview of analytical and normative approaches to regional development.
2. Conceptual insights (via guided reading and in-class discussions) into:
 - Localised production systems, clusters, and embeddedness.
 - Evolutionary perspectives on regional development.
 - Multi-level perspectives on regional development.
 - Socio-technical transitions, transition regions and towns.
 - Regional development under post-growth constraints.
3. Desktop research on illustrative case studies.

Language: Anglais

Mandatory: Oui

Evaluation: 30% guided reading, 30% participation, 40% case study report (oral, written)

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Professor: DÖRRY Sabine, SCHULZ Christian

04-73 Global Environmental Change in the Anthropocene

Module: Module 73 - Environmental Change (Semester 3)

ECTS: 4

Language: Anglais

Mandatory: Oui

Professor: STANKIEWICZ Jacek

22-33 Introduction to Border Studies in Geography

Module: Module 33 - Territorial Governance and Policy Analysis - Advanced (track A) (Semester 3)

ECTS: 5

Objective: "On completion of the course a student should be able to:
- Understand and explain different aspects of border regions
- Critically reflect different concepts of boundaries
- Have a knowledge and understanding on different scales of borders
- Develop relevant research questions on border issues"

Description: "The major aim of this course is to provide and to critically discuss with the students concepts of spatial delineation and demarkation as a special aspect of Political Geography. The interest on bounding spaces increases with new nationalism on the one hand and European integration and globalization on the other.

This course will especially focus on bordering, debordering and rebordering processes and bounding space in different scales as well as their spatial conflicts.

National borders can be seen as barriers, filters or open contact spaces for people, trade goods and information. Barriers can be different political, fiscal etc systems or even physical barriers like the frontier between the two parts of Cyprus or the former Berlin wall. Filtering borders can e.g. define who can come inside and who will stay outside which is a form of demarcation (e.g. by visa). One example here is the fortress Europe with the FRONTEX program. Open contact spaces are e.g. illustrated within the Schengen area where cross-border cooperation is strengthened and cross-border contacts are possible on a daily basis (e.g. with shopping, working or meeting friends' activities). Borders can also change their function and character becoming more open or close.

From a national perspective border regions are often peripheries, but by overcoming the national peripheral deficits new cross-border regions (debordering/flexible geometries/soft spaces) can develop. The course will discuss if these border regions can become laboratories of the European integration process. Transnational migrants can also build up new integration areas beyond national borders and can be seen as one example for debordering processes.

Bounding spaces are often expressed by inclusion ("we") and exclusion ("them"). This can define other (spatial and social) boundaries than national borders, sometimes expressed



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through cultural or mental fear, conveyed by external stimulation (e.g. EU structural funds) or economically defined. They can be dynamic and flexible, or fixed.

These topics will be illustrated mainly with case study examples on global, European and regional scale. The course will be structured with parts of guided reading, discussions and surveying case studies in group work."

Language:	Anglais
Mandatory:	Non
Evaluation:	20% guided reading, 20% participation/ group work, 60% final report (oral, written)
Professor:	MELLINGER Lukas

24-33 Project in Regional Development

Module:	Module 33 - Territorial Governance and Policy Analysis - Advanced (track A) (Semester 3)
ECTS:	5
Course learning outcomes:	On completion of the course a student should be able to develop a research design and autonomously conduct field and desktop work in view of a particular objective and case study.
Description:	The course is designed as a project related to contents and methods of the respective module category. The project is conceived as an applied case study where students will develop a problem oriented research design and will autonomously conduct field and desktop work under the supervision of the instructor. The project is seen as a first step to identify and prepare for the master's dissertation to be written in the succeeding semester. Depending on subjects and students, it can consist of group or individual work.
Language:	Anglais
Mandatory:	Non
Evaluation:	100% participation and report
Professor:	DÖRRY Sabine, SCHULZ Christian

27-63 Urban and Environmental Economics

Module:	Module 63 - Geographical Modelling - Advanced (track B) (Semester 3)
ECTS:	5
Course learning outcomes:	On completion of the course, a student should be able to - Demonstrate a profound knowledge of urban and environmental economics concepts and theories - Describe and formalize the relationships between location choice and environmental issues - Explain the theoretical rationale for the implementation of environmental policy instruments - Discuss the ability of various policy instruments to reach a given environmental target

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Description:	<p>The course aims at providing the key concept theories and formalization in urban and environmental economics in order to provide a framework to understand the intricate relationships between urban development and environmental issues.</p> <p>The first part of the course reviews the standard concepts of microeconomics that explain the consumption choices of households.</p> <p>The second part of the course introduces space and residential choice in the analysis, providing the key concepts of urban economics. Emphasis is put on how the environment may enter this framework, either as a consequence of residential location choice or as a component of this choice.</p> <p>The third part of the course introduces the key concepts of environmental economics to provide an understanding of the design of environmental policy instruments, in particular in an urban development context. It defines the concepts of social cost and externalities, and provides an overview of the public policy instruments that may be implemented to manage an environmental issue, with illustrations from several case-studies.</p> <p>Part two and three are complemented by practical works in order to deepen the understanding and linkages of the key concepts and their underlying assumptions and components</p>
Language:	Anglais
Mandatory:	Non
Evaluation:	40% Practical assignment during the course and 60% final written exam
Professor:	LEGRAS Sophie, DELLOYE Justin

28-43 Project in Spatial Analysis and Modelling

Module:	Module 43 - Quantitative Spatial Analysis - Advanced (track B) (Semester 3)
ECTS:	5
Course learning outcomes:	On completion of the course a student should be able to develop a research design and autonomously conduct field and desktop work in view of a particular objective and case study.
Description:	The course is designed as a project related to contents and methods of the respective module category. The project is conceived as an applied case study where students will develop a problem oriented research design and will autonomously conduct field and desktop work under the supervision of the instructor. The project is seen as a first step to identify and prepare for the master's dissertation to be written in the succeeding semester. Depending on subjects and students, it can consist of group or individual work.
Language:	Anglais
Mandatory:	Non
Evaluation:	100% participation and report
Professor:	JONES Catherine



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Semester 4

29-83 Master Thesis Workshops

Module:	Module 83 - Research Methods and Seminars - Advanced (Semester 4)
ECTS:	3
Course learning outcomes:	See Master's thesis guidelines and general learning outcomes of the Master
Description:	<p>The research seminar is a platform where students have an opportunity to discuss progress in their master's thesis with the other students, MAGEO professors and some research staff. The seminar is organised as a set of 3 or 4 workshops in the second half of the 4th semester. Every student presents the progress of his/her master thesis and can exchange on thematic, conceptual and methodological issues and share empirical findings.</p> <p>The workshop is a complement to the individual guidance that every student receives from his or her supervisor(s).</p> <p>Students are expected to show progress in the conception and methodology of their research and show capacity to account for suggestions and remarks across the set of seminars. They are also expected to contribute actively to the discussion related to the thesis of the other students. Participation to the workshop is compulsory and presence should be arranged in all cases, including prolonged internship.</p>
Language:	Anglais
Mandatory:	Oui
Evaluation:	100% participation
Professor:	JONES Catherine, SCHULZ Christian

30-90 - Master Thesis

Module:	Module 90 - Master Thesis (Semester 4)
ECTS:	27
Objective:	<p>Aims and objectives</p> <p>With the Master's dissertation to be prepared at the end of this study programme, students shall prove their ability to independently and scientifically work on a research topic in the realm of geography and spatial planning and related fields. This task allows the candidates to appropriately apply conceptual approaches, theoretical models and methodological tools acquired over the</p>



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preceding semesters.

The Master thesis is the major part of the fourth semester and counts for 27 ECTS. It can either

- be linked with an internship within a research or non-research institution abroad or in Luxembourg,

thus helping the students to step in the professional market

- or constitute a stand-alone research linked to research interests and projects of the Institute of Geography and Spatial Planning.

In the case students opt for an internship, an agreement need to be signed between the students, the University and the host institution (see internship agreement form). Internships are usually undertaken between the end of January and the end of April during the 4 th semester. Internship dates must be chosen so that participation to exams is not problematic.

Moreover participation to the Master Thesis Workshops in May and June (3 ECTS) is compulsory.

During these workshops students will have opportunity to present the progress of their research to

the other students and staff.

Course learning outcomes:

See Master's thesis guidelines

Description:

Formal requirements

The Master's dissertation has to be written in one of the University's official languages English, French or German. The final choice of the language depends on the language skills of the candidate

and of the members of the "Jury de mémoire". Its length should not exceed 90,000 characters (including spaces, figures, tables, references etc.). Additional documents like maps, large data files,

photos or films can be submitted electronically on CD or DVD.

Teaching modality:

Supervision

According to article 14 of the Règlement grand-ducal du 22 mai 2006 relatif à l'obtention du grade de bachelor et du grade de master de l'Université du Luxembourg, the Master's dissertation is





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supervised by a "Jury de mémoire" consisting of two researchers one of whom has to be a Professor

or Associated Professor at the University of Luxembourg. Furthermore, the jury may associate a third and non-university member coming from an applied field relevant to the dissertation's topic (typically a responsible person at the internship place). The "Jury de mémoire" is nominated by the

Dean at the suggestion of the Directeur d'Etudes.

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Language: Anglais

Mandatory: Oui

Evaluation: **Evaluation**

Each member of the "Jury de mémoire" evaluates the dissertation in a short written report and proposes a mark (0-20). The average of the marks is then submitted to the Jury d'examen of the study programme deliberating the final mark in its end of term session.

Professor: JONES Catherine