UNIVERSITÄT LIECHTENSTEIN

Schedule

Research Design & Management

Doctoral degree programme in Architecture and Planning (01.09.2010)

Doctoral degree programme in Business Economics (01.09.2008)

Winter term 2015/2016

Prof. DI MAAS Peter Droege

Dr. Tanja Kirn

Module Coordinator

Table of Contents

Module description

The module is required as a cross-faculty course in the preparation phase of both the doctoral programs Architecture and Planning, and Economic Sciences.

This module supports formal research training at the doctoral level by focusing on fundamental aspects of research design, particularly through the lens of the special disciplines, styles of inquiry and cultures of learning at the University of Liechtenstein. It also helps to develop research management skills.

Research design describes 'the structure of any scientific work. It gives direction and systematizes the research. Different types of research designs have different advantages and disadvantages.' In technical terms a typical research design is a detailed outline of how an investigation will take place. A research design will typically include how data is to be collected, what instruments will be employed, how the instruments will be used and the intended means for analysing the data collected.

Research management skills, or so called transferable skills, comprise the ability to manage projects, be self-motivated and autonomous, network internationally, to think analytically and to be creative, inquisitive and original. In combining both research design and management skills, the University of Liechtenstein aligns itself with aspirations of the League of European Research Universities (LERU). It calls for an innovative doctoral education that brings together cohorts of candidates and includes elements of professional development training. This combination nurtures a range of skills that help PhD candidates to be more effective in their research projects but also to nurture abilities that will be useful in their future lives and careers.

Learning Outcomes

After completing the module, students will be able to

> appreciate the value of a sound research design and well-constructed research project architecture
> independently conduct research design and method recherchés and evaluate and select options, assemble and test research designs for their own projects, evolving dynamic models
> capable of being optimized over time embark on a self-propelled path towards mastering a range of essential time, resource and other research management skills
> speak the language of research design and management, and converse reflectively with teams in house and internationally
> develop personal yet professional and continually evolving research styles and customize management and communication options responsibly devise research programs
> pursue their funding and establish their standing in the published research communities
> appreciate the range of research styles and cultures across the University of Liechtenstein and in wider research communities

Aims

The course aims to develop a range of skills that that help PhD candidates to be more effective in their dissertation research but also to work on a broader range of transferable and widely applicable skills that will be useful in their future lives and careers, qualifying them as competent researchers beyond the assembly and execution of their particular dissertations.

By imparting skills in research design and management, and an appreciation of modes of independent modes of insight acquisition, this module pursues high level academic aims. It provides an understanding of the logic and procedures involved in the discovery and formation of knowledge, of the planned development, interpretation and sharing of evidence and findings, and the conception and architecture of research programs and projects in these pursuit. It presents specific personal and academic competencies supporting this quest. Participants will learn to appreciate the structure and performance of successful research endeavours and acquire conceptual and technical skills needed for designing their own research approaches, styles and methodical constructs.

Module Coordinator

Prof. DI MAAS Peter Droege (peter.droege@uni.li)

Dr. Tanja Kirn (tanja.kirn@uni.li)

Module Courses

Structure

To provide a tailored program, the PhD students may select a specialized topic of 'Specialization according to PhD study' (4 taught lecture units). In addition to this, the PhD student may select five courses from the pool of "General academic and technical skills" and participate in any of all courses from the pool "Personal and professional management skills". The features of the series "Personal and professional management skills" are open lectures, and every interested staff member is invited to join and listen.

Aademic and technical skills

Specific academic and technical skills

((mandatory, specialization according to PhD study) 4 taught units)

Date	*Time*	*Course*	*Taught units*	*Lecturer*	*Room*
17.09.2015	08:00 - 10:00	Introduction to Research Design[1]	2	Droege, Peter / Kirn, T.	S5
23.09.2015	09:00 –12:00	Research Design in Entrepreneurship	4	Kraus, Sascha	S1
01.10.2015	13:00 –17:00	Experimental Research Designs in Finance	4	Angerer, Martin	IFDL[2]
01.10.2015	10:30-14:30	Research Design for BPM	4	vom Brocke, Jan	BPM[2]
01.10.2015	09:00-10:30	Research Design for Sustainable Building	4	Ritter, Volker	SD[2]
01.10.2015	10:30-14:30	RD for Sustainable Urban Design and Planning	4	Radzi, Anis	SUD[2]
01.10.2015	10:30-14:30	Research Design for Architectural Theory	4	Staub, Peter A.	SD[2]
			6	***Total***	

[1] Introduction is mandatory, others specialization, in total 6 taught units.

[2] The lectures will be held at the respective institutes or chairs.

General academic and technical skills

(electives, select 5 courses (10 taught units) out of pool)

Date	*Time*	*Course*	*Taught units*	*Lecturer*	*Room*
15.10.2015	08:00 -0 9:30	Experimental Research Design	2	Kirn, Tanja	S10
15.10.2015	09:45 - 11:15	Concepts of Time-Series Econometrics	2	Stöckl, Sebastian	S10
15.10.2015	11:30 - 13:00	Case Study Research and Action Research	2	Güldenberg, Stefan	S10
15.10.2015	14:00 - 15:30	Panel Data: Fixed and Random Effects	2	Kirn, Tanja	S10
15.10.2015	15:45 - 17:15	Mixed Methods Approaches	2	Marxt, Christian	S10
15.10.2015	17:30 - 19:00	Use and types of Observations and Surveys	2	Marxt, Christian	S10
29.10.2015	08:00 - 09:30	Literature Review	2	Simons, Alexander	S10
29.10.2015	09:45 - 11:15	Big Data Skills	2	Müller, Oliver	S10
29.10.2015	11:30 - 13:00	Community Research / Social Science for built environment	2	von Grabe, Jörn	S10
29.10.2015	14:00 - 15:30	Energy and the built environment	2	Droege, P. / Ritter,V.	S10
29.10.2015	16:00 - 17:30	Inquiry by design	2	Droege, Peter	S10
			10	***Total***	

Personal and professional management skills (mandatory)

Date	*Time*	*Course*	*Taught units*	*Lecturer*	*Room*
12.11.2015	09:00 - 09:45	Ethics	1	Marxt, Christian	H6
12.11.2015	10:00 - 10:45	Self-/time-/stress-management	1	Droege, Peter	H6
12.11.2015	11:00 - 11:45	International doctoral exchange / PhD net-work	1	Ackermann, Trudi	H6
12.11.2015	13:00 - 13:45	Project management	1	Lippe, Sonja	H6
12.11.2015	14:00 - 14:45	Personal Knowledge Management for PhD students	1	Güldenberg, Stefan	H6
12.11.2015	15:00 - 15:45	Publication process	1	Güldenberg, Stefan	H6
12.11.2015	16:00 - 16:45	Grant application process	1	Gunz, Dieter; Droege, Peter; vom Brocke, Jan	H6
12.11.2015	17:00 - 17:45	Leadership in research	1	vom Brocke, Jan; Droege, Peter	H6
			8	***Total***	

Presentation of Research Paper (mandatory)

Date	*Time*	*Title*	*Taught units*	*Lecturer*	*Room*
03.12.2015	09:00 - 17:00	Presentation of Research Paper	1	P. Droege / T.Kirn / PhD supervisors	S4
			1	***Total***	

Course Description

Aademic and technical skills

RDM01_Introduction to Research Design

Thursday, 17.09.2015

Time	Lecture	Lecturer	Taught units	Room
8:00	**Introduction** **Selecting an Research Approach** ▪ Philosophical worldviews ▪ Research Designs ▪ Criteria for Selecting a Research Approach **The Theory of Research Design** ▪ Quantitative Theory Use ▪ Qualitative Theory Use ▪ Mixed Methods Theory Use	Prof. DI MAAS P. Droege Dr. T. Kirn	2	S5
10:00	End of lecture			

Lecturer name and contact

Prof. Peter Droege
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Dr. Tanja Kirn
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Role of the unit in the doctoral module RDM

The unit provides an introduction into Research Design. We will begin with an overview of different philosophical stances, and present quantitative, qualitative and mixed methods approaches. Then it is discussed, how philosophy, designs, and methods intersect when on uses on of these approaches. We also discuss various factors that go into the choice of an approach to research. Additionally, we will provide an understanding, how the theories serve different proposes in a quantitative and qualitative theory use, as well as mixed methods theory use.

Topic content

Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis and interpretation. This plan involves several decisions, whereby informing this decision should be based on the philosophical assumptions the researcher brings to the study (research designs), and specific research methods of data collection and analysis, as well as aspects which derive from the nature of the research problem.

This lecture introduces the basic research approaches (qualitative, quantitative and mixed methods) and relates it to philosophical assumptions as well as distinct methods or procedures.

Although philosophical ideas remain largely hidden in research, they still influence the practice of research and

need to be intensified. This awareness will help to choose among qualitative, quantitative, or mixed methods approaches.

Skills focus

The lecture develops an understanding, how to decide whether al qualitative, quantitative or mixed approach is suitable for their proposal studies. Additionally it helps PhD students to consider and plan how theory might be incorporated into their studies.

Structure

The lecture is structured into two topics. The first topic, focus on the selection of an appropriate research approach. In doing so, it discusses the components of an research approach (philosophical worldviews, research designs, research methods) and derives criteria for selecting an appropriate research approach. The second topic addresses the use of theory (quantitative and qualitative use of theory, mixed methods theory use)

Topic aims are to

- provide an comprehensive overview about components of research approaches
- build abilities to select a suitable research approach
- develops the understanding about the use of theory

Hand-outs

Lecture slides will be shared via Moodle.

Literature

Textbooks

> Campbell, D. T., Stanley, J. C., & Gage, N. L. (1963). Experimental and quasi-experimental designs for research (No. 04; Q175, C3.). Boston: Houghton Mifflin.

> Creswell, J. W. (2013). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

> Crotty, M. (1998). The foundation of social research. NSW Australia: Allen and Unwin.

> Flinders, D. J., & Mills, G. E. (Eds.). (1993). Theory and concepts in qualitative research: Perspectives from the field. Teachers College Press.

> Fowler Jr, F. J. (2013). Survey research methods. Sage publications.

> Keppel, G., Wickens, T.D. (2004). Design and Analysis: A Researcher's Handbook (4th Ed.), NJ: Prentice Hall.

> Mertens, D. M. (2008). Transformative research and evaluation. Guilford press.

Articles

> Collins, A., Joseph, D., & Bielaczyc, K. (2004). Design research: Theoretical and methodological issues. The Journal of the learning sciences, 13(1), 15-42.

> Mertens, D. M. (2003). Mixed methods and the politics of human research: The transformative-emancipatory perspective. Handbook of mixed methods in social and behavioral research, 135-164.

> Thomas, G. (1997). What's the use of theory?. Harvard educational review, 67(1), 75-105.

> Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. The Sage handbook of qualitative research, 4, 97-128.

RDM02_Research Design for Business Process Management

to be defined

Prof. Dr. Jan vom Brocke

RDM03_Experimental Research Designs for Finance

Thursday, 01.10.2015

Time	Lecture	Lecturer	*Taught units*	Room
13:00	Introduction into the world of experiments Experimental errors and biases Controlling of extraneous variables Design types UniLi Opportunities	Dr. Martin Angerer	4	S10
17:00	End of lectures			

Lecturer name and contact

Dr. Martin Angerer
Email: martin.angerer@uni.li
Phone: +423 265 11 57

Role of the unit in the doctoral module RDM

The unit is an introduction for finance students into the field of experimental research designs. Additionally the opportunities for conducting experiments at the University of Liechtenstein will be discussed.

Topic content

Introduction into the world of experiments

Finding and controlling experimental errors and biases

How to control for extraneous variables. Why is it important?

What types of experimental research designs does exist? Advantages and disadvantages of each

What infrastructural opportunities do exist at the UniLi

Skills focus

The presentation aims to develop a basic understanding which skills are important for successfully conducting experiments in finance. Especially correct sampling and limiting experimenter biases will be discussed.

Structure

The lecture is structured into a general introduction to experimental research designs, a discussion of specific conditions that must be fulfilled in finance related experiments and a hand on example where students are asked to set up a small experiment idea by themselves.

Topic aims are to

- provide an overview about current approaches in experimental finance with a focus on stock markets
- build abilities to evaluate good experimental setting
- know how to basically conduct an experimental study and know the opportunities at the University of Liechtenstein

Hand-outs
A preliminary version of the slides is placed in G:\WW\RDM2015\RDM2015_ Experimental Research Designs

Reading and other reference material

Additional readings will be announced during the lecture.

RDM04_Research Design in Entrepreneurship

Wednesday, 23.09.2015

Time	Lecture	Lecturer	Taught units	Room
9:00	**Introduction** ▪ Entrepreneurship as a field of research ▪ Methods in entrepreneurship research ▪ Current trends in entrepreneurship research	Sascha Kraus	4	
12:00	End of lectures			

Lecturer name and contact

Prof. Dr. Dr. Sascha Kraus
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Role of the unit in the doctoral module RDM

The unit offers doctoral students of all disciplines insights into the interdisciplinary research field of Entrepreneurship as a sub-field of Management Science.

Topic content

Entrepreneurship – the formation and growth of new firms on the one hand or entrepreneurial behavior in established firms on the other – is a relatively young field of research; nonetheless, the research in this domain has been growing at an impressive rate in recent decades. As is commonly the case with emerging fields, entrepreneurship research currently faces a number of opportunities and challenges. Overall, entrepreneurship has an opportunity to establish itself as a field whose methodological rigor matches that of neighboring fields such as strategic management, innovation management or organization science, but some key challenges stand in the way of completing this endeavor. This unit explores the emerging work in this dynamic area. Reflecting the complex nature of entrepreneurship, the unit will touch on literature in a variety of academic disciplines. The purpose of this unit is to develop first understanding of methodological and empirical issues within the field of Innovation and Entrepreneurship. The methods and research strategies used are shared with other fields in business and social science, but should also be applied to topics in our subject area.

Skills focus

The goal of the unit is to introduce participants into the field of entrepreneurship research and the problems, theories and methods that are prevalent in (empirical) research on entrepreneurship. Participants should learn to 'know the field' and develop an ability to assess its strengths and weaknesses as well as its development trends.

Upon completion of the unit, the student should be able to

- develop initial insight into an advanced understanding of research and methodology.
- contrast and analyze principles and approaches within a few key empirical strategies and techniques for analyzing Entrepreneurship.
- demonstrate first research proficiency in the ability to critically examine the relationships between theoretical explanations, method, research question, and empirical data.
- apply this understanding and techniques to analyze their own work.

Structure

The unit is structured into three parts (see above).

Topic aims *are to*

- discuss concepts and ideas on how entrepreneurship can or should be researched.
- After a comprehensive treatment of entrepreneurship as societal phenomenon and scholarly domain, the core part of the unit will discuss design, sampling, operationalization and analysis issues on several levels of analysis: individual, venture, firm, industry, region and nation.

Hand-outs

Presentations, hand-outs, reference papers and reading material are provided in: G:\WW\RDM2015\RDM2015_

Research Design in Entrepreneurship

Reading and other reference material

> Cooper, A. 2003. Entrepreneurship: The Past, the Present, the Future. In Acs, Z.J. and Audretsch D.B. (eds) Handbook of Entrepreneurship Research. Dordrecht: Kluwer Academic Publishers. 21-34.

> Eckhardt, J.T. and Shane, S.A. (2003) Opportunities and Entrepreneurship. Journal of Management, 29(3): 333-349.

> Gartner, W.B. 2001. Is There an Elephant in Entrepreneurship? Blind Assumptions in Theory Development. Entrepreneurship Theory & Practice, 25(4): 27-39.

> Shane, S., and Venkataraman, S. 2000. The promise of entrepreneurship as a field of research. Academy of Management Review, 25(1): 217-226.

> Low, M. 2001. The Adolescence of Entrepreneurship Research: Specification of Purpose. Entrepreneurship Theory & Practice, 25(4): 17-25.

RDM05_Research Design for Sustainable Building

Thursday, 01.10.2015

Time	Lecture	Lecturer	Taught units	Room
9:00	**Introduction**	Dr. Volker Ritter	4	SD
10:30	End of lectures			

Lecturer name and contact

Prof. Dipl.-Arch. ETH/SIA Dietrich Schwarz
Email: dietrich.schwarz@uni.li
Phone: +423 265 11 39

Dr. Volker Ritter
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Role of the unit in the doctoral module RDM

The unit provides an insight in optimization strategies applied of heating and cooling systems of modern refurbishment projects. The optimization strategies applied for this specific engineering issue can be transferred research projects where multiple parameters exist. In addition, this unit provides insight in the issue that neglecting deviation within the optimization strategies causes.

Topic content

Research in building technologies is by nature an applied science with the intent to optimize processes in construction or operation of buildings. Various research projects have a special focus on the optimization of the operation of heating and cooling processes in existing un-refurbished buildings, because these processes are considerably accountable for the generation of greenhouse gas emissions. Implementing adaptive building systems in such refurbishment projects requires optimizing complex control strategies today. A special focus is on the issue of how neglecting deviations within the optimization considerably affect the results. Optimization strategies need to consider multiple parameters, which links to other field of research where optimization of multiple parameters is also required

Skills focus

The presentation aims to develop a comprehensive understanding of typical applicable optimization strategies in building technologies. The presented methods can be transferred to other field of research.

Structure

The lecture is structured into a brief introduction to building technologies in general with a focus on building technologies applied for heating and cooling purposes. Different currently running research projects of adaptive systems will be presented and discussed. The main optimization strategies of such adaptive systems will be introduced and applied to a specific case study.

Topic aims are to

- provide an overview about current approaches to optimize adaptive building systems
- build abilities to transfer these strategies to other fields.

Reading and other reference material

Please list your references here, formatted like the readings under:

http://www.uni.li/tabid/251/id/45046.67/default.aspx .

Literature

Introductory textbooks

> D. Bohne, "Technischer Ausbau von Gebäuden: Und nachhaltige Gebäudetechnik," pp. 1–599, Nov. 2014.

> P. Liedl, G. Hausladen, and M. de Saldanha, *Building to Suit the Climate: A Handbook*. 2014, pp. 1–159.

Advanced textbooks

> K. Fitzner and H. Rietschel, *Raumklimatechnik: Band 4: Physik des Gebäudes*. Springer, 2013, pp. 1–327.

> G. Girmscheid and D. Lunze, *Nachhaltig Optimierte Gebäude: Energetischer Baukasten, Leistungsbündel Und Life-Cycle-Leistungsangebote*. Springer, 2010.

Companion textbooks

> B. Weigand, J. Köhler, and J. von Wolfersdorf, *Thermodynamik kompakt*. 2010, pp. 1–219.

> H. D. Baehr and S. Kabelac, *Thermodynamik: Grundlagen und technische Anwendungen*. Springer, 2010, pp. 1–664.

RDM06_Research Design for Sustainable Urban Design and Planning

Thursday, 01.10.2015

Time	Lecture	Lecturer	Taught units	Room
10:30	**Introduction** ▪ Urban design ▪ Spatial planning ▪ Regional development ▪ Thematic integration: energy autonomy as emerging research focus and practice (The module is not offered in the winter semester of 2015-16)	Dr. Anis Radzi	4	SUD^2
14:30	End of lecture			

Lecturer name and contact

Dr. Anis Radzi
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Phone: +423 265 11 41

Role of the unit in the doctoral module RDM

The unit is central to an understanding of the physical planning sciences.

Topic content

This lecture provides an overview understanding of how research projects in spatial development fields are designed and framed. It distinguishes between urban design, spatial planning and regional development, and explores how topical themes such as resource autonomy are introduced. The new research and practice field of energy autonomy provides a case in understanding how classical land use and transport frames are combined with new GIS based spatial resource models, community engagement concepts and insight into governance.

Skills focus

The presentation aims to develop multidisciplinary research skills at the intersection of settlement development and design, transport planning, land use, energy, water and governance.

It will introduce research methods in urban and regional strategic planning and design using the Lake Constance Alpine Region as a case study. It will provide students with grounding in the core knowledge and skills needed to formulate and evaluate urban and regional planning practices in relation to both process (organisation) and content (policy), highlighting the need to understand a range of different knowledge and skill areas. The basic skills which will be covered include basic spatial and demographic analysis, graphic presentation, governance audits, consultation strategies and survey tools, resource analysis, and GIS.

Structure

The lecture is structured into an introduction and brief overviews over research fields traditionally and newly associated with spatial development.

Topic aims are to

- provide an overview about current approaches in spatially relevant research design
- build abilities to evaluate research programs and projects
- enable candidates to independently design research projects
- build an understanding of what is required in successful research funding applications

Hand-outs

Hand-outs, reference papers and other reading materials will be available: I:\AR\AR\RDM2015\RDM2015_ Research Design for the built environment_spatial development

Reading and other reference material

> Bracken, I. (2008) Urban Planning Methods: Research and Policy Analysis. London: Routledge.
> Carmona, M. (Ed.) (2014). Explorations in Urban Design: An Urban Design Research Primer. Burlington: Ashgate.
> Droege, P. G., Roos, M., & Ruff, A. (2012). Erneuerbares Liechtenstein. Vaduz: Universität Liechtenstein
> Droege, P. (Ed.)(2014). Regenerative Region. München: Oekom Verlag.
> Fahy, F. & Rau, H. (2013) Methods of Sustainability Research in the Social Sciences. London: Sage.
> Perdicoulis, A. (2011). Building Competences for Spatial Planners: Methods and Techniques for Performing Tasks with Efficiency. New York: Routledge.
> Silva, E.A., Healey, P., Harris, N., & Van den Broeck, P. (2015). The Routledge Handbook of Planning Research Methods. New York: Routledge.
> Stillwell, J. & Clarke, G. (2008). Applied GIS and Spatial Analysis. New York: Wiley.
> Wang, X., & vom Hofe, R. (2007) Research Methods in Urban and Regional Planning. Berlin, Heidelberg: Springer.

RDM07_Research Design for Architectural Theory

Thursday, 01.10.2015

Time	Lecture	Lecturer	Taught units	Room
9:00	**Introduction** ▪ Introduction to Research Design in Architectural Design Theory ▪ Seminar	Peter Staub	2	tbc
10:30	End of lectures			

Lecturer name and contact

Prof. Peter Staub
Email: peter.staub@uni.li
Phone: +423 265 11 30

Role of the unit in the doctoral module RDM

The unit intends to provide an overview of research design specific to architectural design theory and to help students with their individual research design of their thesis.

Topic content

A variety of research designs are being presented and discussed

Skills focus

The presentation aims to develop the student's ability to develop an appropriate research design for his/ her thesis.

Structure

The lecture is structured into two parts: the first one providing an overview of research designs related to architectural design theory and the second one is an applied seminar/ discussion relating such research designs to the student's individual thesis.

Topic aims are to

- provide an overview of current approaches to research design in architectural design theory
- build abilities to assess research designs (within the field of architectural design theory) and appropriate strategies for one's individual thesis

General academic and technical skills

RDM08_Experimental Research Design

Thursday, 15.10.2015

Time	Lecture	Lecturer	Taught units	Room
8:00	**Introduction** **Types of Experimental Design** ▪ The classic experimental design ▪ Solomon four-group design ▪ Factorial designs **Issues in Experimental Design** ▪ Problems with internal and external validity ▪ Practical issues ▪ Ethical issues **Analyzing Experimental Data**	Dr. Tanja Kirn	2	S10
9:30	End of lecture			

Lecturer name and contact

Dr. Tanja Kirn

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Role of the unit in the doctoral module RDM

The unit provides an introduction into Experimental Research Design. We will begin with an overview of various types of experimental design, ranging from simpler to more complex experimental designs. Additionally, various issues in Experimental Research Design are discussed, such as methodological issues, problems with internal and external validity, as well as practical and ethical issues. Furthermore, an overview analysing methods is given.

Topic content

The classic version of the experimental design has the following elements: one pre-intervention (pre-test) measure on the outcome variable; two groups: one group that is exposed to the intervention (the experimental group) and one group that is not exposed to the intervention (the control group); Random allocation to the groups before the pre-test; one intervention (test/treatment); and one post-intervention (post-test) measure on the outcome variable.

This lecture introduces types of Experimental Design, such as classic experimental design, as well as simpler experimental design (Post-test only with control group, Retrospective experimental design) as well as more complex experimental designs, by introducing more than two groups, adding additional pre-test and post-test measures and including more than one independent variable.

It furthermore discusses various issues in Experimental Design, ranging from methodological issues (problem of explanatory narrowness, internal and external validity), practical issues, and ethical issues (informed consent, aspects of anonymity and confidentiality).

Skills focus

The lecture focuses on experimental design techniques, a methodology that allows to analyse treatment effects. It can be particularly relevant for studying the impact of an intervention (treatment) on various groups, which could consist of employees, firms, etc..

Structure

The lecture is structured in four topics, comprising an introduction, types of experimental research design, issues in experimental research design and the analysis of experimental research design.

Topic aims are to

- provide an comprehensive overview about different types of experimental designs
- build abilities to understand and apply experimental designs

Hand-outs

Lecture slides will be shared via Moodle.

Literature

Introductory textbooks

> Campbell, D. T., Stanley, J. C., & Gage, N. L. (1963). Experimental and quasi-experimental designs for research (No. 04; Q175, C3.). Boston: Houghton Mifflin.

> Creswell, J. W. (2013). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

> Fowler Jr, F. J. (2013). Survey research methods. Sage publications.

> Gunter, B., Coleman, D. (2014) A DOE Handbook: A Simple Approach to Basic Statistical Design of Experiments.

> Keppel, G., Wickens, T.D. (2004). Design and Analysis: A Researcher's Handbook (4th Ed.), NJ: Prentice Hall.

Advanced textbooks

> Kirk, R. E. (1982). Experimental design. John Wiley & Sons.

> Montgomery, D. C. (2013). Design and analysis of experiments. John Wiley & Sons.

Companion textbooks

> Thompson, B. (2006). Foundations of behavioral statistics: An insight-based approach. Guilford Press.

> Wooldridge, Jeffrey M. (2010), Econometric Analysis of Cross Section and Panel Data, MIT Press.

Articles

> Collins, A., Joseph, D., & Bielaczyc, K. (2004). Design research: Theoretical and methodological issues. The Journal of the learning sciences, 13(1), 15-42.

> Solomon, R. L. (1949). An extension of control group design. Psychological bulletin, 46(2), 137.

RDM09_Concepts of Time-Series Econometrics

to be defined

Dipl.-Ing. Mag. Dr. Sebastian Stöckl

RDM10_Panel Data: Fixed and Random Effects

Thursday, 15.10.2015

Time	Lecture	Lecturer	Taught units	Room
14:00	**Introduction** **The Econometric Model** ▪ Random Effects Estimation ▪ Fixed Effects Estimation **Estimation with Pooled OLS** **Random Effects vs. Fixed Effects Estimation** **First-Difference Model** **Implementation**	Dr. Tanja Kirn	2	H6 (Fabrikweg)
15:30	End of lectures			

Lecturer name and contact

Dr. Tanja Kirn
Email: tanja.kirn@uni.li
Phone: +423 265 11 88

Role of the unit in the doctoral module RDM

The unit provides an introduction on on applied econometrics dealing with 'panel' or 'longitudinal' data sets. We will begin with a development of the standard linear regression model, then apply it to panel data settings involving “fixed” and “random” effects.

Topic content

In panel data, individuals (persons, firms, cities, ...) are observed at several points in time (days, years, before and after treatment, ...). This lecture focuses on panels with relatively few time periods (small T) and many individuals (large N).

This lecture introduces the two basic models for the analysis of panel data, the fixed effects model and the random effects model, and presents consistent estimators for these two models. The lecture does not cover so-called dynamic panel data models.

Panel data are most useful when we suspect that the outcome variable depends on explanatory variables which are not observable but correlated with the observed explanatory variables. If such omitted variables are constant over time, panel data estimators allow to consistently estimate the effect of the observed explanatory variables.

Skills focus

The lecture focuses on panel data techniques, a methodology that makes an analysis of a large number of objects through short periods in time. It can be particularly relevant for studying dynamic changes in household behavior, enterprise productivity, investment, etc..

Structure

The lecture is structured in four topics, comprising RE and FE models, estimation with Pooled OLS, Random versus Fixed Effects estimations, and First-Difference Model.

Topic aims are to

· provide an comprehensive overview about RE and FE models

· build abilities to understand and apply RE and FE models

Hand-outs

Lecture slides will be shared via Moodle.

Literature

Introductory textbooks

> Stock, James H. and Mark W. Watson (2012), Introduction to Econometrics, 3rd ed., Pearson Addison-Wesley. Chapter 10.

> Wooldridge, Jeffrey M. (2009), Introductory Econometrics: A Modern Approach, 4th ed., South-Western Cengage Learning. Ch. 13 and 14.

Advanced textbooks

> Cameron, A. Colin and Pravin K. Trivedi (2005), Microeconometrics: Methods and Applications, Cambridge University Press. Chapter 21.

> Wooldridge, Jeffrey M. (2010), Econometric Analysis of Cross Section and Panel Data, MIT Press. Chapter 10.

Companion textbooks

> Angrist, Joshua D. and Jörn-Steffen Pischke (2009), Mostly Harmless Econometrics: An Empiricist's Companion, Princeton University Press. Chapter 5.

Articles

> Manuel Arellano (1987), Computing Robust Standard Errors for Within-Group Estimators, Oxford Bulletin of Economics and Statistics, 49,431-434.

> Bertrand, M., E. Dufflo and S. Mullainathan (2004), How Much Should We Trust Differences-in-Differences Estimates?, Quarterly Journal of Economics, 119(1), 249-275.

> Mundlak, Y. (1978), On the pooling of time series and cross section data, Econometrica, 46, 69-85.

> Stock, James H. and Mark W. Watson (2008), Heteroskedasticity-Robust Standard Errors for Fixed Effects Panel Data Regression, Econometrica, 76(1), 155-174. [advanced]

RDM11_Case Study Research and Action Research

Thursday, 15.10.2015

Time	Lecture	Lecturer	Taught units	Room
11:30	**Case Study Research:** • Origins and area of application • Case Study selection • How to get good data? • Cases as „Black Swans“ and how to generalize from them **Action Research:** • Origins and area of application • Action Research in organization development • Action Research tools • The Role of the Action Researcher: How to balance action and inquiry?	Prof. Dr. Stefan Güldenberg	2	S. 10
13:00	End of lectures			

Lecturer name and contact

Prof. Dr. Stefan Güldenberg
Email: stefan.gueldenberg@uni.li
Phone: +423 265 1280

Role of the unit in the doctoral module RDM

The unit introduces the two qualitative methods of case study and action research.

Topic content

This lecture supports PhD students to learn more about the advantages and disadvantages of the two research methods and introduces the context in which both methods can be applied successfully.

Skills focus

The presentation aims to develop the skills how to apply case study and action research.

Structure

The lecture is structured into two parts: Firstly the different types of case study research will be introduced and discussed. Secondly the background and application of action research will be shown.

Topic aims are to

- provide an overview about case study and action research to the PhD students.
- build abilities to evaluate if the two research methods are appropriate to use for a certain context.

Reading and other reference material

Case Study Research:

> Eisenhardt, K. M. (1989): Building theories from case study research. The Academy of Management Review, 14 (4), 532-550.

> Eisenhardt, K. M. (2007): Theory Building from Cases: Opportunities and Challenges. The Academy of Management Journal, 50 (1), 25-32.

> Yin, R. (1994): Case study research: Design and methods (2nd ed.). Beverly Hills, CA: Sage Publishing.

> Yin, R. (2002): Applications of case study research (2nd ed.). Beverly Hills, CA: Sage Publishing.

Action Research:

> Lewin, K. (1946): Action research and minority problems. Journal of Social Issues 2(4): 34-46.

> Argyris, C. (1970): Intervention Theory and Method. Reading MA: Addison-Wesley.

> Argyris, C. (1994): Knowledge for Action. San Francisco CA: Jossey-Bass.

> Schein, E. (1999): Process Consultation Revisited. Reading MA: Addison-Wesley.

RDM12_Mixed Methods Approaches

to be defined

Prof. Dr. Christian Marxt

RDM13_Use and Types of Observations and Surveys

to be defined

Prof. Dr. Christian Marxt

RDM14_Literature Reviews

Thursday, 29.10.2015				
Time	Lecture	Lecturer	Taught units	Room
08:00	**The Role of Literature Reviews in Scientific Research** **Literature Reviews: Outcome or Method?** **The Literature Review Process** **Challenges and Recommendations of Dissertation Reviews** **Examples of Dissertation Reviews**	Dr. Alexander Simons	?	?
09:30	End of lectures			

Lecturer name and contact

Dr. Alexander Simons
Email: alexander.simons@uni.li
Phone: +423 265 1307

Role of the lecture in the RDM module

The lecture provides an introduction to the literature review, an integral part of any dissertation. Literature reviews considerably determine the quality of doctoral studies because they help PhD students to develop an understanding of a domain, to uncover gaps in research and develop their research agenda, and to identify the concepts and theories – and the research strategies and methods – that are common in their research area. As such, this literature-review lecture can contribute to most, if not all, other teaching units of the research-design module, and it is interesting for business and architecture students alike: for example, literature reviews inform the development of research questions and hypotheses in quantitative, theory-testing studies, while they provide an orienting framework for data collection and analysis in qualitative, theory-generating studies. In design-oriented studies that deal with creating and evaluating artifacts, reviews help to justify the novelty of design ideas against related works and to identify existing methods and models that can inform the design process.

Contents

The unit covers the fundamentals of literature reviews. It explains the decisive role that literature reviews play in any research project, especially in dissertations, and frames the literature review as both an outcome and a method. From an outcome perspective, dissertation reviews are located at the intersection of background reviews and review articles. From a method perspective, the lecture distinguishes between “conventional” narrative reviews and systematic reviews and explains which method is typically best suited for doctoral students. Two different review processes – sequential and iterative reviews – are outlined; basic reviewing activities are explained for both of them, including literature search, appraisal, retrieval and synthesis as well as documentation and write-up. The lecture covers issues that typically emerge during dissertation reviews and explains how to

deal with them. It concludes with a discussion of what determines the quality of literature reviews and provides examples of good dissertation reviews.

Developed Skills

The lecture focuses on the development of methodological skills required to perform high-quality literature reviews as part of doctoral studies. These skills not only include theoretical knowledge but also practical knowledge on how to conduct and report literature reviews. Special emphasis is put on 1) using the Internet and online databases for literature search and retrieval and 2) balancing time and coverage in literature search and synthesis. Students learn how to avoid often fruitless pursuits of "complete" literature reviews in times of ever-increasing numbers of academic publications.

Structure

The lecture is interactive, so it includes discussions with students and small exercises.

Course objectives

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

- explain the role of literature reviews in scientific inquiry,
- describe various outcomes and types of literature reviews,
- plan and organize the major activities involved in literature reviews,
- avoid problems that typically emerge during literature reviews,
- evaluate the quality of literature reviews, especially in terms of coverage, and
- comprehensibly report the results of literature reviews.

Hand-outs

Lecture slides will be shared via Moodle.

Reading and other reference material

> Fink, A. (2013). Conducting research literature reviews: From the Internet to paper (4th ed.). Thousand Oaks, CA: Sage.

> Hart, C. (1998). Doing a literature review: Releasing the social science research imagination. London, UK: Sage.

RDM15_Big Data Skills

Thursday, 29.10.2015

Time	Lecture	Lecturer	Taught units	Room
9:45	▪ Introduction to Big Data ▪ Research Question: Framing a Big Data study ▪ Data Collection: The Nature of Big Data ▪ Data Analysis: The Computational Analysis of Unstructured Data ▪ Interpretation: Opening Up the "Black Box" of Analytics ▪ Illustrative Example of a Big Data Study ▪ Guidelines for Conducting Big Data Analytics Studies	Oliver Müller		
11:15	End of lectures			

Lecturer name and contact

Dr. Oliver Müller
Email: oliver.mueller@uni.li
Phone: +423 265 13 23

Role of the unit in the doctoral module RDM

The lecture describes the challenges and promises that big data analytics (BDA) offers to advance scientific research. In broad terms, we understand big data analytics as the statistical modelling of large, diverse, and dynamic datasets of user-generated content and digital traces.

Topic content

BDA, as a new paradigm for utilizing big data sources and advanced analytics, has already found its way into some social science disciplines. Sociology and economics are two examples that have successfully harnessed BDA for scientific inquiry. Often, BDA draws on methodologies and tools that are unfamiliar for some IS researchers (e.g., predictive modelling, natural language processing). This lecture is set out to dissect and illustrate BDA's challenges and promises for scientific discovery in order to assist PhD students in deciding whether BDA is applicable and suitable for their own work and to provide some initial guidance for conducting rigorous BDA studies.

Skills focus

Analytical skills

Structure

The structure of the lecture roughly mirrors the phases of a typical research process. We discuss issues related to appropriately framing a BDA research question, the nature of data collection, its computational analysis, and the interpretation of results. For each phase, we discuss the challenges and the promises of BDA for scientific discov-

ery. We also walk through an exemplary illustration of a BDA study and present a set of initial guidelines for PhD students who choose to apply BDA as part of their research endeavor.

Topic aims are to

- Understand the specific characteristics of big data
- Gain an overview about current approaches for the computational analysis of big data
- Provide pointers to further resources that can help students to build up skills in big data analytics
- Build abilities to evaluate the scientific rigor of big data studies

Reading and other reference material

> Anderson, C. (2008). The End of Theory: The Data Deluge Makes the Scientific Method Obsolete. Wired Magazine. Retrieved from http://www.wired.com/science/discoveries/magazine/16-07/pb_theory

RDM16_Community Research/Social Science for the built environment

Thursday, 29.10.2015

Time	Lecture	Lecturer	Taught units	Room
11:030	**Introduction** **Different scales of research** – from "lab psychology" to "ecological psychology" **Examples from the field of energy relevant human interaction with buildings** **Benefits and drawbacks of different approaches**	Jörn von Grabe	2	?
13:00	End of lectures			

Lecturer name and contact

Dr.-Ing. Jörn von Grabe
Email: joernvgrabe @uni.li
Phone: +423 265 11 39

Role of the unit in the doctoral module RDM

The unit illustrates the range of scales on which energy relevant community research can be conducted, including the specific advantages and disadvantages. It will thus raise awareness for the relevance of scale for the own research field.

Topic content

Community research can be conducted on different scales, ranging from lab-based research in a very constrained context to field-based research in a very rich and complex context. Both approaches have specific advantages and disadvantages, require different methods and skills and result in categorically different knowledge. The essential differences will be illustrated by two examples that are relevant for energy-relevant human interaction with buildings.

The first example refers to thermal comfort research as a typical example of lab-based research. It is a useful example because it refers to the everyday experience of everyday people on the one side - and is thus of relevance for "everyone" – and because its methods and approaches are representative of a wide range of comparable, comfort-relevant research fields on the other side – such as lighting, noise etc.

The second example will discuss Barker's and Wright's Ecological Psychology approach. Instead of looking at behavior on the individual level, this approach focusses on supra-individual behavior and its social and material antecedents. It conceptualizes context in its broadest sense and demonstrates that a large portion of the observable behavior of people is determined by context and not by individual traits.

The specific benefits and drawbacks of these two exemplary approaches will be discussed.

Skills focus

The presentation and discussion of entirely different approaches to the research into human behavior and their specific advantages/ disadvantages and methods will demonstrate the relevance of scale to the specific research aim of the researcher. It will support the process of deciding which is the most appropriate approach for the own research.

Structure

The lecture is structured as follows:

- Introduction to the field, specifically its energy-relevance in the building sciences
- Fanger's Predicted Mean Vote: a lab-based index for the prediction of thermal comfort in buildings, its methods, benefits and restrictions
- Examples of other lab-based indices
- Barker's Ecological Psychology: a field-based conceptualization of supra-individual behavior, its methods, theoretical background and its application in community research
- Examples of other field-based approaches
- Contrasting these approaches

Topic aims are to

provide an idea of the range of scales of research that are typically used in community research, including their advantages and disadvantages.

Hand-outs

Hand-outs will be provided during the lecture.

Reading and other reference material

No further reading required.

RDM17_Energy and the built environment

Thursday, 29 October 2015

Time	Lecture	Lecturer	Taught units	Room
14:00	**Introduction** ▪ Energy, cities and regions ▪ Enegy and buildings	Droege, Peter Ritter, Volker	2	S10
15:30	End of lectures			

Lecturer name and contact

Prof. Peter Droege
Email: peter.droege@uni.li
Phone: +423 265 11 32

Dr. Volker Ritter
Email: volker.ritter@uni.li
Phone: +423 265 11 47

Role of the unit in the doctoral module RDM

The unit provides an introduction to topical issues and research frameworks at the nexus of energy and the built environment. It provides glances into the interdisciplinary research worlds of the physical and technical sciences, spatial and architectural science, engineering science as well as public policy.

Topic content

Human settlements from buildings to cities and inhabited regions are not only formal and structural expressions of their energy systems, and not only fundamentally depend on these, but increasingly emerge as providers of renewable energy, both for their own supply and for export. The fundamental transition that buildings experienced during the last decade from being units that solely demand energy to becoming structures that also provide energy from renewable resources, a.k.a. Zero- or Plus-energy buildings, affects social, ethical and financial aspects of construction and planning. This presentation highlights key findings of the existing literature, main research questions and illustrates two cases of successful and recent research designs – one each for urban and building scale issues.

Urban issues

Numerous research questions, modes, types and sectoral concerns are involved in energy and the built environment at the urban and regional level. For example, at the urban level, energy autonomous settlements require research into supportive urban planning and infrastructure policies by local and regional governments. Rules governing land-use, height, density and built form may impact the construction of plus-energy buildings in terms of its ability to optimise efficiency and self-supply renewable energy. Presence of policies guiding on-site renewable energy generation, local rebates for energetic construction, and conditions supporting sustainable use of locally

sourced materials will be critical to creating settlements with a significantly reduced carbon footprint. Waysos usefully designing research in these fields will be described using a recent case study.

Building issues

On the individual building level, the transition towards Plus-energy buildings requires new models of ecological and financial life cycle assessment methods. In the course of this type of building, aspects like embedded energy in construction materials or the energy demand for mobility become indirectly more important in the energy balance of Plus-energy buildings than building operation. In addition, the distribution of energy between buildings that generate a surplus to buildings with a demand requires new assessment methods and new policies. (Research design ….)

Skills focus

The presentation aims to develop an awareness for the methods and means of integrated research design for programs of inquiry into energy in the built environment, contrasting urban with building level approaches.

Structure

The lecture is structured into an introduction to energy in cities and the built environment more generally, then focus on the building level. The former examines the dimensions involved in appreciating the fundamental energy crises and opportunities at an metropoltan and regional level, the latter includes a presentation of building typologies of Zero and Plus-energy buildings. Following, the existing ecological and financial life cycle assessment methods will be presented with a focus on the differences of each method. Finally, the students apply their new skills to an exemplary building. (Research design?)

Topic aims are to

- provide an overview about current approaches to the assessment methods of buildings with a focus of the different existing methods that exist for Plus-energy buildings
- build abilities to evaluate the energetic context of buildings

Hand-outs

A hand-outs, reference papers and copied reading material are placed in I:\AR\AR\RDM2015\RDM2015_ Energy and the built environment

Reading and other reference material

Introductory textbooks

> K. Voss and E. Musall, Net Zero Energy Buildings : International projects of carbon neutrality in buildings. Detail Green Books, 2011, pp. 1–194.

> F. P. Torgal, M. Mistretta, A. Kaklauskas, C. G. Granqvist, and L. F. Cabeza, “Nearly Zero Energy Building Refurbishment: A Multidisciplinary Approach,” pp. 1–655, Oct. 2013.

> P. Droege, The Renewable City: A comprehensive guide to an urban revolution. Wiley, 2007, pp. 1-322.

> P. Droege, Urban Energy Transition: From Fossil Fuels to Renewable Power. Elsevier, 2008, pp. 1-664. http://www.sciencedirect.com/science/book/9780080453415

> S.T. Rassia and P.M. Pardalos (Eds), Cities for Smart Environmental and Energy Futures: Impacts on Architecture and Technology. Springer, 2013, pp. 1-301.

Advanced textbooks

> J. Kurnitski, Cost Optimal and Nearly Zero-Energy Buildings (nZEB): Definitions, Calculation Principles and Case Studies. Springer London ; Imprint: Springer, 2013, pp. 1–183.

> I. Dinçer and M. A. Rosen, EXERGY: Energy, Environment and Sustainable Development. Elsevier Science, 2007.

> J. Kierstead and N. Shah (Eds.), Urban Energy Systems: An Integrated Approach. Routledge, 2013, pp.1-336.

> M. Santamouris, Energy and Climate in the Urban Built Environment. Routledge, 2013, pp.1-410.

> N. Baker and K. Steemers, Energy and Environment in Architecture: A Technical Design Guide. E&FN Spon, 2000, pp.1-240

Articles

> M. Panagiotidou and R. J. Fuller, “Progress in ZEBs—A review of definitions, policies and construction activity,” Energy Policy, 2013, vol. 62, issue C, pages 196-206

> A. J. Marszal, P. Heiselberg, J. S. Bourrelle, E. Musall, K. Voss, I. Sartori, and A. Napolitano, “Zero Energy Building – A review of definitions and calculation methodologies,” Energy and Buildings, vol. 43, no. 4, pp. 971–979, Apr. 2011.

> P. Torcellini, S. Pless, and M. Deru, “Zero Energy Buildings: A Critical Look at the Definition,” presented at the ACEEE Summer Study; Pacific Grove, California; August 14−18, 2006, 2006, pp. 1–15.

> A. J. Marszal, “A literature review of Zero Energy Buildings (ZEB) definitions.,” Aalborg University Department of Civil Engineering, Dec. 2009.

> H. Lund, A. J. Marszal, and P. Heiselberg, “Zero energy buildings and mismatch compensation factors,” Energy and Buildings, vol. 43, no. 7, pp. 1646–1654, Jul. 2011.

> K. Steemers, "Energy and the city: density, buildings and transport," Energy and buildings, vol. 35, no. 1, pp. 3-14, 2003.

> J. Rutherford and O. Coutard, “Urban Energy Transitions: Places, Processes and Politics of Socio-technical Change, Urban Studies, vol. 51, pp. 1353-1377, May 2014.

> W. Rickerson et al., "Solar and the city." Renewable Energy Focus , vol.8, no.5, pp.56-58, 2007.

> M. Amado and F. Poggi, "Towards solar urban planning: A new step for better energy performance." Energy Procedia, vol.30, pp.1261-1273, 2012.

RDM18_Inquiry by design

Thursday, 29.10.2015

Time	Lecture	Lecturer	Taught units	Room
16:00	**Introduction** ▪ Fundamental tools ▪ Following the process logic ▪ Program driven research ▪ Design by inquiry	Droege, Peter	2	S10
17:30	End of lecture			

Lecturer name and contact
Prof. Peter Droege
Email: peter.droege@uni.li
Phone: +423 265 11 32

Role of the unit in the doctoral module RDM

The unit provides an introduction to topical issues and research frameworks of researching, investigating – or 'inquiring' by and through the means, methods, frames and products of design. Besides examining some of the precepts and percepts of design inquiry as a pool of methodological tools, both quantitative and qualitative and mixed, it also provides a guide for evidence based design programming provides glances into the interdisciplinary research worlds of the social, behavioural and technical sciences, spatial frames of reference science, engineering science as well as public policy.

Topic content

Design thought and decisions underly all built products and human-made environments. Design inquiry therefore must inform modes of inquiring into the making, performance and indeed quality of the built environment.

Skills focus

The presentation supports an understanding of the conceptual frames, tools and skills sets involved in a derived from

Structure

The lecture is organized into basic concepts, examples of principles and approaches, as well as illustrative tactics and strategies in assembling a research project or, alternatively, a research guided design or post-occumpany desgin evaluation program, deploying inquiry by design thinking.

Topic aims are to

- provide an introduction into inquiry by design, as well as design by inquiry
- build abilities to inquire into and evaluate the programmatic performance and quality of research based built settings and structures.

Hand-outs

Presentations, hand-outs, reference papers and other reading material can be found in

I:\AR\AR\RDM2015\RDM2015_ Inquiry by design

http://staff.washington.edu/villegas/BerlinSyllabus2008/zeisel_inquirybydesign.pdf

http://ocw.mit.edu/courses/architecture/4-241j-theory-of-city-form-spring-2013/lecture-notes/MIT4_241JS13_handout6.pdf

Reading and other reference material

Introductory textbooks

> Zeisel, J. 1985/2006. Inquiry by design. Norton
> Whyte, W. The social life of small social spaces. Project for Public Spaces Inc.

Advanced textbooks

> Rowe, P. 1991. Design thinking. MIT Press
> Lynch, K. 1984. Good city form. MIT Press

Applied research design case

> Droege, P. 1999. The design dividend. Property Council of Australia

Other sources

> Droege, P. 2009. Urban quality assessment and design. Personal lecture notes

RDM19_Personal knowledge management for PhD studies

Thursday, 12.11.2015.2014

Time	Lecture	Lecturer	Taught units	Room
14:00	**Personal knowledge management** ▪ Views on Self-Leadership ▪ Individual Perception and Learning ▪ Motivation and Goal Setting ▪ Knowledge and Communication ▪ Doing	Prof. Dr. Stefan Güldenberg	1	H6
14:45	End of lectures			

Lecturer name and contact

Prof. Dr. Stefan Güldenberg
Email: stefan.gueldenberg@uni.li
Phone: +423 265 12 80

Role of the unit in the doctoral module RDM

The unit helps PhD students to achieve successfully their goals in the course of their dissertation.

Topic content

This lecture supports a deep understanding of personal behavior, motivation, learning and how to overcome the knowledge-doing gap.

Skills focus

The presentation aims to develop self-organizing and personal knowledge management skills, especially individual perception and learning, reflection, motivation and knowledge sharing in order to close the knowledge-doing gap.

Structure

The lecture is structured into short video segments, exercises and lecture.

Topic aims are to

- provide an overview about current tools in personal knowledge management
- build abilities to evaluate and control personal progress in the course of the PhD studies.

Reading and other reference material

> Drucker, Peter F. 1999: Managing Oneself. In: Harvard Business Review, March-April 1999, pp. 65-74.

RDM20_Self-/time-/stress-management

Thursday, 12. 11. 2015

Time	Lecture	Lecturer	Taught units	Room
10:00	**Introduction** ▪ Stress ▪ Time ▪ Self ▪ Management (life?)	Peter Droege	1	H6
10:45	End of lecture			

Lecturer name and contact

Prof. Peter Droege
Email: peter.droege@uni.li
Phone: +423 265 11 32

Role of the unit in the doctoral module RDM

The unit comprises a central personal skills feature, highlighting key elements in the mastering of the doctoral curriculum, process and growth experience.

Topic content

This lecture focuses on the development and maintenance of general performance levels, personal growth opportunities and personal and group stress management discipline involved in becoming and being an effective, responsible and original researcher.

Skills focus

The presentation aims to point in directions of personal management that, if pursued, can assist in not only coping with the stress resulting from setting, institutional, isolation, peer pressure, social and project pressures, but also in advancing time and resource management skills. Ultimately the main gain may be achieved by delving into means of self-development in boosting mindfulness and emotional intelligence. These assist, not coincidentally, in stress reductions as well.

Structure

The lecture is structured into discussions, exercises, presentations and advice.

Topic aims are to

- provide an overview about current approaches to stress and time managemnt through enhancing and nurturing emotional intelligence
- build abilities to social and organisational adeptness

Hand-outs

Prsentations, hand-outs, reference papers and reading material are provided in I:\AR\AR\RDM2015\RDM2015_self-time-stress-management

Reading and other reference material

There is a large set of resources available online – three examples:

Comprehensive:

Google. 2015. Search inside yourself. https://siyli.org/

Selective:

Dartmouth College www.dartmouth.edu/~acskills/success/time.html

Mindtools http://www.mindtools.com/pages/main/newMN_HTE.htm

RDM21_Leadership in Research

to be defined

Prof. Dr. Jan vom Brocke

RDM22_Project management

Thursday, 12.11.2015

Time	Lecture	Lecturer	Taught units	Room
13:00	**Introduction** ▪ Presentation: General project management skills ▪ Presentation: Project management for research projects ▪ Discussion: Own experience in managing research work	Sonia Lippe	1	H6
13:45	End of lectures			

Lecturer name and contact

Dr. Sonia Lippe
Sonia.lippe@uni.li
+41 79 701 8951

Role of the unit in the doctoral module RDM

PM knowledge is most useful when it is tailored to the specific needs of a certain project type. Thus this unit aims at introducing project management (PM) skills targeted at research and PhD projects and at discussing the benefits and problems.

Topic content

Generally, research projects are considered as highly uncertain, constantly evolving, and equipped with only little resources. Common PM methods are often perceived as too rigorous, too time-consuming, and too controlling to be useful for this type of project. Still, research projects - like any other type of project - benefit from PM knowledge and its application. The unit will show, how the problems of research projects can be overcome and the existing knowledge can still be applied. Thus it will develop a better understanding of the suitability of PM knowledge in the context of research projects.

Skills focus

PM skills of the participants will be improved. Participants will be able to assess the specific PM requirements of their own projects. Drawing from general PM knowledge, participants will be provided with a set of methods that they can use depending on the identified needs. In discussion rounds the awareness of the benefits of PM methods for research projects will be raised.

Structure

The lecture is structured into three parts. First, an introduction into basic, general PM skills will be given. Next, more special knowledge will be provided. The specific characteristics of research project will be analyzed and it

will be discussed how the general knowledge can be applied in this context. The presentation will be complemented by a discussion in which participants can contribute their own experiences.

Topic aims are to

- Foster project management awareness in research projects
- provide an overview of the characteristics and needs of research projects
- analyze resulting PM needs
- improve PM skills and learn about PM methods suitable for a research environment

Reading and other reference material

General project management

> Project Management Institute (2008), A guide to the project management body of knowledge (PMBOK guide), 4th ed., Project Management Institute.

> Kerzner, H. (2006), Project management - A systems approach to planning, scheduling and controlling, 9th ed., John Wiley & Sons Inc

Project management for research projects

> Barnes, T., Pashby, I., & Gibbons, A. (2006), Managing collaborative R&D projects development of a practical management tool, International Journal of Project Management, 24(5), 395-404.

> König, B., Diehl, K., Tscherning, K., & Helming, K. (2013), A framework for structuring interdisciplinary research management, Research Policy, 42(1), 261–272.

> vom Brocke, J., & Lippe, S. (2015), Managing collaborative research projects: A synthesis of project management literature and directives for future research, International Journal of Project Management, 33(5), 1022–1039.

> vom Brocke, J., & Lippe, S. (2010), Taking a project management perspective on design science research, 5th International Conference on Design Science Research in Information Systems and Technology (DESRIST2010), St. Gallen, Switzerland.

RDM23_Ethics

to be defined

Prof. Dr. Christian Marxt

RDM24_Publication Process

Thursday, 12.11.2015

Time	Lecture	Lecturer	Taught units	Room
15:00	**Publication Process:** • Why? • What? • Where? • When? • What's next? • Why you should never give up!	Prof. Dr. Stefan Güldenberg	1	H. 6
15:45	End of lectures			

Lecturer name and contact

Prof. Dr. Stefan Güldenberg
Email: stefan.gueldenberg@uni.li
Phone: +423 265 12 80

Role of the unit in the doctoral module RDM

The unit introduces PhD students into the challenges and pitfalls of the publication process.

Topic content

This lecture supports PhD students to learn more about the dos and don'ts of the publication process.

Skills focus

The presentation aims to develop the skills how to successfully place a paper in a scientific journal.

Structure

The lecture is structured around six central questions: Why should I publish? What to publish? Where to place my paper? When is the right time to hand in? How to deal with reviews? Why you should never give up.

Topic aims are to

- provide an overview about the publication process for PhD students from the perspective of a reviewer.
- build abilities to increase the probability of getting published.

RDM25_Grant application process

Thursday, 12.11.2015

Time	Lecture	Lecturer	Taught units	Room
9:00	Introduction Pre-requisites Structure and basic elements Proposal Do's and Dont's Discussion, questions	Dieter Gunz Peter Droege Jan vom Brocke	1	
10:30	End of lectures			

Lecturer name and contact

Prof. Peter Droege
Email: peter.droege@uni.li
Phone +423 265 11 32

Dr. Dieter Gunz
Email: dieter.gunz@uni.li
Phone +423 265 11 10

Professor Dr. Jan vom Brocke
Email: jan.vom.brocke@uni.li
Phone +423 265 13 20

Role of the unit in the doctoral module RDM

The unit provides a short overview and insight of preparing and writing a research proposal (grant application)

Topic content

Structure and basic elements of a research proposal are presented including some hints and tricks by setting up an application

Skills focus

Students will understand how to set up a research proposal and to avoid mistakes often made

Structure

The lecture is structured into three sections: Introduction, proposal set up, discussion and questions

Topic aims are to

- provide a brief overview how to prepare and set up a research grant application (pro-requisites)
- understand the basic principles (do's and dont's) in writing a research proposal

Reading and other reference material

> Chapin, Paul G.. 2004. Research projects and research proposals. A guide for scientists seeking funding. Cambridge University Press: Cambridge. ISBN-10: 0521537169 / ISBN-13: 978-0521537162

RDM26_International doctoral exchange /PhD network

Thursday, 12.11.2015

Time	Lecture	Lecturer	Taught units	Room
11:00	**Introduction**	Trudi Ackermann	1	
11:45	End of lectures			

Lecturer name and contact

Trudi Ackermann
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Topic aims are to

- provide an overview about different options to study, lecture to do a short term training abroad and to get information about the different grants which will support the mobility.