AG2126 Theory of Science and Research Methodology for Planning and Design (7.5 credits)

Period 3, 2019-2020

Teaching Staff

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Course Content

The professional planner or architect works in an environment saturated with multiple conflicting claims to legitimate knowledge. On a daily basis, s/he must make continuous judgments as to what knowledge is relevant, trustworthy and applicable in relation to specific problems and situations which are frequently of an entangled and 'wicked' nature involving many factors that are difficult to predict.

The primary aim of this course is to provide the prospective planner or architect the necessary understanding and analytical tools to be able to make informed judgments about the quality and relevance of knowledge claims, and to gain an understanding of how knowledge – and specifically 'scientific' knowledge – is produced, verified and translated into professional practice in contemporary societies, especially within the academic disciplines closely related to the broader practice fields of planning and architecture.

A second aim of the course is to serve as a primer in general academic research methodology and practice, including practical skills covering issues such as how to conduct a proper literature overview, write a research question, structure a scientific argument, and so on. These skills will provide a strong foundation for the final Masters' Thesis project in Year 2. The course thus provides the basic practical skills necessary to use theories to develop ideas, to choose suitable research methods to answer operative research questions and to evaluate and present results, in both an academic and a professional context.

Further, the course provides an overview of leading contemporary research methods in the fields of planning and architectural research, and discusses the benefits and potential risks of employing specific methods. It focuses specifically on commonly employed methods in the research fields of spatial planning, environmental studies, geography, architecture and urban design. The course is based around three main themes:

1. Theory of science: how is certified knowledge made?
   - Traditions in scientific thinking and modes of reasoning
   - Introduction to the history and traditions of natural sciences, social sciences, humanities, and arts and their role in the academic and practical field of planning and architecture research

2. Research methodology: practices for producing knowledge

- Contemporary research methodologies, their relevance and applicability
- Ways of structuring a research question and translating the theoretical question to an operational level
- Techniques for gathering and analysing data and source material
- Methods in research practice, including how the implementation of different methodological traditions varies between different research traditions
- Translation of research methods into analytic methods within planning and design practice
- Research ethics

3. Scientific writing: the structure and content of scientific argumentation
- Traditions and formats of scientific writing
- Textual structure and argumentation techniques in scientific writing
- Literature search and literature reviews
- Referencing and citation
- Scrutinizing scientific text: critical perspectives
- The craft of writing scientific text, writing as a form of research

Learning Aims
After this course, students should be able to demonstrate their understanding of the research process by:
- Formulating and presenting a research project proposal
- Designing a small-scale research project
- Choosing suitable methods to answer research questions
- Display responsiveness to constructive collegiate critique
- Writing literature reviews and scientific texts
- Critically reflect on relevant use of theories and methods, and to discuss development of new knowledge

After completing the course, students should also have sufficient knowledge of research theory, tradition and method to:
- Critically question and analyse the frequently implicit foundations of knowledge claims
- Identify the research traditions and methods that underpin different knowledge claims
- Compare and critically discuss the strengths and weaknesses of different traditions and methods, and how different methods are employed within different traditions
- Reflect and argue on how different knowledge traditions play into roles, arguments and approaches within practice

Course Structure
The course is structured with the following types of activities:

<u>Introductions</u>
There are three introductions, each broadly covering one theme of the course, in sequence. The introductions provide opportunities for students to prepare for upcoming activities in the course. They also offer an opportunity to ask questions and receive clarification. The first introduction is mandatory and covers general aspects of the course.

Lectures

The lectures are divided into three broad blocks, corresponding to the three themes of the course (see schedule and 'course content'), and are meant to function as support and resources to help complete the group and individual projects. Methodological aspects of research, critical perspectives and traditions of thought, are presented. Some lectures include minor assignments to be performed during the lecture. Lectures are followed (when possible) by a discussion of the material, wherein students are invited to critically reflect on the content of lectures and provide alternative positions, make linkages and consider material from a disciplinary perspective (what does this mean for planning, architecture, design or engineering?).

Seminar

The seminar is a mandatory activity concluding the first theme of the course (theory of science).The seminar adopts a 'workshop' format and provides a structured opportunity for students to actively and collectively explore the complexities of knowledge practices through participation, discussion, analysis, presentation and critique in a group setting. The seminars are conducted in smaller groups.

Search Clinic

The search clinic offers the student a 'master class' in using the web as an information tool for surveying a research field, with a focus on peer-review publications. It primarily consists of hands-on demonstrations of possible search practices based on student interests and input.

Group Work

The group work involves a Problem Based Learning task in which students are given the opportunity to work in collaboration to develop their skills in methodology and research design. The group work is conducted in small groups (5-6 students) for 2.5 weeks with a 'case' and results in a fictitious but plausible research proposal. The group work is examined via writing and a review seminar in which groups present their proposal and fellow students discuss it and provide feedback. Students are provided with supervision as part of the learning process (see further description below).

Individual Project

The individual project challenges students to design, write, present and discuss a proposal for a small-scale research project. Students should also learn to use collegial critique constructively and develop the ability to adapt their proposal in line with relevant collegial suggestions. Grounds for grading include the submitted project documentation, the ability to present and discuss the project, the ability to give constructive critique in the role of opponent and the ability to revise one's own project proposal in response to constructive critique. Supervision by peers and teachers is provided. Active attendance and participation at the final review seminar is compulsory.

Supervision

Supervision is provided in relation to the group work and for the individual project work. Two supervision sessions are teacher-led while the others are peer-led and self-organized. During supervision, students can ask for assistance, request clarification and critique, and generally discuss the development of their projects. Supervisions are carried out in groups. All supervisions are voluntary.

Schedule

Wk	Date	Time	Room	Activity	Lecturer
3	16 Jan	10:00-12:00	Lounge	Introduction	Andy Karvonen
4	20 Jan	10:00-12:00	Lounge	Lecture 1 - Knowledge and complexity in planning and design	Jonathan Metzger
	20 Jan	13:00-15:00	Lounge	Lecture 2 - Research in action: research and practice entanglements	Andy Karvonen
	23 Jan	10:00-12:00	Lounge	Introduction to Group Project	Andy Karvonen
5	27 Jan	10:00-12:00	Lounge	Lecture 3 - Research design	Maria Håkansson
	27 Jan	13:00-16:00	Lounge	Search clinic: how to find information and conduct a literature review	Andy Karvonen
	30 Jan	10:00-12:00	Lounge	Lecture 4 - Quantitative social science: Theories and methods	Marcus Adolphson
	31 Jan	13:00		Individual Reading Notes/Theory of Science Seminar Submission	
6	3 Feb	10:00-12:00	Lounge	Lecture 5 - Qualitative social science methods: what, when, how, why + common approaches	Amanda Winter
	3 Feb	13:00-17:00	Lounge, L44, Q15, Q22	Seminar: Theory of Science	4 groups
	6 Feb	10:00-12:00	Lounge	Lecture 6 - Observations & representations	Daniel Koch
7	10 Feb	10:00-12:00	Lounge	Lecture 7 - Academic debate: purpose, form, etiquette	Jonathan Metzger
	10 Feb	13:00-17:00	Lounge, L44, Q15, Q22	Research methodology /group supervision relating to the group project	4 groups
	13 Feb	13:00		Submit group assignment	
8	17 Feb	10:00-12:00	Lounge, L41, L42, L43	Examination 1 - Research design and methodological considerations/group project	4 groups
	17 Feb	13:00-15:00	Lounge, L41, L42, L43	Examination 1 - Research design and methodological considerations/group project	4 groups
	17 Feb	15:00-16:00	Lounge	Introduction to individual assignment	Andy Karvonen
	20 Feb	10:00-12:00	Lounge	Lecture 8 - Perspectives on academic writing: giving form to content	Hans Westlund
9	24 Feb	10:00-12:00	Lounge	Lecture 9 - Design research methods	Helen Runting
	24 Feb	13:00-17:00	Lounge, E33, E34, E36	Supervision individual project (in groups)	4 groups
10	5 Mar	13:00		Submit individual project	
11	9 Mar	08:00-12:00	Lounge	Examination 2: Project proposal	
	9 Mar	13:00-17:00	Lounge	Examination 2: Project proposal	
	10 Mar	08:00-12:00	Lounge	Examination 2: Project proposal	
	10 Mar	13:00-17:00	Lounge	Examination 2: Project proposal	
	11 Mar	18:00		Peer-review submission	
	20 Mar	18:00		Submit individual project (final)	

Examination Requirements
The course is comprised of the following examinations and grading schemes:
- PRO1 (4.5 credits, graded A-F): carry out and present an individual project
- SEM1 (3.0 credits, graded P/F): actively participate in seminars and compulsory activities, including submission of reading notes for the literature seminar and contribution to the group project

Students who miss any of the compulsory activities need to contact the course administrator to request alternative assignments. Detailed information of the grading criteria for the project work will be given at the individual project work introduction on 17 February 2020.

Assessments and Course Grades
All the assignments on this course are assessed holistically. This means that they are read and graded as a whole. Details must be relevant and correct, but the main emphasis is on the quality of the whole assignment. Thus, the details should fit within a coherent, appropriate and logical structure.

The grade on this course is set in relation to the criteria listed on the following rating scale:

Focused	<—>	Unfocused
Original	<—>	Derivative
Theoretical	<—>	Atheoretical
Good coverage	<—>	Thin
Well-referenced	<—>	Poorly referenced

The more to the left on each separate criterion, the higher the grade. The grade on the project work is mainly based on the qualities of the project work, but the performance at the project presentation seminar is also taken into consideration, as is the ability to give constructive feedback to colleagues.

The grades given are A-F for the individual project and P/F for seminars and group work. Both written and oral achievements are taken into account. Grades from A to F adhere to the following criteria:

Grade	**Description**
A	Excellent
B	Very good
C	Good
D	Sufficient
E	Pass
Fx	Fail (but possible to get an E with *minor* adjustments)
F	Fail (considerable additional work required)

Plagiarism
We apply the rules and regulations for examination of KTH. Plagiarism, other forms of cheating, or other inappropriate behaviour are brought to the attention of the President, who after examination of the legal unit decides whether it should be reported to the Disciplinary Committee. The Disciplinary Committee may decide to suspend a student from his or her study at KTH for a period of 1 to 6 months. Project work is checked by an electronic plagiarism detective tool and by the teaching staff's judgment and experience. More information on plagiarism is available here:

https://www.kth.se/social/upload/529e4900f27654016c9ce69a/KTH_Policy for handling plagiarism in KTH education.pdf