KTH Architecture and the Built Environment

Course Memo

AG2805

SUSTAINABLE PLANNING & DESIGN

2020

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1 ADMINISTRATIVE INFORMATION

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Teachers

Greger Henriksson, Sustainable development, Environmental science and Engineering (SEED)

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Nicolas Francart, SEED, KTH

Pernilla Hagbert, Urban Planning and Environment, KTH

Ola Persson, Urban Planning and Environment, KTH

Naomi Lipke, Urban Planning and Environment, KTH

Daniel Koch, Architecture, KTH

Patrick Verhoeven, Mandaworks

Francesca Savio, Mandaworks

Examiner

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Teaching unit

Department of SEED (Sustainable Development, Environmental Science and Engineering), at the School of Architecture and the Built Environment, KTH.

Visiting address: Teknikringen 10B

Web address: www.seed.abe.kth.se/

2 LEARNING OUTCOMES, CONTENT AND WORKLOAD

Aim of course

The aim of this course is to introduce you to ways of exploring and understanding urban sustainable development, as well as to how urban planning and design practice can be improved and contribute to the pursuit of fulfilling sustainability goals. In the course you will meet students from different backgrounds (e.g. architects, engineers and planners) and try out collaborating across disciplines.

Intended learning outcomes

The Intended Learning Outcomes (ILOs) describe and define what you will need to know in order to pass the course. Your grade(s) is based on our assessment of your performance in relation to the ILOs, specified through the grading criteria (see p. 12). The ILOs are formalized through the course plan established by KTH and are non-negotiable for both teachers and students.

After completing the course, you should be able to:

- Summarise, compare and critically discuss definitions of sustainable development and urban sustainable development,
- Identify and apply planning and design methodologies that contribute to urban sustainable development, including tools for assessment
- Identify main characteristics of different city districts and analyse these in relation to urban sustainable development,
- Identify and characterise main actors of urban sustainable development,
- Creatively explore and critically analyse how planning and design can contribute to urban sustainable development of a city such as Stockholm– in short and long time perspectives,
- Present proposals and analyses as text, drawings and/or illustrations as well as orally.

Contents

The teaching and learning activities are designed to support you in achieving the ILOs. The course comprises lectures, seminars, exercises, essays and project work. The course includes both formative assessment (i.e. assessment for non-graded feedback) and summative assessment (i.e. assessment for grading). You find more information about what is included in the summative assessment in the description of each of the course parts (see Section 6), as well as in Section 9 “Examination and grading”.

The course is structured into four main parts:

- Part 1 is a small group project work exploring Stockholm (SEMC, 3.0 credits, P/F)
- Part 2 comprises a number of exercises on methods for assessing and understanding sustainable urban development (SEMB, 3.0 credits, graded P/F)
- Part 3 is a larger group project work (PRO1, 6.0 credits, graded A-F)
- Part 4 comprises a reflective home exam (TEN1, 3.0 credits, graded A-F)

A lecture package series will run every Monday afternoon for the first five weeks, introducing five themes that will be highlighted by invited guest lecturers from different perspectives.

Workload

The course runs fulltime, implying around 40 hours of course work per week. Apart from lectures and other scheduled activities, the course demands substantial time for group work.

3 COURSE REGISTRATION

You must register for the course. If you are not registered, you are not allowed to attend the course and your grades will not be reported. Registration is possible only after you have applied and been admitted to the course. Program students who have not applied when the course starts must contact their student counsellor or program coordinator. This is your own responsibility and cannot be arranged by the course coordinator.

Please register on-line for the course through My Pages → Courses →Registrations. You will immediately see in your personal menu when you have registered successfully. If you encounter any problems when registering, please contact the education office (Teknikringen 74).

4 KTH-ID, CANVAS AND ZOOM

KTH-ID

To have access to Canvas and KTH Social, once the course has started, you need a kth.se account. If you do not already have one, instructions are available at: https://www.kth.se/en/student/kth-it-support/kth-account/2.65555/information-om-ditt-kth-konto-1.471319

Canvas

All course information, instructions for assignments etc. is published on the internal web called Canvas, https://kth.instructure.com/. There, all registered students (and teachers) can login with the kth.se account that you get from your international administrator at the dean's office. During summer 2020 you can access a brief public version of the Canvas course page. We use Canvas:

- To distribute all course material, including the required readings
- For information regarding schedule changes etc., and
- For the teachers to publish and the students to submit assignments.

Handing in assignments on Canvas

Pay attention to the deadline for submission. After that you will not be able to upload your assignment.

For any questions regarding Canvas, please contact course assistant Erika Kriukelyte, SEED, erikakri@kth.se

Zoom

Zoom is a video conferencing service for employees and students who are registered at KTH. We will be using Zoom for multiple activities within the course, and it is important that you regularly check on Canvas to get the links needed to join the Zoom meetings.

5 DISABILITIES (FUNKA)

If you have a disability you may receive support from Funka:
https://www.kth.se/en/student/studentliv/funktionsnedsattning

It is also important that you immediately, no later than the beginning of the course, contact the course responsible teachers and provide information on your needs, and, if necessary a certificate from KTH Funka coordinators. This must be done in order for us to take into account your specific needs during the course and its various parts.

6 COVID-19

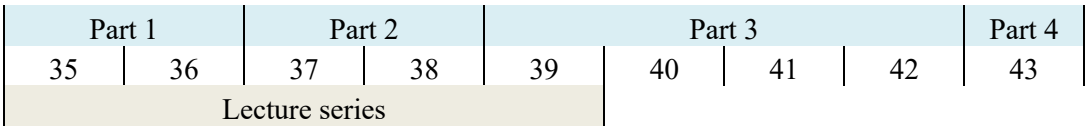
Considering the ongoing situation with Covid-19, the course will be adapted to ensure a safe learning environment in line with the current recommendations from Swedish authorities. We ask for your patience and co-operation in this, where we will try to accommodate different needs and requirements while maintaining the quality of education. It is important that we reduce the travel to and from KTH campus, and try to organize activities in a way that minimizes the need to go back and forth. Please let us know if you have certain circumstances or needs that we should take into consideration, and we can discuss how to solve this together.

For most of the scheduled mandatory activities (including lectures, method exercises, presentations and final critique), we will seek to hold an on campus session, with a maximum of 50 people present in the same room at a time, with the rest of the students joining online. To ensure that all students are given the same opportunities, we will have a rotating attendance scheme for example for lectures, where half of the class is given the opportunity to be on campus, while the other joins online, and vice versa for the next lecture. For other activities (including peer-review essay seminars, and some supervision sessions), these will be conducted digitally. As this is the first time we run the course in this way, last minute changes and the availability of technical hardware and support might mean that we will all have to adapt as best as we can.

7 COURSE PARTS

Overview

The four course parts runs in a sequence as follows, with lecture packages given Monday afternoons (13-16) during the first 5 weeks of the course.



Lecture packages are scheduled Monday afternoons (13 -16) during the first 5 weeks (see below).

Part 1: Pre/present/post Stockholm (SEM C)

Responsible teachers: Daniel Koch

Runs: Monday 24/8 to Friday 4/9

Activities: Lectures, reading, study trip, supervisions, project work in groups and presentation

Summative examination: Supervisions and final presentation of group work project

Course moment examined: SEMC, 3.0 credits

Grading: P/F

Learning outcomes examined (with a specific focus on those marked in bold):

- *Summarise, compare and critically discuss definitions of sustainable development and urban sustainable development,*
- *Identify and apply planning and design methodologies that contribute to urban sustainable development, including tools for assessment*
- ***Identify main characteristics of different city districts and analyse these in relation to urban sustainable development,***

- ***Identify and characterise main actors of urban sustainable development,***
- ***Creatively explore and critically analyse how planning and design can contribute to urban sustainable development of a city such as Stockholm– in short and long time perspectives,***
- *Present proposals and analyses as text,* ***drawings and/or illustrations as well as orally****.*

In this part of the course, you will be introduced to Stockholm, to one another, and to discussing and developing concepts of sustainability, planning, and urban design via intense and focused project work where you learn from one another, in supervision, at presentation, and through the project you work on in groups.

The task is to investigate how the comprehensive plan for Stockholm relates to the existing urban landscape, and whether deploying its strategy can also lead to improve conditions of sustainability with its many different facets. It is thereby investigating two "heres": the "here" of the built materiality and lived space, and the "here" of current planning policy and strategy of the municipality, by use of deploying a "then", or the "here" of a possible future. It also addresses questions of scales of action for sustainability solutions in order to learn more about the Stockholm urban structure.

To investigate this, we ask you to explore one of the areas visited in a study trip on ***Tuesday August 25th*** in its context, and then make a proposal based on such a connection strategy. This means that you have to also make a choice of what to connect to – and in this sense the task concerns (a minimum of) two areas. The one assigned, and the one you choose to investigate a connection to.

This course part will be examined through supervision sessions, and the final group presentation on ***Friday September 4th***. To pass, the group must show that they have engaged with the tasks in the assignment, and have made a proposal that binds it together.

Part 2: Methods for assessing and understanding sustainable urban development (SEM B)

Responsible teachers: Greger Henriksson

Runs: Monday 7/9 to Thursday 17/9

Activities: Lectures, reading, exercises, peer seminars and essay writing

Summative examination: Participation in methods exercises, individual reflective essay (summarizing and comparing the methods), and peer-review of another student's essay

Course moment: SEMB, 3.0 credits

Grading: P/F

Learning outcome examined:

- *Identify and apply planning and design methodologies that contribute to urban sustainable development, including tools for assessment*

In this part of the course you will be introduced to a selection of methods relevant for sustainable urban planning and design. We will explore qualitative and quantitative methods, and discuss what it means for methods to be constructive. Depending on your background we believe you will probably know of at least one of the methods introduced, while we hope that at least one will be a complete novelty.

This part addresses: Cost-benefit analysis, interviews, discourse analysis, life-cycle assessment/environmental impact assessment and child impact assessment. Each method is presented in a "package" consisting of a lecture, exercise and seminar. First the method is introduced through a lecture. This is followed by an exercise where you are given a chance to try the method out in practice, either individually or as a group, depending on the exercise. Finally, a seminar provides possibilities for formative assessment of what you have learned about the method, and an opportunity to identify any unresolved questions or uncertainties through discussion with your peers.

The course moment is examined and graded (pass/fail) through an individual essay in which you are asked to describe and critically reflect on the methods introduced, submitted ***latest 18.00 Wednesday September 16th***. Here you will have good use of the insights from the lectures, exercises and peer seminars. The course moment is concluded with a final peer-review seminar in Zoom on ***Thursday September 17th***, before which you are to peer-review another student's essay and prepare feedback. Teachers will be available during the seminar, but each group will be responsible for facilitating their own discussion. In each seminar group two facilitators will be selected, one in charge of the first hour and the other one in charge of the last hour. The role of the facilitator is to make sure that everyone gets to speak.

Part 3: Group project: A Sustainable Inner City 2050 (PRO1)

Responsible teachers: Greger Henriksson, Pernilla Hagbert, Ola Persson, Naomi Lipke, Johan Högström, Daniel Koch, Patrick Verhoeven, Francesca Savio

Runs: Thursday 17/9 to Friday 16/10

Activities: Project work in groups, supported by lectures, reading, peer-feedback and tutoring

Summative examination: The project report and/or the final presentation of project, the peer-review report (depending on which project work version you choose, either Planning or Design)

Course moment: PRO1, 6.0 credits

Grading: A-F

Learning outcomes examined:

- *Identify and apply planning and design methodologies that contribute to urban sustainable development, including tools for assessment*
- *Identify main characteristics of different city districts and analyse these in relation to urban sustainable development,*
- *Identify and characterise main actors of urban sustainable development,*
- *Creatively explore and critically analyse how planning and design can contribute to urban sustainable development of a city such as Stockholm– in a short and long term perspective,*
- *Present proposals and analyses as text, drawings and/or illustrations as well as orally.*

Introduction

In this group project work you are tasked to develop a *Planning* or a *Design* proposal for a more sustainable inner city of Stockholm in the year 2050. The somewhat paradoxical notion of a "sustainable city" is here put to the test, at the convergence of multiple systems of provision, infrastructure and urban functions. How can we, through urban planning and design, tackle the challenges of meeting global sustainability goals, and what obstacles and opportunities emerge when we at the same time seek to address the demands of (and on) the metropolitan core,

including assumptions of growth and the intensification of land use? Set in the very centre of urban commerce, the project work will creatively explore planning and design strategies to contribute to a sustainable development in this complex context, including taking on questions of what, when, and by whom?

To support the introduction to the complexities associated with working with sustainable urban development in practice, you will be introduced to insights and project experiences from planning practitioners at the consultancy firm WSP, on ***Friday September 18th*.** With inspiration from the issues and themes raised during this day, from the course so far, and considering your own disciplinary backgrounds and skills, you will develop a proposal that explores, but also critically assesses, how planning and design for sustainable urban development can span between the long-term vision (with the target year 2050) and short-term (the steps necessary to take along the way?)

Two types of project work: Planning and Design

The project work comes in two versions: one focusing on developing a Planning proposal (where planning is understood in a wide sense), and one focusing on developing a Design proposal. These are introduced more fully in separate PMs, and at the intro to Part 3 on *September 17th*. Deadline for selecting what kind of project to work with is that same evening, ***Thursday September 17th 18:00***. Thereafter we will form groups with the ambition of creating as diverse teams as possible in terms of background, ethnicity and gender.

Both project types consist of two main phases; starting with a long-term vision to establish core ideas for long term sustainability in the first phase, to then make a pragmatic revision to define what can and must be done on the way there, including the actors that will be involved. Design groups investigate this through drawings and put together a cohesive presentation of the proposal. Planning groups instead write a report and prepare a presentation of the proposal.

Final critique and Vernissage

In the final critique ***October 15th and 16th***, all projects are presented and discussed. To make the final critique a lively learning event, we will (as far as it is possible during the current Covid-19 situation) mix groups across the two types of project work and students are asked to peer-review at least one other group (those doing a Planning proposal will also submit a 1-page individual written peer-review report the evening before, *Wednesday October 14th*).

The project work is usually finalised with a vernissage on the last day of the course, in which the project works are presented as posters in an open exhibition for practitioners and other visitors. However, due to the Covid-19 situation this year, we will postpone the vernissage until spring 2021. Further information will be given when available.

Part 4: Reflective home exam (TEN1)

Responsible teachers: Pernilla Hagbert

Runs: Monday 19/10 to Thursday 22/10 (4 days)

Activities: Reading, reflecting and writing.

Summative examination: Home exam, essay style questions

Course moment: TEN1, 3.0 credits

Grading: A-F

Learning outcomes examined:

- *Summarise, compare and critically discuss definitions of sustainable development and urban sustainable development.*
- *Creatively explore and critically analyse how planning and design can contribute to urban sustainable development of a city such as Stockholm– in short and long time perspectives.*

The home exam will allow you to synthesize and reflect on the learning from the course as a whole, with a focus on 1) describing and critically reflecting on the relationship between *sustainable urban development*, and *sustainable development* in general, and 2) describing and critically reflecting on how planning and design can contribute to sustainable urban development and to sustainable development in general. It is essential that you do the reading associated with the lecture packages given (see below) continuously throughout the course, as this *constitutes the main course literature on which you should base your answers in your home exam!*

The home exam questions will be posted at Canvas ***Monday 19/10 at 8:00*** and must be handed in via Canvas no later than ***Thursday 22/10 at 18:00***.

Thematic lecture packages

To support the above described course parts, and to highlight different perspectives on sustainable urban development, five lecture packages are provided. These sessions are held every ***Monday afternoon 13.00-16.00*** during the first five weeks of the course. Invited lecturers will offer their approaches and provide insights into how they work with these issues in different ways, in their research and/or in practice. The lectures are grouped in the following themes:

1. **"Ecologies"**
   The challenges we face are fundamental, if we are to ensure a socially just development without trespassing planetary boundaries and undermining key Earth-system processes. What are the ecological impacts of cities, and what role does, or could cities play in relation to for example securing eco-system services or providing a regenerative approach?

2. **"Production & consumption"**
   How we understand the function of cities, but also the relation between the design of the built environment and artefacts in everyday life, and the opportunities for "living more sustainably" are entangled with different assumptions and norms. The material conditions we create can both reproduce unsustainable modes of production and consumption, or offer new ways of doing and being.

3. **"Social (& urban) justice"**
   Increased social fragmentation, a 'crisis of democracy', along with the continued uneven distribution of both environmental goods and harms, indicate that we are still far from a *safe* and *just* operating space for humanity. This plays out in different ways in different geographies, where environmental and social injustices offer challenges for urban planning and design to contribute to a just development for all.

4. **"Infrastructure & services"**
   The need for fundamental, large-scale and long-term transformations span across different sectors and socio-technical systems. This concerns everything from the potential (and limitations) of ICT and integrated building technologies, to transportation infrastructure and the consequences of shifting mobility practices, and the need for also addressing blue-green infrastructures in planning.

5. **"Governance & policy"**
   How can we plan for a more sustainable future, what actors should be involved, and how should this be managed? Policy-making and planning need to handle these complexities, yet sustainable urban development practice offers both stories of entanglements and lessons to bring forward, where new trans-disciplinary approaches are needed.

Each lecture package session will contain three short lectures (of about 30-40 minutes each), followed by a panel debate where the invited lecturers are asked to comment on each other's presentations (and points of view) and then available for questions from the students. A new student moderator will be assigned for each session, who will be in charge of moderating the discussion and distributing the word to fellow classmates.

Readings & preparations

Each lecture package is accompanied by assigned readings, listed in Canvas under Modules -> Literature for lecture package. These texts provide opportunities for you to deepen your understanding of the topics covered by the invited lecturers, and *constitutes the main course literature on which you should base your answers in your home exam*.

Before each lecture package session, you should read the assigned texts and prepare 1-2 questions in relation to what you understand as the key challenges and opportunities connected to the themes raised in the literature. During the session, after you have listened to the three lectures, you will be asked to discuss in smaller groups, where you are to reflect on the questions you brought with you into the session, and what potential new questions have emerged while listening to the lectures. From this, select one key question per group that you would like to ask the invited lecturers in the panel debate.

Optional lectures

In addition, there are a few lectures marked *optional* in the schedule, which should be seen as a resource for those that do not previously have extensive skills in and knowledge on:

1. **Stockholm's annual rings** (lecture by Magnus Andersson on ***August 25th 9.00-10.30*** – *YET TO BE CONFIRMED*)
2. **The Swedish planning system** (lecture by Dr. Mats Lundström on ***August 26th 17.00-18.00***)
3. **Visual communication** (lecture by David Valldeby on ***September 25th 13.00-15.00***)

# 8 CO-OPERATION AND EQUAL CONTRIBUTION TO PROJECT WORK

Co-operating in projects is sometimes challenging. Group members may have different levels of ambition, different communication styles, or different expectations on each other, which can create stress or even conflicts. One reason to work in projects is to experience this and to learn how to resolve difficulties in a professional way. The project requirements and supervision are designed in part to help you to plan your project in a way so that problems are avoided.

Please contact your group supervisor at an early stage if you experience problems of co-operating in your group that you don't know how to resolve yourselves, so that we can find a way to help.

9 EXAMINATION AND GRADING

The course gives a total of 15.0 credits, and comprises four different course moments. For each of these moments (see below) you get a partial grade.[1] This is based on the grading criteria outlined on the next page.

- SEMA (3.0 credits) P/F: This grade is based on the presentation (oral and ppt) in Part 1.
- SEMB (3.0 credits) P/F: This grade is based on the essay in Part 2.
- PRO1 (6.0 credits) A-F: This grade is based on the deliverables in Part 3, including the project poster/report, presentation and peer-review.
- TEN1 (3.0 credits) A-F: This grade is based on the home exam in Part 4.

Final grade

The final grade for the course (A-F) is a combination of passing grades for SEMA and SEMB, and an aggregate of the specific grades for PRO1 and TEN1. Since PRO1 is a group project and graded based on the group's results, and TEN1 is the only graded individual assignment, this is especially considered in the weighting of the partial grades into a final individual grade.

To pass the course you need to have passed all of the course moments. To pass all the course moments, besides specific requirements described for each part, you need to:

- Be present and actively participate all mandatory activities,
- Hand in all assignments in time.

Improving grades or complementing failed tasks

- For reason of time and fairness, the student has no possibility to improve her/his grade(s) in any of the tasks assigned during the course;
- Fx represents a failing grade which lies on the boundary between pass/fail, and can be complemented to reach the grade E.
- For those students who get Fx, an extra task will be assigned which should be handed in no later than 6 weeks after the extra task has been assigned to her/him.
- In case a student fail (F) assignments in Part 1-3, the student will need to redo these parts the next time the course is given.
- In case a student fail (F) the exam (Part 4), there will be a re-examination which follows the schedule of the academic calendar.
- If a student has had valid reasons (e.g. illness, illness in the family, funeral, union or political duties) to miss one or more of the tasks, and thus risks failing (F) a part of the course, it might be possible to undertake it/them as an extra task. Contact the course responsible teachers (Greger or Pernilla) and examiner (Mattias) to discuss this. Note than going on holiday is **not** seen as a valid reason.
- Rules for upping and appealing grades apply according to student rights and can be found at: http://www.kth.se/en/student/studentliv/studentratt/overklagan-overklagande-av-myndighetsbeslut-1.323892

[1] The Swedish university grading system normally has five levels of "pass" (A-E) plus "fail" (F), but two of the partial grades of this course is just "pass-fail" (P-F).

Grading criteria

	Part 1 Project work	Part 2 Essay	Part 3 Project work report	Part 4 Home exam
A	Pass: Identifies main characteristics of the city district. Identifies at least four sustainability problems in the district. Proposal addresses at least one of identified sustainability problem. Proposal identifies main actors and discusses a few barriers to change. At least one sustainability problem that cannot be addressed by the proposal is discussed.	Pass: Explains the basic characteristics of all introduced methods. Identifies key similarities and differences, and discusses these in terms of strengths and weaknesses in relation to concrete examples. Provides relevant examples of situations when to use a particular method, and gives at least one example of when a combination of two or more methods would be useful.	Identifies main characteristics and key sustainability problems of the area, also based on new data, generated either through own investigations or processing of data. Methods are described, argued for **and clearly related to one another**. Proposal identifies main actors, **which are well related to the process of change**. The proposal is well researched and **clearly goes beyond the reference-projects**. The relevance of the proposal in relation to the specific area is clearly argued for **and nuanced in terms of the distribution of costs and benefits**. Effects of the proposal on social and ecological sustainability are comprehensively analyzed, using at least **two different methods**. Synergies and conflicts are identified, and **ways of dealing with conflicts are discussed**.	Describes **and critically discusses** key issues for sustainable urban development. Provides relevant and concrete examples of how urban planning and design **can work together to** mitigate these, and **reflects on strengths and weaknesses**. Provides a comprehensive account on the relationship between sustainable urban development and sustainable development, **and critically discusses this**. Clearly demonstrates awareness of context and discourse. The discussion is to a large extent based on and makes reference to relevant literature, which exceeds the mandatory readings.
B			Meets all requirements for a C, and at least half of the requirements for an A.	Meets all requirements for a C, and at least half of the requirements for an A.
C			Identifies main characteristics and key sustainability problems of the area, also **based on new data, generated either through own investigations or processing of data**. Methods are described **and argued fo**r. Proposal identifies main actors. The proposal builds on reference-projects, **and goes beyond these to some extent**. The relevance of the proposal in relation to the specific area is **clearly argued for**. Effects of the proposal on social and ecological sustainability are **comprehensively analyzed, using at least one method**. **Synergies and conflicts are identified**.	Describes key issues for sustainable urban development. Provides relevant and concrete examples of how urban planning and design can mitigate these. **Provides a comprehensive account on** the relationship between sustainable urban development and sustainable development. **Clearly demonstrates** awareness of context **and** discourse. **The discussion is to a large extent based on and makes reference to relevant literature.**
D			Meets all requirements for an E, and at least half of the additional requirements for a C.	Meets all requirements for an E, and at least half of the additional requirements for a C.
E			Identifies main characteristics and key sustainability problems of the area, based on readily available data. Methods are described. Proposal identifies main actors. The proposal builds on reference-projects, but does not go beyond this to any extent. The relevance of the proposal in relation to the specific area is indicated. Effects of the proposal on social and ecological sustainability are indicated. Report and poster are easy to read, without major flaws, and gives a clear account of the project.	Describes key issues for sustainable urban development. Provides relevant and concrete examples of how urban planning and design can mitigate these. Sketches the relationship between sustainable urban development and sustainable development. Indicates awareness of context and/or discourse. The discussion is to some extent based on and makes reference to relevant literature.

Plagiarism

KTH takes plagiarism and other forms of cheating very seriously. In the web platform Canvas, all assignments are automatically controlled for plagiarism. Deliberate plagiarism leads to disciplinary measures from KTH, but in most cases, it is possible in an early stage just to draw attention to the risk or suspicion of plagiarism.

The following is an informative quote from: "Guiding students away from plagiarism", by Jude Carroll and Carl-Mikael Zetterling (available at http://www.kth.se/vil/learninglab/plagiat):

"Plagiarism is defined as submitting someone else's work as your own. A student's work can be declared to be plagiarism if it shows unacknowledged use of other people's ideas and materials. Plagiarised student work makes it seem as though the ideas or materials are the student's own rather than making it clear where in the material the student has included work from others. The same is true if students include others' words and do not show that they are quoted. There are well-developed methods for demonstrating that work is derived from others' work or others' words. Acknowledgments may include referencing and citation systems, explicit descriptions of how the work was developed, and academic writing styles which give explicit signals of where ideas, words, images, figures and other such materials are used in the student's own work."

10 LITERATURE

All compulsory reading is available in Canvas.

Literature for the respective lecture packages:

1. **"Ecologies"**

Andersson, E., Barthel, S., Borgström, S., Colding, J., Elmqvist, T., Folke, C., & Gren, Å. (2014). Reconnecting Cities to the Biosphere: Stewardship of Green Infrastructure and Urban Ecosystem Services. *AMBIO, 43*(4), 445-453.

Eisenmenger, N., Pichler, M., Krenmayr, N., Noll, D., Plank, B., Schalmann, E., . . . Gingrich, S. (2020). The Sustainable Development Goals prioritize economic growth over sustainable resource use: a critical reflection on the SDGs from a socio-ecological perspective. *Sustainability Science, 15*(4), 1101-1110.

Dhillon, L., & Vaca, S. (2018). Refining Theories of Change. *Journal Of MultiDisciplinary Evaluation, 14*(30), 64-87.

KTH (2020). Climate framework for Higher Education Institutions, including guidelines. Available at: https://www.kth.se/en/om/miljo-hallbar-utveckling/klimatramverk

McPhearson, T., Andersson, E., Elmqvist, T., & Frantzeskaki, N. (2015). Resilience of and through urban ecosystem services. *Ecosystem Services, 12*, 152-156.

Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., . . . Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science, 347*(6223).

2. **"Production & consumption"**

Florida, R. & Pedigo, S. (2020). How our cities can reopen after the COVID-19 pandemic. Brookings [online] https://www.brookings.edu/

Jensen, J. O., Christensen, T. H., & Gram-Hanssen, K. (2011). Sustainable urban development– compact cities or consumer practices? *Danish Journal of Geoinformatics and Land Management, 46*(1), 50-64.

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