Final version of grading criteria for Transport and Sustainable Development

Assignment 2 LH216V VT17-1 Develop the Learning by Using Grading Criteria - Joram Langbroek

Introduction

In this report, grading criteria will be designed for the course Transport and Sustainable Development. This course consists of lectures and discussion seminars. At the last seminar, the students present their plan for updating a Sustainable Urban Mobility Plan (SUMP), which is the main assignment for the course. In the lectures, different aspects of sustainable transport are discussed, and in the discussion seminars, the students work on their assignments and discuss their progress of the update of their SUMP.

There are three assignments that form the assessment for this course, namely one small individual assignment about Long-distance travelling (often by plane) and sustainable transport, one group assignment (consisting of two deliverables) where the students update a SUMP and one individual reflection report where the students critically discuss the use of SUMPs for stimulating sustainable transport. In the reflection report, they also have to reflect about the group work they have been doing. There are two Ladok course components: the SUMP (for 4 ECTS) and the individual assignments (for 3.5 ECTS).

Rewritten Intended Learning Outcomes

The Intended Learning Outcomes of the course follow below. Two ILOs have been deleted from the original course plan (see the erased ILOs in red), because the course has developed in such a way that these topics do not have a place in the course any more.

After the course you should be able to:

1. Account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.
2. Describe alternative energy futures and their relations to climate change and explain the role of transport systems in different scenarios.
3. Discuss the potential for technological development in transport and infrastructure systems in relation to different energy scenarios.
4. Describe how scenarios and backcasting can be used to analyze sustainable transport systems
5. Apply scenarios and forecasting for analysis of sustainable transport options
6. Analyze relationships between urban development and mobility patterns and their implications for sustainability
7. ~~Identify environmental impacts of transport and apply the environmental impact assessment approach on a transport project~~
8. ~~Account for the strategic environmental assessment approach and apply it on a transport plan~~

7. Select and synthesize policies and strategies for approaching sustainable transport

This course is a rather broad course where the students of two different master programs (Transport and Urban Planning) work on sustainable transport. First, they will get an overview of what sustainable transport and sustainability is. Different visions are discussed about the relation between social, economic and ecological sustainability. After this, the students will get into contact with the complexity of sustainability, by looking at long-term targets and ways to reach these targets (backcasting), ways to look into the future (forecasting) and more specific topics relating to driving forces of our current transport system and potential solutions. In the assignments, the students propose concrete policies and strategies that they analyse and evaluate.

Current grading criteria

Currently, the grading criteria for the main assignment (updating a Sustainable Urban Mobility Plan) are formulated like this:

"Numerical Grade	Explanation
0	The minimum criteria for the task are not met.
1	The minimum criteria for the task are met. The response addresses all questions and makes nominal use of available sources.
2	Generally sound work. The response addresses all questions and clearly motivates them based on a mix of available local and international sources.
3	Outstanding work. The response meets a high standard for fulfilling the objective by strategically integrating local and international sources to address all questions.

Each Part must receive at least a "1" to receive a passing grade on the whole Deliverable. After that, the grade on the Project will computed as an average of each Part's numerical grade. The letter grade will then be determined from this average:

Numerical grade	Letter grade
2.75-3.00	A
2.25-2.74	B
1.75-2.24	C
1.25-1.74	D
1.00-1.24	E

Note that the Presentation will not be graded on its own, but rather you will need to integrate Stakeholder Input that you receive at the Presentation into your reporting in Deliverable 2. However, all group members are required to take an active role in the presentation."

These criteria are clearly "Grade of execution-criteria" and it is rather vague and open for interpretation whether a work is "Generally sound" or "Outstanding". I would instead opt for the use of discrete qualities to distinguish between grades, where more difficult skills have to be shown in order to get a higher grade.

ILOs and assessment tasks

In the matrix that is shown below, the different ILOs are listed, in combination with the assessment tasks in which each ILO is assessed.

Intended Learning Outcomes	I-REP	G-REP	I-REF
1. Account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.		X	
2. Describe alternative energy futures and their relations to climate change and explain the role of transport systems in different scenarios.	X		
3. Discuss the potential for technological development in transport and infrastructure systems in relation to different energy scenarios.	X		
4. Describe how scenarios and backcasting can be used to analyze sustainable transport systems	X		
5. Apply scenarios and forecasting for analysis of sustainable transport options		X	
6. Analyze relationships between urban development and mobility patterns and their implications for sustainability		X	
7. Select and synthesize policies and strategies for approaching sustainable transport	X	X	X

ILO 7 is assessed in all assessment tasks, because it is the core component of the course. ILO 1-6 are only assessed in one assessment task.

Grading criteria for E (pass level)

For all Intended Learning Outcomes, there are grading criteria that must be satisfied in order to pass the course. The criteria are a specification of the ILOs connected to the relevant assessment task(s).

1. Account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.
    o G-REP: Describe visions of sustainable transport as they have been formulated in Sustainable Urban Mobility Plans
2. Describe alternative energy futures and their relations to climate change and explain the role of transport systems in different scenarios
    o I-REP: Describe the current trend of long-distance travelling in the light of its effects on GHG emissions and climate change
    o I-REP: Describe the Paris Climate Targets and describe how current trends of long-distance travelling conflicts with reaching the climate targets

3. Discuss the potential for technological development in transport and infrastructure systems in relation to different energy scenarios.
    o I-REP: Explain the role of ICT with respect to replace long-distance travel
    o I-REP: Describe the potentials and limitations of technological developments for reaching the Paris Climate Targets
4. Describe how scenarios and backcasting can be used to analyze sustainable transport systems
    o I-REP: Apply backcasting to find out what should be done to reach the Paris Climate Targets
5. Apply scenarios and forecasting for analysis of sustainable transport options
    o G-REP: Develop internally consistent future scenarios for the locality of the SUMP
6. Analyze relationships between urban development and mobility patterns and their implications for sustainability
    o G-REP: Describe typical issues arising from the spatial planning within the SUMP municipality that has negative implications for the potential for sustainable mobility
7. Select and synthesize policies and strategies for approaching sustainable transport
    o I-REP: Describe acceptability for two potential policy measures influencing long-distance travelling
    o I-REP: Estimate the cost-effectiveness for two potential policy measures influencing long-distance travelling
    o G-REP: Explain why the chosen policies individually contribute to approach sustainable transport

ILOs not assessed on higher level than level E

Some ILOs are rather basic and understanding of these is important, but it is not really feasible or there is not really a large added value to do an outstanding job on these criteria. Most of these ILOs are very describing in their kind and do not require higher order learning skills. I think that the following Intended Learning Outcomes do not need to be assessed on a higher level than level E:

ILO 3: Discuss the potential for technological development in transport and infrastructure systems in relation to different energy scenarios.

ILO 4: Describe how scenarios and backcasting can be used to analyze sustainable transport systems

Grading criteria on A-level/higher maximum levels

The following grading criteria on A-level/levels higher than E are proposed:

ILO 1: Account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.
    o G-REP: Evaluate the degree to which the current situation in the city chosen for the SUMP-assignment is sustainable
ILO 2: Describe alternative energy futures and their relations to climate change and explain the role of transport systems in different scenarios
    o I-REP: Describe the changes that have to be made regarding long-distance travelling in order to comply with the Paris Climate Targets (C-level)
ILO 5: Apply scenarios and forecasting for analysis of sustainable transport options

o G-REP: Argue based on literature why the scenarios described in the SUMP are likely to happen

ILO 6: Analyze relationships between urban development and mobility patterns and their implications for sustainability

        o G-REP: Apply the theory of the relationships between urban development and mobility patterns to the SUMP case study (C-level)

ILO 7: Select and synthesize policies and strategies for approaching sustainable transport

        o G-REP: Assess synergy effects between packages of policy measures proposed in the SUMP based on international literature

        o I-REF: Criticize the followed approach for updating the SUMP considering its interaction effects with other planning instruments and other planning actors

Grading criteria on middle levels

For ILO 1 and ILO 7, there are grading criteria at level E, C and A. For this case, the student has do a describing task to get an E, to apply theory in order to get C and to make an evaluation or critical reflection in order to get an A. The following grading criteria for the middle levels are proposed:

ILO 1: Account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.

        o G-REP: Apply the sustainability concepts and indicators to a specific urban area

ILO 7: Select and synthesize policies and strategies for approaching sustainable transport

        o G-REP: Define potential synergy effects of policy packages based on international literature

Matrix of Intended Learning Outcomes and Grading Criteria

Intended learning outcomes	E	C	A
1. Account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.	G-REP: Describe visions of sustainable transport as they have been formulated in Sustainable Urban Mobility Plans	G-REP: Apply the sustainability concepts and indicators to a specific urban area	G-REP: Evaluate the degree to which the current situation in the city chosen for the SUMP-assignment is sustainable
2. Describe alternative energy futures and their relations to climate change and explain the role of transport systems in different scenarios.	I-REP: Describe the current trend of long-distance travelling in the light of its effects on GHG emissions and climate change I-REP: Describe the Paris Climate Targets and describe how current trends of long-distance travelling conflict with reaching the climate targets	I-REP: Describe the changes that have to be made regarding long-distance travelling in order to comply with the Paris Climate Targets	X
3. Discuss the potential for technological development in transport and infrastructure systems in relation to different energy scenarios.	I-REP: Explain the role of ICT with respect to replace long-distance travel I-REP: Describe the potentials and limitations of technological developments for reaching the Paris Climate Targets	X	X
4. Describe how scenarios and backcasting can be used to analyze sustainable transport systems	I-REP: Apply backcasting to find out how long-distance travels have to change to reach the Paris Climate Targets	X	X
5. Apply scenarios and forecasting for analysis of sustainable transport options	G-REP: Develop internally consistent future scenarios for the locality of the SUMP	G-REP: Argue based on literature why the scenarios described in the SUMP are likely to happen	X
6. Analyze relationships between urban development and mobility patterns and their implications for sustainability	G-REP: Describe typical issues arising from the spatial planning within the SUMP municipality that has negative implications for the potential for sustainable mobility	G-REP: Apply the theory of the relationships between urban development and mobility patterns to the SUMP case study	X
7. Select and synthesize policies and strategies for approaching sustainable transport	I-REP: Describe acceptability for two potential policy measures influencing long-distance travelling I-REP: Estimate the cost-effectiveness for two potential policy measures influencing long-distance travelling G-REP: Explain why the chosen policies for the SUMP individually contribute to approach sustainable transport	G-REP: Define potential synergy effects of policy packages based on international literature	G-REP: Assess synergy effects between packages of policy measures proposed in the SUMP based on international literature I-REF: Criticize the followed approach for updating the SUMP considering its interaction effects with other planning instruments and other planning actors

Combining grades

Right now, there is an individual Ladok-item and a group-based Ladok item. In order to pass the course, the student needs to score an E on all ILOs. Some ILOs are only assessed in one Ladok course component, whereas other ILOs are assessed at both Ladok course components.

Grade for the group work (G-REP)

The group work reflects ILOs 1, 5, 6 and 7. If 1 ILO is approved at level C and the score for the other ILOs is E, the grade will be E. If 2 or 3 ILOs are approved at level C and the score for the other ILOs is E, the grade will be D. If the score for each of the four ILOs is C, the grade will be at least C. The student can get a B in case all ILOs have been graded at least at level C and if either ILO 7 is almost approved at level A. In case ILO 7 is approved at level A, the student gets an A for the group assignment.

Individual assignment (I-REP and I-REF)

The individual work reflects ILOs 2, 3, 4 and 7. ILOs 3 and 4 are only graded on E. For ILO 2, a C is needed on the individual work in order to score a C for the individual work. For ILO 7 it is possible to get an A. If the score is A for ILO 7, the student can get an A for this course component under the condition that he or she has been approved on C-level for ILO 2. If the student almost gets a score on A-level but there are minor flaws leading to not being approved on A-level but scoring higher than C-level requires, the student can get a B for this course component. Scoring well on ILO 7 but not being approved on C-level for ILO 2 will result in a D.

Conditional grading

This grading system is conditional: the higher grades can only be obtained in case the student has been approved on the lower levels. The exception is the individual assignment: scoring high on the reflection report can compensate not scoring high on the individual assignment, because these are two different assessment tasks.

Final grade

The final grade will be a weighted average between the scores on the Ladok course component group work (4 ECTS) and the Ladok course component regarding the individual assignments (3.5 ECTS). This means that the grade for the group work will count a little bit higher than the grade for the individual assignments.

Reflection

Especially the group assignment and the individual reflection assignment are very open and extensive exercises, which makes it relatively easy to include sub-tasks on different levels within the same task. However, I wonder how the coherence between the different subtasks can be evaluated, so that it will be possible to make a holistic evaluation of both the parts and the whole. I am not sure whether it is possible to make a plan for a Sustainable Urban Mobility Plan that scores high on all separate intended learning outcomes, but that is at the same time internally inconsistent, but it should not. A good story line and logical structure of the work is a very desirable aspect of the work, but I am afraid that these are hard to assess, as there is no logical connection to the ILOs of the course. However, every time students work on complex assignments, they should also learn to work on these more general skills. In some other evaluation forms, I have seen that part of the evaluation is based on the style (structure, language) of the report, besides the evaluation of the main content itself. I wonder whether we need additional intended learning outcomes to be able to assess these general issues, or

whether we can somehow use content-based ILOs and add grading criteria to account for reporting issues.

In the former case, I would add an intended learning outcome such as "the student should be able to clearly and internally consistently report the results of the update of the SUMP". This learning outcome could only be graded on E-level, so that it will become a go/no-go criterion.

Generally, the use of grading criteria for this course where there are a lot of different topics, but there is no clear hierarchy between the different elements, is challenging. The way of deciding which criteria to use for which grade is rather arbitrary. I have tried to use grading criteria in such a way that they follow different levels of learning, where tasks such as describing and explaining have to be fulfilled to get an E, applying theory and use different parts of the course in order to get a C and evaluating and criticizing the followed approach based on international literature to get an A. The methods used for defining the grade are mainly based on conditionality. A student cannot pass the course in case the student has not been approved on E-level for all intended learning outcomes. Also for the higher levels, the principle is that you need to be approved on a specific level in order to be able to get a grade on a higher level. Because of the fact that the individual part consists of two assignments, the students can improve their grade from E to D in case they score well on the individual reflection report and not so well on the individual assignment. In that way, students will get less demotivated by a bad score on the individual assignment and are assumed to be more likely to keep their ambitions high when preparing the individual reflection.