



Guide for the Preparation of a master thesis

Institute for Transport Studies (IVE),
BOKU Vienna

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1. Introduction

We are pleased that you have decided to write your master thesis at the Institute of Transportation (IVe). This starting information is intended to help you get started with your thesis and to support you in organizing your work flow. Legal background information on writing a master thesis can be found in the statutes of the University of Natural Resources and Life Sciences, Vienna (III. Section: Study regulations; *Kapitel E. WISSENSCHAFTLICHE ARBEITEN; § 86 Masterarbeiten und Diplomarbeiten*). In particular, we draw attention to the section "J Pretending scientific achievements". The obligations to maintain good scientific practice also include the safeguarding and storage of underlying data. According to § 95, "all raw data on which a master thesis [...] is based must be kept (...) for at least five years". A written affidavit that good scientific practice has been followed is part of every MA submission. For further information see also "Guidelines of the Austrian Agency for Scientific Integrity (OeAWI) on Good Scientific Practice" (GWP Guidelines of OeAWI). Please note the continuously updated information from the Centre for Teaching and the Admissions Office!

- "Completion of studies"¹, BOKU-Start > Topics for Students > Final degree

2. Procedure

2.1. Choice of topic

Free master thesis topics are advertised (amongst others) on the IVe homepage:

- "Master-thesis / information"², BOKU-Start > Department of Landscape, Spatial and Infrastructure Sciences > Institut für Verkehrswesen (IVe) > Studies: Information and Guidelines

Ongoing master theses are listed here as well as a link to already completed master theses of the institute. As a rule, the topics advertised are working titles. The exact contents and the procedure will be developed during the initial interview, the topic will be formulated more precisely in the course of processing. It is certainly desirable to bring in your own suggestions for topics or to develop them in consultation with the (co-)supervisor team.

2.2. Working steps

The following steps give an overview of how to write a master thesis.

- (1) Initial interview;
- (2) Establish structure of table of contents on the basis of agreed objectives; first draft at the beginning of the work, then ongoing revision; literature research;
- (3) Check whether the task has been answered, the objectives of the work, formal criteria have been met and a red thread is visible;
- (4) Spell check: Activate in the word processor, additionally self-reading and check reading by an "outside" person who has no direct insight into the topic (request feedback regarding comprehensibility of the contents and connections, recognizability of a red thread, and the central statement);
- (5) Complete raw report for review by (co-)supervisor; (calculate several weeks of review time; experience shows that it is not practical to hand in individual parts of the work);

¹ <https://boku.ac.at/en/studienservices/themen/infos-studienabschluss>

² <https://boku.ac.at/en/rali/verkehr/lehre-informationen-und-richtlinien/masterarbeiten-informationen>

2.3. Initial interview

In an initial interview between the supervisor, the co-counselor and the student, the content and organizational framework for the master thesis is defined. This includes, for example

- Concretisation of the task (problem definition, objectives, assessment criteria) as well as the structure, title (working title) and appropriate methods;
- explanation of the working steps;
- Time frame;
- confidentiality in handling data;
- Clarification of the minimum contact with main supervisor;
- Possible first literature selection.

2.4. Registration

Following the initial interview or after consultation with the co-supervisor, the master thesis must be registered by the student in the Admissions Office using the appropriate form. Support for this can be obtained from the secretariat of the Institute of Transportation. For the required form¹:

- "Master thesis ", BOKU-Start > Topics for Students > Final degree

the signatures of the supervising persons (main and joint supervision) and the institute management must be obtained by the student.

The title of the master thesis given on the form is declared as a working title and can be adapted to the thesis at a later date. The type of work must be indicated (usually monograph). The completed form has to be handed in at the Admissions Office, a copy has to be given to the IVE secretariat.

In addition to registering in the Admissions Office, the work must also be registered directly at the Institute of Transportation with a separate form. With the registration at the Institute an entry in the distribution list for the Master's Seminar is connected. From this time on you will receive all information about dates and presentations (Kapitel 2.7).

2.5. Supervision

The main supervision of a master thesis must be assumed by a person holding a habilitation (usually a university professor, honorary professor, professor emeritus, professor emeritus, university lecturer), unless there are exceptions. At present, Astrid Günemann, Juliane Stark, Yusak Susilo, Reinhard Hössinger and external lecturers (Bernhard Hofko, Ernst Pfleger, Friedrich Zibuschka) can supervise master thesis for the Institute of Transportation. Depending on the subject area and the number of current supervisors, the work is co-supervised by a research associate of the institute. As a rule, the co-supervisor is the main contact person.

Appointments for supervision are made by personal arrangement with the co-supervisor. In these meetings the current progress of the work is discussed. Supervision is particularly useful when decisions have to be made about the direction of the work.

2.6. Writing the Master thesis

The provisions of the Copyright Act, Federal Law Gazette No. 111/1936, must be observed when working on the topic. When writing the master thesis, it is important to ensure that a

¹ <https://boku.ac.at/en/studienservices/themen/infos-studienabschluss/abschlussarbeiten/masterarbeiten>

continuous citation form is used and that sources are correctly indicated (see section "Citation"). This can be decisive for the assessment of performance.

2.6.1. Stylistic requirements

- Sober factual report, no flowery narrative style, no colloquial language;
- no use of the "I" form, "I have..." → "It was... "; "In my experience..." → "experience has shown..."
- check each sentence for necessity;
- Keep sentences short, with clear statements - divide long sentences or structure them with dashes or mirror points, as well as important statements and enumerations;
- create paragraphs with a thematic context, never format every sentence as a paragraph;
- use filler words sparingly (e.g. natural, further, thus, while, but, also, still, only, thus, just, nevertheless);
- define foreign words if necessary;
- not changing genitive forms within the work (of the vehicle or vehicle)
- Abbreviations: common (e.g., passenger car, motor vehicle, etc.) or those of frequently occurring technical terms (e.g., VLSA, ÖPNV, MIV, JDTV) List of abbreviations required, never abbreviate "normal" words (e.g., footnote, sec., best.)
- Terms: use predefined terms (according to StVO, RVS, ÖNORM V5050) as defined (e.g. lane lane, start moving off, stop) or define new ones (term definition) and use them consistently (e.g. do not use "measuring point", "point of survey", "counting point" etc. for defined "measuring cross-section" at the same time.
- Support statements and assertions with quotations from the literature, if possible.
- Always refer to contents and statements that do not exclusively originate from your own investigation with reference to the source.

2.6.2. Formal requirements

Cover pages of the master thesis:

With the beginning of the winter semester 2021/22, it is mandatory to use an uniform cover page for master theses at BOKU¹.

Behind the cover page of the BOKU, the second page has to be the IVE cover page. This is available on the institute's homepage² (see also 5.2).

The IVE cover page contains more information than the BOKU cover page, including the institute's internal master thesis number (bottom left). This arranges the work completed in the respective year and is important for the signature of the institute library. It has to be requested from the supervisor or in the secretariat shortly before the work is completed.

¹ <https://boku.ac.at/en/studienservices/themen/infos-studienabschluss/abschlussarbeiten/cover-pages/masters-thesis>

² https://boku.ac.at/fileadmin/data/H03000/H85000/H85600/DA/Masterarbeit_Deckblatt_2015.docx

Structure of the master thesis:

The structuring is done in consultation with the supervisor.

For example:

(Abstract - will be written after completion of the thesis)

Foreword

Table of contents

1. Introduction: Tasks, problem definition, objectives/research questions, chosen approach, definitions of terms and list of abbreviations;
2. literature research: presentation of results of national and international topic-related investigations;
3. theoretical foundations, formulation of the hypothesis(s);
4. methodical approach, methodical considerations;
5. data bases, data collection;
6. data evaluation and presentation
7. data assessment, evaluation;
8. description and interpretation of results;
9. summary of the results, central statements, conclusions;
10. summary;
11. list of sources;
12. appendix (protocol samples, data tables, ...); in case of extensive contents a subdivision with structured headings is useful.

Layout:

There are no specifications for font size, line spacing, margins (etc.). The layout should be agreed with the support team. General recommendations are:

- Consistent adherence to paragraph formats for figures, tables, enumerations, etc. (define appropriate formats in a word processing program).
- Choose meaningful headers and footers (e.g. header with title and author, footer with institute and page number).
- Do not use oversized line and paragraph spacing, page margin widths;
- Use a maximum of 4 chapter levels:
 1. 1st heading level 1
 - 1.1 Level 2 heading
 - 1.2 etc.
 - 1.2.1 Level 3 heading
 - 1.2.2 etc.
 - 1.2.2.1 Level 4 heading
 - 1.2.2.2 etc.
- Note for the chapter structure: a subchapter only gets its own number if there is at least a second subchapter in this hierarchy: 2.2.1 as a subchapter of 2.2 is only possible if at least 2.2.2 also exists.
- Recommendation: Use of format templates and automatic creation of tables of contents, tables of figures, tables of tables, cross-references.

- Chapters usually start with introductory sentences, not immediately with figures; avoid chapters that consist only of figures, tables, etc.
- Refer to the each figure and each table in the text.
- Put units in tables and graphics in square brackets (e.g. [s], [km/h], [Kfz/24h]).
- Put enumerations with numbers in brackets:
 - (1) motorised transport;
 - (2) non-motorised traffic;
 - (3) local public transport.
- Protected space between digit and unit (<shift>+<strg>+space bar), e.g. 30 km/h.

2.6.3. Tables

- Table numbering: consecutive with decimal numbering.
- Table labels above the table.
- Table labeling: analogous to figures.
- Define all columns and rows exactly, specify the dimension.
- Refer to each table in the text.

For example:

Tab. 5.3-9: Accident density U_d [PSU/direction, km] and accident rate U_r [PSU/million vehicle km] 1994 to 1997 of the A1 Westautobahn on open road and within the sphere of influence of junctions

A1 (1994 - 1997)	between stations	for connection points	Difference
Ud Ri Sbg.	0,82	1,10	+34%
Ud Ri Wien	0,87	1,13	+30%
Ud gesamt	0,85	1,12	+32%
Ur Ri Sbg.	0,142	0,165	+16%
Ur Ri Wien	0,149	0,170	+14%
Ur gesamt	0,146	0,168	+15%

2.6.4. Figures

- Figure numbering: consecutive with decimal numbering including the chapter number (2nd heading level), e.g. Fig. 2.6-1; in each main chapter starting with 1.
- If figures/tables are numbered automatically in the word processor, the references to figures/tables in the text can also be automated.
- Illustration labels below the illustration; clear definition of content (illustration should be understandable without text).
- In the case of diagrams: exact labelling of the axes, indicating the units/dimensions.
- Refer to each illustration in the text, e.g. "as shown in Fig. 4.6-5 ..." or "The growth of motorization is 4% per year (Fig. 4.6-5)".
- Put numbers on graphics (Fig. 2.6-1).
- Use copyable grids and ensure black and white comprehensibility.

For example:

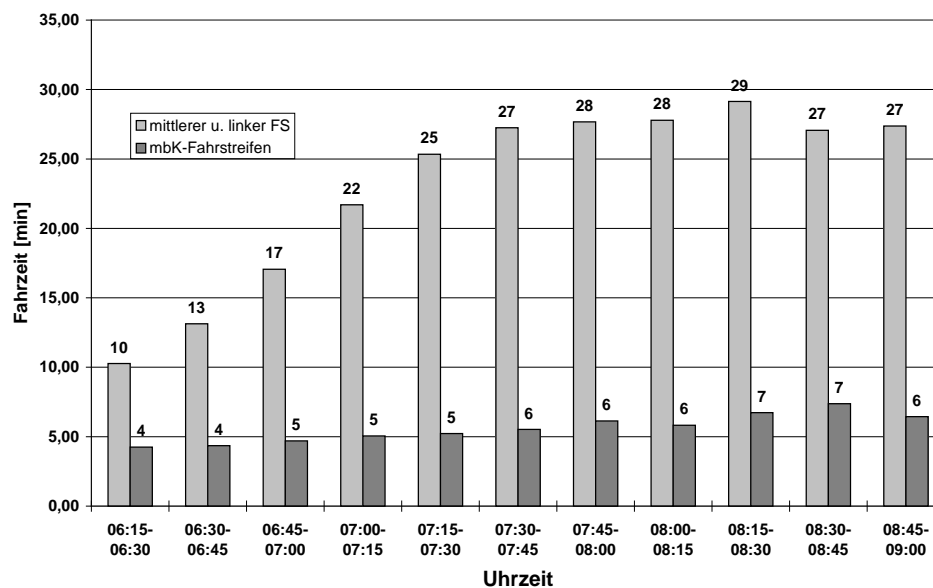


Abb. 2.6-1: Comparison of the average journey times of mbK lane users and other motor vehicles per quarter of an hour in the direction of Linz on the B127 from 6:15 to 9:00 a.m. (cross-section X-Dorf, Monday 10.05.1999)

2.6.5. Citations

References in the text consist of the names of the authors and the year of publication. The year is supplemented by a letter if other publications are cited by the same authors from the same year. For the second reference, a list of more than two author names may be replaced by a reference to the first author and the abbreviation et al (et alii; Latin "and others").

Examples:

„... like Müller und Meier (1990, 1992a) in contrast to Schmidt (1988) or Schmidt, Krause und Krause (1989) suggest ...“

„... Schmidt et al. (1989) come to different conclusions than the literature so far (Schmidt, 1988; Meier, 1985 oder Müller, 1990) ...“

The bibliography is single-line. The bibliographical references are to be sorted alphabetically according to the surname and first name of the first author, then according to the names of the other authors and then according to the year of publication. If two or more articles by the same author or group of authors from the same year are cited, the year of publication must be supplemented by letters: 1994a, 1994b, ...

Nationally and internationally, there is a multitude of formally different types of literature references. Which one is chosen for the work should be discussed with the supervisor. The citation style must then be used consistently (no "mixing" of e.g. names in block letters or not, with or without comma after the name, with or without colon after the year etc.). Recommendation: There is a number of programs, such as Endnote, Zotero, with which literature can be systematically managed and cited.

2.6.6. Data handling

The legal basis for data protection in Austria is the Data Protection Act 2000 (DSG 2000). Compliance is monitored by the data protection authority.

As a student, you are obliged to comply with the data protection regulations. In principle, all data that is processed in the course of a master thesis must be treated confidentially and may not be passed on. Particularly personal data are to be processed exclusively in anonymous form and may not allow any conclusions to be drawn about persons and their personal situations, inclinations, needs, etc. Results from surveys etc. and evaluations based on them should therefore preferably be presented in aggregated form, i.e. the results of groups of test persons should be presented, not of individuals.

2.7. Master seminar

Participation in the master seminar (LV no. 850.301) on at least four dates is obligatory from the time of registration and will be verified with signature lists. Please also note the information about the course in BOKUonline.

In the course of the seminar two presentations about the progress of the master thesis have to be held. The date for these presentations is fixed after consultation with the supervisor; usually at the beginning (overview of the topic, method, work plan etc.) and at the end of the master thesis (results etc.). A presentation time of ten minutes is set aside for the presentations and another ten minutes for the subsequent discussion. The invitation to participate will be sent by e-mail by the secretariat.

The objectives of the seminar include:

- Guidance for independent scientific work;
- acquisition and consolidation of the theoretical and methodological knowledge required for scientific work;
- practice of presentation techniques;
- Professional discussion and treatment of methodological questions;
- critical reflection of the work;
- Preparation for defensio.

Expected content of 1st and 2nd presentation:

- **1st presentation**

- Should take place after approximately ¼ to 1/3 of the master's thesis. Expected status:
 - Research questions roughly defined
 - Proposals for methods / data collection developed
 - First literature research on background and methods carried out
- Presentation and understanding of the research objective and approach in the foreground.
- Objectives:
 - Practice presentation skills
 - Discussing the research objective, workflow, and methods envisioned
 - Obtain feedback from instructors and other students
- If applicable, presentation of initial results or intermediate steps (e.g., a questionnaire, experimental design, initial data analysis of secondary data)
- Presentation should end with a discussion question

- **2nd presentation**

- Should take place at the end of the master thesis. There should be a substantial set of results that provide a meaningful impression of the final result. However, not all results need to be available yet. The core of the methods should have already been applied.
- Focus on results and clean presentation of the method(s).
- Critical reflection on the method/results and interpretation of the results.
- Objectives:
 - Practice of a scientific presentation and demonstration of expertise
 - Preparation for Defensio
 - Presentation technique (with less weight)
 - Obtain feedback from instructor and other students (if possible) before finalizing the paper
- Presentation should end with a discussion question

Evaluation of the Master's Seminar:

Grades: - in quarter steps per seminar

- in the case of in-between grades, the supervisory team determines the final grade

Range of grades:

Very good	An excellent presentation that (not only) has no deficiency in the above criteria, but also gives an excellent impression of the work for students and supervisors.
Good	A presentation that is easily recognizable and presentable as a „good performance“ in terms of content and rhetorical quality and form - even to the outside world.
Satisfactory	A presentation that achieves the desired goal „to a satisfactory degree“; notable shortcomings are evident here and there.
Sufficient	A presentation that „still sufficiently satisfies“ the set requirements, but in several points deviates from the expectations placed in it.
Not sufficient	The presentation fails to meet several of the requirements or is extremely deficient and, in the overall judgment of the evaluators, will not allow the student to meet requirements for a Master's degree (e.g. Defensio afterwards).

Criteria and expectations for a very good rating:

Content of the presentation	
1st presentation	<ul style="list-style-type: none"> • Objectives and research question of the work clearly defined, usually derived from the literature • Appropriate suggestions for methodological procedure presented • Intermediate results clearly comprehensible, if presented • Clear conclusions (or questions) for further work available
2nd presentation	<ul style="list-style-type: none"> • Clear objectives and research question of the work and results related to them presented • Key findings of the work presented concisely and precisely • Critical reflection on the results and/or methods presented available • Clearly comprehensible conclusions for further work or research outlook given
Technical competence in answering the questions in the subsequent discussion	
1st presentation	<ul style="list-style-type: none"> • Demonstrates good basic knowledge of subject area and methods • Independent thought and critical awareness recognizable
2nd presentation	<ul style="list-style-type: none"> • Demonstrates very good literary knowledge of the subject area including related disciplines and can clearly justify choice of method • Any weaknesses / limitations of the method(s) are clearly demonstrated • Independent thought and critical awareness are clearly evident

Rhetoric	<ul style="list-style-type: none"> • Clear structure of the presentation, logically structured • Appropriate speed of speech and duration of the slides • Presentation is stimulating, appropriate to the audience, understandable and factual • Acoustically clearly audible
Time management	<ul style="list-style-type: none"> • Clear adherence to available time (without rushing at the end) • Available time was used very well (no lengths, not excessive time at the end)
Slides layout	<ul style="list-style-type: none"> • Practically no typos, graphics with correct labels • Everything readable, slides look tidy/not cluttered • Slides numbered throughout

The prerequisites for a positive conclusion of the seminar include the holding of two presentations and participation in four seminar sessions as well as the creation of a poster (format A2) after completion of the thesis (see 5.3). The design of the poster will be arranged with the supervisor. A poster template can be found on the IVE homepage:

- "Download"¹, BOKU-Start > Department für Raum, Landschaft und Infrastruktur (RALI) > Institut für Verkehrswesen (IVE) > Lehre: Informationen und Richtlinien > Masterarbeiten / Informationen

2.8. Finalization

After the final check of the written work by the supervisor, final hard copies of the work must be produced. A total of two formal submission copies must be made. One of them has to be handed in at the Department of Studies (for the University Library); there are no formal requirements - except for the firm binding and the name of the student on the spine of the book. The second copy will be sent to the institute (institute library) and should have a black cover and an inscribed book spine (below: first name SURNAME; above: master thesis number). Further copies (e.g. for the supervisor) have to be made in agreement with the supervisor. You will receive the master thesis number (MA number) for the cover and spine from your supervisor.

After submitting the copies to the IVE, you will receive the grade of your work in the form of an evaluation sheet. Please inform all supervising persons in time about your planned submission. Please consult your supervisor about the extent to which the master thesis or the data and literature has to be submitted digitally.

3. Assessment criteria of the master thesis

The assessment of the master thesis by the evaluation sheet is based on the following central criteria:

- Problem definition (relevant/central literature cited, guidance to the problem)
- Question(s) (comprehensible derivation from problem definition)
- Research design (theoretical framework concept, adequate research methods)
- Methodical procedure (scientific level, traceability)
- Research results (formal presentation meets scientific criteria, adequate description of content)

¹ https://boku.ac.at/fileadmin/data/H03000/H85000/H85600/LVs/Poster_Riegler.ppt

- Analysis/interpretation/discussion/conclusion(s) (comprehensibly derived from results, answering the question(s), integration into current state of knowledge, applicability/technical relevance)
- Bibliography (completeness with regard to relevant literature, formal correctness)
- Quality Formulations
- Outline of the work

The Assessment form can be found here¹:

- Assessment of the thesis by the supervisor: "Assessment form for Master thesis", Assessment of the thesis and presentation: "Assessment form for Defensio Master thesis", BOKU-Start > Topics for Students > Final degree > Graduation from BOKU Master's degree programmes

4. Completion of studies

4.1. Approval

The current "Guidelines for the Defensio of a Master Thesis at the University of Natural Resources and Life Sciences, Vienna" must be observed.

Excerpt from "Studienabschluss von BOKU-Masterstudien" of the BOKU homepage with the form of the Master's examination/defense relevant for the IVe: "When all study achievements have been completed, the application for the Master's examination or defensio can be made after examination by the Admissions Office (preliminary check) (...)". It is recommended to initiate the examination by the Admissions Office one semester prior to the registration for the Master's examination/defense or before the completion of the Master's program so that any deficiencies can be corrected in time. Admission to the Master examination/Defensio, with which the study program is also completed, or the completion of Master studies without a Master examination/Defensio by a commission, requires that all courses prescribed in the curriculum have been completed positively (all examinations in BOKUonline validated) and the Master thesis has been assessed positively. If these admission requirements are fulfilled, the actual registration can take place. For this purpose, all necessary documents or forms have to be submitted, which can be found on the homepage of the Admissions Office:

- Graduation from BOKU Master's degree programmes, BOKU start > Topics for Students > Final degree

All signatures and the release for the abstract² by the supervisor must be obtained in time: these must be in the original. Scans or signatures by representatives are not permitted.

After completion of the thesis (before graduation):

1. student enters the abstract data.
2. supervisor checks the data and releases the data.
3. student hands in the abstract printout to the academic department.

¹ <https://boku.ac.at/en/studienservices/themen/infos-studienabschluss/studienabschluss-von-masterstudien/studienabschluss-von-boku-masterstudien>

² <https://boku.ac.at/en/boku-it/themen/teach-learn/studium-meldung-weitermeldung-abschluss/abschlussarbeiten-abstracts-erfassung>

After graduation:

4. Admissions Office, the Research Service and the University Library process and complete the data and release the data. This can take 1 to 2 months.
5. Final thesis is found on the Internet.

4.2. Defensio

The student is responsible for the composition of the Defensiosenat and the determination of the defensio date (date, time, place/room). A total of three persons with a habilitation are necessary for the defensio (first examiner, second examiner, chair). The student coordinates in advance a defensive meeting with two university teachers with high teaching authority (first and second examiner). The supervisor of the master thesis is usually (but not necessarily) part of the commission, but cannot assume the chairmanship. First and second examiners may be from the same department and institute. The chair must be from a different department than the supervisor and is determined by the Admissions Office. The student has the opportunity to propose a chair.

Defensions can take place throughout the year. Excepted from this is the exam-free period. Date, time and place of the defensions are published on the homepage of the Admissions Office (under Examination Dates). The submission deadline for the application for the Defensio (which is also the submission of all documents) is exactly 3 weeks (according to information: not negotiable).

4.3. Final documents

The final documents (award notice, diploma and Diploma Supplement) are issued within the statutory period of four weeks. As soon as they are ready for collection at the Admissions Office, you will be notified by email. The following documents must be presented when taking over the final documents:

- BOKUcard or an official photo identification,
- Printed confirmation of the entry of the data entry form on study-related stays abroad
- If the documents cannot be collected in person, a notarized power of attorney and official photo identification must be presented

The final documents (award notice, diploma and Diploma Supplement) are issued within the statutory period of four weeks. As soon as they are ready for collection at the Admissions Office, you will be notified by email. The following documents must be presented when taking over the final documents:

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- If the documents cannot be collected in person, a notarized power of attorney and official photo identification must be presented.

4.4. Academic ceremony

In order to register for the academic ceremony (sponson), the Master's examination/defense must be passed at least three weeks before the first planned sponson date. Students of Master's programs without a Master's examination by a board of examiners must have submitted all necessary documents for the degree at this time.

4.5. Overview of deadlines

	Deadline	noteworthy
Pre-control of completion of studies (by the academic department)	one semester before registering for the Master's examination/defensive course or before completing the Master's programme	necessary documents, page info degree
Master examination: Registration	at the latest three weeks before the examination date (period begins on the next working day)	Prerequisites for registration, see page Degree Info
Defensio: Registration	at the latest three weeks before the defensive date (period begins on the day of registration)	valid guidelines for the defensio of a MA at the University of Natural Resources and Life Sciences, Vienna Form "Registration for Defensio", see page information about graduation
Final documents	takes place within the statutory period of four weeks	Presentation of the documents on collection (see final documents)
Academic celebration: Registration	Master's examination/Defensio must be successfully completed at ≥ 3 weeks before the 1st planned sponson date	Deadlines, see page Graduation information/"Sponsons and doctorates"

5. Appendix

5.1. Registration Form Master Thesis at the Institute for Transport Studies

Type of work	Note of receipt
Master thesis <input type="checkbox"/>	
PhD <input type="checkbox"/>	

Theme (Working title)

Supervisor

Gühnemann	<input type="checkbox"/>
Hössinger	<input type="checkbox"/>
Stark	<input type="checkbox"/>
Susilo	<input type="checkbox"/>
Hofko ^{e)}	<input type="checkbox"/>
Pfleger ^{e)}	<input type="checkbox"/>
Zibuschka ^{e)}	<input type="checkbox"/>

Co-Supervisor

Berger	<input type="checkbox"/>
Hartwig	<input type="checkbox"/>
Klementsitz	<input type="checkbox"/>
Meschik	<input type="checkbox"/>
Pfaffenbichler	<input type="checkbox"/>
Roider	<input type="checkbox"/>
Zierl ^{e)}	<input type="checkbox"/>

Other Person:

Comment:

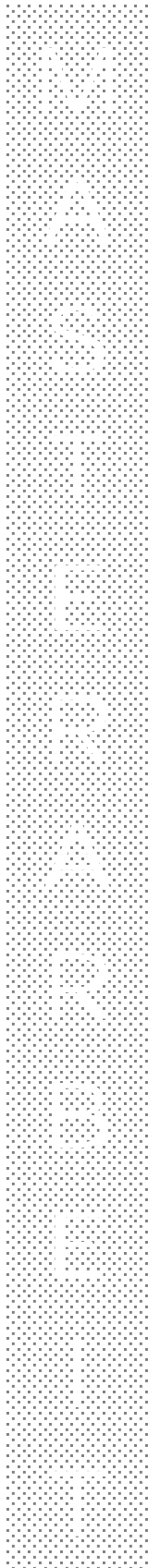
^{e)} extern

Personal information

Matr.-Nr.:	
Studies Nr:	
Last name:	
First name:	
Birthday:	
Place of Birth:	
Tel. 1:	
Tel. 2:	
E-Mail:	
Street:	
PLZ/Place:	

- I have read and accept the statutes of the University of Natural Resources and Life Sciences, Vienna (BOKU), regarding scientific work, in particular point "J. ACTING OF SCIENTIFIC PERFORMANCE" (statutes section III/point J; see appendix).

5.2. Cover page of IVE



Titel, Zeile 1
Titel, Zeile 2
Titel, Zeile 3

Verfasser:

Vorname Name

allfällige akademische Titel oder Standesbezeichnung in Abkürzung (nicht: cand. Ing.)

Masterarbeit für das Fachgebiet
VERKEHRSWESEN

Betreuung:

Vorname Name

o. Univ.Prof. Dipl.-Ing. Dr. techn. oder sonstige

Vorname Name

Univ.Ass. Dipl.-Ing. Dr. techn. oder sonstige



MA-Nr.



5.3. Poster-template

Rotlichtverstöße an signalregelten Schutzwegen auf freier Strecke

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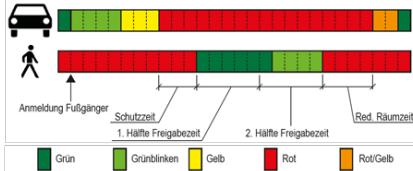
Masterarbeit für das Fachgebiet Verkehrswesen (Nr. 01/2014)

Universität für Bodenkultur Wien
Department für Raum, Landschaft und Infrastruktur
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PROBLEMSTELLUNG

Als Druckknopfampeln werden signalregelte Schutzwegen bezeichnet, bei denen Fußgänger mittels Anmeldetaleaus ihre Grünzeit zum Queren der Fahrbahn anfordern müssen. Trotz der zeitlichen Trennung von Fahrzeugen und Fußgängern kommt es durch Rotlichtmissachtungen zu Konflikten und Unfällen.



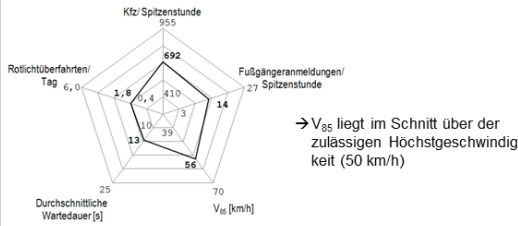
ZIELE

Beantwortung folgender Fragestellungen:

- Wann und von wem werden Rotlichtüberfahrten begangen?
- Wie hoch ist die Geschwindigkeit der Rotlichtfahrer?
- Beeinflusst die Fußgängerfrequenz die Häufigkeit von Rotlichtüberfahrten?
- Welchen Gefährdungen sind Fußgänger tatsächlich ausgesetzt?

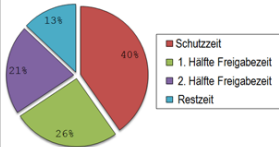
ERGEBNISSE DER ROTLICHTÜBERWACHUNG (n= 490 Rotlichtfahrer)

- Vergleich der neun Druckknopfampeln an Hand wesentlicher Parameter: (von innen nach außen: Minima, Durchschnitt, Maxima)



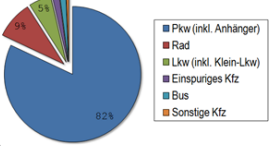
→ V_{85} liegt im Schnitt über der zulässigen Höchstgeschwindigkeit (50 km/h)

- Verteilung der Rotlichtüberfahrten nach der Rotlichtsekunde:



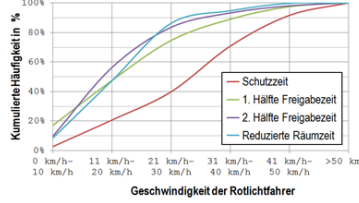
→ Deutlich spätere Rotlichtüberfahrten als an vierstrahligen Knotenpunkten

- Verteilung der Rotlichtüberfahrten nach Fahrzeugarten:



→ Verteilung entspricht der gemessenen Verkehrszusammensetzung

- Geschwindigkeit der Rotlichtfahrer:

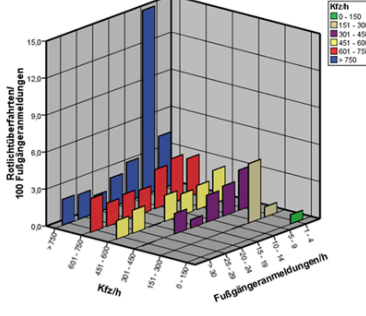


→ Hoher Anteil an „schnellen“ Rotlichtfahrern in den ersten Rotlichtsekunden (Lenker wollen sich das Anhalten ersparen)
→ Ab der 1. Hälfte der Freigabezeit vermutlich ein hoher Anteil an bewussten Rotlichtüberfahrten (Lenker vergewissern sich bei verminderter Geschwindigkeit von „freier Fahrt“ und halten nicht an oder fahren vorzeitig los)

METHODEN

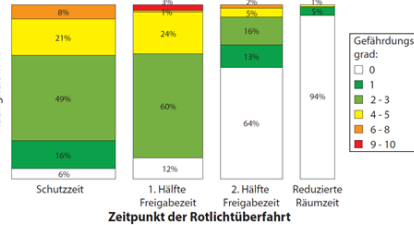
- Literaturrecherche zu Ursachen von Rotlichtverstößen seitens Fußgängern und Fahrzeuglenkern
- Erfassung von Rotlichtfahrern mittels Rotlichtkamera an neun Druckknopfampeln in Niederösterreich
- Analyse der Daten aus der Rotlichtüberwachung (300 Überwachungstage bzw. 490 Rotlichtüberfahrten)
- Interpretation und Ableitung von potenziell wirksamen Maßnahmen

- Einfluss der Fußgängerfrequenz auf die Häufigkeit von Rotlichtüberfahrten:



→ Bei seltenen Fußgängeranmeldungen nehmen Rotlichtüberfahrten zu

- Gefährdung von Fußgängern: (Skala von 0= „überhaupt keine Gefährdung“= 0 bis 10= „sehr hohe Gefährdung“)



→ Höchste Gefährdung in der Schutzzeit und der 1. Hälfte der Freigabezeit
→ Bei jeder dritten Rotlichtüberfahrt wird kein Fußgänger gefährdet

EMPFEHLUNGEN

- Druckknopfampeln nur bei ausreichendem Querungsbedarf anordnen
- Flexible, frequenzabhängige Signalprogramme (Einsatz von Sensortechnik)
- Umrüstung auf LED-Leuchtkörper
- Vermehrter Einsatz von automationsunterstützter Überwachung

