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Technische Universität Dresden  
"Friedrich List" Faculty of Transport and Traffic Sciences

## **Examination Regulations for the consecutive Master's degree program Transportation Economics**

as of 25 May 2021

On the basis of § 34 para. 1 sentence 1 of the Act on the Autonomy of Institutions of Higher Education in the Free State of Saxony in the version published on January 15, 2013 (SächsGVBl. p. 3), Technische Universität Dresden issues the following Examination Regulations as statutes.

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## **Part 1: General regulations**

### **§ 1**

#### **Standard period of study**

The standard period of study for the Master's program in Transportation Economics includes attendance, independent study, the Master's examination and a period of professional practice, if applicable.

### **§ 2**

#### **Examination structure**

The Master's examination consists of module examinations as well as the Master's thesis and the colloquium. A module is concluded by a module examination, which consists of at least one examined assessment. Examined assessments are accomplished throughout the program.

### **§ 3**

#### **Deadlines and dates**

(1) The Master's examination shall be taken within the standard period of study. A Master's examination that has not been taken within four semesters following the standard period of study will be considered as failed. A failed Master's examination can be repeated once within one year. Following the expiration of this deadline, it is deemed as failed again. A second re-take of the examination is only possible at the next available examination date, thereafter the Master's examination is deemed to be irreversibly failed.

(2) Module examinations shall be taken by the end of the semester as stated in the study schedule.

(3) Technische Universität Dresden, through its study regulations and courses offered, ensures that study achievements and examined assessments as well as the Master's thesis and the colloquium can be completed within the specified periods of time. Students will be informed in good time and as is customary at the Faculty about the nature and the number of the required study achievements and examined assessments as well as about the respective deadline; the same holds true for the issuing and submitting of the Master's thesis and the date of the colloquium. For each module examination, students shall also be informed about the respective opportunity to repeat the examination.

(4) During maternity leave, deadlines do not apply and the leave is not counted towards current deadlines. For regulations regarding parental leave, students are referred to § 12 para. 2 of the Enrollment Regulations at Technische Universität Dresden.

### **§ 4**

#### **General admission requirements and admission procedures**

(1) Students can only be admitted to the Master's examination according to § 2 sentence 1 if

1. they are enrolled in the Master's program Transportation Economics at Technische Universität Dresden, and

2. have proven the subject-specific requirements (§ 25), and
3. they have made a declaration regarding para. 4 no. 3 either in writing or recorded in a data processing system.

(2) In order to submit examined assessments, students have to register. Later withdrawal is possible without giving any reason. Procedures and the deadline for registration and withdrawal are specified by the Examination Committee and published at the beginning of each semester as is customary at the Faculty. The same applies to preliminary graded work.

(3) Admission is granted

1. to a module examination on the basis of the first registration for an examined assessment of this very module examination, and
2. to the Master's thesis on the basis of a student's request for issue of the topic, or if § 21 para. 3 sentence 5 applies, upon issue of the topic, and
3. to the colloquium based on the assessment of the Master's thesis with a grade of at least 'sufficient' (4.0).

(4) Admission is denied if

1. the requirements stated in para. 1 or the rules of procedure stated in para. 2 are not met, or
2. the documents are not complete, or
3. the student has already irreversibly failed an examination required for the completion of the Master's program Transportation Economics.

(5) Admissions decisions will be taken by the Examination Committee. The announcement thereof may be public. § 17 para. 4 remains unaffected.

## § 5

### **Types of examined assessments**

(1) Examined assessments are

1. written examinations (*Klausuren*) (§ 6),
2. seminar papers (§ 7),
3. project work (§ 8),
4. oral examinations (§ 9).
5. oral presentations (*Referate*) (§ 10) and/or
6. other examined assessments (§ 11).

In modules that are subject to several examination regulations, synonyms are permitted for examinations with the same content. Written multiple-choice examinations are permitted in justified individual cases by decision of the Examination Committee in accordance with the MC regulations of the "Friedrich List" Faculty of Transport and Traffic Sciences.

(2) Studies and examinations must be completed in English or, if indicated by the module descriptions, in German. If, according to the module description, a module primarily serves to acquire foreign language qualifications, studies and examined assessments may also have to be completed in the respective foreign language if required by the assignment.

(3) If a student proves that, due to extended or permanent physical impairment or chronic illness, they are unable to accomplish an examined assessment or parts thereof in the stipulated

form, the chair of the Examination Committee will approve, upon request, an extended time frame or an equivalent manner for the examined assessment (compensation for disadvantages). For this purpose, the student may be required to submit a medical certificate and, in cases of doubt, an official medical certificate by a public health officer (*Amtsarzt*). The same applies to preliminary graded work.

(4) If a student proves that, due to taking care of their own children until they reach the age of 14 or caring for close relatives, examinations cannot be taken as stipulated, the chair of the Examination Committee, upon request, will approve an equivalent method for taking the examination. Close relatives are children, parents, grandparents, spouses, and civil partners. The chair of the Examination Committee, in consultation with the responsible examiner, will decide, at their due discretion, on how the examination is to be taken. The chair of the Examination Committee shall decide on an appropriate measure to compensate for the disadvantages. Suitable measures to compensate for disadvantages are, for example, extended time allowance, extended breaks, use of other media, use of other examination rooms within the university or another examination date. The same applies to preliminary graded work.

## **§ 6**

### **Written examinations (*Klausuren*)**

(1) Written examinations are intended for students to prove that they are able to resolve tasks and analyze topics drawing on the required fundamental knowledge and using the standard methods of the degree program with time constraints and with limited resources. If written examinations or individual tasks are set in accordance with § 5 para. 1 sentence 3, the student is to demonstrate the knowledge required to achieve the module objective. For this purpose, they must indicate which of the answers presented with the tasks they consider to be correct.

(2) Written examinations that students are required to pass in order to continue their studies shall be marked by two examiners as a general rule, however, in the case of repeat examinations, two examiners are compulsory. The grade is calculated as the average of the individual grades according to § 12 para. 1; whereby only the first decimal point is taken into account, all other decimals are omitted without rounding. In cases pursuant to § 12 para. 3, the assessment shall correspond to the matching individual assessments pursuant to § 12 para. 1 sentence 4; if the individual assessments do not match, § 20 para. 9 sentences 1 and 2 shall apply. The time for assessing the work shall not exceed four weeks.

(3) The duration of the written examinations is specified in the module descriptions and shall be no less than 60 minutes and shall not exceed 240 minutes.

## **§ 7**

### **Seminar papers and other equivalent written papers**

(1) Seminar papers are intended to demonstrate the student's competence in dealing with selected issues on the basis of specialist literature and other sources. Furthermore, they are intended to assess whether students are familiar with the basic techniques of scientific work. Where indicated in the module descriptions, seminar papers also include a demonstration of the student's competence to present and discuss their findings in a coherent manner. Other equivalent written papers, namely term and semester papers, are considered equivalent to seminar papers.

(2) For seminar papers and other equivalent written papers, § 6 para. 2 applies accordingly.

(3) Seminar papers and other equivalent written papers may not exceed a time requirement of 400 hours. The specific scope is determined in each case in the module descriptions. Derived from this, the deadline for submission is to be determined as part of the assignment.

## **§ 8**

### **Project work**

(1) Project work generally demonstrates the ability to work in a team and, in particular, to develop, implement and present concepts. The student shall demonstrate the competence to define goals for an overarching task and to develop interdisciplinary solutions and concepts. Project work also includes a demonstration of the student's competence to present and discuss findings in a coherent manner.

(2) For written project work, § 6 para. 2 shall apply accordingly.

(3) The time required for the project work is specified in each case in the module descriptions and amounts to a maximum of 100 hours. Derived from this, the deadline for submission is to be determined as part of the assignment.

(4) If the project work consists of teamwork, the individual contributions must be clearly identifiable and assessable and must meet the requirements set out in para. 1. If parts of the project work are performed orally, § 9 para. 4 sentence 1 shall apply accordingly.

## **§ 9**

### **Oral examinations**

(1) Oral examinations are intended to demonstrate the student's competence to recognize the interdependences of the examined subject and to be able to place particular issues within these correlations. Furthermore, they are intended to determine whether the student possesses the fundamental knowledge appropriate to the level of their studies.

(2) Oral examinations shall be taken in the presence of at least two examiners (colleague examination) or one examiner and one expert assessor (§ 18). Oral examinations that students are required to pass in order to continue their studies are conducted by two examiners as a general rule, however, in the case of repeat examinations, two examiners are compulsory.

(3) Oral examinations shall run for 15 to 60 minutes. The specific duration is determined in each case in the module descriptions. Oral examinations are conducted as individual examinations, unless a group examination with up to 4 students is stipulated in the module description.

(4) The main points and results of the oral examination shall be recorded in a protocol. The result is to be announced to the student directly after the oral examination.

(5) Students who wish to take the same examination at a later date shall be admitted as listeners if the facilities allow for this, unless the student to be examined objects. The admitted listeners are not entitled to participate in the deliberation and the announcement of the examination results.

## **§ 10**

### **Oral presentations (*Referate*)**

(1) Oral presentations are intended for students to prove their ability to prepare specific academic questions and present them, according to the research task.

(2) § 6 para. 2 shall apply accordingly. The lecturer responsible for the course in which the oral presentation is assigned and, if applicable, presented, shall be one of the examiners. If the oral presentation is held, § 9 para. 4 sentence 1 shall apply accordingly.

(3) The time required for the preparation of the oral presentation is specified in each case in the module descriptions and amounts to a maximum of 30 hours. Derived from this, the deadline for submission or presentation is to be determined as part of the assignment.

## **§ 11**

### **Other examined assessments**

(1) Students shall provide proof of defined learning outcomes through other specifically determined examination forms (other examined assessments) that can be assessed according to equal standards, and are described in the module descriptions including requirements and duration or time frame. If a time scope is given, the resulting deadline shall be specified when assigning the task. Other examined assessments include homework and exercise assignments as well as internship reports.

(2) Other examined assessments pursuant to para. 1 sentence 3 are defined as follows:

1. Term papers and exercise assignments are designed to demonstrate the student's ability to apply the subject matter of a module in solving a series of theoretical or practical tasks, each covering individual aspects.
2. The internship report is a formalized report of the internship activity and its results.

(3) For written other examined assessments, § 6 para. 2 shall apply accordingly.

## **§ 12**

### **Assessment of examined assessments, calculation and weighting of grades, publication of examination results**

(1) Assessments of the individual examined assessments are determined by the responsible examiners. The following grades shall be used:

1 = excellent	= an excellent performance;
2 = good	= a performance considerably exceeding average requirements;
3 = satisfactory	= a performance that meets average requirements;
4 = sufficient	= a performance that meets the requirements despite some inadequacies;
5 = unsatisfactory	= a performance that does not meet the requirements because of grave inadequacies.

For a more differentiated assessment, individual grades can be raised or lowered by 0.3 to obtain intermediate values; whereby the grades 0.7, 4.3, 4.7 and 5.3 are excluded. An individual examined assessment is solely assessed as 'passed' or 'failed' (ungraded examined assessment) if the relevant module description provides an exception for this. Ungraded examined assessments that are assessed as 'passed' do not enter into further grade calculations; ungraded examined assessments

assessed as 'failed' receive the grade 5 (unsatisfactory). They are then included in further grade calculations.

(2) The module grade is calculated as the average of the individual examination grades which may be weighted as specified in the module descriptions. Only the first decimal point is taken into account, all further decimals are removed without rounding. On the basis of the averages, the module grades are:

1.5 and better = excellent

1.6 to 2.5 = good

2.6 to 3.5 = satisfactory

3.6 to 4.0 = sufficient

4.1 and worse = unsatisfactory

If a module examination is not passed due to an examination performance relevant to passing the examination pursuant to § 14 para. 1 sentence 2, the module grade shall be 'unsatisfactory' (5.0).

(3) Module examinations that solely consist of an ungraded examined assessment are assessed as 'passed' or 'failed' in accordance with the grading of the examined assessment (ungraded module examinations). Ungraded module examinations do not enter into further grade calculations.

(4) For the Master's examination, an overall grade is calculated. The final grade of the Master's examination is calculated on the basis of the final grade of the Master's thesis with a 30-fold weighting and the module grades weighted according to the credit points pursuant to § 26 para. 1. The final grade of the Master's thesis is composed of the grade of the Master's thesis with double weight and the grade of the colloquium with single weight. For the overall and final grades, para. 2 sentences 2 and 3 shall apply accordingly. If the performance is outstanding (overall grade of 1.2 or better), the Examination Committee will award the grade 'passed with distinction'.

(5) Additionally, the overall grade of the Master's examination is indicated as a relative grade corresponding to the ECTS grading scale.

(6) Students shall be informed, as is customary at the Faculty, about how examination results are announced.

### § 13

#### **Non-appearance/Non-submission, withdrawal, cheating, violation of rules and regulations**

(1) An examined assessment is deemed to be 'unsatisfactory' (5.0) or 'failed' if a student fails to appear for or withdraws from a compulsory examination without due justification. The same shall apply when an examined assessment is not completed within the specified period of time.

(2) The given reason for non-appearance, non-submission, or withdrawal shall be immediately communicated and justified in writing to the Examination Office. In case of illness, the student normally shall provide a doctor's note and, in cases of doubt, a note from a public health officer (*Amtsarzt*). With regard to deadlines for the first entry into examinations, re-taking of examinations, reasons for non-appearance at examinations and the adherence to submission periods, the illness of a child in need of care who is mainly cared for by the student shall be equivalent to the illness of the student themselves. If the reason is accepted, a new date is set. In this case, already existing examination results shall be considered. Acceptance of the withdrawal or the reason for non-appearance or non-submission is subject to the decision of the Examination Committee.



(3) If a student attempts to manipulate the result of the examination by cheating, e.g. by bringing or using illicit aids, the examination concerned is deemed to be 'unsatisfactory' (5.0) upon detection by the Examination Committee. Ungraded examinations shall be assessed as 'failed' accordingly. A student who is disrupting the normal proceedings of an examination may be excluded from continuing the examination by the respective examiner or invigilator; in this case, the examination is assessed as 'unsatisfactory' (5.0) or 'failed'. In serious cases, the Examination Committee may exclude the student from taking further examinations.

(4) If, during an examination, a student has cheated and this is only detected after the publication of the result, the Examination Committee may change the result of the examination to 'unsatisfactory' (5.0) or 'failed' and subsequently change the module grade according to § 12 para. 2. If the requirements for taking a module examination have not been met and the student was not at fault, this irregularity is rectified by passing the module examination. If the student intentionally and unduly obtained admission to an examination, the Examination Committee may assess the module examination as 'unsatisfactory' (5.0) or 'failed'. In serious cases, the Examination Committee may exclude the student from taking further examinations.

(5) Para. 1 to 4 shall apply accordingly to preliminary graded work, the Master's thesis and the colloquium.

(6) If the student declares in writing to the Examination Office that they wish to waive the completion of an examination, this examination will be considered 'insufficient' (5.0) or 'failed' in the respective examination attempt. The waiver is irrevocable and requires admission pursuant to § 4.

#### **§ 14 Passing and failing**

(1) In order to pass a module examination, the module grade needs to be at least 'sufficient' (4.0) or the ungraded module examination needs to be assessed as 'passed'. If the module examination is passed, the credit points specified for the module in the module descriptions are awarded. In the cases specified by the module descriptions, the passing of the module examination is also dependent on the assessment of individual examined assessments with at least 'sufficient' (4.0).

(2) The Master's examination is passed if the module examinations and the Master's thesis as well as the colloquium have been passed. Master's thesis and colloquium are passed if they have been assessed as at least 'sufficient' (4.0).

(3) A module examination is not passed if the module grade is not at least 'sufficient' (4.0). Master's thesis and colloquium are not passed if they have not been assessed as at least 'sufficient' (4.0) or the ungraded module examination has been assessed as 'not passed'.

(4) A module examination is irreversibly failed if it has not been assessed as at least 'sufficient' (4.0) or if the ungraded module examination is assessed as 'failed' and cannot be re-taken. The Master's thesis and the colloquium are irreversibly failed if they have not been assessed as at least 'sufficient' (4.0) and if they cannot be re-submitted/re-taken.

(5) A Master's examination is failed or irreversibly failed if either one of the module examinations or the Master's thesis or the colloquium have been failed or irreversibly failed. § 3 para. 1 remains unaffected. In the case that a module examination is irreversibly failed in the elective compulsory area, the irreversible failure of the Master's examination is only declared according to § 17 para. 4 if, within one month after the publication of the module examination results, the student

does not change their module or if a change of the module according to § 6 para. 3 of the Study Regulations is no longer possible. If a student has irreversibly failed the Master's examination, the student loses the right to take examinations for all parts of the Master's examination according to § 2 sentence 1.

(6) If a student has failed a module examination, the Master's thesis or the colloquium, the student is informed as to whether, when and to what extent they can re-take or re-submit it.

(7) If a student failed the Master's examination, upon request and upon submission of the relevant proof and the certificate of de-registration (withdrawal from the student registry), the student is provided with a certificate listing the completed examined assessments including the results, as well as those that have not been completed (if this is relevant) showing that the Master's examination has not been passed.

## **§ 15**

### **Re-taking module examinations**

(1) Failed module examinations can be repeated once within one year following the first examination attempt. This period of time begins with the announcement of the first failed attempt of the module examination. Following the expiration of this deadline, the examination is deemed to be failed again.

(2) An examination can only be repeated a second time at the next available examination date. After that, the module examination is deemed to have been failed definitely. It cannot be re-taken again.

(3) The re-take of a failed module examination that consists of several parts entails only those examined assessments that were not assessed as at least 'sufficient' (4.0) or 'passed'. When retaking a failed module examination that includes one or more elective examinations, students are not bound to the previous choice of an examined assessment not graded with at least 'sufficient' (4.0) or with 'passed'.

(4) It is not permitted to re-take a module examination that has already been passed.

(5) Failed attempts at the module examination in the same or in other degree programs are taken into account.

## **§ 16**

### **Recognition of study achievements and examined assessments, periods of study, and qualifications obtained outside a higher education institution**

(1) Studies and examined assessments accomplished at a different institution of higher education are recognized upon request of the student if there are no substantial differences in the acquired skills. Further agreements between Technische Universität Dresden, the German Rectors' Conference, the Standing Conference of the Ministers of Education and Cultural Affairs, as well as agreements ratified by the Federal Republic of Germany shall be observed, if applicable.

(2) Qualifications obtained outside an institution of higher education are recognized upon request of the student if they are deemed to be equivalent. Qualifications are equivalent if their con-

tents, scope and requirements are fundamentally similar to parts of the Master's program Transportation Economics at Technische Universität Dresden. The qualification comparison shall not be schematic, instead it should be considered and assessed in its entirety.

(3) Study achievements and examined assessments in the same degree program accomplished in the Federal Republic of Germany are transferred ex officio.

(4) Study achievements and examined assessments accomplished at a different institution of higher education can be recognized despite substantial differences if, when assessed as a whole, their contents and qualification objectives are equivalent to the intent and purpose of the modules included in this degree program, and they are thus structurally equivalent. The degree certificate shows the achievements accomplished.

(5) If study achievements and examined assessments are recognized or transferred according to para. 1, 3 or 4, or if qualifications obtained outside an institution of higher education are recognized according to para. 2, the respective study periods are ex officio recognized as well. If the grading systems are comparable, grades are transferred and enter into further grading calculations. If the grading systems cannot be compared, a note 'passed' is added and they do not enter into further grading calculations. Recognition is marked as such in the degree certificate.

(6) Recognition is decided by the Examination Committee. The student needs to provide the required documents. After submission, the recognition procedure must not exceed two months. If recognition is denied, § 17 para. 4 sentence 1 shall apply.

## **§ 17**

### **Examination Committee**

(1) An Examination Committee for the Master's program Transportation Economics is established that will conduct and organize examinations and take on the tasks assigned in the Examination Regulations. The Examination Committee consists of three lecturers, one research and teaching associate, and one student. With the exception of the student, the term of office shall be three years. The term of office of the student members shall be one year.

(2) The chairperson, their deputy, and the other members and their deputies are appointed by the Faculty Council of the "Friedrich List" Faculty of Transport and Traffic Sciences; student members are appointed upon recommendation by the Faculty Students' Council.

(3) The Examination Committee ensures that the stipulations of the Examination Regulations are adhered to. The Committee reports on a regular basis about the development of examination and study periods including the actual time spent on the Master's thesis, as well as about the distribution of the module and overall grades. The Examination Committee offers suggestions to reform the Examination Regulations, the Study Regulations, the Module Descriptions, and the Study Schedule.

(4) Decisions that adversely affect students must be announced to them in writing, including a justification and information about legal appeal options. The Examination Committee as the examination authority rules on appeals against such decisions in due course, and communicates its decisions concerning the appeal.

(5) The chairperson normally manages the Examination Committee. The Examination Committee may also delegate individual tasks to the chairperson for independent processing and decision-

making if the student member agrees; a resolution must be passed to this effect. This does not apply to decisions pursuant to para. 4 sentence 2. If any or all of the members of the Examination Committee are reappointed, any delegation shall expire.

(6) The Examination Committee can allow guests without voting rights to attend its meetings. The members of the Examination Committee are entitled to attend any examination and the colloquium.

(7) The members of the Examination Committee and their deputies must abide by the duty of official confidentiality. The chairperson shall oblige any members who are not public service staff to maintain official confidentiality.

(8) On the basis of the decisions of the Examination Committee, the Examination Office organizes the examinations and manages the examination files.

## **§ 18**

### **Examiners and assessors**

(1) The Examination Committee appoints the examiners from amongst university lecturers and other individuals who are authorized to be examiners under Saxon State Law. A person can only be appointed assessor if they have passed the respective Master's examination or at least a comparable examination.

(2) The student may nominate the supervisor for their Master's thesis and the examiners for oral examinations and the colloquium. This suggestion does not bear any entitlement.

(3) For examiners and assessors, § 17 para. 7 shall apply accordingly.

## **§ 19**

### **Purpose of the Master's examination**

Passing the Master's examination concludes the degree program and qualifies the student for professional work. It ensures that students have an overview of the professional contexts, are able to apply academic methods and findings, and have acquired the in-depth knowledge required for entering into the world of work.

## **§ 20**

### **Purpose, issue, submission, assessment and re-submission of the Master's thesis and colloquium**

(1) The purpose of the Master's thesis is to prove that the student is able to analyze issues of the degree program through independent work and within a given period of time, using academic methods.

(2) The Master's thesis can be supervised by a university lecturer or another individual who is authorized to examine according to the Act on the Autonomy of Institutions of Higher Education in the Free State of Saxony, provided that they are working at the "Friedrich List" Faculty of Transport and Traffic Sciences of Technische Universität Dresden. If an extramural person authorized to be

an examiner is to supervise the Master's thesis, the chairperson of the Examination Committee needs to approve such supervision.

(3) The Examination Committee issues the topic of the Master's thesis. The topic and date of issuance shall be documented. Students are allowed to suggest a topic. Upon the request of the student, the Examination Committee issues the topic of the Master's thesis in a timely manner. The Examination Committee issues the topic ex officio at the latest at the beginning of the semester that follows the completion of the last module examination.

(4) The topic can be changed only once within two months of being issued. In case of re-submission of the Master's thesis, changing the topic is only permitted if the student did not use this option previously. If a student has changed their topic, they are immediately issued a new topic in accordance with para. 3 sentences 1 to 4.

(5) The Master's thesis may also be produced as a group thesis if the individual contribution to be assessed as the student's Master's thesis is clearly distinguishable and assessable due to the indication of sections, page numbers or other objective criteria that allow a clear delimitation, and if this contribution fulfills the requirements pursuant to para. 1.

(6) Two typed and bound copies of the Master's thesis written in English shall be submitted to the Examination Office before the deadline, as well as a digital copy on a suitable storage device; the date of submission shall be documented. Upon submission, the student must declare in writing that they have written the thesis - or, in the case of a group thesis, the appropriately marked share of the paper - independently and has not used any sources or aids other than those indicated.

(7) The Master's thesis shall be marked by two examiners separately according to § 12 para. 1 sentences 1 to 3. The supervisor of the Master's thesis shall be one of the examiners. The first examiner must be a member of the Institute of Transport and Economics of the "Friedrich List" Faculty of Transport and Traffic Sciences. The time for marking the thesis shall not exceed four weeks.

(8) The grade for the Master's thesis is calculated as the average of the individual grades given by the two examiners. If the two individual grades given by the examiners differ by more than two grades, the average is only valid if both examiners agree on this. If this is not the case, the Examination Committee arranges for the thesis to be marked by an additional examiner. In this case, the grade of the Master's thesis is calculated as the average of the three individual grades. § 12 para. 2 sentences 2 and 3 shall apply accordingly.

(9) If one of the examiners has assessed the Master's thesis as at least 'sufficient' (4.0) and the other examiner as 'unsatisfactory' (5.0), the Examination Committee arranges for the thesis to be marked by an additional examiner. The additional examiner then decides whether the Master's thesis is passed or failed. If the thesis is then deemed to be passed, the grade of the Master's thesis is calculated as the average of the individual grades given in favor of pass, in the opposite case in favor of fail. § 12 para. 2 sentences 2 and 3 shall apply accordingly.

(10) A failed Master's thesis can be re-submitted once within a one-year period. Following the expiration of this deadline, it is deemed to be failed again. A second re-submission is only possible at the next available examination date, following that date it is deemed to be irreversibly failed. Any further re-submission or a re-submission after already having passed the Master's thesis is not permitted.

(11) The student must elucidate their Master's thesis to the supervisor of the thesis as the examiner and to an assessor in a public colloquium. The colloquium is intended to demonstrate that the student is able to coherently present the results of the Master's thesis and to discuss them with expert knowledge. Additional examiners may be called in. Para. 10 as well as § 9 para. 4 and § 12 para. 1 sentences 1 to 3 shall apply accordingly.

## **§ 21**

### **Examination certificate and Master's degree certificate**

(1) Upon passing the Master's examination, students receive an examination certificate without undue delay, if possible within four weeks. The Master's examination certificate shall consist of the module results according to § 26 para. 1 and the respective credit points and where applicable an indication of the recognized achievements and results, of the topic of the Master's thesis, its grade and supervisor, as well as of the overall grade, and, if applicable, the grade award pursuant to § 12 para. 4. The results of the individual examined assessments as well the examiners are shown on a supplement to the examination certificate. Upon request of the student, the certificate also shows the results of additional modules and the study time spent on the completion of the Master's examination; and the supplement also includes the results of the examined assessments in the additional modules.

(2) Concurrent with receiving the Master's examination certificate, students shall receive the Master's degree certificate with the date identical to that of the examination certificate. It certifies that the Master's degree has been awarded. The Master's degree certificate is signed by the chairperson of the Examination Committee and bears the handwritten or electronic signature of the Rector, alongside the seal of Technische Universität Dresden. Additionally, students are provided with an English translation of both the degree certificate and the examination certificate.

(3) The examination certificate bears the date of completion of the last part of the examination according to § 14 para. 2. It is signed by the chairperson of the Examination Committee and bears the faculty seal of Technische Universität Dresden.

(4) Technische Universität Dresden issues a Diploma Supplement (DS) in accordance with the Diploma Supplement model of the European Union/Council of Europe/UNESCO. For information on the German higher education system (DS para. 8), the text agreed upon by the Conference of the Ministers of Education and Cultural Affairs and the German Rector's Conference shall be used as amended.

## **§ 22**

### **Invalidity of the Master's examination**

(1) If a student has cheated in an examined assessment and if this cheating only is discovered after the examination certificate has been issued, the results of the examined assessment can be amended according to § 13 para. 4 sentence 1. If applicable, the Examination Committee may declare the module examination as 'unsatisfactory' (5.0) and the Master's examination as 'failed'. The same applies to ungraded module examinations, the Master's thesis, and the colloquium.

(2) If the requirements for taking a module examination had not been met and this had not been discovered prior to the issuance of the examination certificate and the student was not at fault, this irregularity is rectified by passing the module examination. If the student intentionally and unduly obtained admission to an examination, the Examination Committee may assess the

module examination as 'unsatisfactory' (5.0) and the Master's examination as 'failed'. The same applies to ungraded module examinations, the Master's thesis, and the colloquium.

(3) The incorrect examination certificate and its translation shall be retracted by the chairperson of the Examination Committee and replaced by a new one, if applicable. If the Master's examination has been declared 'failed' due to cheating, the Master's degree certificate, any translations, and the Diploma Supplement shall be retracted together with the now invalid examination certificate. Following a period of 5 years since the date of the examination certificate, a decision according to para. 1 and para. 2 sentences 2 or 3 is no longer permissible.

### **§ 23**

#### **Access to examination documents**

Within one year after completion of the examinations, the student will be granted access to their written examination papers, the related expert opinions and the examination protocols within a reasonable period of time upon request.

## **Part 2: Subject-specific regulations**

### **§ 24**

#### **Duration, structure and scope of the degree program**

(1) The standard period of study according to § 1 is four semesters.

(2) The program is divided into modules and concluded with the Master's examination. The program may include a minimum of eleven weeks of practical work experience.

(3) By passing the Master's examination, a total of 120 credits are awarded for modules, the Master's thesis, and the colloquium.

### **§ 25**

#### **Subject-specific requirements for the Master's examination**

(1) For the module examinations, study achievements may be required as preliminary graded work. Their number, type and design are to be regulated in the module descriptions, and the number of repeat attempts may be limited as well. Prior to the colloquium, the Master's thesis must have been evaluated with a grade of at least 'sufficient' (4.0).

(2) Passing the modules Decision Support in Transportation Logistics and Management of Public Transport Systems and Services is a prerequisite for taking the module exam of the module Research Task in Computational Logistics. In addition, passing the modules Cost-Benefit Analysis in Transport as well as Cost and Prices in Transport is a prerequisite for taking the module exam of the module Research Task in Transport Policy. In addition, passing the modules Empirical Research in Spatial and Environmental Economics as well as Urban Economics is a prerequisite for taking the module exam of the module Research Task in Spatial and Environmental Economics. In addition, passing the modules Applied Multivariate Statistics as well as Data-Driven Multivariate Statis-

tics is a prerequisite for taking the module exam of the module Research Task in Statistics. In addition, passing the modules Advanced Methods in Data Analytics as well as Application of Data Analytics is a prerequisite for taking the module exam of the module Research Task in Data Analytics in Transportation.

(3) Prior to the topic of the Master's thesis being issued, the modules of the compulsory area must have been passed and a total of at least 75 credit points must have been acquired. Moreover, the selected module from the elective compulsory area of the research tasks module group must have been passed. If subject-specific requirements have been fulfilled in the form of elective compulsory modules, a later re-selection is feasible.

(4) Subject-specific requirements that would be fulfilled by a waiver pursuant to § 13 para. 6 shall be deemed to have been fulfilled if the Examination Committee agrees to this upon application by the student.

## **§ 26**

### **Subject, nature and scope of the Master's examination**

(1) The Master's examination comprises all module examinations of the compulsory area and those of the selected modules of the elective compulsory area as well as the Master's thesis and the colloquium.

(2) Modules of the compulsory area are

1. Operations Research and Logistics
2. Methods in Transport Policy
3. Spatial Economics and the Environment
4. Theoretical Multivariate Statistics
5. Methods in Data Analytics.

(3) Modules of the elective compulsory area are the modules of the module groups specializations, research tasks and supplements according to the appendix. In the specializations module group, the specializations Computational Logistics, Transport Policy, Spatial and Environmental Economics, Statistics and Data Analytics in Transportation are available for selection, of which two specializations must be chosen as stated in the appendix. Depending on the specializations chosen, one module must be selected from the research tasks module group. From the supplement module group, modules amounting to 30 credits must be selected in accordance with the appendix. Of these, a maximum of 10 credits can be earned from the area of foreign language specialized communication and a maximum of 5 credits from the area of additional general qualification.

(4) The required examined assessments in the modules and their type and structure are specified in the module descriptions. The subject matter of the examined assessment consists of the contents and skills acquired in the module, if not stated otherwise in the module descriptions.

(5) Students can take examinations in modules other than those stipulated in para. 1 (additional modules). Optionally, these module examinations can be selected from the full range of modules offered at Technische Universität Dresden or a cooperating institute of higher education after consultation with the person conducting or examining the module. They do not enter into the calculations of a student's workload nor of the overall grade.

## **§ 27**



### **Time permitted for the Master's thesis and duration of the colloquium**

(1) The time permitted for writing the Master's thesis is 20 weeks, and 27 credits are awarded for it. The supervisor shall limit the topic, tasks, and scope of the Master's thesis so that the deadline for the submission of the Master's thesis can be realistically met. In specific cases and upon justified request by the student, the Examination Committee may extend the period by up to a maximum of 4 weeks, the number of credits awarded remains unaffected.

(2) The colloquium shall run for 60 minutes. Three credits are awarded.

### **§ 28 Master's degree**

If the Master's examination is passed, the 'Master of Science' degree (abbr. M.Sc.) is awarded.

### **Part 3: Final provisions**

### **§ 29 Entry into force and publication**

(1) These Examination Regulations shall enter into force on the day following their publication in the Official Announcements of TU Dresden.

(2) They apply to all students enrolled in the Master's program in Transportation Economics in the 2021/2022 winter semester or later.

Issued based on the resolution of the Faculty Board of the "Friedrich List" Faculty of Transport and Traffic Sciences as of February 15, 2021, and the approval of the University Executive Board as of April 6, 2021.

Dresden,

The Rector  
of Technische Universität Dresden

Prof. Dr. Ursula M. Staudinger

**Annex:**  
**Modules of the elective compulsory area**

- A Elective compulsory modules of the specializations module group of the Master's program in Transportation Economics are
- I. in the specialization Computational Logistics
    1. Decision Support in Transportation Logistics, and
    2. Management of Public Transport Systems and Services,
  - II. in the specialization Transport Policy
    1. Cost-Benefit Analysis in Transport, and
    2. Cost and Prices in Transport,
  - III. in the specialization Spatial and Environmental Economics
    1. Empirical Research in Spatial and Environmental Economics, and
    2. Urban Economics,
  - IV. in the specialization Statistics
    1. Applied Multivariate Statistics, and
    2. Data-Driven Multivariate Statistics,
  - V. in the specialization Data Analytics in Transportation
    1. Advanced Methods in Data Analytics, and
    2. Application of Data Analytics,
- of which two specializations must be chosen in accordance with § 26 para. 3.
- B Elective compulsory modules of the research tasks module group of the Master's program in Transportation Economics are
- I. Research Task in Computational Logistics,
  - II. Research Task in Transport Policy,
  - III. Research Task in Spatial and Environmental Economics,
  - IV. Research Task in Statistics, and
  - V. Research Task in Data Analytics in Transportation,
- of which one must be chosen depending on the chosen specialization in accordance with § 26 para. 3.
- C Elective compulsory modules of the supplement module group of the Master's program in Transportation Economics are
- I. In the area of transportation economics
    1. Current Topics in Transport Policy
    2. Cost-Benefit Evaluation of Infrastructure Projects and Traffic Law
    3. Current Topics in Spatial and Environmental Economics
    4. Methods in Transportation Econometrics and Statistics
    5. Traffic Flow Dynamics and Simulation
  - II. In the area of transport engineering
    1. Applied Computer Science
    2. Safeguarding Railway Operation
    3. Railway Signalling
    4. Operational Processes and Operational Planning in Public Passenger Transport
    5. Planning, Construction and Operation of Local Traffic Systems, Special Lectures
    6. Railway Construction
    7. Management of Plant Construction Projects

8. Operational Planning and Operational Management in Public Transport
9. Operation of Urban and Regional Public Transport
10. Planning and Design of Railway Systems
11. Planning of Signalling Facilities
12. Flight Performance and Aerodynamics
13. CNS and Tactical ATM
14. Flight Planning and Aircraft Operations
15. Safety and Airline Management
16. Terminal Operations
17. Helicopter Technology
18. Road Traffic Control Technology
19. Optimal Control Methods and Algorithms for Decision Making Problems
20. Transportation Telematics Networks
21. Theory and Technology of Information Systems
22. Vehicle Communications and Positioning
23. Technology Assessment
24. Design and Operation of Virtual Mobility Systems
25. Transport Ecology
26. Methods of Transport Ecology
27. Road Design
28. Special Problems in Traffic Flows Science
29. Special Problems in Traffic Flow Science and Logistic
30. Evaluation Procedures for Traffic Facilities
31. Transport and Infrastructure Planning, City Planning
32. Geodata Infrastructures
33. Basics in Psychology and Behavioural Economics
34. Advanced Issues in Psychology and Behavioural Economics
35. Basic of Electrical Engineering for Transport Engineering
36. Electric Railways
37. Electric Urban Transport Systems
38. Contact Lines

### III. In the area of business administration (BWL)

1. Supply Management
2. Inventory Management
3. Power System Economics
4. Financing with Venture Capital
5. Relationship-Marketing
6. Technology Management
7. Environment-Oriented Production Planning
8. Sustainability Management and Controlling
9. Ressource Management

### IV. In the area of economics (VWL)

1. Economics of Innovation
2. Theory of Taxation
3. Theory of the Welfare State
4. Resource Economics
5. Game Theory and Behavioural Economics
6. Economics of Migration
7. Computable General Equilibrium Analysis
8. Exchange Rates

9. Economics of European Integration
  10. Environmental Economics
  11. Financial Stability and Regulation of Financial Markets
- V. In the area of business informatics
1. Business Engineering
  2. Enterprise Modeling
  3. ERP-supported Business Processes
  4. IT-Management and IT-Architecture
  5. Corporate Communications
  6. Knowledge Management
  7. Basic Principles of Information Systems
- VI. In the area of foreign language specialized communication
1. Elementary Level Foreign Language (CEFR A2),
  2. Advanced Elementary Level Foreign Language (CEFR A2+),
  3. Extension Module Intermediate Level Foreign Language (CEFR B1),
  4. Extension Module Intermediate Level Foreign Language (CEFR B1+),
  5. Introduction to Professional and Academic Language: Working with Texts and Oral Communication (CEFR B2+),
  6. Introduction to Professional and Academic Language: Written Communication and Application Training plus one Profile Course (CEFR B2+),
  7. Professional Competencies in a Foreign Language (CEFR C1/C2),
  8. Introduction to Professional and Academic Language: Working with Texts and Oral Communication (CEFR C1),
  9. Introduction to Professional and Academic Language: Written Communication and Application Training plus one Profile Course (CEFR C1),
- VII. In the area of additional general qualification  
Additional General Qualifications for Transportation Economists,
- VII. In the area of professional practice  
Vocational Internship,

of which modules amounting to a total of 30 credits must be selected pursuant to § 26 para. 3, whereby modules amounting to a maximum of 10 credits may be taken from the area of foreign language specialized communication and modules amounting to a maximum of 5 credits may be taken from the area of additional general qualification.