

**Examination Regulations**  
**for the Master's degree program Manufacturing Technology (MMT)**  
**at TU Dortmund University**  
**from 10.12.2021**

On the basis of Section 2 (4) in conjunction with Section 64 (1) of the Higher Education Act of the State of North Rhine-Westphalia (*Hochschulgesetz NRW*, HG) of 16 September 2014 (GV.NRW. p.547), as last amended by Article 2 of the Act Amending the Higher Education Act for the Arts and Amending Other Provisions in Higher Education of 25 March 2021 (GV.NRW. p.331), TU Dortmund University has issued the following regulations:

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## I. General

### Section 1

#### Scope of validity of the Master's examination regulations

- (1) These Master's examination regulations apply to the Master's degree program "Manufacturing Technology" at the Department of Mechanical Engineering, TU Dortmund University. They regulate the structures of the Master's degree program according to Section 64 Higher Education Act of the State of North Rhine-Westphalia (*Hochschulgesetz NRW*, HG).
- (2) The module descriptions of the module handbook describe the individual study elements, the course content and the competences to be acquired. They are not part of the examination regulations. They are decided by the responsible Department Councils and have to be reported to the Rectorate.

### Section 2

#### Study objectives and purpose of the examinations

- (1) The combination of scientific, theoretical teaching units and practical study components makes graduates into sought-after specialists for production engineering tasks.
- (2) In the first year of the degree program, in-depth, theoretical specialist knowledge of production technology is taught. Through the elective subjects, the studies can be given a direction corresponding to individual inclinations. In the second year of study, also practical skills are acquired in the specialist laboratory module as well as in the (industrial) project work, which consolidates both the understanding of the theoretical content and the ability to implement it in practice. This should also enable students to compare the manufacturing processes they are already familiar with in industrial practice with the current developments in the individual subject areas. In addition, students learn to organize and successfully implement projects with several participants. Due to the international nature of the degree program, participants additionally gain intercultural experience. The extracurricular qualification in the form of elective modules from the fields of social sciences, humanities or economics enables students to become familiar with methods from other disciplines of science. The skills acquired in rhetoric and language courses can be used in everyday professional life and contribute to the personal development. On the basis of the final Master's thesis, students demonstrate that they are able to work independently on a more complex problem setting. Upon completion of their studies, graduates are able to analyze and optimize existing manufacturing processes, evaluate production systems and develop new processes.
- (3) The consecutive Master's degree program builds on a Bachelor's degree program. With the completion of the Master's degree program, a further professional qualification with the ability to work scientifically is acquired, which usually entitles the student to doctoral studies. By successfully completing the degree program, the student has proven that he or she has in-depth knowledge in the field of manufacturing and production technology.

### Section 3

#### Admission requirements

- (1) Prerequisite for admission to the Master's degree program in Manufacturing Technology is

- a) a Bachelor's degree in Mechanical Engineering from TU Dortmund University or
  - b) another comparable degree in a comparable degree program of at least three years (six semesters) at a state or state-recognized higher education institution within the area of application of the Basic Law for the Federal Republic of Germany or at an institution of higher education outside the area of application of the Basic Law, provided that the admission committee has determined that there are no substantial differences to the degree and degree program mentioned in subsection 1 lit. a.
- (2) The comparability of the degree program according to subsection 1 lit. b to the Bachelor's degree in mechanical engineering is generally given if the degree program has the following subject-related contents:
- a) Coursework in the field of mathematics amounting to at least 15 credit points (*Leistungspunkte*, LP),
  - b) Coursework in the field of mechanics amounting to at least 9 credit points (LP),
  - c) Coursework in the fields of materials engineering, production engineering, design engineering and/or measurement and control engineering amounting to at least 15 credit points (LP) and
  - d) Coursework from areas a) to c) totalling at least 50 credit points (LP).
- (3) The admission committee is responsible for examining the admission requirements. The criterion for determining whether or not there are substantial differences is a comparison of the content, scope and requirements of the achieved degree and degree program with the degree and degree program pursuant to subsection 1 lit. a.
- (4) If the academic degree was acquired abroad, the equivalence agreements approved by the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (*Kultusministerkonferenz*) and the German Rectors' Conference (*Hochschulrektorenkonferenz*), agreements within the framework of university partnerships and the recommendations of the Central Office for Foreign Education (*Zentralstelle für ausländisches Bildungswesen*, ZAB) must be taken into account when examining the materiality of differences.
- (5) In addition to the above-mentioned requirements according to subsection 1, applicants must meet the following criteria:
- a) The overall grade achieved in the prerequisite degree in accordance with Section 1 was at least the grade "good" (1.9) or better or, in the case of a foreign degree, a grade at least equivalent to the grade "good" (1.9) in the respective national grading system.
  - b) As this is an exclusively English-language degree program, sufficient knowledge of the English language is required. If the native language of the applicant is not English and if the academic Bachelor's degree was not acquired in an English-language degree program, sufficient knowledge of English must be proven before admission to the degree program. These language skills are considered to be proven if the applicant submits a certificate of sufficient English language skills (e.g. TOEFL: paper-based: 587; internet-based: 94, IELTS: minimum score: 6.5, Cambridge First Certificate) which corresponds to the competence level B2 of the Common European Framework of Reference for Languages (CEFR). The admission committee decides on the recognition of the certificates. German language skills are not a prerequisite.
- (6) Applicants are strongly encouraged to provide proof of a written aptitude test (e.g. GRE test, *Graduate Record Examination*).
- (7) An admission committee decides on the admission of students. The admission committee consists of two university teachers and one scientific staff member of the Department of Mechanical Engineering. The members are elected by the Department Council separately

in groups for two years. The admissions committee elects the chairperson and the substitute chairperson from its members of the group of university lecturers. The Department Council elects substitutes for the members of the admissions committee, with the exception of the chairperson and his or her substitute. Re-election is permitted. The composition of the admissions committee is announced by the Dean. If the election of the admissions committee or of individual members is declared invalid after taking office, this shall not affect the legal validity of the resolutions and official acts previously passed. The admissions committee may delegate the execution of certain tasks (e.g. urgent decisions) to the chairperson within the scope of current business. This does not apply to decisions on appeals. The admissions committee constitutes a quorum if two of the members from the group of university lecturers are present. The admissions committee decides by simple majority. In the event of a tie, the chairperson has the casting vote. The meetings of the admissions committee are not public. The members of the admissions committee, including their substitutes, are subject to official secrecy. If they are not members of public service, they must be sworn to secrecy by the chairperson of the admissions committee.

- (8) If an applicant does not yet hold the certificate of the Bachelor's degree, the Examination Board may admit this applicant to the chosen Master's degree program if the applicant provides evidence that he or she has successfully passed all examinations of a Bachelor's degree program in accordance with Section 1.

#### **Section 4**

##### **Master's degree**

Based on the successful completion of the Master's examination, the Department of Mechanical Engineering at TU Dortmund University awards the academic degree "Master of Science" ("M. Sc. ").

#### **Section 5**

##### **Credit point system**

- (1) The degree program is structured on the basis of a credit point system that is compatible with the European Credit Transfer System (ECTS).
- (2) Each module is assigned a number of credit points (LP) according to its study effort. One LP in the sense of these examination regulations corresponds to one ECTS point and is awarded for a performance that requires a workload of approximately 30 hours. As a rule, 30 credit points (LP) are to be acquired per semester.
- (3) Credit points (LP) are awarded on the basis of successfully and fully completed modules.

#### **Section 6**

##### **Standard program duration, scope of studies and study structure**

- (1) The standard program duration for the Master's degree program is four semesters (two years) and includes the completion of the Master's thesis.
- (2) The Master's degree program comprises a total of 120 LP, which correspond to approx. 3,600 student working hours and are divided into compulsory and compulsory elective courses. This already includes independent preparation and postprocessing of the courses.

- (3) The degree program is divided into modules, each of which extends over a maximum of two consecutive semesters. Modules are self-contained units of study that are rounded off in terms of content and time and usually comprise at least 5 LP.
- (4) The courses and examinations are offered in English. The extra-curricular qualification module is offered in English and, if available, in other languages.
- (5) The structure of the Master's degree program as well as the modules, including the LP to be acquired and the type of examination (module examination or partial coursework/graded or ungraded), are shown in the appendix to these examination regulations.
- (6) The degree program can only be taken up in the winter semester.

## **Section 7**

### **Admission to courses with limited number of participants**

- (1) The courses of the Master's degree program Manufacturing Technology may be limited in the number of participants for the reasons stated in Section 59 (2) sentence 1 HG.
- (2) The determination of the limitation of the number of participants as well as a maximum number of participants for the respective courses is made by the Department Council of the Department of Mechanical Engineering and shall be announced in an appropriate manner.
- (3) If the number of applicants exceeds the admission capacity, the according teacher can request that the Dean of Studies or a teacher appointed by him or her shall regulate the admission with participation of the Department's Commission for Teaching and Studies. Applicants are to be considered in the following order:
  1. Students who are dependent on attending the course at that time within the context of their chosen degree program.  
  
On the one hand, these are students for whom the course is intended according to the module descriptions of the module handbook and the study plan in the subject semester in which the course is offered; on the other hand, students who are in the last semester of their studies according to the standard program duration or in a later semester and need the course in order to complete their studies within the standard program duration or in a timely manner.
  2. Students who, according to their degree program, are not dependent on attending the course at this point in time within the framework of their chosen degree program, or students who, according to Section 52 (2) HG, are admitted as cross-registered students and who, according to their study plan, are dependent on attending the course at this point of time within the framework of their chosen degree program.
  3. Students who are admitted to the respective course as cross-registered students according to Section 52 (1) HG.
  4. Other students of TU Dortmund University if they meet the requirements for participation in the course.
- (4) Where a selection is required within a group, candidates shall be considered in the following order:
  1. Students with a long-term or permanent disability, chronic illness or with care requirements (care of children living in the household who are mainly to be looked after, care of the spouse, the registered partner or a relative in the direct line or a first-degree relative by birth or marriage, insofar as the latter is in need of care).

2. Students for whom it is mandatory to repeat a course in the according module.
  3. After the remaining criteria have been exhausted, the decision is made by lot.
- (5) The existence of the conditions related to the criteria according to subsection 4 no. 1 and no. 2 shall be asserted to the Dean by the applicants themselves during the application procedure and within the specified and published deadlines.
- (6) The Department of Mechanical Engineering shall ensure, within the limits of the available resources, that the students referred to in subsection 3 no. 1 as a rule suffer no loss of time, or at most a loss of time of one semester, as a result of the limitation of the number of participants.

## **Section 8**

### **Examinations**

- (1) Modules are usually completed with only one examination. The module is usually completed by a graded module examination. Exceptionally, a module can also be successfully completed by cumulative, graded coursework/partial performances. Partial performances are achieved within the framework of individual courses.
- (2) The module examinations and partial performances are carried out during the course of study, as a rule by means of written, oral, or electronic examinations or examinations in electronic communication (written examinations, presentations or seminar contributions, term papers, portfolios, poster or project presentations with or without disputation and practical examinations, etc.). The accordingly responsible examiners can determine other suitable forms of examination with the approval of the Examination Board.
- (3) The type, form and scope of the examinations are specified in the module descriptions or are announced by the examiner no later than two weeks after the start of the course. Upon application via the Examination Board and in justified cases, the form of delivery originally stipulated in the module descriptions of the module handbook may be deviated from for a limited period of time. The dates for written examinations are set by the chairperson of the Examination Board and are to be announced as early as possible, but no later than four weeks before the end of the lecture period. Periods for oral examinations shall be announced at least four weeks before the earliest examination date. Individual dates will be announced one week before the examination.
- (4) Registration for the examinations must be submitted to the Central Examinations Office of TU Dortmund University no later than two weeks before the start of the respective examination. The registration period must be at least two weeks. The lecturer responsible for the according course will provide students with more details on how to register for examinations at the beginning of the course. Cancellation without giving reasons is possible up to one week before the start of the respective examination in the case of oral examinations and up to one day before the start of the respective examination in the case of written examinations. The student is then deemed as not registered for the examination. For examinations which are carried out by another department within the framework of a degree program, different deadlines for registration or cancellation may apply. In the case of specialist laboratories and all courses with restricted participation, the start of the examination is deemed to be the time of the binding declaration of participation to the examiner.
- (5) Access to the courses of a module can be made dependent on certain prerequisites, in particular the successful completion of other modules. The individual access requirements of the modules result from the module descriptions of the module handbook.

- (6) Admission to the individual module examinations or partial performances requires that the examinations designated as prerequisites in the module descriptions of the module handbook/in the appendix to these examination regulations have been successfully passed.
- (7) Written examinations can be carried out in whole or in part using the answer-choice method. Particularly when using this procedure, care must be taken to ensure that the examination questions are based on the content and required knowledge taught in the modules or the corresponding courses and enable reliable examination results. In the case of examinations which are to be assessed by two examiners, the examination questions shall be drawn up jointly by both examiners. When setting examination questions, it must be specified which answers are to be recognized as correct.
- (8) As a rule, the performance of examinations is assessed by one examiner. Examination performances in written or oral examinations with which a degree program is completed, and in repeat examinations for which no compensation option is provided in the event of a definite final failure, are to be assessed by at least two examiners within the meaning of Section 12. In addition, oral examinations shall always be taken by several examiners or by one examiner in the presence of an expert observer as an individual examination or group examination.
- (9) For module examinations, a minimum of one hour and a maximum of four hours should be allowed for written examinations and a minimum of 15 and a maximum of 45 minutes per student for oral examinations. For partial performances, a minimum of 30 minutes and a maximum of three hours must be allowed per student for written examinations and a minimum of 15 to a maximum of 30 minutes per student for oral examinations. In oral group examinations, a total duration of 120 minutes may not be exceeded for module examinations and 90 minutes for partial performances.
- (10) The written examinations are conducted under supervision and are not open to the public. Any approved aids will be announced by the examiners in good time before the examination. The assessment of written examination performances is to be made known to the students in a suitable form after two months at the latest, whereby the requirements of data protection are to be observed.
- (11) In the case of oral examinations, the essential items and results of the oral examination shall be recorded in minutes. The candidate shall be informed of the result of the examination directly after the examination. If an oral examination is taken in front of one examiner, the examiner must hear the observer before the determination of the grade in accordance with Section 16 (1). If an oral examination is taken before two examiners, each examiner shall determine an individual mark for the oral examination performance in accordance with Section 16 (1). The grades for the oral examination performance shall be determined from the arithmetic mean of the two individual grades in accordance with Section 16 (6). Students who wish to take the same examination at a later date shall be admitted as listeners if spatial conditions allow it, unless the student who is to be examined objects. This admission does not extend to the discussion and the announcement of the examination result. In the event of influencing or disrupting the examination, these persons may be excluded as listeners by the examiner.
- (12) In modules that conclude with a module examination, additional coursework may be required in the individual courses. These can be in particular: presentations, homework, certified practical experiments, practical exercises, written or oral performance reviews, lectures or protocols. The requirements of coursework are clearly below the requirements of a module examination or partial performances in terms of form and scope. If the type of coursework is not defined in the module descriptions, it will be announced by the teacher at the beginning of the course. Coursework can either be graded or assessed as "passed" respectively "failed". A prerequisite for participation in the module examination is the

successful completion of all coursework required in this module. Participation in these coursework activities can also be indicated as voluntary.

- (13) The obligation of regular attendance may be stipulated for courses whose learning objective cannot be achieved without the active participation of the students. When regulating compulsory attendance, the constitutional requirement of proportionality must be observed. Decisions on compulsory attendance are taken on the basis of a two-thirds majority of the Department Council. The compulsory attendance is to be indicated in the module description in the module handbook.

### **Section 9 Disadvantage compensation**

- (1) If students provide a medical certificate to make credible that they are unable to take an examination in whole or in part in the intended form, duration or time limit due to a long-term or permanent disability or chronic illness, the chairperson of the Examination Board shall determine in which other form, duration or time limit the examination is to be taken. This also applies to the acquisition of a participation requirement. Furthermore, deviations may be provided with regard to the use of aids or assistants as well as the number of and requirements for the repetition of examination performances. In the case of persons with a disability or chronic illness, this should apply to all examinations to be taken during the degree program, unless a change in the illness or disability is to be expected. In case of doubt, the person or office responsible for questions concerning the interests of disabled students will be involved (e.g. the Department of Disability and Studies within the Center for Higher Education of TU Dortmund University, *DoBuS/zhb*).
- (2) Compensation for disadvantages is granted on a case-by-case basis on application to the Examination Board and must be submitted to the Central Examinations Office. Examination procedures take into account the periods of absence due to the care of children living in the household who are mainly to be looked after, the care of the spouse, the registered partner or a relative in the direct line or first-degree relative by birth or marriage, insofar as the latter is in need of care.

### **Section 10 Maternity protection**

The statutory maternity protection periods as well as the corresponding provisions of the Maternity Protection Act (*Mutterschutzgesetz*, MSchG) apply, cf. Section 64 (2) no.5 and (2a) North Rhine-Westphalia Higher Education Act (HG NRW).

### **Section 11 Repetition of examinations, passing the Master's examination, final failing of an examination**

- (1) The module examinations and the individual partial performances can be repeated twice if they have not been passed or are deemed as failed. If a partial performance has not been passed, only this has to be repeated. For reasons of comparability and fairness, repeat examinations must be carried out in the same form as the first attempt at the examination. Examinations that have been passed cannot be repeated.
- (2) A change of the compulsory elective module is possible as long as none of the examinations associated with the module has been definitively failed. The definite final



failure of compulsory elective modules cannot be compensated by other successfully completed compulsory elective modules.

- (3) Within an academic year, two examination dates are to be offered for the module examination or the partial performances. The according second examination date serves in particular to enable a candidate who has not passed the examination of the first date to take part in the examination on the second date.
- (4) In deviation from subsection 1, the Master's thesis can only be repeated as a whole and then only once and with a new topic. A return of the topic of the Master's thesis in accordance with Section 17 (6) is only permitted if the candidate did not make use of this option when preparing the unsuccessful Master's thesis.
- (5) The Master's examination is passed if all 120 LP from the module examinations and partial performances as well as from the Master's thesis have been acquired.
- (6) The Master's examination as a whole is definitively failed if
  - a) the Master's thesis is failed again after the repetition or is deemed as failed, or
  - b) the student can no longer acquire the required minimum number of LP, or
  - c) a module has been definitively failed.
- (7) If the Master's examination has been definitively failed or if an examination performance is deemed as definitively failed, the chairperson of the Examination Board shall issue a written notification to the student. The notification shall be accompanied by instructions on how to appeal. Upon application, the student will be issued a certificate of the successfully passed examinations; it shall be added that this certificate is not valid for presentation at another university.

## **Section 12**

### **Examination Board**

- (1) For the organization of the examinations and the tasks assigned by these examination regulations, the existing Examination Board of the Department of Mechanical Engineering is entrusted with corresponding tasks.
- (2) The Examination Board consists of seven members, namely four members from the group of university lecturers respectively teachers, one member from the group of academic staff and two members from the group of students. The members are elected by the Department Council separately according to groups for two years, the members from the group of students for one year. The Examination Board elects the chairperson and the substitute chairperson from among its members from the group of university lecturers. The Department Council elects representatives for the members of the Examination Board, with the exception of the chairperson and his/her substitute. A re-election is permitted. The composition of the Examination Board is announced by the Dean. If the election of the Examination Board or individual members is declared invalid after taking office, this does not affect the legal validity of the resolutions and official acts previously adopted.
- (3) The Examination Board ensures that the provisions of the examination regulations are complied with and that the examinations are conducted properly. In particular, it is responsible for deciding on appeals against decisions made in the examination procedure and for the coordination of inter-faculty questions and problem settings. In addition, the Examination Board must report to the Department Council regularly, at least once a year, on the development of examinations and study times. It makes suggestions for the reform of the examination regulations and the curricula. The Examination Board may delegate the following tasks to the chairperson: questions of recognition, urgent decisions,

appeals/complaints, appointment of examiners. Decisions on appeals and the duty to report to the Department Council cannot be delegated to the chairperson of the Examination Board.

- (4) The Examination Board has a quorum if, in addition to the chairperson or the substitute chairperson and two other members from the group of university teachers, at least two other members with voting rights are present. The Examination Board decides by simple majority. In the event of a tie, the chairperson has the casting vote. The student members do not participate in pedagogical-scientific decisions. Such decisions include, in particular, the assessment, the recognition of achievements, the setting of examination tasks and the appointment of examiners and observers.
- (5) The members of the Examination Board have the right to attend the taking of the examinations.
- (6) The meetings of the Examination Board are not public. The members of the Examination Board, including their substitutes, the examiners and the observers are subject to the obligation of discretion. If they are not employed in public service, they must be sworn to secrecy by the chairperson of the Examination Board.
- (7) The Examination Board uses the administrative assistance of the Central Examinations Office of TU Dortmund University in the performance of its duties.

### **Section 13**

#### **Examiners and observers**

- (1) The Examination Board appoints the examiners and the observers in accordance with the legal requirements. It may delegate the appointment to the chairperson of the Examination Board. Teachers of TU Dortmund University as well as other persons authorized to examine within the meaning of Section 65 (1) HG may be appointed as examiners. As examiner or observer may be appointed who has acquired at least the qualification to be determined by the examination or a comparable qualification.
- (2) The examiners are independent in their examination activities.
- (3) Students can propose examiners for the Master's thesis. The suggestions should be taken into consideration as far as possible. However, these suggestions do not constitute a legal claim.

### **Section 14**

#### **Recognition of examination achievements, placement in higher program semesters**

For the recognition of examination achievements and the classification into higher program semesters, the currently valid Recognition Regulations of TU Dortmund University for examination achievements in all Bachelor's and Master's degree programs apply.

### **Section 15**

#### **Absence, withdrawal, deception and violation of regulations**

- (1) An examination is assessed as "insufficient" (5.0) or "failed" if the candidate fails to appear at an examination date without good reason or if he or she withdraws from the examination after it has begun without good reason. The same applies if a written examination performance is not completed within the specified processing time.
- (2) The reasons asserted for the withdrawal or failure to attend must be notified in writing without delay to the Examination Board and must be made credible. In the case of illness

of the candidate or of a child who is predominantly to be cared for by the candidate, the submission of a medical certificate in German is required. In the case of illness of the candidate, the medical certificate must prove the inability to take the examination. In the case of a subsequent withdrawal from an examination that has been taken, the medical certificate must show that the impairment of performance at the examination was not apparent to the student for health reasons and that there was no reasonable cause to doubt the student's ability to perform. If the Examination Board does not recognize the reasons for the withdrawal or failure, the candidate will be informed of this decision in writing.

- (3) If an examination performance is influenced by deception or cheating (e.g. use of unauthorized aids, adoption of text passages without reproduction as a quotation, copying, etc.), this examination is deemed as "insufficient" (5.0) or "failed". This also applies to attempts at deception. If during an examination an attempt at deception or deception within the meaning of sentence 1 is detected by the examination supervisor, the supervisor shall record the attempt at deception or the deception in writing. The decision as to whether there has been an attempt at deception or an act of deception and whether the examination is therefore deemed as "insufficient" (5.0) or "failed" is made by the respective examiner. A candidate who disrupts the orderly conduct of the examination may, as a rule after a warning, be excluded from continuing the examination by the respective examiner or the supervisor. In this case, the examination in question shall be deemed as "insufficient" (5.0) or "failed". The respective reasons for the decision are to be recorded. In serious cases of deception or disruption, the Examination Board may exclude the candidate from taking further examinations.
- (4) In the case of module examinations or partial performances, the Examination Board may demand a written declaration from the candidate that he or she has written the work independently - in the case of group work, an appropriately marked part of the work - and has not used any sources or aids other than those stated and has marked verbatim and analogous quotations. Section 17 (9) remains unaffected.
- (1) The candidate can demand within a period of 14 days that decisions according to subsection 3 are reviewed by the Examination Board. Incriminating decisions are to be communicated to the students in writing without delay, reasons are to be given and instructions on the right to appeal are to be included. Prior to the decision, the students must be given the opportunity and right to a hearing.

## **II Master's examination**

### **Section 16**

#### **Admission to the Master's examination**

- (1) Upon enrolment in the Master's degree program in Manufacturing Technology at TU Dortmund University or upon admission as a cross-registered student according to Section 52 (2) HG, a student is considered as admitted to the examinations of this degree program, unless enrolment or admission is to be refused in accordance with subsection 2.
- (2) Enrolment or admission is to be refused if
  - a) the candidate has definitively failed an examination required by these examination regulations in the Master's degree program Manufacturing Technology at TU Dortmund University or in another degree program which has a considerable relation in content to this degree program, or

- b) the candidate, after having taken the examination in one of the above-mentioned degree programs, has not yet received a final and legally binding decision on the definite failure due to a subsequent challenge of the examination notice.

## Section 17

### Scope of Master's examination

- (1) The Master's examination consists of course-related examinations during the degree program in which a total of 90 LP must be acquired. A further 30 LP are to be acquired through the Master's thesis.
- (2) The appendix shows the modules to be studied and the LP assigned to each of them.

## Section 18

### Evaluation of course-related examination performances, acquisition of credit points, calculation of grades

- (1) The grades for the examinations and partial performances are determined by the respective examiners. The following grades are to be used for the assessment:

1 = <i>very good</i>	=	an excellent performance,
2 = <i>good</i>	=	a performance significantly above the average requirements,
3 = <i>satisfactory</i>	=	a performance that meets average requirements,
4 = <i>sufficient</i>	=	a performance which, despite its deficits, still meets the requirements,
5 = <i>insufficient</i>	=	a performance that no longer meets the requirements due to significant deficits.

For a differentiated consideration of the course-related examinations, the grades can be reduced or increased by 0.3; the grades 0.7, 4.3, 4.7 and 5.3 are excluded.

- (2) In consultation with the Examination Board, examination performances which are not taken into account in the overall grade can be evaluated either according to the grading scale as described in subsection 1 or according to the following simplified scale:

passed =	a performance that at least meets the requirements,
failed =	a performance that no longer meets the requirements due to substantial deficits.
- (3) The number of LP assigned to the respective module is acquired if the module has been assessed with at least "sufficient" (4.0) or "passed". Each partial performance must have been evaluated with at least "passed" or "sufficient" (4.0).
- (4) A written examination which has been carried out exclusively by means of the answer-choice method is deemed as passed if
  - a) 60 % of the total number of points to be obtained has been achieved, or
  - b) the achieved score does not fall below the average performance of the candidates who took part in the examination by more than 22 %.
- (5) If the candidate has achieved the minimum score in accordance with subsection 3 and has thus passed the examination, the grade shall be as follows:

- 1 = “*very good*”, if he or she has achieved at least 75 %,
- 2 = “*good*”, if he or she has at least 50 % but less than 75 %,
- 3 = “*satisfactory*”, if he or she has achieved at least 25 % but less than 50 %,
- 4 = “*sufficient*”, if he or she has no or less than 25 %

of the points to be obtained in excess of the minimum score for passing.

- (6) If a written examination is only partly carried out in the answer-choice method, the tasks in the answer-choice method will be assessed in accordance with subsections 4 and 5. The remaining tasks will be assessed according to the usual procedure for them. The grade of the examination performance is determined from both assessments, taking into account the proportions of the total number of points to be achieved in each case.
- (7) Subsections 4 to 6 shall not apply if the assessment of the examination is carried out by examiners within the meaning of Section 13.
- (8) If the module is completed by a module examination, this grade is also the module grade. In the case of partial performances, the module grade is calculated from the arithmetic mean of the non-rounded grades of the partial performances taken within the framework of the respective module, weighted with the corresponding LP.

The module grades are in words:

with an average up to 1,5	= <i>very good</i> ,
with an average value above 1.5 to 2.5	= <i>good</i> ,
with an average score above 2.5 to 3.5	= <i>satisfactory</i> ,
with an average score above 3.5 to 4.0	= <i>sufficient</i> ,
with an average score above 4.0	= <i>insufficient</i> .

When calculating module grades, only the first decimal place after the decimal point is taken into account; all other decimal places are deleted without rounding.

- (9) In individual modules it can occur that the total number of added credit points (LP) of the individual partial performances is higher than the number of LP of the module specified in the appendix and in the module descriptions of the module handbook. In this case, the module grade is calculated as described above from the arithmetic mean of the individual grades weighted with the respective LP. When calculating the overall grade, the module is weighted with the LP specified in the appendix.
- (10) The module descriptions of the module handbook can provide for voluntary coursework for individual modules. In this case, upon application by the student and at the discretion of the examiner, up to three voluntary semester-accompanying items of coursework can be taken into account in the determination of the module grade beyond the module examination, provided that the module is passed with at least "sufficient" (4.0). The consideration of the voluntary semester-accompanying coursework may only lead to an improvement of the module grade of a maximum of 0.7 and at best to the grade of 1.0.
- (11) The overall grade of the Master's examination is calculated from the arithmetic mean of the module grades formed according to subsection 6 and the grade of the Master's thesis, whereby the individual module grades and the grade of the Master's thesis are weighted with the respective number of LP. If more compulsory elective modules are completed than required, the modules with the lowest grades are not to be taken into account for the Master's examination, taking into account the minimum requirements stipulated in these examination regulations. In the case of equal grades, the modules which were completed later shall not be taken into account. Other considerations are possible upon application by the candidate. Subsection 6 applies accordingly.

- (12) The overall grade is also shown in the form of a degree according to the European Credit Transfer System (ECTS). In addition to this, ECTS grades can be indicated for all graded examinations. A corresponding resolution of the Examination Board is required for this.

The degrees according to ECTS are indicated as follows:

A = usually the approximately top 10% of successful students;

B = usually the next approximately 25% of successful students;

C = usually the next approximately 30% of successful students;

D = usually the next approximately 25% of successful students;

E = usually the next approximately 10% of successful students.

- (13) The formation of the ECTS grades is basically done by comparing the cohorts of the last six semesters. If this group is smaller than 50 persons, the reference group is to be determined from the last 10 semesters. In principle, the current semester is not to be taken into account in the formation of the ECTS grades. As long as no statistical data are available for the calculation of a relative evaluation, no ECTS grades are indicated. For reasons of legally secure awarding, a decision of the Examination Board may waive the reporting of ECTS grades. Appropriate notes appear in the final document. The composition of the comparison group shall be differentiated according to the degree and the degree program. In addition, in objectively justified cases, a different composition of the comparison group can take place. This requires a corresponding decision by the Examination Board.

- (14) Instead of the overall grade "very good", the overall grade "passed with distinction" is awarded if the Master's thesis is graded with at least 1.3 and the LP-weighted average of all other module grades is less than 1.3.

## Section 19

### Master's thesis

- (1) The Master's thesis should demonstrate that the candidate is able to work independently on a task/problem setting using scientific methods within a given period of time.
- (2) The Master's thesis can be taken up after the acquisition of 70 LP from completed modules according to Section 5 (3) in the Master's degree program Manufacturing Technology. 30 LP are acquired through the Master's thesis.
- (3) The Master's thesis is written in English.
- (4) The Master's thesis can be issued and supervised by any university teacher and any university lecturer with post-doctoral lecture qualification (i.e. *Habilitation*) in the subject who is active in research and teaching and belongs to the Department of Mechanical Engineering at TU Dortmund University, the Faculty of Mechanical Engineering at Ruhr-University Bochum or the Teaching Unit Mechanical Engineering at the Faculty of Engineering, University of Duisburg-Essen. If the Master's thesis is to be carried out in another institution of the university or in an institution outside the university, this requires the approval of the chairperson of the Examination Board. Other persons who meet the requirements of Section 65 (1) HG may, with the consent of the Examination Board, issue and supervise the Master's thesis. In this case, a supervisor must be a university teacher in a subject area corresponding to the topic of the thesis.
- (5) The topic of the Master's thesis should be chosen close to industry and must include the subject area of production engineering. The topic is issued at the request of the candidate via the chairperson of the Examination Board; the time of issue is to be recorded in writing. The candidate may make suggestions in the application regarding the supervisor and the

topic. If a candidate is unable to name a supervisor, the chairperson of the Examination Board shall ensure that the student receives a topic for the Master's thesis and a supervisor.

- (6) The Master's thesis must always be written independently as an individual piece of work. However, this does not preclude that the topic of the Master's thesis can be worked on within a workgroup. In this case, it must be ensured that the contribution of the individual that is to be assessed as examination performance is clearly distinguishable and assessable according to objective criteria and fulfils the requirements according to subsection 1. The number of pages specified in the module handbook must adequately exceed the requirements of an individual thesis.
- (7) The processing time for the Master's thesis is 24 weeks and begins with the issue of the topic. The topic and the assignment must be such that the thesis can be completed within this period. Upon justified application by the candidate, the chairperson of the Examination Board may, in agreement with the supervisor, exceptionally grant an extension of the processing time by up to four weeks. An application for an extension must be submitted to the Examination Board at least 14 days before the end of the processing period. In the case of illness, the deadline for submission can be extended by a maximum of 12 weeks. A medical certificate is required for this purpose. The extension corresponds to the period of illness. If the period of illness exceeds the deadline, the student can work on a new topic without recognition of an examination attempt.
- (8) The topic of the Master's thesis can only be returned once and only within the first four weeks; the Master's thesis is then considered not to have been started.
- (9) The scope of the Master's thesis can be found in the module handbook.
- (10) When handing in the Master's thesis, the candidate must declare in lieu of oath that he or she has written the thesis independently and has not used any sources or aids other than those indicated, and that he or she has indicated verbatim and analogous quotations. Unpublished contributions must also be included in the list of sources. For the affidavit, a standardized form of the Central Examinations Office of TU Dortmund University is to be used and, when submitting the Master's thesis, it is to be signed and included as an integral part of the Master's thesis or, in accordance with the digital submission procedure pursuant to Section 20 (1), uploaded together with the thesis as one file.
- (11) The Master's thesis includes an oral examination with a presentation of the work carried out and the results achieved. The oral examination usually lasts 30 minutes per candidate. The oral examination is assessed by two examiners who are usually also the examiners of the Master's thesis. The date on which the oral examination takes place must be communicated to the Central Examinations Office of TU Dortmund University in good time.

## **Section 20**

### **Submission and assessment of Master's thesis**

- (1) For the submission of the Master's thesis, the provisions of the Regulations for the Submission of Theses (Bachelor's/Master's) of TU Dortmund University apply in their currently valid version. If the uploading of individual theses or parts of theses is not suitable for technical reasons and/or if there is a contractual agreement with third parties that excludes the publication of theses or parts of theses, the previous analog procedure for the submission of theses according to subsection 2 shall apply by decision of the Examination Board.
- (2) In the analog procedure, the Master's thesis is to be submitted to the Dean's Office of the Department of Mechanical Engineering in due time in two hardback copies and additionally in an electronic version that can be used for a software product for plagiarism

detection. The date of submission is to be recorded in writing. In the case of postal delivery, the date of the postmark is valid. If the Master's thesis is not handed in on time, it is assessed as "insufficient" (5.0).

- (3) The Master's thesis is to be assessed and evaluated by two examiners. One of the examiners should be the supervisor of the thesis (first assessor). The second examiner (second assessor) is appointed by the chairperson of the Examination Board.
- (4) The individual assessment is to be made in accordance with Section 16 and justified in writing. The grade of the Master's thesis according to Section 16 is formed from the arithmetic mean of the individual assessments, provided that the difference is not more than 2.0. If the difference is more than 2.0 or if only one examiner assesses the Master's thesis as "sufficient" (4.0), the Examination Board shall appoint a third examiner to assess the Master's thesis. In this case, the grade of the Master's thesis is formed from the arithmetic mean of the two better grades. However, the Master's thesis can only be assessed as "sufficient" (4.0) or better if at least two grades are "sufficient" (4.0) or better. Section 16 (6) applies accordingly.
- (5) The assessment of the Master's thesis must be communicated to the student no later than six weeks after the submission.
- (6) The overall grade for the Master's thesis is composed of the average grade of the assessments with a weighting of 0.8 and the grade for the oral examination with a weighting of 0.2.

## **Section 21**

### **Additional qualifications**

- (1) The student may take examinations in modules other than those prescribed before passing or failing the Master's examination. No LP can be acquired with these examination performances. The examination conditions of the concerned department apply.
- (2) Additional qualifications are not included in the determination of the final cumulative grade. These examination achievements will be included in the Transcript of Records at the request of the student.

## **Section 22**

### **Master's certificate, documents for a change of university**

- (1) If the candidate has passed the Master's examination, a certificate will be issued to him or her after notification of the passing of the Master's examination to the Central Examinations Office, usually within 6 weeks. The certificate bears the date of the day on which the last examination performance was achieved. The final cumulative grade of the Master's examination, including the ECTS grade according to Section 16 (8), the topic and grade of the Master's thesis, the modules and module grades as well as the number of LP acquired in the individual modules are to be included in the certificate.
- (2) A Diploma Supplement is attached to the certificate. It describes in particular the essential contents of the degree, the course of studies, the competences acquired with the degree and the awarding university. The Diploma Supplement is issued in German and English. Furthermore, an overview of the achievements (Transcript of Records) is attached to the certificate.
- (3) At the candidate's request, additional achievements that have not been included in the module and in the final cumulative grade are listed on the Transcript of Records.



- (4) The candidate may request that even before completion of the Master's examination, a certificate of the examination achievements (Transcript of Records) be issued, which contains a list of the successfully completed modules with the acquired LP and examination achievements and the grades according to Section 16 (1).
- (5) The certificate is signed by the chairperson of the Examination Board and bears the seal of the Department of Mechanical Engineering.
- (6) The certificate and the further documents are issued to the candidate in German and in English.

### **Section 23**

#### **Master's Diploma**

- (1) The candidate is issued with a Master's Diploma in German and English with the date of the certificate. This certifies the awarding of the academic degree in accordance with Section 4. The degree program of the graduate shall be stated in the Master's Diploma.
- (2) The Master's Diploma is signed by the Dean of the Department of Mechanical Engineering and the chairperson of the Examination Board and bears the seal of the Department of Mechanical Engineering.

### **III. Final provisions**

#### **Section 24**

##### **Invalidity of examination results and withdrawal of the Master's degree**

- (1) If the candidate has cheated in an examination and this fact only becomes known after the certificate has been issued, the Examination Board may subsequently correct the grades for those examination performances in which the candidate cheated and declare the examination wholly or partially failed.
- (2) If the requirements for admission to an examination were not fulfilled without the candidate's intention to deceive and if this fact only becomes known after the certificate has been issued, this defect is remedied by the passing of the examination. If the candidate has intentionally obtained admission unlawfully, the Examination Board decides on the legal consequences in accordance with the Administrative Procedure Act NRW (*Verwaltungsverfahrensgesetz für das Land Nordrhein-Westfalen, VwVfG NRW*).
- (3) Before a decision is taken pursuant to subsections 1 and 2, the concerned person shall be given the opportunity to make his or her views known orally or in writing.
- (4) In the event of a decision in accordance with subsection 1 or subsection 2 sentence 2, the incorrect examination certificate shall be withdrawn and, if necessary, a new one issued. A decision in accordance with subsection 1 or subsection 2 sentence 2 is excluded after a period of five years after the certificate has been issued.
- (5) The Master's degree is revoked and the Master's Diploma is to be withdrawn if it is subsequently found that it was acquired by deception or if essential requirements for the awarding were erroneously considered to have been met. The Department Council of the Department of Mechanical Engineering decides on the revocation.

## **Section 25**

### **Viewing of examination records**

- (1) After the announcement of an examination result, a viewing of the examination documents will be granted. The time and place of the viewing is determined by the examiners and announced in a suitable form at the latest when the examination results are announced. Copies or other reproductions true to the original may be made during the inspection. The use of copies and other reproductions of the examination are only permitted for the personal use with the purpose of the examination viewing. In particular, the publication, duplication, distribution and any kind of exploitation as well as the transfer to third parties is not permitted. In case of violations, considerable legal consequences are to be expected.
- (2) Upon request, students are granted access to the examiners' assessments of the according examinations and to the examination protocols of the oral examinations. The application must be submitted to the chairperson of the Examination Board within three months after the announcement of the examination result. The chairperson of the Examination Board determines the place and time of the viewing.

## **Section 26**

### **Scope of application, entry into force and publication**

- (1) These examination regulations apply to all students who have been enrolled in the Master's degree program Manufacturing Technology at TU Dortmund University for the first time from the Winter semester 2021/2022 onwards.
- (2) From the Winter semester 2022/2023 onwards, these examination regulations in their currently valid version will apply to all students enrolled in the Master's degree program Manufacturing Technology, unless new examination regulations for this Master's degree program at TU Dortmund University have already come into force.
- (3) For students who have been enrolled in the Master's degree program Manufacturing Technology at TU Dortmund University before the Winter semester 2021/2022, the regulations of Section 9 (3) and (6) of the examination regulations for the Master's degree program Manufacturing Technology (MMT) at TU Dortmund University of 26 January 2016 (AM 4/2016) continue to apply up to and including the Winter semester 2024/2025.
- (4) Students who have already been enrolled in the Master's degree program before the Winter semester 2021/2022 when these examination regulations come into force, can apply to the Examination Board to be examined according to these examination regulations. The application is irrevocable. Failed attempts and achievements will be recognized.
- (5) These examination regulations are published in the Official Communications of TU Dortmund University and will come into force on 1 October 2021.
- (6) The regulations of Sections 8 (2), 11 (1), 12 (2), 20 (1) and (2) as well as Section 25 apply to all students enrolled in the Master's degree program Manufacturing Technology.

Issued on the basis of the resolutions of the Department Council of the Department of Mechanical Engineering of 24 November 2021 and the Rectorate of TU Dortmund University of 24 November 2021.

**Note**

Attention is drawn to the fact that, pursuant to Section 12 (5) of the Higher Education Act of the State of North Rhine-Westphalia (*Hochschulgesetz*, HG NRW), a violation of procedural or formal requirements of the university's regulatory or other autonomous law can no longer be asserted after the expiry of one year from the date of this announcement, unless

1. the regulations have not been duly published,
2. the Rectorate has previously objected to the decision of the committee adopting the regulations,
3. the formal or procedural fault has been notified to the university in advance and the violated legal provision and the fact giving rise to the fault have been indicated, or
4. the legal consequence of the exclusion of the right to complain was not pointed out when the regulations were publicly announced.

Dortmund, 10.12.2021

The President  
of TU Dortmund University

Professor Dr. Manfred Bayer

## Module overview of the Master's degree program Manufacturing Technology

### Compulsory modules

<i>No.</i>	<i>Credit points (LP)</i>	<i>Graded module examination/ Partial performances</i>	<i>Module name</i>
1	10	2 partial performances	Machining Technology <i>Spanende Fertigungstechnik</i>
2	10	2 partial performances	Materials Technology <i>Werkstofftechnologie</i>
3	10	2 partial performances	Forming Technology <i>Umformtechnik</i>
11	10	1 module examination / partial performances	Laboratory Work <i>Laborarbeit</i>
12	10	1 module examination	Scientific Project Work <i>Projektarbeit</i>
13	10	1 module examination / partial performances	Interdisciplinary Qualification <i>Außerfachliche Kompetenz</i>
14	30	2 partial performances	Master's Thesis <i>Masterarbeit</i>

### Compulsory elective modules

Compulsory elective modules must be taken amounting to 30 LP. The compulsory elective modules are shown in the module descriptions of the module handbook.