

Examination regulations for the Diploma degree programme in Mechanical Engineering

From 17 May 2019

On the basis of § 34 paragraph 1 sentence 1 of the Saxon Higher Education Freedom Act (Sächsisches Hochschulfreiheitsgesetz) in the version of the announcement of 15 January 2013 (SächsGVBl. p. 3), Technische Universität Dresden enacts the following examination regulations as statutes.

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Section 1: General provisions

§ 1

Standard period of study and forms of implementation

(1) The standard period of study for the Diploma degree programme in Mechanical Engineering includes attendance, self-study, supervised practical periods and the Diploma examination.

(2) The degree programme can be completed both as a face-to-face study programme and as a distance learning programme.

§ 2

Examination structure

The Diploma examination consists of module examinations as well as the Diploma thesis and the colloquium. A module examination concludes a module and consists of at least one examination. The examinations are taken during the course of study.

§ 3

Deadlines and dates

(1) The Diploma examination shall be taken within the standard period of study. A Diploma examination which has not been taken within four semesters after completion of the standard period of study shall be deemed to have been failed. A failed Diploma examination may be repeated once within one year. After expiry of this period, it shall be deemed to have been failed again. A second repeat examination is only possible at the next possible examination date, after which the Diploma examination is deemed to have been definitively failed.

(2) Module examinations shall be taken by the end of the respective semester specified by the study schedule.

(3) The Technische Universität Dresden shall ensure through the study regulations and the courses offered that study and examination achievements as well as the Diploma thesis and the colloquium can be taken within the set periods of time. The students shall be informed in good time, as is customary in the faculty, both about the type and number of study and examination achievements to be taken and about the dates on which they are to be taken, as well as about the submission and submission date of the Diploma thesis and the date of the colloquium. The students shall also be informed of the possibility of repeating each module examination.

(4) During maternity leave, no time limit begins to run and it is not counted towards current time limits. With regard to taking parental leave, reference is made to § 12 Paragraph 2 of the Matriculation Regulations.

§ 4

General admission requirements and admission procedure

(1) Only those persons may be admitted to examinations for the Diploma examination pursuant to § 2 sentence 1 who

1. is enrolled in the Diploma degree programme in Mechanical Engineering at the Technische Universität Dresden and
2. has demonstrated the professional requirements (§ 26) and
3. has made a data-processing recorded declaration in respect of paragraph 4 number 3.

(2) The student must register for the performance of examinations. The student has the right to withdraw from examinations from the first to fourth semesters of the study plan up to a period of five working days, and from examinations from the fifth to ninth semesters of the study plan up to a period of three working days before an examination date without giving reasons. The form and deadline for registration as well as the form of deregistration are determined by the Examination Board and announced at the beginning of each semester in the usual manner of the faculty. The same applies to preliminary examinations and bonus achievements.

(3) The admission shall take place

1. to a module examination due to the first registration for an examination performance of this module examination,
2. for the Diploma thesis on the basis of the student's application for the issue of the topic or, in the case of § 21 paragraph 3 sentence 5, with the issue of the topic and
3. to the colloquium based on the assessment of the Diploma thesis with a grade of at least "sufficient" (4.0).

(4) Admission shall be refused if

1. the requirements referred to in paragraph 1 or the procedural requirements referred to in paragraph 2 are not fulfilled, or
2. the documents are incomplete or
3. the student has already definitively failed an examination required for the completion of the Diploma degree programme in Mechanical Engineering.

(5) The Examination Board decides on admission. The announcement may be made publicly. Section 18 (4) remains unaffected.

§ 5

Types of examination performance

(1) Examination performances shall be

1. written examinations (§ 6),
2. seminar papers and other appropriate written work (§ 7),
3. project work (§ 8),
4. oral examinations (§ 9),
5. presentations (§ 10) and/or
6. other examination performances (§ 11)

to be performed. Written examinations using the multiple-choice (MC) method are possible. The conduct and assessment of the examinations are regulated in the MC regulations. In modules that are recognisably subject to several examination regulations, synonyms are permitted for examination performances with the same content.

(2) Studies and examinations must be completed in German or, according to the module descriptions, in English. If, according to the module description, a module primarily serves the acquisition of foreign language qualifications, study and examination achievements may also have to be completed in the respective foreign language according to the assignment.

(3) If the student can credibly demonstrate that he or she is unable to take examinations in whole or in part in the prescribed form due to a long-term or permanent physical disability or chronic illness, the chairperson of the Examination Board shall, upon request, allow the student to take the examinations within an extended processing time or in an equivalent manner (compensation for disadvantages). For this purpose, the submission of a medical certificate and, in cases of doubt, an official medical certificate may be required. The same applies to preliminary examinations and bonus performances.

(4) If the student can credibly demonstrate that he/she is unable to complete the examination as prescribed due to the care of his/her own children up to the age of 14 or the care of close relatives, the chairperson of the Examination Board shall allow the student to complete the examination in an equivalent manner upon request. Close relatives are children, parents, grandparents, spouses and life partners. The chairperson of the Examination Board decides in consultation with the responsible examiner how the examination performance is to be carried out. The chairperson of the Examination Board decides on an appropriate measure to compensate for a disadvantage. Suitable measures to compensate for disadvantages include, for example, extended processing times, processing breaks, use of other media, use of other examination rooms within the university or another examination date. The same applies to preliminary examinations and bonus achievements.

§ 6

Written examinations

(1) In written examinations, the student shall prove that he/she can solve tasks and work on topics on the basis of the necessary basic knowledge in a limited time and with limited aids using the common methods of the subject of study. If written examinations or individual tasks are set according to § 5 Paragraph 1 Sentence 2, the student shall demonstrate the knowledge required to achieve the module objective. To this end, he or she must indicate which of the answers presented with the assignments he or she considers to be correct.

(2) Written examinations, the passing of which is a prerequisite for the continuation of studies, shall as a rule, but at least in the case of the last resit examination, be assessed by two examiners. The grade results from the average of the individual evaluations according to § 12, Paragraph 1; only the first decimal place behind the comma is taken into account, all other places are deleted without rounding. The assessment procedure shall not exceed four weeks.

(3) The duration of the written examinations is specified in each case in the module descriptions and may not be less than 90 minutes and not exceed 240 minutes.

§ 7

Seminar papers and other appropriate written work

(1) Through seminar papers, the student is to demonstrate the competence of being able to work on selected questions within a limited period of time on the basis of the specialist literature and other working materials. Furthermore, it is to be determined whether the student has the basic techniques of scientific work. Other corresponding written work, namely papers, are equivalent to seminar papers.

(2) For seminar papers and other corresponding written work, § 6 paragraph 2 shall apply accordingly.

(3) Seminar papers and other corresponding written work may have a maximum duration of 210 hours. The concrete scope is specified in each case in the module descriptions. Derived from this, the deadline for submission is to be determined within the framework of the assignment.

(4) Seminar papers and other corresponding written work may also be submitted in the form of group work if the student's individual contribution to be assessed as seminar papers and other corresponding written work is clearly distinguishable and assessable on the basis of the indication of sections, page numbers or other objective criteria that enable a clear delimitation.

§ 8

Project work

(1) Project work usually demonstrates the ability to work in a team and in particular to develop, implement and present concepts. In this context, the student shall demonstrate the competence to define goals on a larger task and to develop interdisciplinary approaches to solutions and concepts.

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

(3) The temporal scope of the project work is determined in each case in the module descriptions and amounts to a maximum of 450 hours. Derived from this, the deadline for submission is to be set within the framework of the assignment. In individual cases, the Examination Board may exceptionally extend this deadline for submission by a maximum of 8 weeks upon justified application by the student.

(4) In the case of project work carried out in the form of teamwork, the individual contributions must be clearly recognisable and assessable and must fulfil the requirements according to Paragraph 1. If parts of the project work are performed orally, § 9 Paragraph 4 Sentence 1 shall apply accordingly.

§ 9

Oral examination performances

(1) By means of oral examinations, the student shall demonstrate the competence to recognise the interrelationships of the examination area and to be able to classify special questions in these interrelationships. Furthermore, it is to be determined whether the student has a basic knowledge corresponding to the state of the studies.

(2) Oral examinations are generally taken in front of at least two examiners (peer examination) or in front of one examiner in the presence of an expert assessor (§ 19) in accordance with the module descriptions as a group examination with up to four persons or as an individual examination.

(3) Oral examinations have a duration of 15 to 45 minutes. The concrete duration is specified in the respective module descriptions.

(4) The essential items and results of the oral examination performance shall be recorded in a protocol. The result shall be made known to the student following the oral examination performance.

(5) Students who wish to take the same examination at a later date shall be admitted as listeners within the framework of the spatial conditions, unless the student to be examined objects. Admission does not extend to the discussion and announcement of the examination results.

§ 10 Papers

(1) By means of presentations, the student shall demonstrate the competence to prepare special questions and also to be able to present them according to the assignment.

(2) § 6 Paragraph 2 shall apply accordingly. The lecturer responsible for the course in which the paper is handed out and, if applicable, presented, shall be one of the examiners. If the paper is presented, § 9 Paragraph 4 Sentence 1 shall apply accordingly.

(3) The time required to complete the papers is specified in the respective module descriptions and amounts to a maximum of 30 hours. Derived from this, the deadline for submission or presentation is to be determined within the scope of the assignment.

§ 11 Other examination performances

(1) The student shall achieve the specified performance by means of other controlled examination performances (other examination performances) which can be assessed according to the same standards and which are specifically specified in the module descriptions, including the requirements as well as the duration or the temporal scope. If a time scope is specified, the deadline for submission is to be determined from this within the framework of the assignment. Other examination performances are protocol collections, laboratory practicals, papers, presentations, written tests, oral tests and language tests.

(2) The other examination performances according to paragraph 1 are defined as follows:

1. In protocol collections, the student should be able to demonstrate the competence to document and critically reflect on the course of practical tasks from technical or analytical issues and the results achieved in an appropriate manner.
2. In the laboratory practical course, the student demonstrates his or her competence in the proper and effective use of equipment and apparatus for the investigation of a specific scientific-technical subject area.
3. In assignments, the student should prove by solving written exercises, by working on electronic learning modules or by limited experimental work that the student has mastered subtasks

- or can solve analytical tasks and is capable of interpreting the results accordingly.
4. The presentation is an oral or media-supported lecture by one student or, according to the assignment, in the case of definable individual contributions by several students, in which results achieved through independent work are presented in a structured form, usually using visual aids.
 5. In written tests, students are to demonstrate the basic knowledge of the subject by solving smaller tasks in a limited amount of time.
 6. In oral tests, students are to prove their basic knowledge of the subject by answering definable questions.
 7. Language tests are shorter oral and/or written performances in which the level of knowledge on a specific topic and the ability to express this in the foreign language are tested.

(3) For other written examinations, § 6 paragraph 2 shall apply accordingly. For other non-written examinations, § 9 paragraph 2 and 4 shall apply accordingly.

§ 12

Assessment of the examination performances, formation and weighting of the grades, Announcement of the examination results

(1) The marks for the individual examination performances shall be determined by the respective examiners, taking into account any bonus points acquired in accordance with Paragraph 2. The following grades shall be used for this purpose:

1 = very good=	an excellent performance;
2 = good=	a performance that is significantly above the average requirements;
3 = satisfactory=	a performance that meets average requirements;
4 = sufficient=	a performance that still meets the requirements despite its shortcomings;
5 = not sufficient=	a performance that no longer meets the requirements due to significant deficiencies.

For differentiated assessment, individual grades can be raised or lowered by 0.3 to intermediate values; the grades 0.7, 4.3, 4.7 and 5.3 are excluded. An individual examination performance is only assessed as "passed" or "failed" (ungraded examination performance) if the corresponding module description provides for this by way of exception. Ungraded examination performances graded with "passed" are not included in the further grade calculation; ungraded examination performances graded with "failed" are included in the further grade calculation with the grade 5 (not sufficient).

(2) Bonus points can be acquired voluntarily for assigned examination achievements through certain study achievements (bonus achievements). Bonus points can replace a maximum of 6 % of the total number of points of the assigned examination performance in addition to the assessment points acquired by the student, if the examination performance was assessed with at least "sufficient" (4.0). The type and structure of the bonus performances as well as their assignment to an examination performance are to be regulated in the module descriptions. The number of bonus points to be acquired through a bonus performance as well as the total number of points to be achieved in the associated examination performance shall be announced at the beginning of each semester as is customary in the faculty. Bonus points earned are only taken into account in the examination date that is binding for the student following the bonus performance.

(3) The module grade results from the weighted average of the grades of the examination performances of the module according to the module description, if applicable. Only the first deci-

mal place after the comma is taken into account, all other places are deleted without rounding. The module grade with an average is

up to and including 1.5	= very good,
from 1.6 to 2.5 inclusive	= good,
from 2.6 to 3.5 inclusive	= satisfactory,
from 3.6 up to and including 4.0	= sufficient,
from 4.1	= not sufficient.

If a module examination is not passed due to a pass-relevant examination performance according to if a module examination is not passed due to a pass-relevant examination performance in accordance with § 14 Paragraph 1 Sentence 2, the module grade is "insufficient" (5.0).

(4) An overall grade is calculated for the Diploma examination. The final grade of the Diploma examination shall include the final grade of the Diploma thesis with a 45-fold weighting, the module grade of the module Subject-Related Internship with a 10-fold weighting and the module grades weighted according to the credit points according to annex 1. The final grade of the Diploma thesis is composed of the grade of the Diploma thesis with quadruple weight and the grade of the colloquium with single weight. For the modules according to annex 2, an overall grade weighted according to the credit points is also formed. Paragraph 3, sentences 2 and 3 shall apply accordingly to the overall and final grades. The overall grade of the Diploma examination shall be "passed with distinction" in the case of outstanding performance (with an average up to and including 1.2 as well as the final grade of the Diploma thesis up to and including 1.5).

(5) The overall grade of the Diploma examination is additionally shown as a relative grade according to the ECTS grading scale.

(6) The modalities for the announcement of the examination results shall be communicated to the students through the usual faculty publication.

§ 13

Default, withdrawal, deception, breach of order, waiver

(1) An examination performance shall be deemed to have been assessed as "insufficient" (5.0) or "failed" if the student misses an examination date that is binding for him/her without good reason or withdraws without good reason. The same applies if an examination performance is not completed within the specified processing time.

(2) The reason asserted for the withdrawal or the failure to attend must be notified to the examination office in writing without delay and must be made credible. In the case of illness of a student, a medical certificate or, in cases of doubt, an official medical certificate must be submitted. Insofar as compliance with deadlines for the initial registration for examinations, the repetition of examinations, the reasons for missing examinations and compliance with processing times for examination papers are affected, the illness of the student shall be deemed equivalent to the illness of a child for whom he/she is predominantly solely responsible. If the reason is recognised, a new date shall be set. In this case, the examination results already available shall be taken into account. The Examination Board decides on the approval of the withdrawal or the recognition of the reason for missing the examination.

(3) If the student attempts to influence the result of his/her examination performance by cheating, for example by bringing or using unauthorised aids, the examination performance in question shall be deemed to have been assessed as "insufficient" (5.0) on the basis of a corresponding determination by the Examination Board. Accordingly, ungraded examinations are

deemed to have been assessed as "failed". A student who disturbs the orderly course of the examination can be excluded from the continuation of the examination by the respective examiner or the respective invigilator; in this case, the examination performance is deemed to be graded as "insufficient" (5.0) or "failed". In serious cases, the Examination Board may exclude the student from taking further examinations.

(4) If the student has deceived in an examination and this fact only becomes apparent after the assessment has been announced, the assessment of the examination may be changed by the Examination Board to "not sufficient" (5.0) or "not passed" and thereupon the grade of the module examination may also be changed in accordance with § 12, paragraph 3. If the requirements for taking a module examination were not fulfilled without the student intending to deceive, this defect shall be remedied by passing the module examination. If the student has intentionally obtained the taking of a module examination wrongly, the Examination Board may declare the module examination "insufficient" (5.0) or "failed". In serious cases, the Examination Board may exclude the student from taking further examinations.

(5) Paragraphs 1 to 4 apply accordingly to preliminary examinations, bonus examinations, the Diploma thesis and the colloquium.

(6) If the student declares in writing to the examination office that he/she waives the completion of an examination, this examination shall be deemed to have been assessed as "insufficient" (5.0) or "failed" in the respective examination attempt. The waiver is irrevocable and requires admission according to § 4.

§ 14 Pass and fail

(1) A module examination is passed if the module grade is at least "sufficient" (4.0). In the cases specified by the module descriptions, the passing of the module examination is furthermore dependent on the assessment of individual examination performances with at least "sufficient" (4.0) and on a further passing requirement, namely the completion of a professional internship. If the module examination is passed, the credit points assigned to the module in the module description are acquired.

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

(3) A module examination is not passed if the module grade is not at least "sufficient" (4.0). Diploma thesis and colloquium are not passed if they have not been assessed with at least "sufficient" (4.0).

(4) A module examination is finally failed if the module grade is not at least "sufficient" (4.0) and its repetition is no longer possible or a preliminary examination comprised by the module examination is not passed and can no longer be repeated. Diploma thesis and colloquium are definitively failed if they have not been assessed with at least "sufficient" (4.0) and a repetition is no longer possible.

(5) The Diploma examination is failed or definitively failed if either a module examination, the Diploma thesis or the colloquium is failed or definitively failed. § 3 paragraph 1 remains unaffected. In the case of a final failure of a module examination of the compulsory elective area, the final

failure of the Diploma examination shall only be decided in accordance with § 18, paragraph 4, if the student does not change his/her choice within one month after the announcement of the result of the module examination or does not make a change of choice in accordance with Section 6, Paragraph 2, Sentence 4 of the Study Regulations is no longer possible. If the student has definitively failed the Diploma examination, he or she loses the examination entitlement for all components of the Diploma examination according to § 2, sentence 1.

(6) If the student has failed a module examination, the Diploma thesis or the colloquium, the student shall be informed whether and, if so, to what extent and within what period the examination in question may be repeated.

(7) If the student has not passed the Diploma examination, a certificate shall be issued to him/her on application and on presentation of the relevant evidence as well as the exmatriculation certificate, which contains the examination components performed and their evaluation as well as, if applicable, the examination components still missing and which shows that the Diploma examination has not been passed.

§ 15 **Free trial**

(1) Module examinations can also be taken before the semesters specified in the study schedule if the admission requirements are met. Taking the module examination for the first time is then considered a free attempt.

(2) At the request of the student, module examinations or examinations graded at least "sufficient" (4.0) can be repeated once at the next regular examination date in order to improve the grade. In these cases, the better grade counts. The form and deadline of the application are determined by the Examination Board and announced in the usual manner of the faculty. After the expiry of the next regular examination date or the application deadline, an improvement of the grade is no longer possible. When repeating a module examination to improve the grade, examination performances that were assessed with at least "sufficient" (4.0) in the free attempt are credited upon application by the student; examination performances that were assessed with "passed" in the free attempt are credited ex officio.

(3) A module examination that has not been passed in the free attempt shall be deemed not to have been taken. Examination performances that were assessed with at least "sufficient" (4.0) or with "passed" are credited in the following examination procedure. If the possibility of grade improvement according to Paragraph 2 is used for examination performances, the better grade shall be credited.

(4) In addition to § 3, paragraph 4, periods of interruption of studies due to a prolonged illness of the student or a child to be cared for by the student as well as periods of study abroad shall not be taken into account for the application of the free attempt regulation.

§ 16 **Repetition of module examinations**

(1) Failed module examinations can be repeated once within one year after completion of the first examination attempt. The period begins with the announcement of the first failure of the module examination. After expiry of this period, they are deemed to have been failed again.

(2) A second resit examination can only be taken at the next possible examination date. After that, the module examination is deemed to have been definitively failed. A further repeat examination is not permitted.

(3) The repetition of a failed module examination consisting of several examinations shall only include the examinations not graded with at least "sufficient" (4.0) or with "passed". When repeating a failed module examination that comprises one or more optional examination performances, students are not bound to the previous choice of an examination performance that was not assessed with at least "sufficient" (4.0) or with "passed".

(4) The repetition of a passed module examination is only permitted in the case regulated in § 15 Paragraph 2 and includes all examination performances.

(5) Failed attempts of the module examination from the same or other degree programmes are carried over.

§ 17

Crediting of study and examination achievements, periods of study and qualifications acquired outside a higher education institution

(1) Study and examination achievements which have been completed at a higher education institution shall be credited upon application by the student, unless there are significant differences with regard to the competences acquired. Further agreements of the Technische Universität Dresden, the German Rectors' Conference, the Standing Conference of the Ministers of Education and Cultural Affairs as well as those ratified by the Federal Republic of Germany shall be observed, if applicable.

(2) Qualifications acquired outside of a higher education institution shall be credited upon application by the student if they are equivalent. Equivalence is given if the content, scope and requirements essentially correspond to parts of the studies in the Diploma degree programme in Mechanical Engineering at the Technische Universität Dresden. No schematic comparison is to be made, but rather an overall consideration and evaluation.

(3) Study and examination credits obtained in the Federal Republic of Germany in the same degree programme shall be transferred ex officio.

(4) Study and examination achievements completed at a higher education institution may be credited despite substantial differences if, due to their contents and qualification objectives, they correspond overall to the sense and purpose of an elective option available in this degree programme and therefore form a structural equivalent. The actual achievements are shown in the transcript.

(5) If study and examination achievements are credited or transferred in accordance with paragraph 1, 3 or 4 or qualifications acquired outside a higher education institution are credited in accordance with paragraph 2, the corresponding periods of study shall also be credited ex officio. Grades shall - insofar as the grading systems are comparable - be taken over and included in the further formation of grades. In the case of incomparable grading systems, the remark "passed" shall be included; they shall not be included in the further formation of grades. The credit will be marked on the certificate.

(6) Credit shall be awarded by the Examination Board. The student must submit the required documents. From this point on, the crediting procedure may not exceed a period of two months. In the case of non-credit, § 18 Paragraph 4 Sentence 1 shall apply.

§ 18 Audit Committee

(1) An Examination Board shall be formed for the Diploma degree programme in Mechanical Engineering to conduct and organise the examinations and for the tasks assigned by the examination regulations. The Examination Board consists of five professors, two research assistants and two students. With the exception of the student members, the term of office is three years. The term of office of the student members is one year.

(2) The chairperson, the deputy chairperson as well as the other members and their deputies shall be appointed by the Faculty Council of the Faculty of Mechanical Science and Engineering, the student members upon proposal of the Student Council. They should be enrolled in one of the degree programmes of the Faculty of Mechanical Science and Engineering. As a rule, the chairperson conducts the business of the Examination Board.

(3) The Examination Board shall ensure that the provisions of the examination regulations are observed. It regularly reports to the faculty on the development of examination and study times, including the actual processing times for the Diploma thesis, as well as on the distribution of module and overall grades. The Examination Board gives suggestions for reforming the examination regulations, the study regulations, the module descriptions and the study schedule.

(4) The student concerned shall be informed in writing of any adverse decisions, the reasons for them and instructions on how to appeal. As the examination authority, the Examination Board shall decide on appeals within a reasonable period of time and issue the appeal notices.

(5) The Examination Board may admit guests to its meetings without voting rights. The members of the Examination Board shall have the right to attend the taking of the examinations and the colloquium.

(6) The members of the Examination Board and their deputies shall be bound by official secrecy. If they are not public servants, they shall be bound to secrecy by the chairperson.

(7) Based on the decisions of the Examination Board, the examination office organises the examinations and administers the examination files.

§ 19 Examiners and assessors

(1) The Examination Board shall appoint university lecturers and other persons who are entitled to take examinations according to Land law as examiners. Only persons who have successfully passed the corresponding Diploma examination or an at least comparable examination shall be appointed as assessors.

(2) The student may propose the supervisor for his/her thesis and the examiners for oral examinations and the colloquium. The suggestion does not constitute a claim.

(3) The names of the examiners shall be made known to the student in good time.

(4) Section 18 (6) shall apply accordingly to the examiners and assessors.

§ 20

Purpose of the Diploma examination

Passing the Diploma examination constitutes the professionally qualifying degree of the degree programme. This establishes that the student has an overview of the subject-related contexts, has the ability to apply scientific methods and findings, and has acquired the thorough specialist knowledge necessary for the transition to professional practice.

§ 21

Purpose, Issue, Submission, Assessment and Retake of the Diploma Thesis and colloquium

(1) The Diploma thesis shall show that the student is able to independently work on problems of the field of study according to scientific methods within a given period of time.

(2) The Diploma thesis may be supervised by a university lecturer or another person authorised to conduct examinations according to the Saxon Higher Education Freedom Act (Sächsisches Hochschulfreiheitsgesetz), provided that this person works at the Faculty of Mechanical Science and Engineering at the Technische Universität Dresden. If the Diploma thesis is to be supervised by a person who works outside the Faculty of Mechanical Science and Engineering and is authorised to do so, the approval of the chairperson of the Examination Board is required.

(3) The topic of the Diploma thesis shall be issued by the Examination Board. The topic and the date of issue shall be recorded in the records. The student may express wishes regarding the topic. At the request of the student, the Examination Board shall arrange for the timely issue of the topic of the Diploma thesis. The topic shall be issued by the Examination Board ex officio at the latest at the beginning of the semester following the completion of the last module examination.

(4) The topic may only be returned once and only within two months of issue. However, the topic may only be returned in the case of a repetition of the Diploma thesis if the student has not made use of this possibility so far. If the student has returned the topic, a new one shall be issued to him/her immediately in accordance with Paragraph 3, Sentences 1 to 3.

(5) The Diploma thesis may also be produced in the form of a group thesis if the individual contribution to be assessed as the student's Diploma thesis is clearly distinguishable and assessable on the basis of the specification of sections, page numbers or other objective criteria that enable a clear demarcation and fulfils the requirements according to paragraph 1.

(6) The Diploma thesis shall be submitted in German in two typed and bound copies as well as in digital text form on a suitable data carrier to the examinations office in due time; the date of submission shall be recorded in the records. In suitable cases, the thesis may be submitted in English upon application by the student to the Examination Board. When handing in the thesis, the student must declare in writing whether he/she has written his/her thesis - in the case of a group thesis, his/her correspondingly marked part of the thesis - independently and has not used any sources and aids other than those indicated.

(7) The Diploma thesis shall be marked individually by two examiners in accordance with Section 12, Paragraph 1, Sentences 1 to 3. The supervisor of the thesis shall be one of the examiners. The assessment procedure shall not exceed four weeks.

(8) The grade of the Diploma thesis shall be the average of the two individual grades of the examiners. If the individual grades of the examiners differ by more than two grade levels, the average of the two individual grades shall only be decisive if both examiners agree. If this is not the case, the Examination Board shall obtain an assessment from a further examiner. The grade of the thesis shall then be calculated from the average of the three individual grades. Section 12, Paragraph 3, Sentences 2 and 3 shall apply accordingly.

(9) If one examiner has assessed the thesis with at least "sufficient" (4.0) and the other examiner with "insufficient" (5.0), the Examination Board shall obtain an assessment from another examiner. This examiner decides whether the thesis has been passed or not. If it is thus deemed to have been passed, the grade of the thesis shall be formed from the average of the individual grades of the evaluations voting for passing, otherwise from the evaluations voting for failing. Section 12, Paragraph 3, Sentences 2 and 3 shall apply accordingly.

(10) A failed Diploma thesis may be repeated once within one year. After expiry of this period, it shall be deemed to have been failed again. A second repetition is only possible on the next possible examination date, after which it is deemed to have been definitively failed. A further repetition or the repetition of a passed Diploma thesis is not permitted.

(11) The student must explain his/her thesis in a public colloquium before the thesis supervisor as examiner and an assessor. Through the colloquium, the student should prove that he or she can present the result of the thesis conclusively and discuss it professionally. Additional examiners may be consulted. Paragraph 10 as well as § 9 Paragraph 4 and § 12 Paragraph 1 Sentences 1 to 3 shall apply accordingly.

§ 22

Certificate and Diploma

(1) The student shall receive a certificate of the passed Diploma examination immediately, if possible within four weeks. The certificate of the Diploma examination shall include the module evaluations according to annex 1 and the evaluation of the module Subject-Related Internship as well as the corresponding credit points and, if applicable, credit marks, the topic of the Diploma thesis, its final grade and supervisor as well as the overall grade of the Diploma examination according to § 12 Paragraph 4 and 5. The grades of the individual examinations and the topics of the project work shall be shown on an enclosure to the certificate. At the request of the student, the assessments of additional modules and the subject study duration required until completion of the Diploma examination shall be included in the certificate and the assessments of examination performances in additional modules shall be indicated on the supplement.

(2) The student shall immediately, if possible within four weeks, receive a report (interim report) on the passed module examinations according to annex 2, which contains the module evaluations and the overall grade according to § 12 Paragraph 4 Sentence 4.

(3) At the same time as the Diploma certificate, the student shall receive the Diploma certificate with the date of the certificate. This certifies the award of the Diploma degree. The Diploma certificate is signed by the chairperson of the Examination Board, bears the handwritten or type-

written signature of the rector and bears the seal of the Technische Universität Dresden. In addition, translations of the certificate and the transcript in English are handed out to the student.

(4) The certificates according to Paragraph 1 and 2 shall bear the date of the day on which the last examination component according to § 14 Paragraph 2 or § 14 Paragraph 1 Sentence 1 has been completed. The certificate according to paragraph 1 shall be signed by the chairperson of the Examination Board and the dean of the Faculty of Mechanical Science and Engineering and shall bear the seal of the Technische Universität Dresden used by the faculty. The certificate according to paragraph 2 is signed by the chairperson of the Examination Board and bears the seal of the Technische Universität Dresden used by the faculty.

(5) The Technische Universität Dresden issues a Diploma Supplement (DS) according to the "Diploma Supplement Model" of the European Union/Council of Europe/UNESCO. The text agreed between the Standing Conference of the Ministers of Education and Cultural Affairs of the State in the Federal Republic of Germany and the German Rectors' Conference shall be used as the representation of the national education system (DS section 8).

§ 23

Invalidity of the Diploma examination

(1) If the student has cheated in an examination and this fact only becomes known after the certificate has been issued, the assessment of the examination may be changed in accordance with § 13, paragraph 4, sentence 1. If necessary, the Examination Board may declare the module examination "insufficient" (5.0) and the Diploma examination "failed". The same applies to the Diploma thesis and the colloquium.

(2) If the requirements for taking an examination were not fulfilled without the student intending to deceive, and if this fact only becomes known after the certificate has been issued, this defect shall be remedied by passing the examination. If the student has intentionally wrongfully obtained the passing of an examination performance, the Examination Board may declare the examination performance with the module examination as "not sufficient" (5.0) and the Diploma examination as "not passed". The same applies to the Diploma thesis and the colloquium.

(3) An incorrect certificate and its translation shall be confiscated by the chairperson of the Examination Board and, if necessary, reissued. The Diploma certificate, all translations and the Diploma Supplement shall be withdrawn together with the incorrect Diploma certificate if the Diploma examination was declared "failed" due to deception. A decision in accordance with paragraph 1 and paragraph 2 sentence 2 or 3 shall be excluded after a period of five years from the date of the certificate.

§ 24

Inspection of the examination documents

Within one year after completion of the examination procedure, the student shall be granted access to his/her written examination papers, the related reports and the examination records within a reasonable period of time upon request.

Section 2: Subject-specific provisions

§ 25

Duration, structure and scope of studies

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

(2) The degree programme is modular and concludes with the Diploma thesis and the colloquium. The degree programme includes 15 weeks of practical work experience. Eight fields of study, one of which must be chosen, with compulsory and compulsory elective modules, are available for the acquisition of special competences. In the distance learning programme, four fields of study are available, General and Structural Mechanical Engineering, Power Engineering, Aerospace Engineering and Production Engineering, one of which must be chosen. In addition, within the framework of the cooperation of the binational study programme with a double degree, there is the possibility, according to the cooperation agreement, to complete the seventh to tenth semester with a cooperation partner.

(3) By passing the Diploma examination, a total of 300 credit points are acquired in the modules as well as the Diploma thesis and the colloquium.

§ 26

Subject-specific requirements for the Diploma examination

(1) For the examinations, coursework may be required as prerequisite examinations. The number, type and structure of these are to be regulated in the module descriptions, and the number of repetition options can also be limited. Prior to the colloquium, the Diploma thesis must have been assessed with a grade of at least "sufficient" (4.0).

(2) At least 248 credit points must have been acquired before the topic of the Diploma thesis is issued.

§ 27

Subject, type and scope of the Diploma examination

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

(2) Modules of the compulsory area are

1. Fundamentals of Mathematics
2. Engineering Mechanics - Statics
3. Scientific Fundamentals
4. Design Theory
5. Computer Science
6. Production Engineering
7. Business Administration and Language Skills
8. Engineering Mathematics
9. Engineering Mechanics - Strength of Materials
10. Fundamentals of Material Science
11. Fundamentals of Electrical Engineering
12. Engineering Thermodynamics/Heat Transfer
13. Special Topics of Mathematics

14. Machine Elements
15. General and Engineering-Specific Qualifications in Mechanical Engineering
16. Engineering Mechanics - Kinematics and Kinetics
17. Fundamentals of Fluid Mechanics
18. Measurement and Automation Engineering
19. Extended Fundamentals for Mechanical Engineering
20. Subject-Related Internship
21. Research Internship
22. Interdisciplinary Technical Qualification of Mechanical Engineering.

(3) The compulsory elective area comprises the fields of study

1. General and Structural Mechanical Engineering
2. Power Engineering
3. Automotive and Railway Vehicle Engineering
4. Lightweight Engineering
5. Aerospace Engineering
6. Production Engineering
7. Simulation Methods in Mechanical Engineering
8. Processing Machines and Textile Machines Engineering.

One of eight and, taking into account § 25 Paragraph 2 Sentence 4, one of four fields of study as well as the modules in accordance with annex 3 must be selected.

(4) The required examinations assigned to the modules, their type and design are specified in the module descriptions. Unless otherwise specified in the module descriptions, the subject of the examinations is the content and the competences to be acquired in the module.

(5) The student may take an examination in modules other than those provided for in paragraph 1 (additional modules). These module examinations can be optionally taken from the entire range of modules offered by the Technische Universität Dresden or a cooperating university after consultation with the respective provider or the examiner. They are not included in the calculation of the student workload and are not taken into account in the formation of the overall grade.

§ 28

Processing time of the Diploma thesis and duration of the colloquium

(1) The processing time of the Diploma thesis is 20 weeks, 27 credit points are acquired. The topic, task and scope of the Diploma thesis shall be limited by the supervisor in such a way that the deadline for submission of the Diploma thesis can be met. In individual cases, the Examination Board may exceptionally extend the processing time by a maximum of two months upon justified application by the student; the number of credit points remains unaffected by this.

(2) The colloquium has a duration of 60 minutes. Three credit points are earned.

§ 29

Diploma degree

If the Diploma examination is passed, the university degree "Diplom-Ingenieurin" or "Diplom-Ingenieur" (abbreviated: "Dipl.-Ing.") is awarded.

Section 3: Final provisions

§ 30

Entry into force, publication and transitional provisions

(1) These examination regulations shall enter into force on 1 June 2019 and shall be published in the Official Announcements of the Technische Universität Dresden.

(2) It shall apply to all students newly enrolled in the Diploma degree programme in Mechanical Engineering in the winter semester 2019/2020 or later.

(3) For students enrolled earlier than from the winter semester 2019/2020, the examination regulations for the Diploma degree programme in Mechanical Engineering previously valid for them before the entry into force of these regulations shall continue to apply.

(4) In derogation of subsection 3, section 18(1) sentence 2 shall apply to all students enrolled in the Diploma degree programme in Mechanical Engineering as of the winter semester 2019/2020 or later.

(5) These examination regulations shall apply from the winter semester 2020/2021 for all students enrolled in the Diploma degree programme in Mechanical Engineering.

(6) In the case of transfer in accordance with Paragraph 3 or Paragraph 5, the module examinations already taken, including the grades, shall be taken over primarily and individual examinations shall also be taken over subordinately on the basis of equivalency tables determined by the Examination Board and announced in the usual manner at the faculty, on the basis of equivalence tables, which are determined by the Examination Board and announced in the customary manner of the faculty. With the exception of § 16 Paragraph 5, module examinations and examinations not graded with at least "sufficient" (4.0) or "passed" shall not be transferred. As a rule, the module grade is not recalculated on the basis of the grades of exclusively transferred examinations; exceptions can be found in the equivalence tables.

Issued on the basis of the resolution of the Faculty Council of the Faculty of Mechanical Science and Engineering of 15 August 2018 and the approval of the Rectorate of 15 January 2019.

Dresden, 17 May 2019

The Rector
of the Technische Universität Dresden

Prof. Dr.-Ing. habil. DEng/Auckland Hans Müller-Steinhagen

Annex 1

Modules whose module grade is included in the overall grade of the Diploma examination according to § 12 Paragraph 4 Sentence 2

1. Measurement and Automation Engineering
2. Extended Fundamentals for Mechanical Engineering
3. Research Internship
4. Interdisciplinary Technical Qualification of Mechanical Engineering
5. Modules of the chosen field of study according to annex 3, which are included in the Diploma examination according to § 27 paragraph 1

Annex 2

Modules whose module grade is used to form an overall grade for the interim certificate according to § 22 (2) pursuant to § 12 (4) sentence 4

1. Fundamentals of Mathematics
2. Engineering Mechanics - Statics
3. Scientific Fundamentals
4. Design Theory
5. Computer Science
6. Production Engineering
7. Business Administration and Language Skills
8. Engineering Mathematics
9. Engineering Mechanics - Strength of Materials
10. Fundamentals of Material Science
11. Fundamentals of Electrical Engineering
12. Engineering Thermodynamics/Heat Transfer
13. Special Topics of Mathematics
14. Machine Elements
15. General and Engineering-Specific Qualifications in Mechanical Engineering
16. Engineering Mechanics - Kinematics and Kinetics
17. Fundamentals of Fluid Mechanics

Annex 3

Modules of the compulsory elective area of the fields of study

- A. In the field of study General and Structural Mechanical Engineering are
- I. Compulsory modules
 1. Fundamentals of Construction and Dynamic Dimensioning of Machines
 2. Fluid Power and Electrical Drive Systems
 3. Mechanical Drives
 - II. Elective modules
 1. Analysis and Dimensioning
 2. Fluid Power Components and Systems
 3. Off-road Vehicle Technology - Systems
 4. Industrial Design Methodology
 5. Two-Dimensional Design Fundamentalstwo of which are to be elected and
 6. Intralogistics - Fundamentals
 7. Fundamentals of Agricultural Systems Technology
 8. Tools and Methods of Product Development
 9. Three-Dimensional Design Fundamentalstwo of which are to be elected and
 10. Simulation Methods in Drive Technology
 11. Design of Agricultural Systems Technology
 12. Fluid-Mechatronics in Industrial Applications
 13. Product Modelling
 14. Materials and Failure Analysis
 15. Virtual Methods and Tools
 16. Data Processing and Experimental Model Analysis
 17. Design Research
 18. Design of Product-Service-Systemsof which three are to be elected and
 19. Intralogistics - System Design
 20. Fluid-Mechatronics in Mobile Applications
 21. Computational Engineering in Fluid Power
 22. Material Handling
 23. Mobile Machinery/Off-road Vehicle Technology – Analysis
 24. Human-centered Product Design
 25. Visualization Techniques
 26. Systems Engineeringof which three are to be elected.
- B. In the field of study Power Engineering are
- I. Compulsory modules
 1. Fluid Mechanics and Simulation Methods
 2. Process thermodynamics
 3. Fundamentals of Heat and Mass Transfer
 4. Fundamentals of Power Machinery
 5. Fundamentals of Non-Fossil Primary Energy Use
 6. Heat Exchanger, Pipings, Pressure Vessels and Energy Storage
 - II. Elective modules
 1. Fundamentals of Refrigeration and Air Conditioning
 2. Principles of Refrigeration and Air Conditioning

one of which must be chosen, whereby either the module Fundamentals of Refrigeration and Air Conditioning or the module Principles of Refrigeration and Air Conditioning can be chosen, as well as

3. Steam and Gas Turbines
4. Turbo Pumps and Piston Working Machines
5. Building Energy Systems
6. Air Conditioning Systems/Supply Engineering
7. Evaluation of Energy Efficiency and Economy
8. Refrigeration Systems
9. International Refrigeration and Compressor Course
10. Mobile Refrigeration and Special Cooling Tasks
11. Renewable Energy Supply
12. Thermal Process Technology
13. Energy Systems Technology
14. Applied Molecular Thermodynamics
15. Properties and Thermodynamic Simulation
16. Gas Dynamics and Numerical Fluid Mechanics
17. Nuclear Reactor Engineering
18. Reactor Physics
19. European Course of Cryogenics

three of which are to be chosen, whereby either the Refrigeration Systems module or the International Refrigeration and Compressor Course module or the Cryogenics module or the European Course of Cryogenics module can be chosen, as well as

20. Turbocompressors
21. Machine Laboratory
22. Heat Supply
23. Energy and Load Management
24. Cryogenics
25. Heat Pumps, Organic Vapour Cycle Processes (ORC) and ORC Machines
26. Innovative Energy Storage Systems
27. Process Simulation and Validation in Power Engineering
28. Process Measurement Technology and Mathematical Methods of Measurement Data Processing
29. Thermo Hydraulics and Safety of Nuclear Facilities
30. Hydrogen Energy Technology
31. Load Management of Refrigeration Plants

of which three are to be chosen, whereby either the module Cryogenics or the module European Course of Cryogenics can be chosen.

- C. In the field of study of Automotive and Railway Vehicle Engineering, elective compulsory modules are
- I. Fluid Power and Electrical Drive Systems
 - II. Fundamentals of Automotive Vehicle Engineering
 - III. Fundamentals of Internal Combustion Engines and Drive Systems
 - IV. Fundamentals of Rail Vehicles
 - V. Fundamentals of Construction and Dynamic Dimensioning of Machines
- of which three are to be elected and
- VI. Construction Materials and Structural Durability
 - VII. Advanced Course: Internal Combustion Engines
 - VIII. Electrical Drive and Control Systems
 - IX. Diagnostics and Acoustics
- two of which are to be elected and

- X. Connected Mechatronic Systems
- XI. Vehicle Engineering
- XII. Traction Mechanics
- XIII. Supporting Structures of Rail Vehicles
- XIV. Tools and Methods of Product Development
- XV. two of which are to be elected and
- XVI. Dynamics of Vehicle Drives
- XVII. Simulation and Experimental Studies on Internal Combustion Engines
- XVIII. Functional Design in Automotive Vehicle Engineering
- XIX. Traffic Safety in Connected, Automated Driving
- XX. Brake Systems and Brake Operation
- XXI. Running Gears of Rail Vehicles
- XXII. Rail Vehicle Design
- XXIII. Mobile Refrigeration and Special Cooling Tasks
- XXIV. of which three are to be elected and
- XXV. Design and Optimization of Vehicle Systems
- XXVI. Simulation Methods in Vehicle Development
- XXVII. Vehicle Safety
- XXVIII. Motorcycle and Commercial Vehicle Technology
- XXIX. Design of Traction Vehicles
- XXX. Advanced Course: Rail Vehicles
- XXXI. Electrical Railway Systems
of which three are to be elected.

D. In the field of study Lightweight Engineering are

- I. Compulsory modules
 - 1. Fundamentals of Lightweight Engineering
 - 2. Lightweight Materials
 - 3. Fibre-Reinforced Materials
 - 4. Dimensioning of Lightweight Structures (A)
 - 5. Fibre Composites Technology
 - 6. Fundamentals of Polymer Technology
 - 7. Development of Lightweight Structures
- II. Elective modules
 - 1. Design of Lightweight Structures
 - 2. Design of Lightweight Structures
 - 3. Plastics Technologies
 - 4. Vibration Technology and Structural Durability
 - 5. Continuum Mechanics and Structural Analysis
 - 6. Construction Materials and Surface Engineering
 - 7. Function-Integrated Structures

of which three are to be elected and

- 8. Dimensioning and Design with Composites
- 9. Manufacturing of Composite Structures
- 10. Adaptive Structures for Lightweight Structures
- 11. Quality Assurance Management
- 12. Damage and Fatigue of Composites
- 13. Designing with Polymers
- 14. Special Problems of Lightweight Engineering
- 15. Industry-specific Lightweight Structures and Technologies

of which three are to be elected.

- E. In the field of study Aerospace Engineering are
- I. Compulsory modules
 1. Fundamentals of Aerodynamics and Flight Mechanics
 2. Fundamentals of Aerospace Vehicles
 3. Fundamentals of Aerospace Engineering
 4. Fundamentals of Flight Propulsion
 5. Numerical Methods of Fluid Mechanics and Structural Mechanics
 - II. Elective modules
 1. Aircraft Design
 2. Space Technology
 3. Turbomachines for Flight Propulsion
 4. Vibration Technology and Structural Durability
 two of which are to be elected and
 5. Design of Innovative Aerospace Structures
 6. Multifunctional Structures and Components
 7. Fracture Criteria and Fracture Mechanics
 8. Interdisciplinary Design Project Aerospace Engineering
 9. Aircraft Structures
 10. Aerodynamics of Aircraft
 11. Aircraft Manufacturing
 12. Flight Dynamics and Control
 13. Space Mission Design
 14. Space Propulsion
 15. Space Environment
 16. Technology of Flight Propulsion
 17. Thermofluidynamics
 18. Turbulent Flows and their Modelling
 of which three are to be elected and
 19. Aeroelastics
 20. Communication Navigation Surveillance (CNS)
 21. Probabilistics and Robust Design
 22. Simulation Technology in Fluid Mechanics
 23. Aircraft Maintenance
 24. Aircraft Systems
 25. Space and Science
 26. Energy Supply in Space
 27. Design of Jet Engines
 28. Turbocompressors
 29. Fundamentals of Flight Operations within the Modern Cockpit
 of which three are to be elected.

- F. In the field of study Production Engineering are
- I. Compulsory modules
 1. Production Engineering - Manufacturing Processes
 2. Production Engineering - Manufacturing and Planning
 3. Production Engineering - Machine Tools and Production Automatization
 - II. Elective modules
 1. Manufacturing processes - deepening
 2. Additive manufacturing
 3. Machine tool development
 4. Industrial Engineering
 two of which are to be elected and

5. Manufacturing Processes - Advanced Course
 6. Laser and Plasma Technology
 7. Production Measurement Technology
 8. Production System and Intralogistics
- two of which are to be elected and
9. Surface Engineering
 10. Photonic Measurement Technology
 11. Joinability
 12. Production Automatization - Advanced Course
 13. Methods to Simulate and Design Part Made by Prototyping, Blanking, and Forming Technology
 14. Manufacturing Management
 15. Material Flow Systems
 16. Work Design
 17. Conceptual Design of Machine Tools
 18. Control of Production Machines and Plants
- of which three are to be elected and
19. Micro and Nanotechnologies
 20. Laser Precision Machining
 21. Weldability
 22. Assembly and Robotics
 23. Cutting and Erosion Manufacturing Engineering
 24. Tools of Forming and Cutting/Splitting Technology
 25. Factory Systems
 26. Product Ergonomics and Product Safety
 27. Property and Behavior Analysis of Machine Tools
- of which three are to be elected.

G. In the field of study Simulation Methods in Mechanical Engineering are

- I. Compulsory modules
 1. Numerical Methods and Structural Durability
 2. Machine Dynamics and Constructive Development Process
 3. Elastic Structures and Technical Fluid Mechanics
 4. Continuum Mechanics and Multifunctional Structures
 5. Multi-Body Dynamics and Computational Fluid Dynamics
- II. Elective modules
 1. Gasdynamics
 2. Experimental Fluid and Solid Mechanics
 3. Bar and Surface Bearing Structures
 4. Design with CAD-Systems/Product Modelling

two of which are to be elected if they have not already been elected, and

5. Gasdynamics
6. Experimental Fluid and Solid Mechanics
7. Bar and Surface Bearing Structures
8. Virtual Methods and Tools
9. Fracture Criteria and Fracture Mechanics
10. Data Processing and Experimental Model Analysis
11. Dynamics of Mechanisms and Elastic Multi-Body Systems
12. Turbulent Flows and their Modelling
13. Theory of Materials
14. Numerical Modelling of Multiphase Flows

three of which are to be elected, unless they have already been elected, and

- 15. Multiscale Material Modeling
 - 16. Coupled Multifield Problems
 - 17. System Dynamics and Structural Vibrations
 - 18. Simulation Technology in Fluid Mechanics
- two of which are to be elected if they have not already been elected, and
- 19. Multiscale Material Modeling
 - 20. Coupled Multifield Problems
 - 21. System Dynamics and Structural Vibrations
 - 22. Simulation Technology in Fluid Mechanics
 - 23. Rheology
 - 24. Aeroelastics
 - 25. Process and Structure Simulation
 - 26. Analytical Methods of Solid Mechanics
- one of which shall be elected if it has not already been elected.

H. In the field of study Processing Machines and Textile Machines Engineering are

I. Compulsory modules

- 1. Fundamentals of Construction and Dynamic Dimensioning of Machines
- 2. Fundamentals of Systematic Product Development for Processing and Textile Machinery
- 3. Fundamentals of Processing and Textile Mechanical Engineering
- 4. Machine Design and Diagnostics
- 5. Mechanism Synthesis and Multi-Body Systems
- 6. Process Simulation for Processing Machines and Textile Machines

II. Elective modules

- 1. Machines and Technologies for High Performance, Functional and Biomedical Fibers
- 2. Processing Machines

one of which is to be chosen, and

- 3. Machines and Technologies for Yarn Structures, especially Composites
- 4. Control of Production Machines and Plants

one of which is to be chosen, and

- 5. Machines and Technologies for Textile Constructions
- 6. Machines and Technologies of Textile Finishing and the Assembly of Textile Products
- 7. Processing Technology
- 8. Planning and Optimizing of Processing Lines

two of which are to be elected and

- 9. Joining Technologies for Flexible Materials
- 10. Development of Complex Textile Constructions
- 11. Machines and Technologies for Technical Textiles
- 12. 3D CAE Technology for Fiber-Based Materials
- 13. Machines and Technologies for the Manufacture of Nonwovens, Textile Recycling and Resource Efficiency
- 14. Functionalisation and Interface Design
- 15. Textile Management
- 16. Fiber-Based Implants and Tissue Engineering
- 17. Packaging Technology
- 18. Food Machines and Pharmaceutical Machines
- 19. Tool - Material - Interaction Simulation
- 20. Drive Technology in Processing Machines
- 21. CAE Cases for the Machine Development
- 22. Adaptive Structures for Lightweight Structures
- 23. Manufacturing of Composite Structures

of which three are to be elected.