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Official Announcement

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**Amendment to the
Study & Examination Regulations for the
Master's Program in Operations Research and Business Analytics
from 07 May 2018, as amended on 26 June 2019**

Based on §§ 13 para. 1 and 67 para. 3, no. 8 of the Higher Education Act of the State of Saxony-Anhalt (HSG-LSA) dated 14.10.2010 (Official Gazette, Saxony-Anhalt, p. 600) as amended, in conjunction with § 6 para. 1 of the General Regulations of Otto von Guericke University Magdeburg dated 27.03.2012 (Ministerial Gazette, Saxony-Anhalt, p. 305) Otto von Guericke University Magdeburg has enacted the following Study & Examination Regulations:

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I. General

§ 1 Scope of Application

(1) These regulations govern the objective, content and structure, as well as the examinations and final degree awarded in the English language Master's program in Operations Research and Business Analytics offered by the Faculty of Economics and Management at Otto von Guericke University Magdeburg.

(2) This consecutive course is designed as a full-time, class-based program. It belongs to the "more research-oriented" category of programs.

§ 2 Program Objective

(1) The objective of the program is to enable students to independently identify business problems, to autonomously devise scientifically-based solutions to these problems, and to propose alternative courses of action. The students will acquire the capacity for systemic thinking, and excellent analytical skills. Both are valuable abilities in consultancy and managerial roles, which enable complex relationships to be understood and problem areas to be considered and assessed from multiple perspectives.

(2) Graduates of this interdisciplinary Master's program will gain skills in both business management and the field of data management and data analysis (computer science). To this end, students will obtain essential methodological skills from the fields of computer science and mathematics and, building on these in two specialist areas, will be specifically trained in the application of these methods to business problems in the particular fields of supply chain management and financial engineering.

(3) The students will acquire skills relating to scientific methods of analysis and the optimization of complex business processes, and the ability to critically evaluate a variety of possible decisions. Graduates of the program will also be able to make scientifically substantiated decisions on the basis of incomplete or limited information and in the process consider social, scientific and ethical insights arising from the application of this knowledge and the decisions taken. They will receive instruction in established problem-solving skills from the relevant fields (supply chain management, operations, logistics, capital markets, financial & risk management), to enable them to make a significant contribution to the development of independent problem-solving approaches to strategic, tactical and operational problems within a business. Students will be able to carry out largely self-directed research and practical projects on the basis of the broad and specialized research methodology of the subject, as well as develop and deal with scientific questions in an independent manner. Furthermore, students will be in a position to plan and execute the process steps involved in problem-solving including in new and unfamiliar, as well as interdisciplinary contexts in a targeted manner. They will learn to communicate clearly and concisely to experts and non-professionals about the current status of research and practice, additionally about problems, solutions, underlying information and reasoning.

(4) Students will, in particular, learn to prepare and analyze large quantities of data using scientific methods and to use the data for producing forecasts or creating models to support decision making. Alongside the provision of input data for business planning models, the students will also learn to create mathematical models themselves, to use algorithms for calculating solutions and, where necessary, to develop new methods. In this way, the students' analytical skills will be further developed, and their practical problem-solving skills further extended.

(5) In particular, the program pursues the following learning objectives:

- Students will be in a position to work through, analyze and process large datasets with the use of IT systems.
- Students will be able to analyze business-related questions (with the focus on supply chain management, operations, logistics, capital markets, and financial & risk management) and also model them quantitatively in software solutions (i.e. using concepts from operations research).

- Students will be in a position to make forecasts and determine input parameters for economic planning models on the basis of data and using specialist software.
- Students will be capable of analyzing existing mathematical methods for solving decision-making problems, and where necessary developing new methods.
- Students will be in a position to work with these methods in practice and successfully implement them for problem-solving.

(6) Students will be able to organize themselves effectively in collaborative groups and work cooperatively on relevant issues. In the process, they will develop an understanding of their role in the team, take on responsibility for themselves and the group, and reflect critically upon and enhance their own conduct and actions in the group, taking into account ethical and moral standpoints. The students will thus be in a position to present complex subject matter and defend it in discussions both clearly and appropriately for the target audience.

(7) The training received on the Operations Research and Business Analytics program enables its graduates – irrespective of industrial sector – to undertake managerial roles and activities in policy units in private and public companies, management consultancies, banks and insurance companies, as well as in public utilities and transport operators. Examples of private companies include industrial (manufacturing, production of capital goods, energy industry), retail (wholesale, mail order) and service companies (trucking, transportation, distribution, disposal). In particular, graduates will be able to find employment in the following fields: supply chain management, operations, logistics, capital markets and financial & risk management, as well as in fields in which data play an important role in decision making. In addition to specialized and management activities within companies, self-employment, as well as roles in the IT industry or positions in academia are also possibilities for future employment.

(8) As well as aiding students to acquire both specialist and interdisciplinary skills, the program also makes a contribution to personality development and promotes both personal and social skills. Through the acquisition of key competences such as independence and self-organization, team skills, a sense of responsibility and media skills, students shall become dedicated individuals with a robust education in business administration. As a result of their training, students will be in a position to gain essential insights into the methodological and ethical/moral foundations of business management and be able to evaluate the social relevance of business management knowledge and practices. Through the reflective and communicative skills that students will also acquire, they will be able to clearly explain and communicate the insights which they have gained to others. As a result, they will take into account interdisciplinary references and current cultural developments.

(9) The academic education resulting in the “Master of Science” degree provides an ample foundation for further post-graduate studies (for example doctoral studies) in the field of business management and adjacent fields.

§ 3 Academic Degree

If the required study credits and examination results set out in these study and examination regulations are attained for the degree program stipulated, the Faculty of Economics and Management (hereafter the Faculty) at Otto von Guericke University Magdeburg will award the academic degree of “Master of Science”, abbreviated to: M. Sc.

II. Examination Scope and Procedures

§ 4 Admission to the Course of Study

(1) The requirements for admission to this Master’s program are as follows:

- Proof of a Bachelor’s degree, a university diploma or a comparable qualification from a state / state-recognized college of advanced vocational studies, a Magister degree in a relevant

subject, or a relevant course of study at a university completed with a state or ecclesiastical examination,

- Proof of adequate knowledge of the English language [suitable forms of proof are set out in Appendix 3 of these regulations.],
- Submission of a letter of motivation in English. The letter must be no more than 400 words in length and must contain details of the subject of the Bachelor's thesis and the methods utilized therein. Additionally, the candidate's interest in this Master's degree program must also be set out.
- Evidence of suitability to participate in a master's program, in accordance with paragraphs 2 to 4, must be demonstrated.

(2) The applicant's suitability will be determined on the basis of the results of the final examination of the qualification as per paragraph 1, subparagraph 4 and requires the previous course of studies to have been completed with a grade point average of at most 2.9.

(3) In the case of applicants who are about to complete a course of studies in accordance with § 4 para. 1, and who by the date of application for this program have not yet graduated, evidence of the degree in question may be replaced by a complete transcript of grades achieved so far on the program concerned, whereby a minimum of 140 credit points must be evidenced and the average grade calculated from the module examinations must be at most 2.9. Applicants without evidence of a first professional degree will be enrolled temporarily and conditionally. The "Regulation governing the organization of the application and admission procedure for Master's degree programs" at Otto von Guericke University (as amended) applies.

(4) A course of studies is relevant if

- at least 20 credit points (CP), in accordance with the European Credit Transfer System (ECTS), have been obtained in courses in the field of quantitative methods and at least 45 credit points (CP), in accordance with the European Credit Transfer System (ECTS), have been obtained in economics modules

or

- at least 65 CP, in accordance with ECTS, have been obtained in mathematical/statistical modules.

If the ECTS does not apply to the Bachelor's program pursued by the applicant, the program shall be considered relevant if

- at least 4 courses in the field of quantitative methods and at least 9 courses in economics modules have been passed, and/or
- at least 13 courses have been passed in mathematical/statistical modules.

(5) The Faculty reserves the right to conduct selection interviews with candidates.

(6) The decision regarding whether or not the admission requirements are satisfied shall be made by the board of examiners.

(7) No applicant will be admitted to the program who

1. has irrevocably failed a module examination in the selected course at an equivalent university and/or has lost their entitlement to take an examination or
2. is subject to another corresponding examination procedure.

§ 5 Duration of Studies and Start Date

The standard course duration, including the preparation of the Master's thesis is four semesters. The program may be commenced in either the winter or the summer semester.

§ 6 Organization and Scope of Studies

(1) The degree program is subdivided into two core areas ("Methods of Computer Science" and "Quantitative Methods"), each worth at least 15 CP, an area of specialization worth at least 35 credit points, a supplementary area worth at least 10 CP and the "Master's thesis" module amounting to 30 CP.

(2) The program is divided into modules. In terms of subjects, modules consist of related study-units and an examination, and generally cover a period of one semester. They may be made up of different forms of teaching and learning. One module examination must be taken for each module.

(3) The module descriptions must be published for each module before the start of the semester, and contain, among other things, the following information: module objectives and learning outcomes targeted, language of instruction, scope of teaching unit, frequency of course, participation requirements, pre-examination requirements, workload and credit points obtainable, type, scope and form of examination(s), module-specific remarks and the name of the person responsible for the module.

(4) For each successfully completed module, a certain number of credit points (CP) will be awarded in line with the European Credit Transfer System (ECTS). They are a quantitative measurement of the average time generally required by students to fulfill the relevant requirements, and meet the learning objectives for a module. Alongside participation in the classes that make up a module, they also comprise all of the preparation for and reviewing of the content, independent evaluation and consolidation of the content, preparation and elaboration of students' own contributions plus successful participation in the performance reviews. One credit point corresponds to an average student workload of approx. 30 hours. As a general principle, 30 CP must be obtained per semester.

(5) To successfully complete the course of studies, a total of 120 credit points must be obtained. Details of the compulsory elective and elective modules that must be obtained for this purpose, the required module examinations, and the allocation of CP to the individual modules can be found in the study and examination schedules contained in Appendices 1 and 2 and/or in the module handbook.

(6) The course of study is designed in such a way that it can be successfully completed within the standard course duration. The module examinations may be completed prior to the end of the semester indicated in the study and examination schedule, provided that the participation and/or pre-examination requirements for admission to the relevant module examination have been satisfied.

(7) It is possible for students to undertake an individualized part-time course of study in accordance with the framework regulations for individualized part-time courses of study at Otto von Guericke University.

§ 7 Course Structure

(1) The range of courses consists of compulsory elective and elective modules.

(2) The designation "compulsory elective module" applies to all modules pursuant to these regulations that may be selected from a certain number of modules. Within the context of the chosen discipline, they enable students to pursue individual inclinations and interests and to take the subject-specific requirements of their future field of professional activity into account. The list of compulsory elective modules may be amended in accordance with the development and availability of teaching staff and be adapted to suit the range of courses offered by the Faculty, and, under certain circumstances, be

extended to include courses offered by other faculties.

(3) All modules from the range of courses offered by the Faculty of Economics and Management that are not assigned to the selected area of specialization may be considered to be elective modules, provided that the Faculty Council has approved them as elective modules. Furthermore, at the written request to, and the subsequent approval of the Board of Examiners, relevant modules from the range of courses offered by other faculties may be selected.

§ 8 Compulsory Elective and Elective Modules

(1) In the two core areas, “Methods of Computer Science” and “Quantitative Methods”, at least 15 credit points must be achieved in compulsory elective modules during each of the first two semesters.

(2) In the area of advanced studies, in one of the two areas of specialization

- – Financial Engineering or
- – Supply Chain Management

compulsory elective modules worth at least 35 CP must be completed. The compulsory elective modules must be selected in such a way that the chosen area of specialization consists of precisely one seminar (10 CP) and one scientific project (15 CP).

(3) At least 10 CP must be obtained in elective modules in the supplementary area.

(4) Decisions regarding the assignment of compulsory elective modules of the two core areas and the areas of specialization as per paragraph 1 to 2, as well the offering of elective modules as per paragraph 3, are made by the Faculty Council, and, in exceptional cases, the person responsible for the program of study for the relevant semester, before the start of the examination registration period. In the event that there is no agreement in place regarding the export of modules (teaching export), the board of examiners shall determine whether modules from other faculties may be admitted to this program of study as compulsory elective or elective modules.

(5) The classes and examinations in the compulsory elective and elective modules are usually conducted in English. Up to four German–language modules may be taken. The module examinations must be taken in the language of the course.

(6) In all degree courses, the program concludes with the “Master's thesis” module, which encompasses the “written work” and “presentation” assessment requirements in the form of a final seminar.

(7) The order of the modules shown in the appendices is not binding. The sequence shown in the appendices for the completion of modules and module examinations is a recommendation for the completion of the degree program within the standard course duration.

§ 9 Study Placement Abroad

(1) In light of the internationalization of the working world and the acquisition of linguistic and social skills associated with a stay abroad, the Faculty of Economics and Management recommends and encourages a voluntary study placement at a foreign university. A study placement of this nature may be completed in agreement with the board of examiners. The study placement abroad must be prepared well in advance, and originals or certified copies of all documents necessary for decisions regarding recognition, in particular certificates/grade confirmations, must be presented together with detailed module descriptions.

(2) Before taking up a study placement abroad, students and the board of examiners must consent to a Learning Agreement that may be updated if, for any reason, the planned classes cannot be undertaken once at the location. In this case, a Change to Learning Agreement must be approved by the board of examiners.

(3) The Learning Agreement or Change to Learning Agreement signed by the student and the board of examiners constitutes the examination registration. The examination registration is required for the recognition of external module examinations and/or study credits and examination results pursuant to § 15 para. 3.

§ 10 Types of Classes

(1) Courses and classes are announced on the university's website. Primarily lectures, seminars, exercises, exercises in small groups and scientific projects are offered.

(2) Lectures are used to communicate in a cohesive and systematic manner, in order to present fundamental technical, theoretical and methodological knowledge.

(3) Seminars are used for teachers and students to scientifically appraise theoretical and practical issues collaboratively. This can be achieved in a variety of different ways of working (provision of information, presentations, development of theses, discussions), and in groups. They require cooperation between the students in the form of presentations and/or written assignments. The seminar leader may require additional assessments.

(4) Exercises, particularly large-scale and lecture hall exercises, are used to practice and consolidate the subject matter, especially the acquisition of basic methods, skills and competences in conjunction with application-oriented practice. In general, they are carried out by research assistants under the responsibility of the person who is offering the course on which they are based.

(5) Exercises in small groups are also used to practice and consolidate the content of lectures with a limited number of participants. They are used to practice and apply the knowledge conveyed and learned. Exercises in small groups are classes that accompany lectures, which offer the students the opportunity to check their level of understanding of the subject area. They are also used to prepare for written examinations. As a rule, exercises are worked on as homework and the correct solutions are subsequently discussed interactively in a tutorial.

(6) In classes designated for scientific projects, students work in a practical manner on complex tasks taking theoretical principles into particular account. The results are presented in a form that is also customary in professional practice. The project may be supervised by an interdisciplinary team of lecturers, members of which may act as both coach and mentor. Access to projects may depend on the students having fulfilled certain requirements, as well as on the module regulations. It is also possible for students, in agreement with a course lecturer, to work on a project independently during a semester.

(7) The main focus of the presentation is to present and defend the knowledge acquired during the relevant modules. The objective of the presentation is to reflect on a subject in theoretical and practical terms to a high professional standard.

(8) In the case of teaching and learning forms that demand regular active participation by candidates in order to attain the learning objective, the requirement to attend regularly may be included in the module description.

(9) Access to individual modules may be restricted in justified exceptional cases if, due to the type and purpose of the class or for any other teaching or research reason, it is necessary to limit the number of participants. The admission requirements are governed by the corresponding module descriptions.

§ 11 Course Guidance

(1) In order to facilitate orientation within the Faculty for new students, introductory courses are offered at the start of each program.

(2) These study and examination regulations only contain information of a general nature; for this reason, further information is needed for precise orientation and planning of the course of studies. For this reason, students should also familiarize themselves with the module handbook.

(3) Course guidance is offered by the Faculty for each study program.

§ 12 Individual Study Plans

(1) Individual study plans are to facilitate the successful completion of the course within the standard course duration. They may be offered particularly for students who are dealing with especially heavy demands as a result of long-term illness, the birth of or caring for their own children, or other reasons.

(2) Individual study plans should be discussed and agreed with the person responsible for the study program.

III. Examinations § 13 Board of Examiners

(1) The Faculty has set up a Board of Examiners to organize the module examinations and to administer the tasks allotted by these study and examination regulations.

(2) The Board of Examiners ensures compliance with the terms set out in these study and examination regulations. The Board reports to the Faculty on developments regarding the module examinations and study periods. The Board makes suggestions regarding the reformation of these study and examination regulations. The board of examiners adjudicates on applications and students' protests regarding examinations.

(3) From the ranks of professors and junior professors, the Faculty Council appoints the chair, deputy chair, one further member and a deputy member to the Board of Examiners. Furthermore, the Faculty Council appoints one member and one deputy member each to the Board of Examiners from the ranks of research assistants and students.

(4) The Board of Examiners has the quorum if, alongside the chairperson or his/her deputy, at least two additional members are present, however this shall only be the case if the group of professors and junior professors cannot be overruled. The Board of Examiners passes resolutions with a simple majority. If the votes are tied, the chairperson, or if he/she is not present, his/her deputy, shall have the casting vote.

(5) The term of office of the members or deputy members of the Board of Examiners is two years, with the incumbency of the student member and his/her deputy being limited to one year. It is possible for members to be reappointed. If the term of office of a member in accordance with § 13 para. 3 sentence 1 ends before a reappointment or new appointment is made, this member shall remain in office until the reappointment or new appointment takes place.

(6) The meetings of the Board of Examiners are not held in public. The members of the board are bound to maintain confidentiality. If they are not public servants, they must be sworn to secrecy by the chair or deputy chair of the board of examiners.

(7) The Board of Examiners shall adopt rules of procedure. The Board may revocably transfer tasks to be dealt with independently to the chairperson. The Chair of the Board of Examiners, or a person nominated by him/her shall represent the Board of Examiners both judicially and extrajudicially. The chairperson prepares and executes the resolutions of the Board, and regularly informs board members as to his or her activities.

(8) Decisions and other measures to be approved in accordance with these study and examination regulations, and in particular the registration, cut-off and examination deadlines and dates must be publicly announced in the usual manner within the university. Admission to an examination, the refusal of admission and the results of the module examinations are announced individually via the electronic examination administration system.

(9) The Office of the Board of Examiners is the examination office of the Faculty.

§ 14

Lecturers, Examiners and Assessors

- (1) The lecturers are appointed by the Faculty Council for specific teaching units/courses in a certain semester pursuant to the Higher Education Act of the state of Saxony-Anhalt.
- (2) The board of examiners appoints the examiners from the ranks of the professors and junior professors working in the Faculty. Furthermore, teachers, university and private lecturers, research associates with doctorates, and employees who carry out independent teaching duties in the subject area to which the module examination relates, in addition to professors and junior professors from other faculties who may be appointed as examiners.
- (3) Two examiners must be appointed to evaluate written examination scripts. If the board of examiners determines that, having considered all those authorized to be examiners or assessors pursuant to paragraph 1, the additional burdens arising from appointment as an examiner for a particular examination date would have an unreasonable impact on their other duties, or if two examiners are not available, it may resolve that the written examinations concerned should be marked by one examiner only. The resolution must be communicated to the student when registering for the module examination.
- (4) The examiners are independent to their examinational duties. They are subject to confidentiality.

§ 15

Recognition of Module Examinations, Study Credits and Examination Results

- (1) In accordance with § 15 para 4, upon written application, the board of examiners will adjudicate on the recognition of module examinations and/or study credits and examination results. The application is to be submitted to the board of examiners via the examination office within four weeks of the date of commencing studies. In the process, the students must hereby submit the documents necessary for checking the suitability for recognition, particularly, the original certificates / grade confirmations or certified copies thereof, plus detailed module descriptions.
- (2) Notwithstanding paragraph 1, the module examinations and/or study credits and examination results in the selected or an equivalent study program shall be recognized / accredited in accordance with official procedures. The Board of Examiners shall decide upon the equivalence of study programs. Where examinations are not passed, the failed attempts will also be recognized in accordance with official procedures pursuant to § 15 para 4.
- (3) Upon written application, the Board of Examiners shall adjudicate upon the recognition of module examinations and/or study credits and examination results in connection with a study placement abroad. Notwithstanding para. 1, this must be submitted in the form of a Learning / Change to Learning Agreement as per § 9 para. 2 and para. 3.
- (4) In accordance with the provisions of the Lisbon Convention (Article III), module examinations and study and examination results must be recognized if there are no significant differences in terms of quality, standard, learning outcome, scope and specialization between the knowledge acquired and that to be acquired. This shall be ascertained through an overall consideration and evaluation rather than a schematic comparison. Recognition with conditions is possible, as is a partial recognition.
- (5) The burden of proof in the event that module examinations and/or study outcomes and examination results do not meet the corresponding requirements for recognition lies with the board of examiners. When applied by both parties, the European Credit Transfer System (ECTS) is to be taken into account in the evaluation and in general the number of credit points obtained is to be adopted. If the ECTS system is not applied by both parties, the number of credit points obtained externally is to be converted based on to the actual workload to the ECTS.

(6) Knowledge and expertise acquired outside of higher education may be accredited to a university degree course as part of an individual, or under certain circumstances, generalized examination, if, in terms of content and level they are equivalent to part of the study program that is to be recognized. Knowledge and skills acquired outside of higher education may replace a maximum of 50% of a university study program. The application is to be addressed to the board of examiners via the examination office within four weeks from the date of commencing studies. The students must hereby submit the original documents or certified copies thereof required for checking the suitability for recognition.

(7) If module examinations and/or study and examination results are recognized, the grades – as long as the grading systems are identical – shall be transferred and included in the calculation of the overall grade. Where grading systems differ, the board of examiners shall decide upon the grade conversion. In the case of disparate grading systems, the grade “sufficient” shall be adopted.

§ 16 Continuous Assessment

(1) In conjunction with the further clarifications in paragraphs two to eleven, the following types of continuous assessment may be used:

- Written examination (interim and/or final written test) (K),
- Electronic examination (interim and/or final written test) (eK),
- Oral examination (M)
- Academic home (H) or seminar paper (S) or other equivalent written work,
- Take-Home-Exam (sA),
- Presentation (P),
- Scientific project (WP),
- Discussion contribution (D),
- Completion of an exercise (Ü)

(2) In an examination (interim and/or final written test) in written or electronic form that is invigilated and taken in a limited time session with limited aids, students are required to demonstrate their comprehension of standard methodology and problem recognition and solving skills within their specific fields. The time allowed for a written examination (interim and/or final written test) amounts to a total of 60 minutes (in the case of a module carrying five CP) or 120 minutes (in the case of a module worth more than five CP). Written exams (interim and/or final written tests) may contain tasks or consist of questions, for which there is a choice of several answers (multiple choice).

(3) In the case of written examinations including multiple-choice exercises, the examination candidate must indicate which of the answers provided he or she considers to be the most applicable. When compiling the examination questions for a multiple-choice test, those answers that are considered applicable must be specified. The second examiner, in conjunction with § 20 para 3, is responsible for checking the examination questions before determining the examination result to establish whether they, as measured by the requirements of para. 2, are erroneous. If this check should establish that individual questions are erroneous, they must not be taken into account in determining the examination result.

(4) A multiple-choice test shall always be deemed to have been passed if the examination candidate has achieved at least 50 per cent of the possible points score (absolute pass mark). The examination shall also always be deemed to have been passed if the points score achieved by the candidate is at least 50 per cent of the average points score achieved by the top 5% of the participants in the test, but no less than 40 per cent of the maximum possible points score (sliding scale pass mark). In the case of repeated examinations, the sliding scale pass mark in line 2 must not be applied if the number of

participants is 45 candidates or fewer. In this case, the absolute pass mark pursuant to line 1 shall apply. This paragraph shall apply if the proportion of examination questions in the multiple-choice test exceeds 50 percent of the total achievable score.

(5) The student should demonstrate, by means of an oral examination, that he or she understands the contexts of the area being examined and is able to understand specific questions relating to the contexts. The oral examination shall be conducted by several examiners (panel examination) or by one examiner and an expert assessor in the form of an individual or group examination, whereby up to 4 students may constitute a group. The assessor is to be consulted before a final grade is awarded. As a general rule, the duration of the examination for each student shall be fifteen minutes. The essential points of the examination and its evaluation must be recorded in writing. This record must be signed by the examiners and the assessors. The result of the module examination is to be made known to the student directly following the oral examination.

(6) An academic or seminar paper or other equivalent written work requires an experimental, empirical or theoretical approach to a task from the specialized area. Students are free to propose topics and task definitions for their papers. However, their proposals shall not give rise to a legal entitlement. Other written work (e.g. a research paper, coursework or project work) may be considered to be the equivalent of a seminar paper.

(7) A written report (e.g. working on a case study, spreadsheet analysis, essay, abstract or assignment) comprises of an independent written discussion of a subject-specific or interdisciplinary problem, including and evaluating relevant literature where appropriate.

(8) A presentation comprises of independent and in-depth discussion of a problem from the work context of the course with the inclusion and evaluation of relevant literature, in addition to the presentation of the work and communication of the results in an oral presentation as well as in the subsequent discussion. Presentations must be provided in documentary form for assessment.

(9) By working on a joint academic project, students must demonstrate their ability to produce scientific work independently as well as to work in a team. Individual contributions to a project must be clearly discernible.

(10) Through oral examinations in the form of a discussion contribution, the students should demonstrate that they are familiar with the context of the subject area and are able to understand specific questions relating to the context.

(11) An exercise consists of a sequence of tasks provided by the relevant lecturer which must be completed independently by a set deadline. The exercise may include reviewing the tasks and discussing any problems. Exercises may also include a written report or another kind of presentation of individual exercise work. (12) Group projects are also a permissible form of examination. The contribution of each individual student must meet the examination requirements and be clearly discernible and assessable on the basis of sections, pages or other objective criteria

(12) Modules are generally concluded with an examination. A combination of types of module examination as set out in paragraph 1 is permissible, if the intended aim of a reasonable examination burden is achieved, whilst maintaining the principle of competence-based assessment. The form and scope of continuous assessment for the individual modules can be found in the appendices containing the study and examination schedules and/or the module handbooks.

(14) The type and scope of the module examinations can be found in the study and examination schedule and/or the module handbook. The types of continuous assessments set out in these regulations or in the module handbook may be changed under the following conditions:

- a) If a small number of candidates are registered or can be expected for an examination that is designated as a written examination, then upon application by the examiner, the board of examiners may agree to the examination being conducted orally instead.
- b) If a large number of candidates are registered or can be expected for an examination that is planned as an oral examination, then upon application by the examiner, the board of examiners may agree to the examination being conducted in writing instead.

This approval shall only apply for one examination date. Students must be notified immediately of any change to the continuous assessments approved by the board of examiners.

(15) The examiner shall decide which examination aids may be used in a written examination. A list of the authorized aids must be supplied in good time before the start of the examination. Grades must be announced no later than the end of the semester during which the exam was taken.

(16) If module examinations are completed in other faculties, then in conjunction with § 19 para. 3, the regulations governing examinations in the relevant faculty shall apply. Separate from this, the regulations pursuant to § 20 and § 21 of these study and examination regulations apply in full.

§ 17 Public Access to Oral Examinations

As long as they themselves are not registered to take the same module examination, students of these programs who have yet to successfully complete the respective examination may be admitted as observers to the oral examinations as per § 16 para 5. A corresponding application must be made to the board of examiners of the Faculty of Economics and Management. This, however, does not include the counseling and notification of the examination candidates with regard to their examination results. Pursuant to sentence 1, a student may apply to exclude observers from his or her examination.

§ 18 Examination Administration System

(1) Students shall use existing online means of access in person to the electronic examination administration system. This system is used to electronically administer the examination data, registration and deregistration for module exams, and announcement of module grades; the board of examiners may enact more detailed regulations for the execution of the process.

(2) To the best of their ability, students are obligated to check the accuracy of the entries in the examination administration system at least once per semester; any transcription errors must be reported immediately.

(3) The examiners as defined in § 14 shall take part in electronically recording the examination results. The grading lists shall be retained by the board of examiners responsible for the module examination.

(4) The module examination results shall, where possible, be announced via the electronic examination administration system or by notice on the notice board. With this in mind, students are obligated to utilize the examination administration system. The assessment result shall be considered to have been announced by, at the latest, two weeks after the assessment has been entered in the electronic examination administration system or after being posted on the notice board, if the relevant students have not already been verifiably made aware of the result already. The students shall be notified in the customary manner that the examination results have been entered in the electronic examination administration system.

(5) If a student wishes to leave the university or change course, upon request, a written confirmation will be issued containing all partaken module examinations sat and their respective grades and an indication of whether the master's examination has not yet been completed or if it has been irrevocably failed.

§ 19

Admittance to Continuous Assessments

(1) Anyone who is enrolled at Otto von Guericke University may be admitted to the module examinations. The completion of module examinations in the same semester in other institutes of higher education either at home or abroad is not significant.

(2) The module examinations are generally arranged by the end of the semester. The deadlines stipulated by the chair of the board of examiners and announced by notice at the latest four weeks before the expiration of said deadlines for registration for the examinations are cut-off dates. The registration deadline is usually four weeks after the start of classes. Upon request of the examiner to the board of examiners, in the case of seminars, a different registration deadline may be stipulated. Students will be made aware of this by notice and/or via the faculty home page and/or the website of the examination office, unless these study and examination regulations specifically state otherwise.

(3) Before the start of each module examination, the student must have registered for it with the board of examiners. For modules completed in the Faculty of Economics and Management, this registration shall take place either by means of electronic enrollment via the web portal of the university or by personally signing a registration form specifically for the examination. For module examinations that are completed in other faculties, a separate registration in the examination office of the faculty offering the examination must be undertaken. In accordance with § 16 para. 16, the registration and deregistration deadlines of the faculty offering the examination shall apply. The registration also applies for any repeat examinations in the ongoing semester. This also applies to module examinations that are taken during the study program in the selected course at another institution of higher education. For this, the signed Learning / Change to Learning Agreement constitutes the written examination registration in accordance with § 9 para. 3. A retrospective registration is not permitted. After achieving the necessary CP for the successful completion of the program, it will not be possible to register again for the same examination.

(4) Registration may be revoked in writing no later than four weeks before the start of the examination period by submission to the board of examiners, or electronically in the designated web portal. In the event of a withdrawal, a new application for admission to the examination must be submitted in accordance with paragraphs 1 and 2 for a later examination date. Students may not withdraw from an examination in the following cases:

- in the module description is clearly stated that a withdraw from an examination is not allowed/possible;
- two weeks after the registration for a seminar;
- two weeks after the registration for a scientific project.

(5) Students who after completion of the second semester cannot successfully demonstrate having obtained at least 25 CP may be invited by the head of program to take part in a course guidance session in which the reasons for exceeding the expected time period are discussed and the future study progress is planned.

(6) The board of examiners is responsible for admission decisions. Admission will be refused if

1. the requirements for admission are not met or
2. the documents are incomplete or
3. the examination has been irrevocably failed or is deemed to have been irrevocably failed.

§ 20 Calculation of Module Grades

(1) A module examination must be taken for each module. The module examinations are to be assessed by the relevant examiners. The result of the module examination must be announced by the latest at the end of the semester in which the exam took place.

(2) The following grades are to be used for the assessment of module examinations:

Grade	Designation	Definition
1	Very good	An outstanding performance
2	Good	A performance which is significantly above average
3	Satisfactory	An average performance
4	Sufficient	A performance which, in spite of its shortcomings, is considered to be sufficient
5	Not Sufficient	A performance which, because of substantial shortcomings, does not meet the requirements

For the sake of greater differentiation, individual grades may be rounded up or down by 0.3; this does not apply to the following grades: 0.7, 4.3, 4.7 and 5.3. The grade of the module examination must be communicated to the Examination Office immediately.

(3) A module examination is considered to have been passed if a minimum grade of "sufficient" is awarded. If a module examination is graded by more than one examiner, it is considered to have been passed if all examiners award at least a grade of "sufficient".

(4) If the grades awarded by the examiners in accordance with para. 1 differ from one another, then in accordance with para. 2, the grade for the module examination shall be the arithmetic average closest to both individual grades; in case of doubt, the better grade of the two is to be awarded.

§ 21
Repetition of Module Examinations

(1) In the case of module examinations, attempts are not counted. It is not necessary to repeat failed module examinations. Module examinations that have been passed may not be repeated.

(2) Notwithstanding para. 1, in compulsory elective examinations that take the form of a seminar amounting to 10 CP or a scientific project amounting to 15 CP, in each case no more than two repetitions may be graded with “not sufficient” or deemed to have been graded with “not sufficient”.

§ 22
Additional Modules

(1) Students may undertake additional module examinations, in addition to the modules offered in their respective program.

(2) The result of the additional modules will, if the examination was registered for in advance, be included in the certificate and/or grade confirmation. The results of additional modules will not be taken into consideration when calculating grade point averages and when determining the overall grade.

§ 23
Non-Attendance, Withdrawal, Cheating, Breach of Regulations

(1) If, after registering for a module examination for which the time and location has been set, the candidate fails to attend without a good reason, or if he or she withdraws from the module examination after it has commenced without good reason, then he or she shall be awarded a grade of “not sufficient” (5.0) for the module examination concerned. The same applies for an assessment which is not submitted by the set submission deadline or a module examination is not completed by the prescribed date.

(2) Students wishing to withdraw from a module examination after the end of the withdrawal period in accordance with § 19 para. 4 must apply in writing to the board of examiners. The reason for missing or withdrawing from the examination must be provided in writing without delay to the board of examiners and must be substantiated. In the case of impairments caused by ill health, the withdrawal from the examination must be substantiated by a doctor’s note. In cases of doubt, the doctor may be appointed by the chair of the board of examiners. If the board of examiners recognizes the reason given, then the candidate will be notified either in writing or electronically.

(3) Should the candidate attempt to influence the result of an examination by deception, then the module examination result concerned shall be recorded as “not sufficient” (5.0). Making use of unauthorized aids after the start of an examination shall always be deemed to be an attempt of deception within the meaning of line 1. In particularly serious cases, the board of examiners may revoke the right to repeat the module examination.

(4) If a candidate disrupts the proper process of an assessment / module examination, then he or she may be excluded by the examiner or invigilator from continuing with the assessment / module examination. If this is the case, the module examination shall be deemed to have been graded as “not sufficient” (5.0).

(5) Adverse decisions in accordance with paragraphs 1 to 4 must be communicated in writing without delay to the candidate and must be justified.

§ 24

Protective Provisions, Compensation for Disadvantages

(1) Where a student provides credible evidence (medical certificate) that, due to a prolonged or permanent illness, he or she is completely or partially unable to fulfill the module examination requirements in the prescribed form, the board of examiners must provide the student with the possibility of taking equivalent module examinations in a different form.

(2) Disabled students may be granted additional materials or aids to compensate for disadvantages, provided that this is necessary to establish equality of opportunity. To this end, the duration of the assessment may be extended to a reasonable degree, or approval may be given for the examination to be taken in a different form. A disabled student is defined as someone who, due to a protracted or permanent physical impediment, is not in a position to complete the examination in the prescribed form, either in part or in full. The impediment must be substantiated. The university may require substantiation in the form of a medical certificate or submission of a certificate of disability. Compensation for disadvantages must be applied for in writing to the board of examiners. The application should be made no later than when registering for the module examination.

(3) In applying these study and examination regulations, the protective provisions pursuant to the Maternity Protection Act and in accordance with the time limits set out by the Federal Child-Raising Allowance Act regarding parental leave are to be strictly adhered to and their utilization facilitated, especially with regard to the calculation of time limits. During a leave of absence granted in order to care for a close relative, students are free to continue with their studies and examinations. Upon written application to the board of examiners, students may repeat a failed examination during their leave of absence.

§ 25

Appeal Procedure

Students may file an objection against adverse administrative acts in connection with examination matters in writing or verbally for transcription, with the board of examiners in accordance with the Administrative Procedure Act (Verwaltungsverfahrensgesetz, VwVfG). Objections are to be provided in written form. If the board of examiners does not wish to remedy the objection, the relevant student must be provided with an official decision complete with instructions on how to appeal.

IV. Master's Degree

§ 26

Registration for the Master's thesis module

(1) The "Master's thesis" module is mandatory in the study program named in § 1. As part of a final seminar, a "written work" is to be produced in English.

(2) As part of the "Master's thesis" module students must show that they are capable, within a given time frame, of working independently, using scientific methods, on a particular issue from the subject area. The topic and task definition of the written work must correspond to the purpose of the examination and the required workload. The type of task and the project definition must be specified when the topic is assigned. Within the context of the final seminar, the candidate must demonstrate that he or she is able to adequately present and explain the problems and solutions on which he or she has been working.

(3) Only applicants who

- are enrolled at Otto von Guericke University on the study program stated in § 1,
- have successfully acquired at least 75 CP,
- have successfully acquired at least 15 CP in each of the two core areas and
- have successfully completed the seminar amounting to 10 CP will be admitted to the "Master's thesis" module.

(4) Permission to write a Master's thesis must be applied for in writing to the board of examiners. The seminar facilitators may set justified admission requirements for the respective final seminars.

§ 27

Issuing of the Topic, Submission and Assessment of the "Master's Thesis" Module

(1) The topic shall be set by the lead examiner in consultation with the student to be examined. Students should be given the opportunity to make proposals for the thesis topic and task definition. However, their proposals shall not give rise to a legal entitlement. Following receipt of an application, the board of examiners shall guarantee that the student receives a topic in good time. During the preparation of a thesis, each student shall be supervised by their lead examiner.

(2) For the setting of topics, the board of examiners shall appoint persons from the ranks of professors, junior professors, university and private lecturers and research associates who hold a doctorate and who are active within the Faculty. Over and above this, with their agreement, other habilitated members of the Faculty and professors, junior professors, university and private lecturers from the Faculties of Computer Science, Mathematics, Natural Sciences or the Engineering faculties may also be appointed as examiners. If the lead expert is not employed in the Faculty of Economics and Management, then the second expert appointed must be an examiner from the Faculty of Economics and Management. The board of examiners may limit the number of theses to be supervised by one person with the objective of achieving an even distribution among the persons setting topics.

(3) The topic of the written thesis shall be issued by the board of examiners once the student has been granted permission to write their thesis and the student shall be notified of the submission deadline for their work. The date of issuing of the topic must be put on record. The topic may be returned only once, and only within four weeks of being issued. Afterwards, students must reapply for admission to the "Master's thesis" module.

(4) The time between the issuing of the topic and the submission of the Master's thesis, including a four-week reading period, is 22 weeks. It may be extended by the board of examiners with the consent of the topic setter by a maximum of four weeks.

(5) A list of the resources used must be appended to the thesis. When submitting their thesis, students must assert in writing that they have completed the work independently and without the use of any other aids or resources than those indicated, and all passages that have been quoted verbatim or paraphrased from published or unpublished papers have been identified as such. Over and above this, a declaration must be given, and appended to the final thesis, that neither the thesis, nor excerpts from it, have already been used for another examination. Plagiarism is an attempt at deception in accordance with § 23 and any work containing it shall be graded as “not sufficient”.

(6) The thesis must be submitted to the examination office in two bound copies plus two copies in digital form by the deadline. If the thesis is not submitted in a timely manner or in the form required, then it shall be graded as “not sufficient” (5.0). § 23 applies accordingly.

(7) The examiners must appraise and grade the thesis within two months of the date of submission.

(8) 30 CP are awarded for the successfully completed “Master’s thesis” module.

(9) The module examination as per para. 8 is comprised of two assessments, which must be completed in the context of a final seminar: the “written work or thesis” contributes 80% of the of the grade for the module examination, whilst the corresponding “presentation” accounts for 20%.

(10) Notwithstanding § 20 para. 2, the grade for the “Master’s thesis” module is calculated as a weighted, arithmetic average of the grades for both assessments as outlined in para. 9. When arriving at a grade for the “Master’s thesis” module, only the first decimal place will be taken into account; all other decimal places will be disregarded without rounding. The grades are as follows:

For a grade average of	Designation
up to 1.5 and including	Very good = A
From 1.6 up to and including 2.5	Good = B
From 2.6 up to and including 3.5	Satisfactory = C
From 3.6 up to and including 4.0	Sufficient = D
From 4,1	Not Sufficient = F

(11) The “Master’s thesis” module shall be deemed to have been passed if both assessments pursuant to para. 9 have each been graded as at least “sufficient”.

§ 28 Repetition of the Master’s Thesis Module

(1) The “Master's thesis” module may be repeated once if it has or is deemed to have been graded as “not sufficient”. As a result, both assessments must be completed again, pursuant to § 27 para. 9.

(2) The “Master’s thesis” module must be repeated within the framework of a final seminar during the following semester.

(3) Once the “Master’s thesis” module has been passed, it cannot be repeated.

§ 29
Overall Master's Degree Result

- (1) The Master's degree shall be deemed to have been passed when all examinations during the program assessing the compulsory elective and elective modules amounting to 90 CP in accordance with appendices 1–2 have been successfully completed and the "Master's thesis" module amounting to 30 CP has been graded as at least "sufficient".
- (2) The overall grade of the Master's degree is the arithmetic average of the grades for all module examinations passed and the "Master's thesis" module weighted according to the credit points. When arriving at a final grade, only the first decimal place will be taken into account; all other decimal places will be disregarded without rounding.
- (3) If the average of the final grade is better than 1.3, then the classification "with distinction" shall be awarded.
- (4) The Master's degree shall be irrevocably failed if the third module examination in a seminar or the third module examination in a scientific project or the repetition of the "Master's thesis" module has been graded "not sufficient" or is deemed to have been graded "not sufficient".

§ 30
Certificates and Confirmations

- (1) A certificate in English and a transcript in German will be issued for a successfully completed Master's degree. The certificate will contain the final grade, the subject and the grade awarded for the Master's thesis. The certificate shall bear the date on which the last assessment was carried out or the last module examination was completed. It must be signed by the chair of the board of examiners and the Dean of the Faculty and stamped with the Otto von Guericke University stamp.
- (2) An appendix to the certificate in English stamped with the university stamp together with a transcript in German will list all of the modules completed including the CP and grades awarded for them.
- (3) Together with the certificate, students shall receive a Diploma Supplement in the German and English languages.

§ 31
Records

- (1) Together with the certificate, students shall receive a transcript of records in English and a copy in German with the date of the certificate. This certifies the awarding of the title of Master.
- (2) This record shall be signed by the Dean of the Faculty at Otto von Guericke University and stamped with the stamp of the Faculty of Economics and Management at Otto von Guericke University.

V. Final Provisions

§ 32
Right to View the Examination Files

- (1) Within a particular period specified by the board of examiners, after completion of each module examination and at the beginning of the following semester, students may view their written examination scripts, the examiners' assessments and the examination records. Outside of this period, access may only be granted upon written application to the board of examiners; the application must be justified and substantiated.
- (2) After issuing of the certificate, written applications to the board of examiners to view an examination file must be made within a cut-off period of one year. The chairperson of the board of examiners will determine the time and place for reviewing the documents.

§ 33
Invalidity of Examination Results

(1) If a student has cheated in an examination or influenced his or her result through the use of unauthorized aids, and this becomes known after the degree has been awarded, the board of examiners is authorized to declare an examination to have been failed either partially or in its entirety.

(2) If the conditions for admission to the module examination were not met but without any intentional deception, and this only becomes known after the degree has been awarded, the deficiency shall be deemed to have been righted if the examination was passed. If a student has deliberately used unfair means to gain admission, the board of examiners, taking into consideration relevant legal regulations, will decide as to the revocation of any unlawful administrative acts.

(3) Prior to such a decision, the student concerned is to be given the opportunity to make a statement on the matter to the board of examiners.

(4) The incorrect certificate must be recovered and replaced by a correct certificate or confirmation in accordance with § 18 paragraph 5. No decision may be made pursuant to paragraphs 1 and 2 after a period of five years has elapsed. In the event that the examination certificate is revoked without replacement, the holder must be stripped of his/her academic degree and the record recovered.

§ 34
Transitional Provisions

(1) The provisions of these study and examination regulations apply to all students who enroll for the first time on the Master's program as named in § 1 of these regulations at Otto von Guericke University Magdeburg from the 2019/2020 winter semester.

(2) Students who have already enrolled on the Master's program in Operations Research and Business Analytics before 1 October 2019, may request that these study and examination regulations be applied to them. The application must be made to the board of examiners of the Faculty of Economics and Management by 31 March 2020. It may not be revoked.

§ 35
Validity and Effective Date of Regulations

These study and examination regulations shall enter into force following approval by the President on the day after they are published in the official announcements of Otto von Guericke University.

Issued by virtue of the resolution of the Faculty Council of the Faculty of Economics and Management dated 26.06.2019 and the resolution of the Senate of Otto von Guericke University Magdeburg dated 25.07.2019.

Magdeburg, 25.07.2019

Prof. Dr.-Ing. Jens Strackeljan

President
of Otto von Guericke University Magdeburg

Appendix 1: Study & Examination Schedule Operations Research and Business Analytics (where studies commence in the winter semester)

No.	Module / Modules	1st semester (WS)			2nd semester (SS)			3rd semester (WS)			4th semester (SS)		
		SHW	AT	CP	SHW	AT	CP	SHW	AT	CP	SHW	AT	CP
1a.	Compulsory Elective Modules on Quantitative Methods												
1.1	Module I	*	*	5									
1.2	Module II	*	*	5									
1.3	Module III				*	*	5						
1b.	Compulsory Elective Modules on Methods of Computer Science												
1.4	Module I	*	*	5									
1.5	Module II				*	*	5						
1.6	Module III				*	*	5						
2.	Compulsory Elective Modules in Specialization												
2.1	Module I	*	*	5									
2.2	Module II				*	*	5						
2.3	Seminar				2S+*	P, APa+*	10						
2.4	Scientific Project							2S+*	*	15			
3.	Elective Modules												
3.1	Elective Module I	*	*	5									
3.2	Elective Module II	*	*	5									
3.3	Elective Module III							*	*	5			
3.4	Elective Module IV							*	*	5			
3.5	Elective Module V							*	*	5			
4.	Master's Thesis 30												
4.1	Master's Thesis Seminar										2S	P	
4.2	Written Thesis Paper											APa	
	Total	~24		30	~20		30	~16		30	2		30

Appendix 2: Study & Examination Schedule Operations Research and Business Analytics (where studies commence in the summer semester)

No.	Module / Modules	1st semester (SS)			2nd semester (WS)			3rd semester (SS)			4th semester (WS)		
		SHW	AT	CP	SHW	AT	CP	SHW	AT	CP	SHW	AT	CP
1a.	Compulsory Elective Modules on Quantitative Methods												
1.1	Module I	*	*	5									
1.2	Module II				*	*	5						
1.3	Module III				*	*	5						
1b.	Compulsory Elective Modules on Methods of Computer Science												
1.4	Module I	*	*	5									
1.5	Module II	*	*	5									
1.6	Module III				*	*	5						
2.	Compulsory Elective Modules in Specialization												
2.1	Module I	*	*	5									
2.2	Module II				*	*	5						
2.3	Seminar				2S+*	P, APa+*	10						
2.4	Scientific Project							2S+*	*	15			
3.	Elective Modules												
3.1	Elective Module I	*	*	5									
3.2	Elective Module II	*	*	5									
3.3	Elective Module III							*	*	5			
3.4	Elective Module IV							*	*	5			
3.5	Elective Module V							*	*	5			
4.	Master's Thesis 30												
4.1	Master's Thesis Seminar										2S	P	
4.2	Written Thesis Paper											APa	
	Total	~24		30	~20		30	~16		30	2		30

Study and Examination Schedule Key:

* for the scope and types of class as well as the form and scope of continuous assessment, see the module descriptions for the available modules.

CP = Credit Points

S = Seminar

APa = Academic Paper

SS = Summer semester

P = Presentation

SHW = Semester hours per week

AT = Assessment type

WS = Winter semester

Appendix 3: Evidence of English Language Skills

A student's English language skills may be evidenced in one of the five following ways:

1. Proof of a valid language test listed here with the relevant minimum points score:

TOEFL	TOEFL iBT (internet): 108
IELTS	7.0
Cambridge Certificate in Advanced English / CAE	grade C
UNlcert	III or higher

2. Proof of a Bachelor's degree or a university diploma completely in a relevant English language program.
3. Proof of at least 30 credit points (CP) according to the European Credit Transfer System (ECTS) in English-language modules on a German-language study program.
4. Attendance at a secondary or higher education institution (e.g. college, high school, university) in an English-speaking country for at least nine months, evidence for which must be provided by an official transcript of records. The following countries are recognized as English-speaking: Antigua & Barbuda, Australia, Bahamas, Barbados, Belize, Grenada, United Kingdom (incl. overseas territories), Guyana, Ireland, Jamaica, Canada, New Zealand, St. Kitts & Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, USA (incl. external territories).
5. Applicants who hold a domestic university entrance qualification with an average grade in English of at least 8 points. The average grade will be calculated from the arithmetic average of the most recent four half-yearly assessments. If, in addition, a final examination in the subject of English has been taken, then the arithmetic average will be calculated from the most recent four half-yearly assessments and the final examination.