

**Examination Regulations for the joint Master of Science in Public Sector Innovation and eGovernance (PIONEER) at the KU Leuven, Belgium, the Westfälische Wilhelms-Universität Münster, Germany, and the Tallinn University of Technology, Estonia  
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## **§ 1**

### **Scope of the Examination Regulations**

These Examination Regulations apply the Master of Science in Public Sector Innovation and eGovernance (PIONEER) at the Katholieke Universiteit Leuven, Belgium, (KU Leuven), the Westfälische Wilhelms-Universität Münster, Germany (University of Münster), and the Tallinn University of Technology, Estonia (TalTech).

## **§ 2**

### **Goal of the Programme and Aim of the Examination**

(1) This Master's programme builds on the knowledge acquired in a prior undergraduate degree programme. In addition to conveying the academic fundamentals of the subject of study, it aims to provide students with the knowledge, skills and methods necessary to meet the academic and professional standards in the fields of public management, information systems and e-Governance. Students are trained to evaluate complex academic problems in an independent and responsible manner and apply practical methods to solve them.

(2) The Master's examination determines whether the students have acquired the necessary knowledge and skills for their prospective professional field, particularly in the areas of research and teaching.

## **§ 3**

### **Joint Master's Degree**

After successfully completing the programme, the student is awarded the academic degree of "Master of Science" (M.Sc.).

## **§ 4**

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

(1) In order to be admitted to the master's programme "Public Sector Innovation and eGovernance", the following admissions requirements must be met:

- a) the general terms for enrolment at the University
- b) successful completion of an academic bachelor's degree or an equivalent degree (Diplom, Staatsexamen etc.) at a state or state-recognised university with at least 180 credits in Social Sciences, Political Sciences, Public Administration, Information Systems, Information Science, Informatics, Engineering business or Law; degrees from other disciplines may be taken in consideration if the qualification profile is equivalent in the sense of the respective current version of the Master of Science in Public Sector Innovation and eGovernance Consortium Agreement.
- c) sufficient English language skills in the sense of the respective current version of the Master of Science in Public Sector Innovation and eGovernance Consortium Agreement (Art. 18 & 19).
- d) admission to and enrolment in the degree programme at KU Leuven and enrolment at TalTech and University of Münster (or statement that the admissions requirements for enrolment at these universities are met; enrolment at University of Münster requires previous and consisting enrolment at KU Leuven and TalTech).

The master's programme "Public Sector Innovation and eGovernance" always starts at KU Leuven in Belgium. KU Leuven is also responsible for admission to the programme. The selection process, including verification of compliance with the admissions requirements in § 4 (1) a-d, is regulated according to Belgian law and takes place at KU Leuven. For more details, see the respective current version of the Master of Science in Public Sector Innovation and eGovernance Consortium Agreement and of the Admission Regulations at KU Leuven.

- (2) Unless these Examination Regulations require additional admissions requirements for the master's examination, admission to this examination is granted with enrolment in the master's programme at KU Leuven, TalTech and the University of Münster, provided the student remains enrolled at all three universities.

## **§ 5**

### **Administration of the Programme**

(1) Every university is responsible for organising their respective examinations in the Master programme Public Sector Innovation and E-Governance, according to § 8. They ensure that the stipulations put forward in these Examination Regulations are observed. In particular, they are responsible for dealing with contested decisions taken during the examination process and for recognising examinations. All disputes and protests related to examinations shall be resolved in accordance with the procedures established at the university, where they arose. Permitted retakes are facilitated by the University where the student is studying at the time of the retake.

(2) The Master programme is managed by the Academic Steering Committee. In particular, the Academic Steering Committee ultimately consolidates the reported grades, decides on appeals related to the Master thesis and its defence and is responsible for awarding the students the Master's diploma. At each of the universities there is also an academic as well as an administrative local coordinator, who is responsible for the management of the Master programme at the local level. In case of appeals related to course examinations (KU Leuven, TalTech) / module examinations (University of Münster), the respective Local Coordinator shall inform the members of the Academic Steering Committee after he/she has decided on an appeal. Further details are outlined in the subsequent articles and in the Course Descriptions.

(3) The Academic Steering Committee consists of one representative of each university. The representatives of the universities must be professors. For each member a substitute must be elected. The term of office for professors is two years. Re-election is possible. KU Leuven as Consortium Coordinator provides the chair of the Academic Steering Committee. Every university appoints a Local Coordinator by the faculty councils. The term of office is also two years. Re-election is possible. At the University of Münster, the Examination Office of the Faculty Business and Economics (Prüfungsamt der wirtschaftswissenschaftlichen Fakultät) is the administrative office of the Local Coordinator.

(4) The members of the Academic Steering Committee and the Local Coordinators may attend all examinations.

(5) Meetings of the Academic Steering Committee are not open to the public. The members of the Academic Steering Committee, their substitutes and the Local Coordinators are obliged to maintain confidentiality. Committee members and Local Coordinators who are not already under such an obligation through their position as state employees are placed under this obligation by the chair.

(6) The agenda of the Academic Steering Committee will be made up by the chair of the Academic Steering Committee and sent to all members of the Academic Steering Committee at the latest one week before the meeting. All members can ask the chair of the Academic Steering Committee to add a topic to the agenda at the latest a week and a half before the fixed meeting in order to prepare the agenda. Decisions of the Academic Steering Committee will be made as much as possible by consensus. If asked for by a member of the Academic Steering Committee, a vote can be held. Decisions will be taken in that case by the majority of the members present (both physically and via electronic channels), each member of the Academic Steering Committee having one vote. Minutes of the meetings will be sent to each member as soon as possible. If a member of the Academic Steering Committee thinks a decision is unacceptable for any good reason, he can ask within a period of 14 days starting from the sending date of the minutes to postpone the execution of the decision by a further 14 days in order to find an extraordinary settlement by all members of the Academic Steering Committee. If no extraordinary settlement by all members of the Academic Steering Committee is found within this period, the decision adopted by the majority of the members of the Academic Steering Committee present (both physically and via electronic channels) is agreed.

## **§ 6**

### **Standard Duration, Workload and Credits**

(1) The standard duration of the programme is two academic years. One academic year consists of two semesters.

(2) In order to obtain the degree, students must earn a total of 120 credits. The programme is structured in such a manner that 60 credits can be earned each year. Academic credit serves as

a quantitative measure of a student's overall workload. This includes attending courses as well as time spent on pre- and post-preparation of the course content (i.e. course attendance and self-study time), taking examinations, preparing for examinations, including term papers and the Master thesis, as well as, if applicable, work placements or other types of courses. One credit is equivalent to 25-30 hours of academic work. The workload for one academic year thus amounts to 1,500 - 1,800 hours. Consequently, the entire Master's programme has a workload of 3,000 – 3,600 hours. One credit is equivalent to one ECTS (European Credit Transfer System) point. In detail, the effort per ECTS-credit is defined as follows:

- KU Leuven: 25-30h/ECTS-credit defined by responsible lecturer in the course description
- University of Münster: 30h/ECTS-credit
- Tallinn University of Technology: 26h/ECTS-credit.

For the master thesis, a common workload of 26h/ECTS is defined.

## **§ 7**

### **Structure and Content of the Programme, Courses / Modules**

(1) All students start their first semester at the KU Leuven (5 courses). For the second semester, students move to the University of Münster (5 modules, four mandatory, one module as elective), and for the third semester, students move to the TalTech (4 mandatory courses and one elective). The last semester is dedicated to the Master thesis and its thesis defence, which is organised in a rotating system between KU Leuven, University of Münster and TalTech.

(2) Students are required to earn a total of 120 credits to complete the Master programme, of which the Master thesis including the defence accounts for 30 credits. In addition to the Master thesis and its defence, the programme consists of 15 courses (KU Leuven, TalTech) / modules (WWU Münster) which are units of instruction varying in topic, content and duration, and which lead to partial qualification in Public Sector Innovation and E-Governance. These are defined in a learning goal related to the academic objective in question. Courses / modules can consist of different types of courses with different teaching and learning formats.

(3) In detail, the Master programme consists of the following courses / modules:

## a) KU Leuven

Course	Type of Course	Type of Examination	Credits
Public Innovation	Lecture	Scientific paper Skills test Reflection reports.	8 ECTS
Public Governance, Administration and Society	Lecture	Class discussion and class assignments A group paper and presentation An oral exam	4 ECTS
Integrated Research Seminar	Practical	Research group report, Group presentation, Participation during contact hours.	6 ECTS
Digital Public Governance	Lecture	Group assignment, individual paper, Assessment of the overall content of the course during an oral exam.	6 ECTS
Business Information Systems	Lecture	A written exam.	6 ECTS

## b) University of Münster

Module	Type of Course	Type of Examination	Credits
Project Management	Lecture + exercise	Final written exam, Short Group presentation (group of approx.. 5 students), Group work essay (group of approx.. 5 students)	6 ECTS
eGovernment	Lecture + exercise	Final written exam	6 ECTS
Integrated Research Seminar	Seminar	Seminar paper (elaboration) and corresponding oral examination	6 ECTS
Information Systems Application	Lecture + exercise	Final written exam	6 ECTS
Elective:			6 ECTS
- Information Management: Theories	Lecture + exercise	Final written exam	
- Enterprise Architecture Management	Lecture + exercise	Final written exam, Case study with Enterprise-Architecture-	
- Information Security	Lecture + exercise	Management-Software, Presentaton	



- Advanced Concepts in Software Engineering	Lecture exercise +	Oral examination + one written exercise  Written examination + Software artifact (4 parts) in groups	
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## c) TalTech

Course	Type of Course	Type of Examination	Credits
Public Sector Innovation Lab	Lecture, seminar, exercise	Home assignment (essay/case study), presentation	6 ECTS
Integrated Research Seminar	Seminar	Seminar paper (case study), presentation	6 ECTS
Entrepreneurship and Technology Management	Lecture, seminar, exercise	Group work, written examination	6 ECTS
Technology, Society and the Future	Lecture, exercise	Group assignments (essays)	6 ECTS
Elective: - Governing in the Digital Era  - Environmental and Social Extremalities of Technology	Lecture, exercise  Lecture, exercise, seminar	Home assignment (case study), written exam  Report	6 ECTS

(4) The examinations of the courses (KU Leuven, TalTech) and modules (University of Münster) are organised by the University that is responsible for the course / module, according to § 8 and the Course Descriptions. Permitted retakes are facilitated by the University where the student is studying at the time of the retake.

(5) Furthermore, § 8 and the Course Descriptions define the structure of the examination and the internal structure of the courses (KU Leuven, TalTech) / modules (University of Münster).

## **§ 8**

### **Structure of the Examination, Admission to Courses / Modules**

(1) The Master's examination is taken in cumulative form over the course of the programme. It consists of the examinations of courses (KU Leuven, TalTech) / modules (University of Münster) as well as the Master thesis and its defence. The overall grade of the Master's is not affected by courses/modules with a pass/fail grading system (see Course Descriptions).

(2) A course / module is successfully completed if all course / module-related coursework has been completed and all examinations have been passed. All required coursework and examinations have to be completed in English, and the student must obtain at least 36 ECTS to be admitted to courses at the TalTech. Furthermore, admission to a module (University of Münster) / course (KU Leuven, TalTech) or a certain type of course or an examination of a module / course can depend on further conditions, which are outlined in the Course Descriptions.

## **§ 9**

### **Required Coursework and Examinations, Registration**

(1) Within each course (KU Leuven, TalTech) / module (University of Münster), students must complete at least one examination, which comprises part of the master's examination and has to be graded in accordance to §16 (1). Besides, in accordance with the provisions in these

examination regulations, students may be obliged to complete coursework as directed and announced by the instructor.

(2) The language of instruction and examination is English, see § 8 (2) sentence 2.

(3) Further regulations concerning the type, duration and scope of the examinations for the respective course (KU Leuven, TalTech) / module (University of Münster), are stipulated in § 7 and the Course Descriptions.

(4) The Course Descriptions also stipulate if and how students must register in advance in order to take part in any examination or coursework.

## **§ 10**

### **Master Thesis and Master Thesis Defence**

(1) The Master thesis module examination comprises the Master thesis and its defence and should demonstrate that a student is capable of independently working on a topic from the field of public management, information systems and e-Governance within a specified period of time in accordance with scholarly methods and that he/she is able to document and present the results appropriately. The thesis should comprise about 80 pages in length. A deviation of 10% in length is accepted. Appendices are not part of this counting.

The Master thesis defence is the last examination in the degree course and is approximately 45 minutes in length. It is split into two parts: a presentation of the Master thesis (not exceeding 30 minutes) and a discussion about the thesis and the presentation.

(2) The topic of the Master thesis is selected in accordance with the Consortium Agreement of the Master of Science in Public Sector Innovation and eGovernance and set by the Educational Board, which comprises the members of the Academic Steering Committee and 2 student representatives, upon request of one member of the Thesis Defence Committee, who is responsible for supervising the thesis process.

- (3) Upon receiving the student's application, the topic of the Master thesis is assigned to the student on behalf of the Educational Board by the examiner who requested the Educational Board to set the topic of the Master thesis. Topics can only be assigned on the condition that the student has already earned a total of 60 credits. The date of the topic assignment must be put on record. For the Master thesis defence, additionally to the submission of the Master thesis, completing the curriculum up to defending the Master thesis shall be the precondition for being eligible to conduct the defence. The curriculum is completed once all the study modules have been completed.
- (4) The Master thesis must be completed within 16 weeks. The topic, task and scope of the thesis are to be limited in such a manner that the time allocated will suffice. The student is permitted to change his/her topic only once, and only within the first four weeks of the 16-week period.
- (5) Upon substantiated request, the Academic Steering Committee may extend the submission deadline of the Master thesis in exceptional cases by up to twelve weeks. Related requests must be submitted before the regular submission deadline. In serious cases, which would make it difficult or even impossible for the candidate to submit the Master thesis on time, e.g. in cases of severe illness or immutable technical difficulties, the deadline may be extended upon the candidate's request. Other valid reasons may include taking care of one's children aged 12 years and under, nursing or caring for a spouse, a registered civil partner or direct relative or first-degree relative by marriage if such care or assistance is necessary. The Academic Steering Committee is responsible for deciding on and granting extensions (see sentences 1 and 2). Upon request of the Academic Steering Committee, the candidate must present proof of a "valid reason" (if necessary in the form of a medical certificate). Instead of extending the deadline, the Academic Steering Committee can, with regard to sentence 2, also assign a new topic for the Master thesis if the candidate was unable to work on the thesis for more than one year in total. In this case, the assignment of a new topic does count as a second attempt at the Master thesis in the sense of § 15 (2).
- (6) The Master thesis must be submitted in English. It must include a title page, a table of contents and a list of works and sources cited. All parts of the thesis that contain wording or content taken from other sources must be identified as such and cited accordingly.

The candidate must attach a written declaration to the thesis which states that he/she has written the thesis himself/herself, has not used sources and means other than those indicated and has identified all direct quotes. The declaration also applies to tables, sketches, drawings, graphic illustrations etc. Furthermore, the candidate must include a written declaration consenting to have the thesis stored in a database and compared with other texts to detect possible plagiarism.

- (7) Candidates are required to submit a digital version for a possible plagiarism check to the Academic Steering Committee by the assigned deadline. Its submission is only considered on time and complete if the digital version is submitted to the Academic Steering Committee before the deadline. The date of submission must be put on record.
- (8) Within an eight-week period after the proper submission of the Master thesis, a defence of the thesis is mandatory; in substantiated and exceptional cases the Academic Steering Committee may extend the eight-week period by up to 4 weeks. The thesis defence will, if feasible with respect to administrative, practical, legal and financial matters, be organised in a rotating system between the three partners and will take place before the Thesis Defence Committee at one of the three universities, see § 11. In the case that a student exceeds the nominal period of studies (2 years), he/she defends his/her Master thesis in the university whose turn it is to host the Master thesis defences in the established rotating system.

## **§ 11**

### **Grading of the Master Thesis and the Master Thesis Defence**

- (1) The Master thesis and its defence are evaluated by the Thesis Defence Committee, composed of at least three members, preferably one from each Consortium partner. The Academic Steering Committee appoints and announces the members of the Thesis Defence Committee at the beginning of each academic year. The members of the Thesis Defence Committee are examiners in the sense of § 12 and shall have at least a doctoral degree or an equivalent qualification within the field of the programme.

- (2) The members of the Thesis Defence Committee must score and grade the master thesis and its defence together in accordance with § 16 (1). The grade for the thesis can only be a “pass” or better, however, if all examiners award a passing score or better.
- (3) The Master thesis and its defence are reviewed according to standardized, uniform criteria whereby the scoring and the grading process of the Master thesis and its defence and its reasons have to be documented; the documentation must be signed by all examiners. The grade for the Master thesis and its defence must be communicated to the student within a one-week period after the defence. Rectifications can be made within a time period of 10 days after the formal announcement of the result.

## **§ 12**

### **Examiners and Assessors**

The Academic Steering Committee appoints examiners for the Master thesis and its defense as described in §10. Every university's Local Coordinator appoints their examiners and assessors for their courses / modules in accordance to the Course Descriptions.

## **§ 13**

### **Recognition of Required Coursework and Examinations**

- (1) Previous study achievements, examinations and/or working experience (in the sense of additional skills and qualifications obtained in ways other than academic study) will be recognised upon request, if equivalence in the sense of the Lisbon Convention is assessed; for modules/part of modules offered by the University of Münster, working experience may only be recognised if that leads to an overall recognition of working experience for less than half of the programme's degree-relevant examinations and required coursework. Equivalence has to be verified, if previous study achievements, examinations and/or working experience are comparable regarding both content and level to the required coursework or examinations they are to replace. The verification of equivalence is not a schematic comparison, but an overall evaluation.

- (2) The student has to provide the documents necessary for deciding on recognition. These documents must contain statements on the knowledge and qualifications that are to be recognised. If previous study achievements and/or examinations from degree programmes are to be recognised, then the examination regulations with module / Course Descriptions as well as the individual Transcript of Records or similar documents have to be submitted.
- (3) The verification of equivalence is decided by the Academic Steering Committee. Before equivalence can be determined, members of staff representing the subjects in question must be consulted.
- (4) If equivalence is verified by the Academic Steering Committee, consideration of previous study achievements, examinations and/or working experience shall take place in accordance with the procedures established at the university, which is responsible for providing the concerned course(s) / module(s), according to § 8 (3) and the Course Descriptions.

## **§ 14**

### **Requirements for Students with Special Needs**

The course descriptions stipulate the rules applicable if a student can demonstrate that due to disability or chronic illness he/she is partially or entirely unable to complete course (KU Leuven, TalTech)/module (University of Münster) examinations in their intended form or by the deadlines set forth in these Examination Regulations. All further stipulations are specified in the course descriptions. For the master thesis and its defence applies § 10.

## **§ 15**

### **Passing and Retaking of the Master's Examination**

- (1) The Master's examination has been passed when the candidate has passed all of the courses (KU Leuven, TalTech) / modules (University of Münster) in accordance with § 8, § 10, § 11 and the Course Descriptions and the Master thesis and the Master defence with at least a pass grade (§ 16 (1)). In that case, the candidate has also obtained a total of 120 credits

(2) If the candidate receives a fail grade for the Master thesis, he/she is granted one more chance to write the thesis. A third attempt is not allowed. This also holds true for the Master thesis defence, where also only one retake is allowed; if a student has not passed the master thesis and its defence within two attempts, he/she is considered to have finally failed the Master's examination.

(3) In case the candidate has permanently failed the Master thesis module, then the Master's examination is considered as permanently failed.

(4) In case the candidate has permanently failed a course (KU Leuven, TalTech) / module (University of Münster) according to the respective Course Descriptions, the Master's examination is also considered as permanently failed. Further regulations are defined in the Course Descriptions.

(5) If the candidate has permanently failed the Master's examination, he/she may request a transcript listing all of the completed coursework/examinations and, if applicable, respective grades. In order to receive a transcript, the candidate must present his/her certificate of exmatriculation. The transcript is printed on paper including the watermarks and holograms of the KU Leuven, the University of Münster and the TalTech and signed by the by the representatives of the three universities, or their delegates.

## **§ 16**

### **Grading of Individual Examinations, Course / Module Grades and Calculation of the Overall Grade**

(1) In accordance with the Course Descriptions, all examinations and coursework are either scored and receive a grade, as specified in the table below, or they receive a "pass"/"fail" grade. For examinations/coursework which are relevant for the calculation of course scores (KU



Leuven)/course scores and grades (TalTech)/module scores and grades (University of Münster) and the overall score and grade, the following scores and grades should be used:

Münster			TalTech			KU Leuven		
Points	Grades	Result	Points	Grades	Result	Points	Grades	Result
< 50	5	Fail	< 51	0	Fail	< 50	0-9	Fail
50-54	4	Sufficient	51-60	1	Sufficient	51-59	10-11	Sufficient
55-59	3,7							
60-64	3,3	Satisfactory	61-70	2	Satisfactory	60-69	12-13	Satisfactory
65-69	3							
70-74	2,7							
75-79	2,3	Good	71-80	3	Good	70-79	14-15	Good
80-84	2							
85-89	1,7							
90-94	1,3	Excellent	91-100	5	Excellent	90-100	18-20	Excellent
95-100	1							

(2) Grades for oral course (KU Leuven, TTU)/module (University of Münster) examinations must be communicated to the student and the responsible Local Coordinator/Examinations Office as quickly as possible but latest together with the grades for written course/module examinations by the end of the semester. The rules applicable for rectifications of announcements of the results of course/module examinations are stipulated in the course descriptions.

(3) For each module of the University of Münster and each course of the Tallinn University of Technology, a final overall score and a final overall grade is determined on the basis of the individual examinations assigned to that course/module; for courses of the KU Leuven, a final overall score is determined on the basis of the individual examinations assigned to that course. If a course/module consists of only one examination, its score is also the overall course/module score and its grade is also the overall course/module grade. If a course/module consists of more than one examination, the course descriptions specify the weighting of the individual score for the calculation of the overall course/module score and the overall course/module grade; thereby, all decimal places are rounded up to the next integral number of the points. This results in the following scores and grades:

Münster			TalTech			KU Leuven		
Points	Grade s	Result	Points	Grade s	Result	Points	Grades	Result
< 50	5	Fail	< 51	0	Fail	< 50	0-9	Fail
50-54	4	Sufficient	51-60	1	Sufficient	51-59	10-11	Sufficient
55-59	3,7							
60-64	3,3	Satisfactory	61-70	2	Satisfactor y	60-69	12-13	Satisfactory
65-69	3							
70-74	2,7							
75-79	2,3	Good	71-80	3	Good	70-79	14-15	Good
80-84	2							
85-89	1,7							
90-94	1,3	Excellent	91-100	5	Excellent	90-100	18-20	Excellent
95-100	1							

(4) The scores of all weighted courses (KU Leuven, TalTech)/modules (University of Münster) and the score of the Master thesis and its defense form the final overall grade. The score of the Master thesis module accounts for 25 per cent of the final overall grade. Unless otherwise specified in the course descriptions, the other course (KU Leuven, TalTech)/module (University of Münster) grades are weighted with respect to their credit points; thereby, all decimal places are rounded up to the next integral number of the points. This results in the following grades:

KU Leuven		
Points	Grades	Result
< 50	0-9	Fail
51-59	10-11	Sufficient
60-69	12-13	Satisfactory
70-79	14-15	Good
80-89	16-17	Very Good
90-100	18-20	Excellent

The final overall grade will only appear with designated results on the documents issued by chair of the Academic Steering Committee, according to § 17.

## § 17

### Joint Degree Master's Diploma

(1) When a student has successfully completed his/her Master's programme, he/she receives a joint degree Master's diploma (KU Leuven, University of Münster, TalTech), confirming the conferral of the Master's degree (see § 3). The joint degree Master's diploma is the document with which it can be determined unambiguously that one has complied with all learning objectives of a programme. In many cases, this document is a prerequisite for advanced programmes or particular professions in the labour market. It contains the following points:

- a) The name, date and place of birth of the graduate;

- b) The statement that it is a diploma awarded by KU Leuven, University of Münster and TalTech;
- c) The obtained degree and title;
- d) The overall grade.

(2) The joint degree Master's diploma is printed (on paper including the watermarks and holograms of all three universities) by the Chair of the Academic Steering Committee, sealed and signed by the representatives of the three universities, or their delegates, and issued by the chair of the Academic Steering Committee. A duplicate will be stored by the chair of the Academic Steering Committee.

(3) The joint degree Master's diploma is issued in English.

(4) Besides the paper documents, all joint degree Master's diplomas are stored in the Flemish government's Credit and Aptitude certificates database.

## **§ 18**

### **Joint Degree Master's Diploma Supplement, State Document**

(1) In addition to the joint degree Master's diploma, the student receives a Diploma Supplement. The Diploma Supplement contains a detailed description of the study itinerary that was followed in order to obtain the degree appears in the Diploma Supplement. This includes information regarding the learning outcomes of the programme, an overview of all courses with corresponding credits and results and information on the educational and examination system at the KU Leuven, the University of Münster and TalTech. The Diploma Supplements are printed (on paper including the watermarks and holograms of all three universities) by the chair of the Academic Steering Committee, signed and sealed by the representatives of the three universities, or their delegates, and issued by the chair of the Academic Steering Committee. The Diploma Supplement is issued in English. A duplicate will be stored by the chair of the Academic Steering Committee.

(2) From Tallinn University of Technology, students will be additionally awarded a State Document certifying education by Tallinn University of Technology participating in the joint curriculum.

## **§ 19**

### **Access to the Examination Files**

(1) After completing the Master thesis students can, upon request, gain access to their Master thesis examination papers and the examiners' assessments. Requests must be filed with the chair of the Academic Steering Committee no later than three months after the results of the Master thesis is announced. The chair of the Academic Steering Committee stipulates the time and place of access on behalf of the Academic Steering Committee. The same applies with regard to the Master's thesis defense and its examination minutes.

(2) Regulations for the access to examination papers, the examiners' assessments and examination minutes of courses (KU Leuven, TalTech)/modules (University of Münster) are defined in the Course Descriptions.

## **§ 20**

### **Absence, Withdrawal, Deception and Violation of Regulations**

(1) If a student attempts to influence the outcome the Master's thesis or its defense through dishonest means such as the use of unauthorised material or devices, the examination is regarded as not having been completed and is considered a fail. The reasons must be put on record. The same applies for other kinds of severe erroneous behaviour against generally accepted standards of conduct and violation of good academic practice, as plagiarism. In case of plagiarism, the Academic Steering Committee decides, depending on the level of plagiarism, whether the student will fail the Master thesis and/or its defense or be excluded from the Master's Examination entirely, and the Master's examination has then been permanently failed. The reason(s) for exclusion must be put on record.

(2) The rules applicable for absence, withdrawal, deception and violation of regulations considering course examinations (KU Leuven, TalTech)/module examinations (University of Münster) are stipulated in the Course Descriptions. In case of plagiarism, the respective Local Coordinator has to inform the Academic Steering Committee to decide, depending on the level of plagiarism, whether the student will fail the examination in question or be excluded from the Master's Examination entirely, and the Master's examination has then been permanently failed. The reason(s) for exclusion must be put on record.

(3) Adverse decisions of the Academic Steering Committee must be immediately disclosed to the student concerned by the chair of the Academic Steering Committee in written form. The decision(s) must be justified and accompanied by information on the legal remedies available. Before a decision can be made, the student concerned must be given the opportunity to state his/her case.

## **§ 21**

### **Invalidity of Individual Examinations, Deprivation of the Master's Degree**

(1) If the student knowingly manipulates the results of an examination or the Master thesis and if this fact comes to light only after the joint Master's diploma has been issued, the Academic Steering Committee can retroactively correct the result and, if applicable, the grades of the examination or the Master thesis accordingly and declare the examination(s) in part or whole as failed.

(2) If the requirements for the admission to an examination or the Master thesis were not met and the student had no intention of acting dishonestly and if this fact becomes apparent only after he/she passed the examination in question, the successful completion of the examination rectifies the mistake. However, if the student is found to have deliberately gained admission through wrongful means, the Academic Steering Committee is responsible for deciding on the legal consequences.

(3) If the requirements for admission to a course were not met and the student had no intention of acting dishonestly and if this fact becomes apparent only after he/she passed the course in

question, the successful completion of the course rectifies the mistake. However, if the student is found to have deliberately gained admission through wrongful means, the Local Coordinator in mutual consent with the Academic Steering Committee is responsible for deciding on the legal consequences.

(4) If the requirements for enrolment in the programme and thus the requirements for admission to the Master's examination were not met and the student had no intention of acting dishonestly and if this fact becomes apparent only after the joint degree Master's diploma has been issued, the successful completion of the programme rectifies the mistake. However, if the student is found to have deliberately gained admission through wrongful means, the Academic Steering Committee is responsible for deciding on the legal consequences.

(5) Before a final decision is made, the student concerned must be heard, i.e. he/she has the right to state his/her case.

(6) The erroneous joint degree Master's diploma and its Diploma Supplement must be handed back to the chair of the Academic Steering Committee, who will replace the erroneous documents with a new joint degree Master's diploma and a new Diploma Supplement if necessary.

## **§ 22**

### **Transitional Provisions, Coming into Force and Publication**

(1) These amended Regulations come into force on the day following their publication in the Official Announcements of the Universities involved in the programme. These Regulations apply to all students who began their studies in the Master's programme PIONEER in or after the winter semester of 2021/22.

(2) For students of the preceding cohorts, the former versions of the "Examination Regulations for the Erasmus Mundus Master of Science in Public Sector Innovation and eGovernance (PIONEER Master) at the Katholieke Universiteit Leuven, Belgium, the Westfälische Wilhelms-Universität Münster, Germany, and the Tallinn University of Technology, Estonia continues to apply for them as stipulated in § 24 of the 1. Amendments to the Examination Regulations for the Erasmus Mundus Master of Science in Public Sector Innovation and eGovernance (PIONEER



Master) at the Katholieke Universiteit Leuven, Belgium, the Westfälische Wilhelms-Universität Münster, Germany.

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Approved by the legal entities of the Katholieke Universiteit Leuven, Belgium, the Westfälische Wilhelms-Universität, Germany, and the Tallinn University of Technology, Estonia.

**Annex to the “Examination Regulations for the joint Master of Science in Public Sector Innovation and eGovernance (PIONEER) at the KU Leuven, Belgium, the Westfälische Wilhelms-Universität Münster, Germany, and the Tallinn University of Technology, Estonia”:**

**Course Descriptions**

(Course/Module Descriptions for the Master in Public Sector Innovation and eGovernance)

# **I. In the Course/Module Descriptions, the Course Descriptions of KU Leuven contains the following amended version:**

## **“1. Semester: KU Leuven**

### **1a**

#### **Lectures and Examinations**

Unless otherwise stipulated in the common part of the present regulations, [the current Regulations on Education and Examinations](#) are applied for all educational and examination activities of course units offered by KU Leuven. A selection of articles from the 2021/22 version of the KU Leuven examination regulations is provided for information purposes.

#### **Title II. Examination regulations**

##### **Section 1. General provisions**

##### **1. *Article 37. General provisions***

Each examination is organised according to the provisions set out below in a way that allows students to demonstrate that they master the competences required for the course.

This calls for a permanent engagement from the examiner and all bodies concerned, to guarantee a well-organised examination for each course.

In the organisation of examinations, special attention is given to providing the possibility for students to use the toilet upon individual request.

##### **2. *Section 2. Organisation of examinations***

##### **3. *Article 38. Examination periods***

Each academic year, three examination periods are organised:

- the first examination period at the end of the first semester, with examinations on the courses completed in this semester;
- the second examination period at the end of the second semester, with examinations on the courses completed in this semester;
- the third examination period after the summer break, where students can take their second examination opportunity of the current academic year.

Postgraduate programmes have different examination periods that are determined per programme.

Examinations on courses spread over more than one semester are taken at the end of the second semester. After the first semester, a partial examination can be organised for courses that are not yet completed.

At the end of each examination period, an examination committee meeting is organised and the results are communicated to the students.

In exceptional cases, the examination committee can decide to postpone the conclusion of the current examination period. The examination committee concludes the last examination period no later than 30 September. However, the examination committee can form a decision after 30

September, but no later than 14 November, for students participating in exchange programmes whose results from the previous academic year have not yet been communicated.

#### **4. *Article 39. Special examination times for complete courses***

The faculty can decide to organise examinations outside the regular examination periods:

1° for learning activities other than lectures;

2° for courses taught by visiting professors or by teaching staff who are legitimately absent during an examination period;

3° for students who participate in exchange programmes with other universities or university colleges;

4° If the assessment method includes a type of continuous assessment.

#### **5.**

#### ***Article 40. Partial examinations and continuous assessment***

The faculty can allow for partial examinations to be organised, inter alia, for courses that consist of more than one learning activity or courses that are spread over two semesters. This means that multiple examinations are organised for this course, during one or more examination periods. The result of a partial examination is a partial result.

The faculty can also allow for a form of continuous assessment to be organised for a complete course or for a learning activity. This means that the examination takes place (in part) outside the examination periods. The faculty determines how the continuous assessment will be organised and communicates it clearly and in advance to the students.

The faculty ensures a balanced distribution of the assessments.

When deciding on partial examinations and continuous assessments, the faculty takes the following into account:

- the description of the partial examinations;
- the various partial results' relative contributions to the examination result for the course as a whole;
- the assessment methods and the timing of the examination; the course holder's communication of the results of the individual examinations to the students;
- the format of a possible second examination opportunity, or the decision not to offer a second examination opportunity, but instead transferring the partial result to a following examination period within the same academic year.

Partial results from partial exams or interim results from continuous assessment, communicated by a course holder, are always provisional. Only the academic progress file can be used to communicate the final results as referred to in article 87.

**6.*****Article 41. Second examination opportunity***

The faculty records in the ECTS course description whether a second examination opportunity with a different assessment method can be organised for specific courses or partial examinations, or whether, as an exception, no second examination opportunity will be offered.

**7. *Article 43. Time and place***

Valid examinations can only be organised during the periods or according to the timing specified in articles 38-40.

Exceptions to this provision:

- cases of force majeure;
- examinations for students with permission to take examinations outside the examination period (see article 51).

Students have to be present at the scheduled start of their examination at the latest. Students who arrive late to a written examination can, in case of serious reasons, still be accepted to the examination. However, the scheduled end of the examination will not be adapted for these students.

All examinations are taken in a KU Leuven room.

Exceptions to this provision:

- examinations subject to specific individual circumstances, to be determined by the chair of the examination committee;
- specific course formats.

**8.*****Article 45. Examination schedule***

The examination schedule for the first and second examination period will be established for every individual student no later than five weeks before the start of the examination period. The examination schedule for the third examination period will be established for every individual student no later than the fourth Monday after announcing the results of the second examination period. This should be done according to the procedure laid down for the academic year and the study programme concerned.

Only students following a standard learning path can be guaranteed an exam schedule in which maximum one compulsory course will be examined per day.

Examiners and students strictly comply with the determined examination schedule. Examinations can only be rescheduled for a serious reason. The exam ombudsperson assesses the situation independently and makes new arrangements where needed. The ombudsperson also decides on the examination moments. The faculty determines whether or not, and under which conditions, examinations can be rescheduled to a moment outside the examination periods. No later than five weeks before the start of the first and the second examination period, and no later than two weeks before the start of the third examination period, the faculty clearly

communicates to the students who the competent examination committee is, who the chair and the secretary of the committee are, who the examination ombudsperson is and when the results will be announced.

(1) Specific provisions regarding religious facilities

Students who apply for rescheduled examinations due to the examination taking place on a religious holiday, are subject to a prior recognition and advisory procedure. More information on this recognition and advisory procedure can be found at <https://www.kuleuven.be/english/student-services/religion>

(2) Procedure

Students with a special examination schedule due to individual circumstances are subject to the provisions laid down in article 51.

9.

**Section 3. Participation in examinations**

**10. Article 46. Conditions for participation in examinations**

**11. §1. Non-payment**

Students can only take an examination if they have paid the tuition fees they are due or if they have come to an agreement with the university.

**12. §2. Requirements per course**

Participation in an examination can be subject to specific requirements, such as required attendance for practical course components, sufficient participation in group obligations, or timely submission of assignments. The ECTS course description of the course concerned states the consequences for the examination when students do not meet the necessary requirements. If students do not meet the necessary requirements, the faculty can decide to award a zero, a 'not taken' or a fail in terms of a pass/fail decision for the course concerned or part of the course concerned (see article 67).

**13. §3. Verification of identity**

When participating in an examination, students have to be able to prove their identity. Students who are registered with a degree contract or a credit contract have to prove their identity by means of their student card. For written examinations, the attendance of the students is registered. Students can, upon request, receive official proof of participation in the exam.

**14. §4. Registration for the third examination period**

Students who wish to participate in examinations during the third examination period, have to register for this following the procedure specified in article 89§3. Students who participate in examinations for which they did not register explicitly, despite specific regulations, cannot be awarded an examination result. In this case, the examination is considered void.

**15. Article 47. Resitting examinations from the first examination period**

For courses with an examination organised in the first examination period, students can resit the examination in the third examination period at the earliest. This also applies to partial examinations and continuous assessment.

The faculty can decide to allow students in their last programme stage to resit an examination in the second examination period for particular courses for which they have already taken an examination in the first examination period, but for which they have not obtained credit and which they want to, or have to, resit. The faculty determines the conditions this provision is subject to.

**16. Article 48. Catching up examinations from the first examination period**

Students who were not able to participate in an examination in the first examination period due to a serious reason, can request permission to take the examination in the second examination period. The deadline for this request is the third Wednesday of the second semester. The faculty makes a decision after receiving advice from the examination ombudsperson and determines the assessment method in consultation with the examiner.

**17. Article 50. Not participating in the examinations**

Students who registered for an examination period but are unable to participate in an examination, have to report this as soon as possible, following the procedure set by the faculty.

Students can justify an absence for instance with a medical certificate, provided that the certificate has been written by a physician no later than the day of the absence and provided that the student presents the medical certificate to the faculty student administration as soon as possible and preferably within three working days. The certificate states that the student concerned was unable to participate in class (for continuous assessment) or in the examination. A medical certificate on (non-)participation in (certain) sports activities has to clarify which activities the student cannot perform.

The following medical certificates will not be accepted:

- an incomplete or inconsistent certificate;
- a certificate based solely on the patient's declaration;
- a post factum certificate (a certificate issued posterior to the illness or after the medical consequences of an accident can no longer be identified).

18.

**Section 4. Deviating examination schedules**

**19. Article 51. Adapted examination scheduling outside the standard examination periods**

Students with special individual circumstances (e.g. serious medical reasons) and students with a recognised status (see article 97) can request permission for an adapted examination schedule

outside the standard examination periods. Students can only take an examination after the classes of the course concerned have ended. This provision also applies to adapted examination schedules outside the standard examination periods.

Students with a recognised status (see article 97) for whom the accreditation body advised such an adapted examination schedule outside the standard examination periods, will in any case be granted this permission. For students working their way through university (status of working student), the advice for an adapted examination schedule applies only if they have an individual study programme of at least 25 credits.

In addition, an adapted examination schedule outside the standard examination periods is possible for students combining two full-time study programmes provided that, for each of the study programmes, they have included at least 54 credits in their individual study programme.

Authorising an adapted examination schedule does not automatically imply the possibility to deviate from set submission deadlines, from explicitly stated mandatory attendance or from determined course formats and assessment methods. Where necessary and by way of exception, specific arrangements are made with the faculty concerned. The education ombudsperson mediates in the event of a disagreement; continuing conflicts are settled by the dean.

For examinations taken as a first examination opportunity after the second examination period, the results will be communicated to the students as soon as possible after the examination, in accordance with the faculty regulations concerned. Students who were authorised an adapted examination schedule decide whether or not they want to resit these examinations before the examination board meetings for the third examination period. Students who have not yet taken an examination for all their courses in the second examination period due to the adapted examination schedule granted to them, can already use tolerance credits for other courses, provided that they comply with the provisions set in article 91.

#### (1) Procedure

Applications have to be send to the manager of [Teaching and Learning Processes](#), no later than 1 December for first semester examinations and no later than 31 March for second semester examinations. The application procedure can be found on [this web page](#).

## **20. Section 6. Examinations taken in another study programme or institution**

### **21. Article 54. Time and place of examinations**

When students take courses in another study programme or in another higher education institution (within or outside Belgium) according to the provisions set by the faculty, they take an examination on these courses on the time and place and under the conditions set by the study programme or institution concerned.

### **22. Article 55. Conversion of results obtained at another institution**

Results obtained for an examination taken at another higher education institution are, if necessary, converted to the KU Leuven marking scale, under the supervision of the Programme



Committee. Students who follow part of their programme at another institution are informed of the conversion rules before departure.

**23. Section 7. Examination ombudsperson**

**24. Article 57. Duties, appointment and availability**

The examination ombudsperson mediates between examiners and students. The ombudsperson has to possess the necessary expertise and be able to perform their duty as an intermediary in full independence.

The faculty appoints a member of the academic staff or another staff member with relevant expertise in education to act as examination ombudsperson and another to act as substitute examination ombudsperson. The selected person will act as examination ombudsperson for all examinations for a group of students until the faculty relieves the examination ombudsperson of their task and appoints a new examination ombudsperson for that group of students. The faculty also makes arrangements for the administrative support for the examination ombudsperson.

The examination ombudsperson clearly communicates to the students where and when they can be contacted and when the substitute examination ombudsperson stands in.

**25. Article 58. Responsibilities and disagreements**

Where necessary, the ombudsperson mediates on the date, place, assessment methods and conditions of an examination, without prejudice to the specific responsibilities laid down in other articles. The examination ombudsperson decides independently on the rescheduling of examinations and on the assignment of an examination moment.

In order to perform their duties as an intermediary effectively, the examination ombudsperson is entitled to gain information on each and every examination, including prior to the examination board meeting. The examination ombudsperson is bound by the duty of discretion.

The examination ombudsperson takes part in the negotiations of the examination board meeting and in the negotiations of the select examination committee, without the right to vote.

**26. Article 59. Conflicts of interest**

The examination ombudsperson may in no circumstances assess the students he represents as an examination ombudsperson. If, by way of exception, the examination ombudsperson is involved in the assessment of students for a particular course, the substitute examination ombudsperson will, for this group of students, stand in for the examination ombudsperson.

**27. Article 60. Report of the examination ombudsperson**

After the third examination period of each academic year, the examination ombudsperson sends a report on the activities to the body specified in the faculty regulations. The body specified in the faculty regulations discusses this report at the start of the next academic year, no later than 15 November.

**28. Section 8. Examination procedure**

**29. Article 61. Examiner**

The task of the examiner is to determine whether students have achieved the learning outcomes of a specific course.

Every examination or part of an examination is held by the course holder(s) of the course or by the person(s) who officially replaced the course holder in teaching the class concerned or supervising the activities or exercises concerned.

In the event of a relationship by blood or marriage to the fourth degree inclusive between a student and an examiner, or in case of force majeure on part of the examiner, the examiner asks the chair of the examination committee, in consultation with the faculty dean, to appoint a substitute.

Examinations on learning activities other than lectures can be held by examiners who are not course holders, provided that they were co-responsible for the content of the learning activity. The faculty regulations can determine that external parties who are not university staff members can act as examiners. The regulations also establish in which situations this is an option and which quality requirements these external parties have to meet.

The course holder, or the course coordinator (if there are multiple course holders) remains fully responsible for the final assessment.

At the end of the examination or partial examination, the examiner does not communicate the result to the student, without prejudice to articles 51 and 96.

Only the course holder, the course coordinator (if there are multiple course holders) or the official substitute can be a member of an examination committee if the examination committee is composed of one representative for each course.

Examinations on courses taught by visiting professors are, in their absence, conducted by another examiner appointed by the faculty.

**30. Article 62. Information prior to the examinations**

The ECTS course description provides detailed information on the content and goals for each course, as well as on the examination content and assessment methods, including, where necessary, the weighting of components with a partial mark and the consequences for not participating in an examination component as stated in article 67. If, by way of exception, the examination content or the assessment methods vary from one examination period to another, this will be specified in the ECTS course description.

The information in the ECTS course description is recorded annually before 15 July preceding the academic year in which the course description is valid. Changes can be made until the beginning of the academic year for courses that start in the first semester, and until the beginning of the second semester for courses that start in the second semester.

### **31. Article 63. Submission deadlines for assignments**

If certain deadlines are set for the submission of an assignment, but students anticipate that they will not be able to meet the deadline for valid reasons, they have to report this before the deadline:

- for the master's thesis, according to the faculty agreements: to the master's thesis coordinator of the programme or to the ombudsperson, who can set a new deadline;

- for other courses, according to the faculty agreements: to the course holder or the ombudsperson, who can set a new deadline.

The faculty can determine in its regulations that if the deadline is not respected, the assignment will be considered 'not submitted' and the students will obtain a zero or a 'not taken' for this assignment. This penalty has to be mentioned in the ECTS course description. If this penalty is included in the regulations, it also applies when a new deadline is not respected.

### **32. Article 65. Examination type and duration**

The assessment method is determined in accordance with the learning goals of the course and the teaching method. The faculty establishes the assessment method on the recommendation of the course holder or the course coordinator, if there are multiple course holders. The assessment method most recently established applies until the faculty decides otherwise. The faculty accepts changes following the same process. This occurs in the academic year preceding the one during which the regulation will apply, and in exceptional cases no later than 14 November of the current academic year.

When an examination is rescheduled individually, the assessment method can differ from the established method. The ombudsperson informs the student of the new assessment method in a timely manner.

For oral examinations or partial oral examinations, students are granted a written preparation of at least twenty minutes. Unless otherwise stated in the ECTS course description, there is no preparation time for examinations consisting of the discussion or presentation of an assignment, for examinations aimed at testing the student's oral language proficiency, for courses with the target language as subject, and for OSCE examinations (objective structured clinical examinations).

Unless otherwise explicitly communicated to the students, all examinations are taken without the use of any resources.

For students with a recognized status with accompanying advice for examination accommodations (see article 97) or students with temporary special individual circumstances of physical or psychological nature, an adapted assessment method or the use of a technical aid may be allowed upon the faculty's approval. The faculty sets the deadline for the application for these accommodations and consults with the education and diversity expert appointed by the faculty.

An examination consisting of an assessment at one specific moment can take no longer than half a day (approximately 4 hours).

### **33.     *Article 66. Assessment scale***

An examination is organised for each course within a study programme. Only one examination mark is presented on the examination board meeting for each course.

Each course is assessed according to a 0-20 marking scale. The result is expressed exclusively in whole numbers. For the master's thesis, the result can be a number with one decimal place, unless the faculty decides not to use decimal numbers. The faculty can decide to assess a course or part of a course in terms of a pass/fail decision. In these regulations, a fail in terms of a pass/fail decision is considered equivalent to a non-tolerable fail (see article 81).

Where necessary, partial marks are converted to one final mark according to the 0-20 marking scale by the course holder or, if there are multiple course holders, by the course coordinator prior to the examination board meeting. Where necessary, numbers are rounded in accordance with the guidelines set in article 80.

### **34.     *Article 67. Not participating in an examination***

If students do not participate in an examination, the examination will be assessed as 'not taken' (NA). In these regulations, NA is considered equivalent to a fail for which no tolerance credits can be used (see article 81). If partial examinations are organised for a course (see article 40) and students do not participate in one of these examinations, the general principle is that they receive a NA mark for the whole course, unless a different assessment is specified in the ECTS course description.

### **35.     *Article 68. Administration process***

The examiners send the examination marks to the administration office concerned in the prescribed format as soon as possible after the examination and no later than two working days before the examination board meeting.

## **Section 10. Examination board meeting**

### **36.     *Article 80. Rounding rules***

#### **37.     §1.**

If no specific rounding rule has been communicated, the standard rounding rules for decimals apply (rounding down for the decimals 0.1-0.4 and rounding up for the decimals 0.5-0.9). The rounding of numbers occurs only after including the partial results in the final result. Individual partial results cannot be rounded. If specific deviating assessment regulations apply for a particular course, the course holder communicates the rounding rules to the students in a transparent way via the ECTS course description.

**38. §2.**

For the rounding of percentages, the combined results of the student are rounded down to the nearest integer for decimals 0.1-0.4 and rounded up to the nearest integer for decimals 0.5-0.9.

The number of credits relating to a specific study efficiency provision is rounded down to the nearest integer for decimals 0.1-0.4 and rounded up to the nearest integer for decimals 0.5-0.9.

**39. Article 82. Criteria for obtaining a diploma or certificate and a level of achievement**

Students who successfully complete a study programme in accordance with criteria laid down in article 81, obtain the diploma or certificate of the study programme.

Students obtaining the diploma of a bachelor's programme, master's programme or subject-specific teacher training programme are awarded one the following levels of achievement:

- cum fructu, if they obtain a weighted percentage of less than 68 %;
- cum laude, if they obtain a weighted percentage of at least 68 %;
- magna cum laude, if they obtain a weighted percentage of at least 77 %;
- summa cum laude, if they obtain a weighted percentage of at least 85 %;
- summa cum laude with the congratulations of the examination committee, if they obtain a weighted percentage of at least 90 %.

The calculations are made on the study programme as a whole. Having obtained a fail mark does not lead to a lowering of the level of achievement.

The examination committee can award a certain level of achievement to individual students who do not meet the criteria for obtaining this level of achievement provided that the committee:

- establishes a case of force majeure;
- or makes a decision substantiated in the examination board meeting report.

No level of achievement is awarded to students with a registered study programme consisting of less than 20 credits. Likewise, no level of achievement is awarded for bridging programmes or preparatory programmes.

The faculty decides whether or not to award levels of achievement for postgraduate programmes.

**40. Section 11. Irregularities****41. Article 84. Definitions**

Every conduct individual students display with which they (partially) inhibit or attempt to inhibit a correct judgement of their own knowledge, understanding and/or skills or those of other students, is considered an irregularity which may result in a suitable penalty.

A special type of irregularity is plagiarism, i.e. copying the work (ideas, texts, structures, designs, images, plans, codes, ...) of others or prior personal work in an exact or slightly modified way without adequately acknowledging the sources.

Every possession of prohibited resources during an examination (see article 65) is considered an irregularity.

Irrelevant to the finding of fact is:

- whether or not the irregularity is the consequence of a deliberate choice of the students,
- whether or not the irregularity has lead to an unfair advantage for the parties concerned,
- whether or not the students decided to stop the behaviour that can be considered as an irregularity;

#### **42.     *Article 85. Procedures***

The examiner informs the chair of the examination committee as soon as possible about every irregularity detected during an assessment activity that could affect the decision of the examination committee. The select examination committee investigates the severity of the irregularity, hears the student in the presence of the examination ombudsperson, hears the examiner of the course in which the irregularity was detected and forms a proposal on the penalty and/or on whether or not to implement a prevention plan.

For irregularities relating to possible plagiarism, the select examination committee preferably consults with the faculty expert on plagiarism. The final decision on discipline regarding examinations is an independent decision of the examination committee.

Pending the decision of the examination committee, the students concerned can finish the examinations of the examination period concerned, including the examination in question, but, if necessary, after the confiscation of the items, resources and the copy of the examination under dispute. The students will receive their confiscated personal belongings preferably immediately after the examination and at the latest by the end of the day. The students must keep themselves at the disposal of the invigilators for this purpose.

The select examination committee can decide, in consultation with the examiner, to convene the examination committee early.

#### **43.     *Article 86. Penalty***

##### **44.     §1.**

The examination committee independently assesses the severity of the irregularities and independently decides on a possible penalty related to them.

For irregularities relating to plagiarism, the severity and the level of penalties is assessed according to the following elements:

- 1) the scope;
- 2) the nature;
- 3) the experience of the students concerned (the extent to which students are expected to be aware of the importance and implications of academic integrity standards, taking into account, inter alia, the students' position in their study career).

When deciding on a penalty for an irregularity, the intention to commit fraud can be taken into account as an aggravating factor. If the committee considers a penalty to be of limited impact on the curriculum of the students, it can make a substantiated decision to impose a more severe penalty.

#### **45. §2.**

On the grounds of an irregularity committed during the examination, the examination committee can decide, without prejudice to article 90 §2, during the examination board meeting or an early meeting, that the students concerned will receive one of the following penalties, or a combination of penalties 1 to 5:

- 1° have taken an invalid examination and have to retake the examination on a moment determined by the faculty;
- 2° will receive an adjusted mark for the examination of the course or part of the course;
- 3° will receive a 0 for the examination of the course or part of the course;
- 4° will receive a 0 for some or all of the courses they took an examination on during the examination period concerned;
- 5° will be rejected for one or more courses from the study programme in which the irregularity was detected. In this case, the students concerned will receive a 0 for the courses concerned in the said examination period and will only be able to take an examination for these courses in the next academic year at the earliest;
- 6° will be rejected for a study programme in which the irregularity was detected. In this case, the students can only re-register in the next academic year at the earliest. The rejected students receive a 0 for some or all of the courses they took an examination on during the examination period concerned. This penalty can only be imposed in cases of very severe irregularities. The examination committee assesses the severity of the irregularity;
- 7° will lose the right to register for the next academic year or for the next two academic years. This penalty applies to all KU Leuven registrations, contracts and study programmes and can only be imposed in combination with a rejection for a study programme.

In addition to penalties 2° to 7°, the examination committee can determine that the rule of retaining the highest examination result will not apply.

In addition to penalties 3° to 7°, the examination committee can require the students concerned to thoroughly revise the assignment concerned based on certain suggestions or to create a new assignment based on a new subject.

For irregularities relating to the unauthorised copying of texts, the examination committee can pair the penalties with a compulsory participation in a self-study module or other type of training related to the prevention of plagiarism.

#### **46. §3.**

In the case of very severe examination fraud, the university can determine to withdraw a favourable decision for the student. In addition, the university can, regardless of the moment the irregularity was detected, decide that the results obtained in the study programme concerned are considered void and, where appropriate, revoke the diplomas, certificates and credit certificates awarded for the study programme.

#### **47. §4.**

In all cases where the faculty imposes one of the penalties from 2° to 7° above, the student progress file will contain the code 'OR', which represents an irregularity.

#### **48. Section 12. Announcement of and feedback on examination results**

#### **49. Article 87. Announcement of the decisions of the examination committee**

The faculty determines the moment and the manner in which, after every examination period, the examination results for all courses and the decisions of the examination committee on the study programme as a whole are communicated to the students through the study progress file. Only the results established by the examination committee and communicated with the academic progress file are final. This communication includes the procedure students can follow to appeal against a decision of the examination committee.

The result of a master's programme or advanced master's programme as a whole is also announced publicly during a graduation ceremony.

Students who are registered with a degree contract, a degree-examination contract or for a study programme with a view to a certificate, will receive a recent overview of their study progress in their study progress file.

Students registered with a credit contract or credit-examination contract are communicated only the results of the courses for which they took an examination in the examination period concerned and, if necessary, the announcement that they will be refused re-registration for one or more courses.

Students will have the opportunity to consult the generalised examination results of the group of students relevant to them, so they can compare the results they obtained for the courses for which they took an examination in the academic year concerned.

On diploma supplements, the examination results are stated using the following code:



- For courses for which the students obtained a credit certificate: the letter C, accompanied by the examination mark or the letter G in the case of non-numerical assessment;
- For the courses for which they obtained a score of less than 10 or a fail in terms of a pass/fail decision: the letter T.

**50.**

***Article 88. The right to feedback and discussion of the results***

Students are granted the opportunity to receive feedback during the first seven calendar days after the day the examination results were announced. This feedback consists of a collective and/or individual discussion of the exam and the opportunity to have a look at the written exam paper. Students have the opportunity to have a look at the results of continuous assessment and partial examinations at the latest during the feedback session (see article 40). An individual discussion consists of a conversation between an examiner and a student about an individual examination.

These feedback arrangements are announced to the students no later than one week before the end of the examination period.

During the individual discussion, students may be accompanied by a person of their choice, who acts as observer. If the observer is a student who was registered for the same course in the same academic year, the observer must have passed the course.

Students can report problems with and complaints about the feedback arrangements to the examination ombudsperson, who will mediate to find an appropriate solution.

**51. Section 13. Resitting examinations on courses and retaining tolerable fail marks**

**52. Article 89. Resitting examinations on courses within the same academic year**

**53. §1. General principle**

Students can take no more than two examination opportunities for the same course or part of a course per academic year, regardless of the (possibly simultaneous or consecutive) contracts they registered for. An examination not taken or a resit not taken is considered to be a used examination opportunity. Students cannot obtain additional examination opportunities by changing their contract. If, based on the course format, only one examination opportunity will be provided (see article 41), this has to be mentioned in the ECTS course description.

**54. §2. Resitting successfully completed examinations within the same academic year**

The result of a credit certificate is final. Once a credit certificate has been obtained for a course in a certain examination period, the student cannot resit the examination on this course within the same study programme.

**55. §3. Resitting examinations on failed courses within the same academic year**

After the second examination period, the students decide for which failed courses they want to take a resit examination in the third examination period, following the procedure laid down for

this purpose. During the third examination period, students can resit courses for which they did not use tolerance credits or for which they obtained a non-tolerable fail mark and for which an examination is organised. In the third examination period, students cannot resit examinations on courses for which they used tolerance credits.

If students resit a failed course examination in the same academic year, they preserve the first result they obtained if it was better than the result of the resit.

## **56. (1) Procedure**

After the examination period in June, the students communicate to the faculty administration using the application intended for this purpose, which examinations they failed in January or June they want to resit in the examination period in September. They have to communicate this no later than the first Thursday after the deliberation week.

If the faculty exceptionally allows students to register for the September examination period after the first Thursday after the deliberation week, the possibility of actual participation in the examination depends on the practical organisability taking into account the examination schedule already fixed.

## **57. §4.**

The assessment method is not necessarily the same for the second examination opportunity. If the assessment method differs for the second examination opportunity, this will be mentioned in the ECTS course description.

## **58. §5. Transfer of partial results**

As a general rule, partial results are not transferred to the next examination period. Only if a transfer of partial results is convenient because of the examination type, the faculty can decide to transfer the partial result (consisting of at least 10/20 or a pass in terms of a fail/pass decision) to a successive examination period within the same academic year. Such a partial transfer can only be granted if it relates to a learning activity or a complete section. Partial results cannot be transferred to the next academic year.

For partial transfers, the initial partial result will be calculated into a new final result for the course. In this case, students only resit the assessment activities for which no result has been transferred.

The ECTS course description states whether or not students can decline a possible partial transfer. If that is the case, the previously obtained result is replaced with the new result.

## **59. Section 14. Settlement of disputes**

## **60. Article 92. Conflicts before or after an examination**

Irregularities or conflicts between individual students and examiners occurring before or during an examination that affect the correct coordination of the examination, have to be communicated

to the chair of the examination committee by one of both parties as soon as possible, where appropriate via the examination ombudsperson. The chair mediates and takes temporary measures where necessary (where appropriate in consultation with the select examination committee) to safeguard the correct coordination of the examination. The examination committee makes the final decision. In any case, the select examination committee first hears the students and examiner concerned.

#### **61. Article 93. Material errors**

When a material error is detected, this has to be formally communicated to the chair of the examination committee.

If this material error leads to the withdrawal of the decision to declare a student graduated from a study programme, the decision on the rectification of the error has to be made by the full examination committee, as specified in article 70, last paragraph. All other material errors are rectified by the select examination committee.

When a material error is detected, the chair of the examination committee has to convene the examination committee as soon as possible. The results established can still be adapted before the deadlines specified in article 105.

If the students concerned have already been notified of their examination results, the faculty administration communicates the adjusted results to them. The chair and the secretary report this at the next meeting of the examination committee.

## **2a**

### **Courses/Modules**

The most recent versions of the course descriptions as can be found in [the online programme guide](#) are applied to the course unites offered by KU Leuven. The 2022/23 course descriptions of the KU Leuven course unites are provided for information purposes.

#### **Public Innovation**

*Number of ECTS: 8*

#### *Aims*

- Students can describe the basics regarding public sector innovation and processes of innovation.
- Students have a critical attitude towards public innovation models, theories and real-life cases.
- Students are introduced to research issues relevant for public innovation.
- Students can compare cases and theories in this field.
- Students become familiar with how public administrations deal with public innovation.
- Students can apply the acquired (theoretical) knowledge and insights on real-life cases.
- Students can describe and apply the main concepts and theories regarding public innovation.

- Students have a critical attitude towards theories and cases in public innovation.
- Students can independently find, select, critically assess and use the correct resources to understand and analyse research on public innovation.
- Students consider, in reflection papers, the lessons learned for public administration organisations in their home country.
- Students can clearly and unambiguously communicate key concepts and cases in public innovation to an academic as well as a practitioner audience.

### *Previous knowledge*

There are no specific prerequisites.

### *Activities*

This course consists of interactive lectures introducing key concepts, theories and trends in the context of public innovation from a public administration perspective, meaning that students must think and work actively during class. The literature (available via Toledo) supports the classes.

A number of lectures are delivered by practitioners from local, regional and (inter)national public organizations involved in public innovation and digitalization.

The course also consists of a series of field visits to public or semi-public organisations that play a role in public innovation, and in particular digitalisation. During the field visits, students will be introduced to the organization and its policies, and/or will receive a guest lecture on a particular innovation.

### *Evaluation*

#### Characteristics of the evaluation

The evaluation for this course consists of three partial evaluations:

- 1) Scientific paper (40%)
- 2) Skills test (40%)
- 3) Reflection reports (20%)

The submission deadline and other deadlines are decided by the lecturer(s) and communicated via Toledo.

#### Determination of the end result

The course is evaluated by the lecturer(s), as communicated via Toledo and in compliance with the examination regulations. The result is calculated and communicated as an integral number on 20.

The grades for this course are given according to the quality of the individual documents.

The scientific paper tests students' ability to independently find, select, critically assess and use the correct resources to understand and analyse research on public innovation. The reflection papers test students' ability to apply acquired knowledge and formulate lessons learned for the public sector of a country. The skills test consists of the production of a webinar or knowledge

clip to test students' ability to clearly and unambiguously communicate key concepts and cases in public innovation to an academic as well as a practitioner audience

Further requirements are specified during the lectures, and in separate documents via Toledo.

All deadlines must be respected. Negotiation about any deviation is impossible. In case of any exceptional circumstances, students are required to contact the faculty's ombudsperson prior to the respective deadline. If (one of) the deadline(s) is not met, the complete course will be evaluated as a 'not taken' (NA) unless a new submission deadline has been determined due to exceptional circumstances.

If the student does not participate in one (or more) out of several partial evaluations of the course, the student receives a 'not taken' (NA) for the complete course.

## **Public Governance, Administration and Society**

*Number of ECTS: 4*

### *Aims*

- Students can describe the main concepts and theories regarding the organisation and processes of public administration.
- Students can clarify the context for public administration (societal, administrative and legal).
- Students can compare administrative concepts and theories in European countries.
- Students can analyse and evaluate systems of public administration in the European countries.
- Students have a critical attitude towards public administration models.
- Students can find, select, critically assess and use the correct resources to understand and analyse the role of the different actors and relevant structures in public administration.
- Students can make their own creative contribution to scientific disciplinary knowledge by writing a scientific paper according to the correct ethical rules.
- Students can independently and in team plan an assignment, execute it, meet deadlines and make a constructive contribution to a common result.
- Students can communicate, clearly and unambiguously, their analysis and rationale underpinning these, by giving a presentation and by writing a scientific paper.

### *Previous knowledge*

- Students have a basic understanding of either public administration and policy, or of European organizations and politics.
- Students have sufficient proficiency in the English language.

### *Activities*

This course consists of (digital) interactive lectures, meaning that students must think and work actively during class. The reader supports the classes and assignments. However, during class, a deeper analysis is made. Therefore, it is necessary to attend the classes and students are strongly advised to take notes. It is advised to read the text material beforehand to ensure that students get a good understanding of the topics discussed in the course. To help them develop the skill of reflecting on the literature, this course makes use of different assignments. Information needed for carrying out the assignments is communicated via Toledo and in class.

### *Evaluation*

#### Characteristics of the evaluation

The evaluation for this course consists of three partial evaluations:

- Class-discussion and class assignments (3/20)
- A group paper and presentation (5/20)
- An oral exam (12/20)

#### Determination of the end result

The course is evaluated by the lecturer(s), as communicated via Toledo and in compliance with the examination regulations. The result is calculated and communicated as an integral number on 20.

The grades for this course are given according to the final examination, the group paper, presentation and the quality of the class-discussion and class assignments. Further requirements are specified during the lectures, and in separate documents on Toledo.

The examination determines whether the students have the necessary theoretical insights and knowledge of the public administration in Europe. The examination also tests the ability of the students to analyse, synthesise and evaluate this knowledge and to test if they can apply the literature and theory to a case or an article and evaluate their findings.

All deadlines must be respected. Negotiation about any deviation is impossible. In case of any exceptional circumstances, students are required to contact the faculty's ombudsperson prior to the respective deadline. If (one of) the deadline(s) is not met, the complete course will be evaluated as a 'not taken' (NA) unless a new submission deadline has been determined due to exceptional circumstances.

If the student does not participate in the oral exam, the student receives a 'not taken' (NA) for the complete course.

## **Digital Public Governance**

*Number of ECTS: 6*

### *Aims*

- The student is familiar with the key components of information management in the public sector.
- The student is acquainted with key technologies related to the management of information in the public sector.
- The student is familiar with and can report on current information management practices at different administrative levels: local, regional, national, European and international.
- The student is familiar with and understands the rationale behind key policies for information management in the public sector at different administrative levels.
- The student is acquainted with key challenges (legal, ethical, technological, security, financial, and governance) in the context of information management in the public sector.
- The student is acquainted with issues related to digital transformation in the public sector.
- The student can describe and explain the main principles and trends relating digital public governance.
- The student can identify the peculiarities in the field of digital public governance.
- The student can recognize the possibilities and limitations of current digital services for public service deliveries and policymaking.
- The student can identify the added public value of digital public governance.
- The student can identify and describe the key characteristics and recent developments in digital public governance (e.g. Open Data, Linked Data, Big Data, Cloud Computing, AI).
- The student can explain how new and emerging technologies can be applied in order to innovate the public sector in a changing society.
- The student can identify the key actors relevant for the development, implementation and management of applications within the public sector.
- The student can develop and present a strategy for an organization concerning a public sector innovation.
- The student can communicate in written and oral ways about various aspects of digital public governance.
- The student can demonstrate a broad interest in digital public governance.
- The student can show a critical attitude towards digital public governance and its value for the public sector as a whole as well as an individual public organization.

### *Previous knowledge*

At the start of this course, the student already has the following knowledge:

- The student has sound knowledge of the societal reality, its problems, norms and values;
- The student knows the basics about the public sector in all its branches, its layers as well as its most important basic characteristics.



At the start of this course, the student already possesses the following skills:

- The student is able to demonstrate their general and specific academic skills such as writing papers, abstract reasoning, arguing and (oral/written) communication.

At the start of this course, the student already has the following attitudes:

- The student has an inquisitive and searching attitude to understand current issues in public governance and digitalisation.

### *Activities*

The learning activity for the first part of the course mainly consists of key concepts, practices and exercises related digital public governance – in particular related to policies and associated technologies. This learning activity consists of the following seven modules:

- Module I: Introduction

This module provides an introduction to the course including the rationale behind the importance for the future of the public sector and past developments leading to the current situation. In this module, the public values and principles of digital public governance, as well as the concepts and key practices of public sector innovation are introduced. This module also illustrates the peculiarities of digital public governance and presents the associated governance structures, rules, players and networks and introduces digital transformation in the public sector.

- Module II: Technologies

This module presents relevant and new emerging technologies that are applied in order to manage information in the public sector and to the public sector in a changing society. This module presents relevant elements related to data science aspects of digital public governance (such as data discovery, accessibility, analysis). Additionally, in this module, students become familiar with the concepts of cybersecurity, interoperability and enterprise architecture and its application in the public sector..

- Module III: Policies, Challenges & Trends

This module presents the key policies that are relevant for the current digital public governance at European, federal/national, regional and local administrative levels, and also provides with an overview of the key challenges and trends related to information management. These challenges and trends mainly refer to ethical, legal, financial, governance and technical aspects.

- Module IV: Real-world example

This module sheds light on real world applications of the concepts and technologies presented in the previous modules including the experiences from Belgium (on federal and regional level), European Union and other countries.

The learning activity for the second part of the course mainly consists of case examples, concrete exercises and an assignment consisting of the following three modules:

- Module V: Strategy Development

This module presents guidelines and tools as ways of support for developing an organizational strategy for digital public governance (incl. eGovernance and Public Sector Innovation).

- **Module VI: Roadmaps**

This module focuses on the development of a roadmap leading to a successful implementation of the organizational strategy. Reference is made to existing successful roadmaps.

- **Module VIII: Final Assignment**

This module deals with the development of a strategy for better managing information resources for a specific public organization. Students have to write a strategy report in group.

### *Evaluation*

#### Characteristics of the evaluation

The evaluation of this course consists of three partial evaluations:

- A group assignment (7/20)
- An individual paper (8/20)
- Assessment of the overall content of the course during an oral exam (5/20)

#### Determination of the final mark

The course is evaluated by the lecturer(s), as communicated via Toledo and in compliance with the examination regulations. The result is calculated and communicated as an integral number on 20.

All deadlines must be respected. Negotiation about any deviation is impossible. In case of any exceptional circumstances, students are required to contact the faculty's ombudsperson prior to the respective deadline. If (one of) the deadline(s) is not met, the complete course will be evaluated as a 'not taken' (NA) unless a new submission deadline has been determined due to exceptional circumstances.

If the student does not participate in one (or more) out of several partial evaluations of the course, the student receives a 'not taken' (NA) for the complete course.

## **Integrated Research Seminar**

*Number of ECTS: 6*

### *Aims*

- Students are able to understand, conceptualize and clearly define a research problem and relevant research questions.
- Students are able to find, select, critically assess and use relevant literature and build a theoretical framework for the research problem.
- Students know and are able to apply relevant methods and tools for doing research in public administrative science and public governance.
- Students know the different phases of scientific research, know the opportunities and limits of each of them and are able to apply those onto their own scientific research.
- Students recognize the importance of an empirical foundation for knowledge acquisition.
- Students are able to conduct scientific research in team, meet deadlines and make a constructive contribution to a common result.
- Students are able to take into account the ethical rules of scientific research.
- Students are able to communicate, clearly and unambiguously, their analysis and rationale underpinning these, by giving an oral presentation and by writing a research paper.
- Students can accept criticism from peers and adapt to it. In addition, they can be critical themselves.

### *Previous knowledge*

- The student masters the basic academic skills that allow him/her to make a thorough and truthful argument, report and presentation.
- The student can critically deal with conceptual frameworks.

### *Activities*

During the (interactive) sessions, students receive theoretical and practical guidance in writing their research report and presenting it to their fellow students.

### *Evaluation*

#### Characteristics of the evaluation

The assessment of this course consists of three partial evaluations:

- 1) Research group report (70%)
- 2) Group presentation (20%)
- 3) Participation during contact hours (10%)

#### Determination of the final mark

The course is evaluated by the lecturer(s), as communicated via Toledo and in compliance with the examination regulations. The result is calculated and communicated as an integral number on 20.

The grades for this course are given according to quality of the group paper, the quality of the group presentation and active participation and presence during the lectures. Further

requirements are specified during the lectures, and in separate documents, made available via Toledo.

All deadlines must be respected. Negotiation about any deviation is impossible. In case of any exceptional circumstances, students are required to contact the faculty's ombudsperson prior to the respective deadline. If (one of) the deadline(s) is not met, the complete course will be evaluated as a 'not taken' (NA) unless a new submission deadline has been determined due to exceptional circumstances.

If the student does not participate in one (or more) out of several partial evaluations of the course, the student receives a 'not taken' (NA) for the complete course.

## **Business Information Systems**

*Number of ECTS: 6*

### *Aims*

Upon completion of this course, the student

- is able to understand the relationship between business strategy, information strategy and the operationalization of the two in information systems,
- is able to compare the information strategy and the business strategy and decide whether these are aligned,
- is able to explain the role of information systems for internal and external control in the context of IS governance frameworks,
- knows the most important theoretical frameworks of technology acceptance and value of IS and is able to apply them in practical examples; the student understands the different dimensions of these frameworks and how they can be measured,
- is able to explain the purpose and value of Enterprise Architecture and is able to explain EA frameworks with concrete examples,
- can read and understand BPMN process models,
- knows the key steps of the business process management cycle and is able to apply fundamental BPM principles to simple examples,
- can read and understand ER, EER, and relational information models,
- can query relational databases with SQL,
- can explain the role of information systems for decision support as well as how business intelligence systems can be designed and used,
- understands the difference between predictive and descriptive data mining and understands how basic analytics techniques work,
- understands different aspects, technologies, and business models in an e-business context.

### *Previous knowledge*

At the beginning of this course the student should:

- be familiar with and interested in the fundamentals of computer science and its business applications such as for example taught in "Grondslagen van de Beleidsinformatica (D0T06A, D0H17A, D0W14A)".
- be familiar with the basics of Office software, computer hardware, file handling and management, and networking and internet technology.

Background knowledge of business economics is useful, but not strictly necessary.

### *Activities*

The purpose of the lectures is on explaining the learning content and illustrating it through demonstrations and examples of business information systems.

*Evaluation*Evaluation elements

- The final exam will count for 20 points.

Final exam

- The (written) exam consists of a number of multiple choice questions (typically 30).
- A correction is applied for guessing by means of the "multiple choice using elimination" method. Further details are communicated via Toledo.
- In case of an individual move of an examination, the form of the examination may differ from this form.

Determination of final grades

- The final grade is the final exam score.

**II. In the Course/Module Descriptions, the Module Descriptions of the University of Münster contain the following amended version:**

**“2. Semester: University of Münster**

**§ 1b**

**Types of Lectures and Examinations**

There are three major types of instruction methods: lectures, exercises and seminars. A lecture normally lasts between 60 and 120 minutes and is held by a staff-member (at least a doctoral degree) with exceptional knowledge in the respective field. Lectures are the main mean of enhancing the student's knowledge. Exercises usually last 60-120 minutes and are held by a staff-member with very good knowledge of the respective field. In exercises the student needs to complete assignments that deepen his/her knowledge in the respective. A seminar normally lasts at least 60 minutes and is held by a staff-member with very good knowledge in the respective field. In seminars, certain topics are discussed more profoundly, including seminar papers. There are three major examination types: written exams, seminar papers and oral exams.

**§ 2b**

**Required Coursework and Examinations, Registration**

(1) The prerequisites for participation in specific modules offered by the University of Münster are outlined in these course descriptions.

(2) Within each module, students must complete at least one examination, which comprises a part of the master's examination as a part of the calculation of the module grade and the overall grade. As a rule, each module concludes with only one examination. Besides, in accordance with the provisions in these examination regulations, students may be obliged to complete non examinations / coursework as directed and announced by the instructor.

(3) § 7 and these course descriptions define the type, duration and scope of the examination(s) for the respective module in general, whereby invigilated written/electronic examinations can take up to four hours and the maximum duration of non-invigilated examinations (e.g. term papers) corresponds to half the time allocated for the master's thesis. Subject to sentences 4 - 11 and within the framework provided by these examination regulations, the Local Coordinator is responsible for determining and announcing the type of examination, its modalities and the time allotted to complete the examination, or the duration of the examination. The announcement should be delivered in a uniform and binding manner for all candidates of the respective examination at least a month prior to the examination date. In accordance with these examination regulations, each required coursework or examination can be completed in the form of group work as long as the candidate's degree-relevant contribution is clearly separated and distinguishable from that

of the other members to enable individual evaluation, e.g. by means of separate sections, page numbers or other objective criteria. Examinations may also be administered and evaluated in electronic, software-based form, or in electronic, communicative form. In that case, the provisions in § 9b ("Rules for Administering Online Examinations") apply in the current form of the restrictive version of the framework examination regulations of the University of Münster. , In addition, if the examination possesses the character of an interview, the rules for oral examinations are applied accordingly on the condition that both the respective student and examiner/assessor give their written consent in advance to this form of examination. For all other cases, the rules on written degree-relevant examinations apply accordingly in addition as well. Furthermore, instructors who hold courses comprised of only a few students may administer oral instead of written examinations. These should generally take 20 % of the duration of the correspondent written examination per candidate. In this case (and if these examination regulations offer no relevant or deviating provisions), the decision to administer an oral examination is made by the Local Coordinator in agreement with the instructors. The decision must be announced well in advance in order to allow ample time for candidates to exercise their right to withdraw from the examination if desired.

(4) Examinations may also consist of or include multiple-choice sections. In the case of pure multiple-choice examinations, all examinees receive the same questions. All examination questions must be related to the content of the module and ensure reliable examination results. When preparing the questions, the responsible instructor must specify which answers will be recognised as correct. Examination questions must be checked for correctness with respect to the stated educational objective of the module before the examination paper is graded. Should questions be incorrect in this regard, they may not be considered for grading and only the remaining questions may be taken into account. Reducing the number of multiple-choice questions may not lead to a disadvantage for the examinees. An examination consisting entirely of multiple-choice questions is graded as passed if at least 60 per cent of the questions are answered correctly or if the number of correct answers is not more than 22 per cent below the average performance of all examinees.

If the candidate has answered the minimum number of items required to pass correctly, the examination is scored and graded according to § 16 (1) and the following criteria:

90 – 100 points / 1, 3 – 1, 0 / "excellent" if at least 75 per cent,  
 75 – 89 points / 2, 3 – 1, 7 / "good" if at least 50 per cent, but less than 75 per cent,  
 60 – 74 points / 3, 3 – 2, 7 / "satisfactory" if at least 25 per cent, but less than 50 per cent,  
 60 – 59 points / 4, 0 – 3, 7 / "pass" if no or less than 25 per cent

of the additional examination questions are answered correctly.



The criteria listed above also apply to examinations which are partially comprised of multiple-choice sections. The overall grade of the examination is then calculated from the weighted arithmetic mean of the multiple-choice section and the other part of the examination. The parts are weighted according to their share of the overall examination in per cent.

(5) All parts of written examinations that contain wording or content taken from other sources must be identified as such and cited accordingly. The candidate must attach a written declaration which states that he/she has written the examination himself/herself, has not used sources and means other than those indicated and has identified all direct quotes. The declaration also applies to tables, sketches, drawings, graphic illustrations etc. Furthermore, the Local Coordinator can request a written declaration of the student confirming that he/she is aware that written examinations may be stored in a database and compared with other texts to detect possible plagiarism.

(6) In order to take part in any examination, students must register in advance with the Examination Office of the Faculty Business and Economics (Prüfungsamt der wirtschaftswissenschaftlichen Fakultät). The registration has to take place in person or through a representative. As far as technical requirements are fulfilled, registration may take place via the online registration system of the Examination Office. The registration deadlines and further details are announced via notice board by the local administrative coordinator. In cases of emergency, e.g. sudden and severe illness, a registration by phone is possible within the announced deadlines; the reasons for the registration by phone have to be submitted immediately. Students may withdraw their registration without explanation within two weeks prior to the examination, either in written or electronic form without negative consequences for them.

### **§ 3b**

#### **Examiners and Assessors**

(1) Any individual who regularly holds relevant courses in the subject of the examination is entitled to serve as an examiner, in accordance with § 65 (1) of the Universities Act (*HG NRW*). The Local Coordinator is responsible for deciding on exceptions to this rule. The Local coordinator appoints examiners for degree-relevant examinations; assessors (*Beisitzer*) are appointed for oral examinations. The appointment of assessors may also be (sub)delegated to the respectively appointed examiners.

(2) Only individuals who hold a relevant *Diploma* or Master's degree or an academic qualification of an equivalent or higher-level degree can serve as an assessor.

(3) Examiners and assessors are independent in their actions. For written *examinations*, academic staff members can draft examinations and suggest preliminary grades on behalf of the examiner.

(4) Oral examinations are conducted by an examiner in the presence of an assessor. Before calculating the grade, the examiner must hear the assessor's evaluation. The grade and key themes of the oral examination are recorded in minutes which are signed by the examiner and the assessor. Thereby, the oral examinations, as well as their evaluation, should be documented in such a way that, if an objection is raised, the results can be validated by a second examiner by means of additional oral clarifications, if necessary; this also applies to objections to those allowed to sit in on oral presentations in accordance with § 3b (7).

(5) All written examinations administered in modules are graded by a single examiner.

(6) If an oral or written examination is the final attempt, the examination must be scored and graded by two examiners. In this case, the score and the grade for the examination is calculated as the arithmetic mean of the individual scores. § 16 (3), sentences 3 and 4 apply.

(7) Students of the same degree programme may attend oral examinations if the candidate does not object. This does not apply to the discussion of the grade and its announcement to the candidate.

#### **§ 4b**

##### **Passing and Retaking of the Master's Examination**

(1) Students have two attempts at passing the examination of a module. Examinations cannot be retaken just to improve the grade. If a student has not passed such a module examination within two attempts, he/she is considered to have permanently failed the module.

(2) If the candidate permanently fails a module, then the Master's examination is considered as permanently failed, see § 15 (4).

#### **§ 5b**

##### **Access to the Examination Files**

After completing each examination, students can, upon request, gain access to their examination papers, the examiners' assessments and examination minutes. As a

rule, students are permitted to make copies or other faithful reproductions of their documents during the review of their examination files. Requests must be filed with the Local Coordinator via the Examinations Office of the Faculty Business and Economics no later than two weeks after the results of the examination are announced. The Examinations Office stipulates the time and place of access on behalf of the Local Coordinator.

### **§ 6b**

#### **Rectification of Results, Absence, Withdrawal, Deception and Violation of Regulations**

(1) An examination is considered a fail if the student, for no valid reason, does not appear at the examination on the designated date, or if he/she withdraws for no valid reason after beginning an assignment/examination. The same applies if a written examination is not completed within the allocated time limit. Examples of valid reasons include severe illness and maternity leave according to the Federal Parental Benefit Act (Bundeselterngeld- und Elternzeitgesetz), or nursing or caring for a spouse, a registered civil partner, a direct relative, or a first-degree relative by marriage if such care or assistance is necessary. Examinations may not be conducted if the University of Münster does not let students take an active role in their education in accordance with the Maternity Protection Act (Mutterschutzgesetz).

(2) The reasons for absence or withdrawal according to § 6b (1) must be submitted immediately and substantiated in writing to the Local Coordinator via the Examination Office of the Faculty Business and Economics. In the case of illness, the Local Coordinator may request a medical certificate (ärztliches Attest). If the Local Coordinator does not accept the reasons given, the student is to be notified in writing. If the student does not receive written notification within a 4-weeks period, then the reasons have been accepted. If a student claims illness as the reason for his/her inability to take an examination but there are sufficient indications that make it likely that he/she was, in fact, able to take the examination or that there was a different reason for missing the examination, then the Local Coordinator can, in accordance with § 63 Absatz 7 Universities Act (HG NRW), request a medical certificate (ärztliches Attest) issued by a University-appointed doctor (Vertrauensärztin/Vertrauensarzt). Such sufficient indications specifically exist if the student has missed four or more examination dates or has withdrawn (see § 6b (1)) from two or more examinations concerning the same examination. The student must be informed of this decision and the reasons for it immediately and be given the names of at least three University-appointed doctors to choose from.

(3) If a student attempts to influence the outcome of a examination or the Master thesis through dishonest means such as the use of unauthorised material or devices, the examination is regarded as not having been completed and is considered a fail. The reasons must be put on record. The same applies for other kinds of severe erroneous behaviour against generally accepted standards of conduct and violation of good academic practice, as plagiarism. In case of plagiarism, the local coordinator has to inform the Academic Committee to decide, depending on the level of plagiarism, whether the student will fail the examination in question or be excluded from the Master's Examination entirely, and the Master's examination has then been permanently failed, see § 20 (4).

(4) Whoever disrupts a examination may, usually after a warning by the invigilator, be excluded from continuing that particular examination. In this case, the examination is not completed and is considered a fail, too. The reasons for the exclusion must be put on record.

(6) Adverse decisions must be immediately disclosed to the student concerned by the Local Coordinator in written form. The decision(s) must be justified and accompanied by information on the legal remedies available. Before a decision can be made, the student concerned must be given the opportunity to state his/her case.

(7) If a result has to be rectified without the student is found to have violated regulations, the local administrator is responsible for deciding on the legal consequences, subject to the Administrative Procedures Act for North Rhine-Westphalia (Verwaltungsverfahrensgesetz für das Land Nordrhein-Westfalen).

## **§7b**

### **62. Compensation for Disadvantages**

(1) If a student can demonstrate that due to disability or chronic illness he/she is partially or entirely unable to complete degree-relevant examinations or required coursework in their intended manner or by the deadlines set forth in these examination regulations, the examinations board must offer the student upon request suitable alternatives with respect to the form, duration and use of aids or assistants in accordance with the principles of equal opportunity. The same applies should these examination regulations stipulate certain requirements for participating in modules and completing their required coursework/degree-relevant examinations.

(2) At the student's request, the faculty representative for students with disabilities must be consulted with regard to decisions specified in § 17 (1). If

consultation with a representative is not possible within the faculty, the University representative is to be consulted.

(3) Compensation for disadvantages is granted on a case-by-case basis in accordance with § 17 (1); students may be required to submit adequate documentation substantiating their chronic illness or disability. This includes, for example, medical certificates or, if applicable, a disability certificate (*Behindertenausweis*).

(4) The compensation for disadvantages as per § 17 (1) should extend to all required coursework and degree-relevant examinations administered during the student's course of study insofar as there is no change to his/her illness or disability.

(5) If due to maternity protection regulations, a female student cannot complete her required coursework or degree-relevant examinations in part or whole as prescribed, then § 17 (1) to (3) apply accordingly.

## § 8b

### Modules

<b>Module Title:</b>	<b>Project Management</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Compulsory
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>					
	<b>No</b>	<b>Type</b>	<b>Course</b>		<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	L/E	Project Management		60 (4 CH)	120

<b>4</b>	<b>Contents:</b> Fundamental knowledge of project management is an essential part of conducting (IT) projects. The content, methods and software tools learned in this course are essential for further courses in the Information Systems study program, especially for the project
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seminar. Moreover, general knowledge of managing projects might be helpful for students during the planning and work on their Bachelor and Master theses. The teaching methods applied in this course include lectures, software tutorials and student assignments. Within the assignments, students need to form groups and apply the gained knowledge to solve tasks that have references to real-world project management scenarios.

**Background and relations to other modules / courses:**

The Project Management course is focused on the dissemination of fundamental knowledge of management of (IT) projects. The course provides an overview of the entire project life cycle, including such stages as initiating, planning, executing, monitoring and controlling, as well as closing a project. Furthermore, main project management processes are studied within the course. Project management methods and tools are introduced in the lectures and are afterwards applied for solving problems and completing tasks within software tutorials and student assignments. Finally, the course includes guest lectures, held by industry representatives, where the connection of the lecture content to the projects in practice is established.

**Main topics and learning objectives:**

Topics	Learning objectives
Introduction to (IT) Project Management	To understand the main concepts in (IT) project management and the differences between projects and routines.
Project Lifecycle Management	To understand the project life cycle and internal and external factors influencing projects.
Management of the Project "Magic Triangle": Scope, Schedule, and Cost	To understand how to manage each of the dimensions of the project "Magic Triangle", namely scope, schedule, and cost, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Quality Management	To understand how to manage quality in projects, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Resource Management	To understand how to manage a project team and all project resources, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Communications Management	To understand how to manage communication(s) in projects, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.

	Project Risk Management	To understand how to manage risks in projects, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
	Specialized Topics in (IT) Project Management	To deepen knowledge of particular topics in (IT) project management, such as knowledge management and document management in projects, agile methods for (IT) project management, multi-project management, project closing and self-management.
	Tutorials on Project Management Software	To gain hands-on experience with project management software (such as Microsoft Project and SAP Project System).

5	<b>Learning outcomes:</b>		
	<b>Academic:</b> Students understand the main concepts in (IT) project management, as well as gain knowledge of some specialized topics in this field. They understand how to manage (IT) projects and know the main processes in project management. They are able to apply methods and tools to solve tasks that have references to real-world project management scenarios, as well as are able to use project management software.		
	<b>Soft skills:</b> Through assignments, students apply and improve their capabilities in group work, problem-solving, academic writing, presentation and discussion. They also have an opportunity to improve their English language skills, as both oral and written assignments need to be submitted in English. They gain experience in working with project management software (such as Microsoft Project and SAP Project System). The course contents need to be further explored by the students through self-study, thus improving their capabilities to work independently. Finally, within the workshop on self-management, the students are introduced to the techniques for time management and task management, which they can then discuss and apply in their future studies and work.		

6	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Final written exam (No. 1)	120 Min.	80
	Short Group presentation (group of approx. 5 students) (No. 2)	20 min	10
	Group work essay (group of approx. 5 students) (No. 3)	4000 words	10

7	Study work: none																		
8	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.																		
9	<table><tr><td colspan="3">CP Assignment</td></tr><tr><td>Presence</td><td></td><td>2.00 CP</td></tr><tr><td rowspan="3">Relevant Work</td><td>No. 1</td><td>3.00 CP</td></tr><tr><td>No. 2</td><td>0.50 CP</td></tr><tr><td>No. 3</td><td>0.50 CP</td></tr><tr><td>Total</td><td></td><td>6 CP</td></tr></table>			CP Assignment			Presence		2.00 CP	Relevant Work	No. 1	3.00 CP	No. 2	0.50 CP	No. 3	0.50 CP	Total		6 CP
CP Assignment																			
Presence		2.00 CP																	
Relevant Work	No. 1	3.00 CP																	
	No. 2	0.50 CP																	
	No. 3	0.50 CP																	
Total		6 CP																	
10	Module Prerequisites: There are no prerequisites, however, having completed the module Application Systems would be beneficial in order to understand the inner workings of project management software (such as SAP PS).																		
11	Presence: The attendance at lectures and active participation in the tutorials and group assignments is highly recommended.																		
12	Responsible Lecturer: Dr. Raimund Vogl																		



<b>ModuleTitle:</b>	<b>eGovernment</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Compulsory
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>				
	<b>No</b>	<b>Type</b>	<b>Course</b>	<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	L	Platforms and Digital Service Ecosystems (PDSE)	30 (2 CH)	60
	2	E	Exercises on PDSE-	30 (2 CH)	60

<b>4</b>	<b>Contents:</b> <p>Digital platforms do not only constitute a keystone of the digital economy, but are also of high relevance to the public sector. In this course, we blend fundamental knowledge on platforms, ecosystems, and digital service design with a public sector perspective. In the first part of the course, we cover key principles of platforms and platform ecosystems. Following this, we discuss public services and central concepts related to the digital transformation of the same. In the third and final part, we combine both perspectives to explore the dynamics of platform-based service ecosystems in selected domains related to the public sector. Such domains include, for instance, smart cities, health, or education.</p>
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<b>5</b>	<b>Learning outcomes:</b> <b>Academic:</b> <p>The students understand key concepts of the digital economy and how they relate to the challenges and opportunities associated with platform-based solutions in the public sector. Furthermore, the students will get an understanding of methods and concepts that can be leveraged in the digital transformation of public services, taking both a supplier as well as customer perspective. The students are able to apply and integrate these concepts within a complex application context like smart cities.</p>
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	<b>Soft skills:</b> Students learn to understand/interpret documents related to the field. Students learn to discuss the role of platforms and digital service ecosystems within the public sector with others and critically reflect on the associated challenges. Students discuss and present relevant topics to the class.
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6	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Final written exam	90 Min.	100

7	<b>Study Work:</b>	
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>
	Case study work (in groups, presentation and written submission)	30 Min, 5 pages
	Simulation Game	Appr. 12 pages

8	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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9	<b>CP Assignment</b>		
	Presence	No. 1	1.00 CP
		No. 2	1.00 CP
	Relevant Work		3.00 CP
	Course Work	No. 1	0.50 CP
		No. 2	0.50 CP
	Total		6 CP

10	<b>Module Prerequisites:</b> none
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11	<b>Presence:</b> Presence is recommended
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12	<b>Responsible Lecturer:</b> Prof. Dr. Tobias Brandt
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<b>Module Title:</b>	<b>Integrated Research Seminar</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Compulsory
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>					
	<b>No</b>	<b>Type</b>	<b>Course</b>	<b>CP</b>	<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	Seminar	Integrated Research Seminar	6	60 (4 CH)	120

<b>4</b>	<p><b>Contents:</b></p> <p><b>Background and relations to other modules / courses:</b></p> <p>Basic idea of the integrated research seminar is to reflect and study a real-life case following the three countries and universities integrated into the programme. Coming from Leuven, the real-life case will be further developed and refined.</p> <p><b>Main topics and learning objectives:</b></p> <p>General objective of the seminar is to be able to understand, compare and contrast the experiences working on real-life case studies in the area of public sector innovation and e-governance in the three participating host countries. The students, having studied in Leuven, have gained basic understanding in the field of public management and hence are able to discuss the case from this perspective. During this course, they will be able to add specific concepts of information technology into the real-life case.</p>
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<b>5</b>	<p><b>Learning outcomes:</b></p> <p><b>Academic:</b></p> <p>The students deepen their knowledge on the information technology side of eGovernment. They are able to use such technologies and integrate them into the real-life case. They are able to understand the problems and dependencies of using IT in the public sector.</p> <p><b>Soft skills:</b></p> <p>Students improve their skills in acquiring profound scientific knowledge and presentation. Depending on the topic, group working abilities are supported.</p>
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6	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Seminar paper (elaboration) and corresponding oral examination	Ca. 20 pages, ca. 60 min.	100

7	<b>Study work: none</b>
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8	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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9	<b>CP Assignment</b>		
	<b>Presence</b>	<b>No. 1</b>	<b>2.00 CP</b>
	<b>Relevant Work</b>	<b>No. 1</b>	<b>4.00 CP</b>
	<b>Total</b>		<b>6 CP</b>

10	<b>Module Prerequisites:</b> none
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11	<b>Presence:</b> Presence is recommended
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12	<b>Responsible Lecturer:</b> Prof. Dr. Tobias Brandt
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<b>Module Title:</b>	<b>Information Systems Application</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Compulsory
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<b>2</b>	<b>Turn:</b> each summer term	<b>Duration:</b> 1 semester	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>					
	<b>No</b>	<b>Type</b>	<b>Course</b>	<b>CP</b>	<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	Lecture	Information Systems Application	?	30 (2 CH)	60
	2	Exercise	Exercise on Information Systems Applications	?	30 (2 SWS)	60

<b>4</b>	<p><b>Contents:</b></p> <p>The content of the course covers a wide range of Information Systems as a discipline. First, a condensed overview of the Information Systems discipline will be provided by looking into the various topics within IS, such as IS strategy and IS Governance. Then, it will get a bit more technical, as IS development and IS architectures will be discussed. The main focus of the course, however, lies on business process management (BPM) and data management. The course covers both the theoretical foundations and practical usage BPM and data management. The different phases of BPM as well as various modeling languages (e.g., EPC, BPMN and PICTURE) will be taught and used to understand how to structure processes in a public sector environment. The data-view on information systems in the public sector will be provided by introducing different concepts and techniques for structuring and working with data, from the conceptual level (e.g., ERM) to the operational level (e.g., SQL).</p>								
	<p><b>Main topics and learning objectives:</b></p> <table> <tr> <th>Topics</th><th>Learning objectives</th></tr> <tr> <td>IS as a discipline</td><td>Basic knowledge about the foundations of Information Systems</td></tr> <tr> <td>IS development</td><td>Basic knowledge about IT-development frameworks and Software Engineering languages. Deepening the knowledge about design principles and concepts.</td></tr> <tr> <td>IS architecture</td><td>Deepening the understanding of IT-architectures as central conceptual element in IS development cycles. Getting an understanding of methods and techniques.</td></tr> </table>	Topics	Learning objectives	IS as a discipline	Basic knowledge about the foundations of Information Systems	IS development	Basic knowledge about IT-development frameworks and Software Engineering languages. Deepening the knowledge about design principles and concepts.	IS architecture	Deepening the understanding of IT-architectures as central conceptual element in IS development cycles. Getting an understanding of methods and techniques.
Topics	Learning objectives								
IS as a discipline	Basic knowledge about the foundations of Information Systems								
IS development	Basic knowledge about IT-development frameworks and Software Engineering languages. Deepening the knowledge about design principles and concepts.								
IS architecture	Deepening the understanding of IT-architectures as central conceptual element in IS development cycles. Getting an understanding of methods and techniques.								

	Business Process Management	Introduction into Business Process Management and general procedure. Getting knowledge about difference modelling techniques. Practical application and deeper understanding of BPM-technologies. Getting an understanding of Process analysis needs and concepts.
	Data Management	Introduction into Data management and general procedure. Getting knowledge about relevant techniques. Practical application.
	Application in the public sector	Applying the technologies and methodologies learned in the context of the public sector with assignments, tutorials and cases.

5	<b>Learning outcomes:</b>		
	<b>Academic:</b> The students should gain knowledge in Information Systems (IS) as a discipline. This includes, for instance, the development of IS, IS architectures and both process and data management. The students will be able to differentiate process modeling languages and the principles of data management. Additionally, they will be able to structure public sector processes and how to prepare public sector organizations for the introduction/implementation of information technologies.		
	<b>Soft skills:</b> Students learn and deepen their problem-solving capabilities in small groups as well as their presentation skills during the exercises. Through self-study, the contents of the module are further explored by the students in order to improve their skills for literature review. Searching and analyzing academic literature is done in order to prepare for class and to put the contents of the class in a general context.		

6	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Final written exam	120 Min.	100

7	<b>Study work: none</b>		
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8	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.		
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9	<b>CP Assignment</b>		
	<b>Presence</b>	<b>No 1</b>	<b>1.00 CP</b>

		<b>No 2</b>	<b>2.00 CP</b>
	<b>Relevant Work</b>	<b>No. 1</b>	<b>3.00 CP</b>
	<b>Total</b>		<b>6 CP</b>

<b>10</b>	<b>Module Prerequisites:</b> There are no prerequisites.
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<b>11</b>	<b>Presence:</b> The attendance at lectures and active participation is highly recommended.
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<b>12</b>	<b>Responsible Lecturer:</b> Dr. Michael Räckers
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**Elective: The fifth course/module is an elective, worth 6 ECTS. One of the following four modules has to be elected by the student.**

<b>Module Title:</b>	<b>Information Management: Theories</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Elective
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>				
	<b>No</b>	<b>Type</b>	<b>Course</b>	<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	L	Theories	30 (2 CH)	60
	2	E	Exercises on Theories	30 (2 CH)	60

<b>4</b>	<p><b>Contents:</b></p> <p><b>Background and relations to other modules / courses:</b></p> <p>A sound understanding of management and information management as provided in the courses “Managing the Information Age Organization” and “Information Management Tasks &amp; Techniques”.</p> <p><b>Main topics and learning objectives:</b></p> <p>This module deepens the students’ understanding of IM tasks and techniques in that it enables them to assess underlying theoretical propositions in more detail. To this end, the lecture introduces important management theories, including market, resource and capability based theories of strategic information systems, IT strategy theory, IT value and productivity theory, organization theory of IT and theories of sourcing and governing the information function. Moreover, on the basis of this theoretical knowledge, critical issues of IM are discussed in the light of the controversial academic discussions surrounding them. The module builds on well-prepared class discussions rather than traditional lectures. The lecturer will support learning by carefully selecting papers and placing them into a broader “theoretical landscape”. He will moderate and facilitate the discussions, and provide feedback on the assignments during the semester (reading papers, preparing presentations, writing minutes).</p>
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5	<b>Learning outcomes:</b>		
	<b>Academic:</b> After the completion of this course, students will a) have access to the academic debate on IM, specifically, the international academic debate on the most important or discussed issues of information management. The students will b) discern theories underlying the frameworks and techniques proposed for solving IM tasks, including market, resource and capability based theories of strategic information systems, IT strategy theory, IT value productivity theory, organization theory of IT and theories of sourcing and governing the information function. They will be able to c) will develop a repertoire of theoretical approaches and be able to apply them to issues of information management and d) will understand the contributions of important management theories to the IS field and will be able to assess these tools and the underlying theories critically.		
	<b>Soft skills:</b> In addition to providing students with the capabilities to deal with academic literature reflectively, the course trains them in presenting their take on selected academic papers to the class and furthers their general ability to take an active part in academic discussions. This ability is based on a combination of reading, thinking, writing, discussing and listening skills. Students will practice their collaboration skills and develop techniques for efficient collaboration		

6	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Final Written Exam (N° 1)	Up to 120 Min.	60

7	<b>Study Work:</b>	
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>
	Reflection on readings by presentation (groups of 3-5 students), written report and comments on reading (N° 2)	ca. 20 min., ca 5 pages, ca 6 pages

8	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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<b>9</b>	CP-Assignments		
	Presence	No. 1	1.00 CP
		No. 2	1.00 CP
	Relevant Work	No. 1	2.50 CP
		No. 2	1.50 CP
	Total		6 CP

<b>10</b>	<b>Module Prerequisites:</b> none
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<b>11</b>	<b>Presence:</b> Presence is recommended
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<b>12</b>	<b>Responsible Lecturer:</b> Prof. Dr. Stefan Klein
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<b>Module Title:</b>	<b>Enterprise Architecture Management</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Elective
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>					
	<b>No</b>	<b>Type</b>	<b>Course</b>		<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	L	EAM		30 (2 CH)	60
	2	E	Exercises on EAM		30 (2 CH)	60

<b>4</b>	<p><b>Contents:</b></p> <p><b>Background and relations to other modules / courses:</b></p> <p>This module stresses the aspect of IM as an engineering discipline, in contrast to being a management discipline only. The fundamental idea is to describe organizations as a whole, consisting of goals and strategies, business models, processes, people and information technology. Enterprise Architecture Management propagates a holistic approach that primarily aims at aligning the spheres of business and IT within one or across several companies and at facilitating and governing transformation processes. The Information Manager thereby has the role of an architect of the corporate information infrastructure. The course “Managing IT in the Information Age” introduces students to the tasks and tools in Information Management thus setting the scene for this module.</p> <p><b>Main topics and learning objectives:</b></p> <p>This module provides insights into the concepts and methods of Enterprise Architecture Management. The need for architectures in complex organizations as an instrument for transformation is motivated by the challenges enterprises face in today’s business. Architectures support the effective planning and governance of enterprises as a whole consisting of business and IT. Consistently implemented, they facilitate the understanding of business entities’ interrelationships, set them in relation to strategic goals and help define the desired to be state and the roadmap for its realization. For this purpose, concepts, methods, models and tools are discussed and enriched with insights from practice. The introduction of a specialised modeling language introduces the students to the creation of architectural artifacts. The concrete architecture realization process is underlined by the study of architecture frameworks currently discussed in research and practice.</p>
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Topics	Learning objectives
Motivation of EAM	To learn about the challenge today's enterprises are facing and the answers EAM provides in this context
Positioning EAM	To learn the definition and major concepts of EAM, about its key applications and its role as a bridge from strategy to design
Management areas and best practices	To learn about the management areas relevant to EAM and associated best practices commonly applied
Modeling of EAM	To learn how to create different architectural artifacts and to connect them to create a holistic, purposeful picture of the enterprise. Moreover, to learn to use viewpoints to generate stakeholder-specific views of the architecture
Frameworks on EAM	To learn why frameworks play an important role in EAM and to get to know prominent frameworks that are vividly discussed in research and practice.
Current developments in Enterprise Architecture Management	To learn current developments and trends in Enterprise Architecture Management in academia and practice.

5	<b>Learning outcomes:</b>
	<p><b>Academic:</b></p> <p>The students' ability to develop and manage Enterprise Architectures is the module's major goal. An understanding of current developments and frameworks in the domain of architecture implementation should be obtained. Students are equipped with methods for planning, creating and governing such architectures. Furthermore, practical skills in architecture development will be conveyed with work on case studies and presentation of the results.</p>
	<p><b>Soft skills:</b></p> <p>Students are encouraged to prepare the contents of the lecture and exercises and to perform follow-up work in teams. This is supported by a Learnweb discussion forum that is guided by the chair. The case study is organised as group work and thus promotes the students' ability to cooperate in teams and to manage their time efficiently. The intermediary results are presented regularly by the groups in front of the complete audience. This enhances the students' presentation and discussion skills. The creation of architectural models by using a syntactically and semantically defined modeling language sharpens analytical and logic skills.</p>

<b>6</b>	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Written Exam (N° 1)	120 Min.	60
	Case Study with Enterprise Architecture Management-Software, Presentation (N° 2)	40 pages, 40 min. presentation	40

<b>7</b>	<b>Study work:</b> none
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<b>8</b>	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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<b>9</b>	<b>CP Assigment</b>		
	<b>Presence</b>	<b>No. 1</b>	<b>1.00 CP</b>
		<b>No. 2</b>	<b>1.00 CP</b>
	<b>Relevant Work</b>	<b>No. 1</b>	<b>2.50 CP</b>
		<b>No. 2</b>	<b>1.50 CP</b>
	<b>Total</b>		<b>6 CP</b>

<b>10</b>	<b>Module Prerequisites:</b> none
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<b>11</b>	<b>Presence:</b> Presence is recommended
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<b>12</b>	<b>Responsible Lecturer:</b> Prof. Dr.-Ing. Bernd Hellingrath
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<b>Module Title:</b>	<b>Information Security</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Elective
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>				
	<b>No</b>	<b>Type</b>	<b>Course</b>	<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	L	Information Security	30 (2 CH)	60
	2	E	Exercises on Information Security	30 (2 CH)	60

<b>4</b>	<p><b>Contents:</b></p> <p><b>Course content:</b></p> <p>This lecture covers the foundations of IT security including the specification of protection goals, adversary models and security mechanisms. Starting with threats to IT infrastructure, authentication principles as well as permission systems are introduced. Cryptography and security protocols give a perspective of IT security design and a short block on modern Web security enriches the lecture with practical knowledge.</p> <table border="1"> <thead> <tr> <th>Topics</th><th>Learning objectives</th></tr> </thead> <tbody> <tr> <td>Threats to IT infrastructure</td><td>This field will give an overview of the IT security landscape and introduce relevant attacks and incidents.</td></tr> <tr> <td>Authetication &amp; access control</td><td>In this block, mechanisms for user authentication and permission enforcement are introduced.</td></tr> <tr> <td>Cryptography</td><td>The cryptography block covers foundations of modern encryption methods.</td></tr> <tr> <td>Protocol analysis</td><td>In this part of the lecture, the security analysis of network protocols is introduced, covering i.a. replay attacks.</td></tr> <tr> <td>Web security</td><td>The last block of this lecture shows practical attacks and defenses regarding modern Web applications.</td></tr> </tbody> </table>	Topics	Learning objectives	Threats to IT infrastructure	This field will give an overview of the IT security landscape and introduce relevant attacks and incidents.	Authetication & access control	In this block, mechanisms for user authentication and permission enforcement are introduced.	Cryptography	The cryptography block covers foundations of modern encryption methods.	Protocol analysis	In this part of the lecture, the security analysis of network protocols is introduced, covering i.a. replay attacks.	Web security	The last block of this lecture shows practical attacks and defenses regarding modern Web applications.
Topics	Learning objectives												
Threats to IT infrastructure	This field will give an overview of the IT security landscape and introduce relevant attacks and incidents.												
Authetication & access control	In this block, mechanisms for user authentication and permission enforcement are introduced.												
Cryptography	The cryptography block covers foundations of modern encryption methods.												
Protocol analysis	In this part of the lecture, the security analysis of network protocols is introduced, covering i.a. replay attacks.												
Web security	The last block of this lecture shows practical attacks and defenses regarding modern Web applications.												

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5	<b>Learning outcomes:</b>
	<b>Academic:</b> a) identify security issues b) keep aware of changing technological limits c) evaluate security advises critically and comprehensively d) oversee the implementation of security measures
	<b>Soft skills:</b> a) communicate effectively with security experts b) assume responsibility for their effects and potential sideeffects

6	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Oral examination	Ca 20 Min.	80
	One written exercise	Ca. 10 pages	20

7	<b>Study work:</b> none.
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8	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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9	CP-Assignments		
	Presence	No. 1	1.00 CP
		No. 2	1.00 CP
	Relevant Work	No. 1	3.00 CP
		No. 2	1.00 CP
	Total		6 CP

10	<b>Module Prerequisites:</b> none
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11	<b>Presence:</b> Presence is recommended
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12	<b>Responsible Lecturer :</b> Prof. Dr.-Ing. Thomas Hupperich
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<b>Module Title:</b>	<b>Advanced Concepts in Software Engineering</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Elective
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<b>2</b>	<b>Turn:</b> Every summer term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 6	<b>Workload (h):</b> 180
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<b>3</b>	<b>Module Structure:</b>				
	<b>No</b>	<b>Type</b>	<b>Course</b>	<b>Presence (h + CH)</b>	<b>Self-Study (h)</b>
	1	L	Advanced Concepts in Software Engineering	30 (2 CH)	45
	2	E	Exercises on Advanced Concepts in Software Engineering	30 (2 CH)	75

<b>4</b>	<p><b>Contents:</b></p> <p><b>Purpose of the module:</b></p> <p>It is assumed that the students have some experience with programming and software development as they are taught in the bachelor program. The learned concepts and techniques are (often) helpful in the master thesis.</p> <p><b>Course content:</b></p> <p>The course consists of lectures providing the theoretical background of topical software-engineering concepts such as enterprise application integration, model-driven software development, web applications, microservices, and container virtualization. Moreover, it consists of 5 assignments where these concepts are applied to develop and connect example information system.</p> <table border="1"> <tr> <th>Topics</th><th>Learning objectives</th></tr> <tr> <td>Enterprise Application Integration (EAI) concepts</td><td>Knowing and being able to evaluate typical EAI topologies and possible integration layers. Knowing corresponding communication paradigms.</td></tr> <tr> <td>Web applications and Middleware</td><td>Knowing typical concepts and frameworks for the development of enterprise applications. Being able to use these frameworks for developing enterprise applications.</td></tr> </table>	Topics	Learning objectives	Enterprise Application Integration (EAI) concepts	Knowing and being able to evaluate typical EAI topologies and possible integration layers. Knowing corresponding communication paradigms.	Web applications and Middleware	Knowing typical concepts and frameworks for the development of enterprise applications. Being able to use these frameworks for developing enterprise applications.
Topics	Learning objectives						
Enterprise Application Integration (EAI) concepts	Knowing and being able to evaluate typical EAI topologies and possible integration layers. Knowing corresponding communication paradigms.						
Web applications and Middleware	Knowing typical concepts and frameworks for the development of enterprise applications. Being able to use these frameworks for developing enterprise applications.						

	Web Services	Being able to connect existing enterprise applications using web-service technologies.
	Message-oriented Middleware	Being able to connect enterprise applications using message-oriented middleware.
	Model-Driven Software Development (MDSD)	Understanding and being able to apply the main concepts of MDSD such as automatically transforming a model to e.g. executable code as well as meta-modeling and domain-specific languages.
	Microservices	Understanding the advantages and disadvantages of microservice architectures. Being able to design resilient and scalable information systems based on microservice architectures.
	Container Virtualization	Knowing recent concepts of operating-system virtualization and being able to apply them.

<b>5</b>	<b>Learning outcomes:</b>		
	<b>Academic:</b> The students learn to know and apply current integration technologies for software systems within a company and across collaborating enterprises. Moreover, they learn how to increase the productivity of software development by automatically transforming abstract models to desired artifacts such as executable code. Finally, they learn to know and apply architecture concepts for resilient and scalable information systems.		
	<b>Soft skills:</b> The assignments are solved in teams of about 5 students. Thus, the students are trained to collaborate in teams.		

<b>6</b>	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Written examination	120 Min.	70
	Software artifact (4 parts) in groups	Ca. 20 pages/ part, 45 code lines/code page	30

<b>7</b>	<b>Study work:</b> none.
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<b>8</b>	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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<b>9</b>	CP-Assignments		
	Presence	No. 1	1.00 CP
		No. 2	1.00 CP
	Relevant Work	No. 1	2.50 CP
		No. 2	1.50 CP
	Total		6 CP

<b>10</b>	<b>Module Prerequisites:</b> none
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<b>11</b>	<b>Presence:</b> Presence is recommended
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<b>12</b>	<b>Responsible Lecturer:</b> Prof. Dr. Herbert Kuchen
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## § 9b

### Rules for Administering Online Examinations

(1) The following rules apply when administering oral examinations as online examinations:

- a) Online video examinations are to be administered by at least two examiners or one examiner in the presence of an observer who has expertise on the subject. In derogation of the examination regulations, external guests are not permitted to attend online examinations.
- b) The difficulty and content of the oral online video examinations must correspond to the originally planned in-person oral examination.
- c) The length of the examination should correspond to the parameters provided in the examination regulations.
- d) Students, examiners and observers must have the technical equipment and capabilities to participate in the online video examination, specifically:
  - PC/notebook/tablet equipped with a camera and microphone
  - stable Internet connection
- e) The student must use a room suited for the purpose of taking the examination alone.
- f) The student must ensure that he/she will not be disturbed for the duration of the examination (e.g. no phone calls, visits etc.).
- g) The examiners and observers must likewise ensure that the examination is conducted without disruption.
- h) Before the examination begins, the student should identify himself/herself by presenting an official photo ID to the camera.
- i) Before the examination begins, the student should use the screen-sharing function to prove that he/she has no access to technical aids or resources.
- j) The examiners and observers must be visible to the examinee throughout the duration of the examination.
- k) If a digital whiteboard is used during the exam, the student's screen should be shared with the other participants throughout (using the screen-sharing function).
- l) If the examiners get the impression that the candidate has attempted to deceive them, they may ask the candidate to pan the camera around the room to prove that he/she is indeed alone and that no technical aids are in view. The camera should be angled in such a way to guarantee a secure testing environment for the duration of the examination.
- m) After completing the examination, the student should leave the online video conference to allow the examiners to discuss the grade to be awarded. After determining the grade, the student is informed (e.g. via email) and may join the video conference again to hear his/her grade.
- n) If the Internet connection is interrupted, the examination should continue as soon as possible. Once the examination resumes, the candidate should be given a new question. If the connection is repeatedly interrupted, the examination should be halted and, in case of doubt, repeated in person as soon as the University of Münster resumes regular operations.
- o) Any other disruptions to the online video examination must be recorded in the minutes of the examination, detailing the type, scope and duration of the disruption.

(2) The following rules apply when administering written examinations as online examinations:

- a) The format of the online examination must correspond to the parameters provided in the examination regulations for written, in-person examinations.
- b) The difficulty of the written online examinations must correspond to the originally planned written, in-person examination.
- c) The length of the examination should correspond to the parameters provided in the examination regulations.
- d) Students, examiners and observers must have the technical equipment and capabilities to participate in the online examination, specifically:
  - PC/notebook/tablet
  - stable Internet connection
- e) The student must use a room suited for the purpose of taking the examination alone.
- f) The student must ensure that he/she will not be disturbed for the duration of the examination (e.g. no phone calls, visits etc.).
- g) The rules on the use of aids as provided in the examination regulations may be modified, provided that the student is informed of these changes with suitable advance notice.
- h) Any disruptions to the online video examination must be recorded in the minutes of the examination, detailing the type, scope and duration of the disruption.

(3) In the case of written online examinations supervised by an invigilator via video conference (written online video examinations), the rules in (1) on administering oral online examinations regarding aids and a secure examination environment also apply.

### **III. In the Course/Module Descriptions, the Course Descriptions of Tallinn University of Technology contain the following amended version:**

#### **“3. Semester: Tallinn University of Technology**

##### **§ 1c**

##### **Organization of Studies and Courses**

Studies are conducted according to curricula and are organised in the form of daytime studies, designed for students for whom studying is their main activity and where instruction is carried out mainly on working days.

The study information system ÕIS (hereinafter ÕIS) is the university's official academic information exchange environment.

Studies take place in the form of face-to-face learning, practical training and independent work. “Face-to-face learning” means studies for the purposes of achieving the learning outcomes in the learning environment in the form of a lecture, e-learning course, practical training or practice session, in which both the student and the lecturer take part. “Independent work” means independent acquisition of the knowledge and skills required for the achievement of the learning outcomes in accordance with the instructions given by the lecturer.

At TalTech an academic year consists of two 20-week semesters (an autumn and a spring semester) and each semester consists, as a rule, of 16 weeks of face-to-face learning.

The courses taught to students are divided in the individual study plan into compulsory, elective and optional courses. A compulsory course is a course that must be passed to complete a curriculum. An elective course is a course selected by the student from among the courses in the curriculum. An optional course is a course that a student can select freely and that allows the student to broaden his or her horizons or to improve his or her professional knowledge and skills.

The unit teaching the course prepares a syllabus for each course. A syllabus includes, inter alia, the brief description of the content, objectives, learning outcomes, literature and prerequisite courses of the course. An extended syllabus, though, stipulates the objectives and learning outcomes of the course, the list of topics to be covered and a short description of their content, a list of assignments to be completed during the course, a schedule, the literature, the organization of studies and the assessment criteria. The extended syllabus is presented to the students in the first class at the beginning of the relevant semester and is available in ŌIS.

An individual study plan means a list of the courses declared by the student for the upcoming semester, which he or she undertakes to study. Declaration of a course means selection of the course for the individual study plan. A student shall submit an individual study plan by the deadline specified in the academic calendar. A course not completed by the end of the semester must be re-declared. A student can re-declare only once a course not completed by the end of the semester. In case of an elective or optional study module, a student can waive completion of the course.

## **§ 2c**

### **Assessment methods and criteria**

The assessment methods define the manner of attesting the acquisition of knowledge and skills (e.g. an oral or written examination, pass/fail assessment, an essay, a report, teamwork, a questionnaire). An assessment criterion specifies the expected level and scope of knowledge which can be proved by the assessment methods and which are formulated as learning outcomes.

The assessment methods to verify the achievement of the learning outcomes, the assessment criteria and procedure, incl. the principles of determining the final grade in case various methods are used for the assessment, are specified by the lecturer in the extended syllabus.

The methods and criteria of assessment defined in extended syllabi are available to students before the commencement of studies.

The final grade can be calculated as a total of different components (e.g. homework, test, exam, assessment) or based only on an examination or assessment at the end of the study period. If the final grade is based partially or entirely on the results of continuous assessment, the assessment criteria and the weight of the results of continuous assessments in the final grade, as well as the deadlines for the performance thereof, are specified in the extended syllabus of the relevant course.

A lecturer may set prerequisites for eligibility for assessment of the components of the final grade of the course. In such a case, the lecturer specifies in the assessment criteria, how will a student be graded if the student has failed to fulfil the prerequisite of the corresponding part of the final grade.

The university has the right to check students' written papers by using a plagiarism detection system and enter a paper in the relevant database.

### **§ 3c**

#### **Methods and scale of assessment**

Assessment may be either graded or non-graded.

In case of graded assessment, the level of achievement of learning outcomes by a student is assessed based on the following scale:

“Excellent” (A (5)) – outstanding and particularly profound achievement of learning outcomes, along with creativity and consummate proficiency in applying skills and knowledge;

“Very Good” (B (4)) – very good achievement of learning outcomes, along with proficiency in applying skills and knowledge in a targeted and creative manner. Some details of knowledge and skills may exhibit errors which are neither substantive nor serious;

“Good” (C (3)) – good achievement of learning outcomes, along with proficiency in applying skills and knowledge in a relevant manner. A certain imprecision and uncertainty are apparent in the depth and detail of knowledge and skills;

“Satisfactory” (D (2)) – sufficient achievement of learning outcomes, along with application of knowledge and skills in a typical manner; in atypical situations both, uncertainty as well as lack of knowledge and skills are apparent;

“Sufficient” (“poor” E (1)) – minimum acceptable achievement of the most important learning outcomes along with limited application of knowledge and skills in typical situations; in atypical situations both, considerable uncertainty as well as lack of knowledge and skills are apparent;

“Fail” (“failed” F (0)) – achievement in knowledge and skills below the minimum standard.

For non-graded assessment the final grade is determined by a threshold; when learning outcomes of a student comply with or exceed the threshold, the assessment is indicated as adequate – A (pass), or, in case the student's learning outcomes fail to comply with the threshold, the assessment is indicated as inadequate – M (fail).

In case of graded assessment, “1” – “5” and in case of non-graded assessment “A” (pass) is a positive result. Final grades are entered in ŌIS and signed by the person teaching or supervising the course, to whom the student has declared the course. An assessment form is the reference document of the final grade.



#### **§ 4c**

##### **Assessment procedure**

If an examination takes place in a course, at least three dates should be provided for taking an examination with an interval of at least three days between the examinations. The three dates for taking an examination must include the option to take a re-examination. The results of the previous examinations shall be available for students.

The lecturer makes sure that the final grade of a written examination or course ending with an assessment is made available for the students in ÖIS within a week after the examination or assessment. The final grades of an oral examination or a course ending with an assessment shall be made available to the students on the day of the examination or assessment and in ÖIS within three working days. All final grades shall be made available in ÖIS not later than three working days after the deadline for taking the examinations in the semester.

The schedule of examinations and assessments shall be available in ÖIS or in the e-support environment of the course at least four weeks before the examination or assessment takes place. Examinations and assessments are conducted in the language of instruction.

Non-attendance at an examination shall be marked as “absent”. A student has the right to take an examination on the basis of one declaration in the given course for two times. A lecturer has the right to take the failure of a student to appear at an examination into account as one of these two times.

A student may retake an examination of a course with a positive final grade once. The final grade is calculated based on the result of the last examination. With the approval of the dean, a student may repeat an examination of a course with a positive final grade once after the deadline for passing the examination.

The lecturer lays down the procedure for testing students’ knowledge. Any resources or materials compiled by the student may be used only with the permission of and under the terms laid down by the lecturer. A lecturer has the right to remove a student from a knowledge test or refuse to assess the submitted assignment if the student is making use of help from others or violates the university’s good academic practice in any other way. In this case, the lecturer marks “0” (failed) or “M” (failed) as the result of the specific knowledge test or the final grade. A student has the right to receive feedback from the lecturer concerning his or her performance.

In justified cases and with the lecturer’s consent, the dean has the right, on the basis of a student’s application, to extend the term for passing an examination or assessment in the autumn semester for up to two weeks and in the spring semester up to the end of the academic year. The results received in the abovementioned period shall be recorded in the semester’s performance.

#### **§ 5c**

##### **Violation of good academic practices**

The following is deemed to be violation of good academic practice:

- 1) use of support materials upon a knowledge test, except those explicitly allowed by the lecturer;

- 2) making use of any other help from others (prompting, copying, copying homework, etc.) upon a knowledge test or violation of examination regulations by the student;
- 3) plagiarism, i.e. submitting another person's writing under one's own name or extensive rewording of someone else's work, referencing or quoting without proper academic reference;
- 4) re-submission of one's own work when this has already been taken into account in the final grade;
- 5) participating in an assessment for another student or allowing another person to participate in an assessment in one's own name;
- 6) deliberate submission of untrue information (false information) in one's assignments, applications, etc.;
- 7) damaging the reputation of the university, which includes providing ungrounded negative value judgements concerning the university, unauthorised mediation of the study opportunities and services provided by the university or compilation and dissemination of materials promoting the university for the purposes of material gain and other activities causing material damage or damage to the reputation of the university.

If a student violates the good academic practice or generally accepted standards of conduct, the dean has, depending on the gravity of violation, the right to:

- 1) issue a letter of reprimand to the student;
- 2) request the Vice-Rector for Academic Affairs to exmatriculate the student.

### **§ 6c**

#### **Disputing decisions concerning studies**

In order to dispute a decision concerning studies, the student must address the person who made the decision and appeal the decision within three working days from notification of the decision. The person who made the decision shall reply within three working days from the date of filing the appeal.

If the appeal is rejected, the student has the right to file a written signed appeal to the dean within 30 days from the notification of the decision. The dean shall reply to the appeal within ten days from filing of the appeal. The procedural deadline may be extended by 30 days by notifying the person filing the appeal thereof via ŌIS or by e-mail. The decision on the appeal shall be recorded in writing and shall be forwarded to the person filing the appeal via ŌIS or by e-mail or delivered against signature.

### **§7c**

#### **Requirements for Students with Special Needs**

Students with a disability are entitled to reasonable adjustments. For students in permanent or temporary special individual circumstances of physical or psychological nature, an

amendment of the exam format, examination facilities or the use of a technical device may be allowed after approval by the faculty. The faculty determines the deadline for the application and consults with the university expert on education and diversity. The adjustments are only granted after a status approval and an accompanying advice procedure.

### **§8c**

#### **Courses/Modules**

##### **Public Sector Innovation Lab**

1. Number of ECTS: 6
2. Grading: Exam
3. Language: English
4. Teaching semester: Fall semester
5. Learning objectives:

Using hands-on approach, this class deals with contemporary public sector innovation challenges by focusing on a concrete public sector case. The aim of the course is not only to find out what should and could be done to address a specific public sector challenge, but also how to re-conceptualize public sector problems and what should be done to implement the needed change.

6. Learning outcomes:

After successfully passing the subject the student should be able to:

- understand and analyze the context and roots of public sector innovation challenges;
- re-conceptualize public sector challenges;
- synthesize novel ideas and solutions for a specific public sector challenge;
- explain the viability of specific innovative solutions in the public sector context..

7. Description of the course:

The course has three main focus areas. First, it introduces the students the basic methods for public sector innovation. Second, the students will tackle a specific real-world public sector challenge through hands-on fieldwork. Third, the students will provide concrete solutions to the identified challenge and present the results and defend their arguments in front of an expert panel.

8. Evaluation methods and criteria:

The grade is based on interim presentations of field-work (50%) and final presentation (quality of the conducted work, style of presentation, quality of slides) (50%).

9. Literature:

Bason. C. 2018. Leading public sector innovation (second edition): Co-creating for a better society. Bristol: Bristol University Press.

Cottam, H., 2018. Radical help: How we can remake the relationships between us and revolutionise the welfare state. Hachette UK.

IDEO and NESTA. Designing for Public Services: a practical guide..

	Full-time (weekly hours)
Lectures	1,0
Practice / seminars	2,0
Total	3,0

10. Independent work:

The group-works focus on developing a solution (e.g. concept, prototype or similar) to a concrete public sector challenge.

Evaluation method	Evaluation criteria
Learning outcomes	<p>After successfully passing the subject the student should be able to:</p> <ul style="list-style-type: none"> <li>- understand and analyze the context and roots of public sector innovation challenges;</li> <li>- re-conceptualize public sector challenges;</li> <li>- synthesize novel ideas and solutions for a specific public sector challenge;</li> <li>- explain the viability of specific innovative solutions in the public sector context.</li> </ul>
Home assignment (evaluates learning outcomes 1-4)	The coursework evaluates, how students demonstrate their critical thinking and conceptual analysis skills, cohesion of arguments, use of sources and evidence, and the breadth and relevance of reading..
Prerequisites for grading	Keeping to the deadlines; lecture-seminar participation. Participation in seminars and lectures is mandatory, absence from maximum 1 seminar-lecture is allowed. For health or serious personal reasons, a second absence may be justified.
Final Grade	100% - Assignment + presentation.

1. Number of ECTS: 6

2. Grading: Exam

3. Language: English

4. Teaching semester: Fall semester

5. Learning objectives:

General objectives of the subject are to:

- introduce the main theories informing and explaining governing in the digital era;
- introduce the concept of digital governance and its role in public administration system, public administration reform and related debates;
- introduce the key issues in governing in the digital age from the increasingly controversial role of data to changing relationship between the state and people;
- present opportunities for public sector innovation from the use of big data and analytics to public service design and 'smart city' approaches;
- give an overview of the current digital governance state of affairs in Estonia and beyond;
- provide critical reflections on governance problems related to the use of digital technologies.

6. Learning outcomes:

After successfully passing the subject the student:

- has acquired basic knowledge about the main theories explaining governing in the digital era and its historical evolution and the current state of affairs;
- understands the logic of public administration and the opportunities and risks related to digitally enabled public sector reform attempts;
- has basic insights into the key issues of governing in the digital era;
- knows the main digital governance trends in Estonia and beyond;
- can critically analyze the impact of digital technologies on public sector governance.

7. Description of the course:

The idea of the course is to discuss how digital technologies specifically and the digital era in general shape governing in and by the public sector. The course will look into how the relationship between digital technologies and governing has emerged and evolved, and with what consequences. As such, the course combines critical, historical and future-oriented debates on governing in the digital era with insights into the current Estonian, European and global digital governance practices. The debates will touch upon several key issues of our time from changing relationship between the state and people to the increasing role of data-driven decision-making practices.

8. Evaluation methods and criteria:

The grade is based on the written exam (50%) and the home assignment (50%).

Students' understanding about the content of lectures and reading materials will be evaluated with the exam and home assignment..

	Full-time (weekly hours)
Lectures	2
Practice / seminars	1
Total	3

Evaluation method	Evaluation criteria
Learning outcomes	<p>After successfully passing the subject the student:</p> <ul style="list-style-type: none"> <li>- has acquired basic knowledge about the main theories explaining governing in the digital era and the historical evolution, development and the current state of governing in the digital era;</li> <li>- understands the logic of public administration and the opportunities and risks related to digitally enabled public sector reform attempts;</li> <li>- has basic insights into the key issues of governing in the digital era;</li> <li>- knows the main digital governance trends in Estonia and beyond;</li> <li>- can critically analyze the impact of digital technologies on the public sector governance.</li> </ul>
Home assignment (evaluates learning outcomes 1-5)	<p>The coursework evaluates, how students demonstrate their critical thinking and conceptual analysis skills, cohesion of arguments, use of sources and evidence, and the breadth and relevance of reading. Differential grading: it is possible to earn maximum 50 points for the case study analyses.</p>
Written exam (evaluates learning outcomes 1-4)	<p>A written exam is composed of short and open-end questions to control the knowledge derived from the compulsory reading assignments and lectures. Differential grading: it is possible to earn maximum 50 points for the written examination.</p>
Prerequisites for grading	<p>Keeping to the deadlines; lectureseminar participation. Participation in seminars and lectures is mandatory, absence from maximum 2 seminar-lectures is allowed. For</p>

	health or serious personal reasons, a second absence may be justified.
Final Grade	<p>In order to get the final grade, it is obligatory to perform on all the components and earn at least half of the points in each of the components.</p> <p>The final grade is calculated as follows: Written examination: 50%; Home assignment: 50%.</p> <p>The final grade is based on the general sum of the points earn for the different components:</p> <p>91% and more: grade 5 81-90%: 4 71-80%: 3 61-70%: 2 51-60%: 1 50% and less: 0</p>

## Integrated Research Seminar

1. Number of ECTS: 6

2. Grading: Exam

3. Language: English

4. Teaching semester: Fall semester

5. Learning objectives:

General objective of the subject is to be able to understand, compare and contrast the experiences working on real-life case studies in the area of public sector innovation and e-governance in the three participating host countries. The aim is also to reflect and explain the essence and applicability of different scientific methods in the context of public sector innovation and eGovernance as well as to enhance students` ability and skills to recite, argue and criticise in scientific discourse.

6. Learning outcomes:

After successfully passing the subject the student:

- is able to apply their theoretical knowledge of public sector innovation and e-governance in practical settings whereby they utilise their interdisciplinary knowledge;
- demonstrates an interdisciplinary expertise in a specific topic of public sector innovation and eGovernance;
- is capable of translating the studied specific topic into a Belgian, German and Estonian public sector context;
- explains, how public organizations through the use of ICT are able to become more adaptable, flexible and innovative;
- is able to discuss, how can ICT contribute to the efficiency of specific policy domains, such as health, education or justice, and how can big data provide solutions for the public sector.
- is able to defend his/her positions both orally and written, and oppose any critique;
- evaluates adequately the applicability of different scientific methods for dealing with different research questions.

7. Description of the course:

The subject deals with the understanding and comparison of the experiences working on real-life case studies in the area of public sector innovation and e-governance in the three participating host countries. It also reflects and explains the essence and applicability of different scientific methods in the context of public sector innovation and eGovernance as well as enhances students` ability and skills to recite, argue and criticise in scientific discourse. The seminar also offers a venue for various guest lectures by leading international scholars from various sub-fields of public sector innovation and e-governance.

8. Evaluation methods and criteria:

The grade is based on a graded case study (80%) and a class presentation (20%).

9. Literature:

- \* Budd, Leslie, Harris, Lisa 2009: e-Governance. Managing or Governing? Routledge.
- \* Noveck, Beth Simone 2009: Wiki Government, R.R. Donnelly.



\* Lathrop, Daniel, Ruma, Laurel 2010: Open Government. Collaboration, Transparency, and Participation in Practice. O'Reilly.

	Full-time (weekly hours)
Lectures	1,0
Practices / seminars	3,0
Total	4,0

#### 10. Independent work:

The goal of the coursework (case study) is to allow students demonstrate their critical thinking and conceptual analysis skills, cohesion of arguments, use of sources and evidence, and the breadth and relevance of reading.

Evaluation method	Evaluation criteria
Learning outcomes	<p>After successfully passing the subject the student:</p> <ul style="list-style-type: none"> <li>- is able to apply their theoretical knowledge of public sector innovation and e-governance in practical settings whereby they utilise their interdisciplinary knowledge;</li> <li>- demonstrates an interdisciplinary expertise in a specific topic of public sector innovation and eGovernance;</li> <li>- is capable of translating the studied specific topic into a Belgian, German and Estonian public sector context;</li> <li>- explains, how public organizations through the use of ICT are able to become more adaptable, flexible and innovative;</li> <li>- is able to discuss, how can ICT contribute to the efficiency of specific policy domains, such as health, education or justice, and how can big data provide solutions for the public sector.</li> <li>- is able to defend his/her positions both orally and written, and oppose any critique;</li> <li>- evaluates adequately the applicability of different scientific methods for dealing with different research questions.</li> </ul>

Home assignment + presentation (evaluates learning outcomes 1-7)	The coursework (case study) and presentation evaluate, how students demonstrate their critical thinking and conceptual analysis skills, cohesion of arguments, use of sources and evidence, and the breadth and relevance of reading.
Prerequisites for grading	Keeping to the deadlines; lecture-seminar participation. Participation in seminars and lectures is mandatory, absence from maximum 1 seminar-lecture is allowed. Missing more than one lecture-seminar will result in failure to pass the course. For health or serious personal reasons, a second absence may be justified.
Final Grade	100% - Home assignment + presentation

## **Entrepreneurship and Technology Management**

1. Number of ECTS: 6

2. Grading: Exam

3. Language: English

4. Teaching semester: Fall Semester

5. Learning objectives:

General objectives of the subject are:

- to analyse entrepreneurship and entrepreneurial process with the focus on R&D and innovation;
- to analyse innovation and technology management on company level;
- to analyse public sector innovation and how its management is different from private sector innovation management;
- to analyse the impact of wider environment on company activities and business models;
- to analyse entrepreneurship related policy, and especially on R&D and innovation policy, and enterprise support system.

6. Learning outcomes:

After successfully passing the subject the student:

- explains the main concepts and processes of entrepreneurship, and relates these to R&D and innovation;
- names the main aspects of the enterprise's economic activities in Estonia and internationally;
- identifies problems and possible solutions in establishing an enterprise;
- demonstrates knowledge on innovation and technology management at the company level;
- evaluates business opportunities, analyses the impact of business environment on the company's activities, and plans a business model, a business plan and a financial plan, including on a practical level;
- proves the ability to think creatively and entrepreneurially and to develop ideas (especially technology- and innovation-intensive) in teamwork, as he/she is aware of how to generate, develop and evaluate business ideas;
- analyzes the impact of the wider environment (including digitalization) on the company's activities and knows the entrepreneurship, research and development, and innovation policies and the support system;
- demonstrates knowledge on the evolution of the academic discourse on entrepreneurship and the most important research topics.

7. Description of the course:

Entrepreneurship is multifaceted, interdisciplinary field that does relate only to management issues, but included wider spectrum of knowledge and skills, and justifies the threefold approach.

First, main entrepreneurship, R&D and innovation related concepts, processes and tendencies are discussed. Company level innovation processes and company strategies in advancing (technological) innovation and research and development are discussed. The focus is both Estonia as well as international developments. Company establishment

as well as technology management, and overcoming possible problems, are discussed. These skills are applied in the first group work where business plans are elaborated and defended in front of other students.

The second block relates entrepreneurship, R&D and innovation with societal and economic development. The impact of wider context on company management and development is analysed. Innovation system concept is applied and the impact of R&D on entrepreneurship is discussed in detail. The group assignment relates to the analysis of various development phases of companies and the analysis of potential further business opportunities. The business plan of the first group assignment is developed further.

The third block focuses on entrepreneurship related policy, and especially on R&D and innovation policy, and on enterprise support system. In the group assignment the potential impact of various policy instruments on different types of enterprises is discussed, and related to the business plan developed.

Leading entrepreneurs and policy makers are involved in the course. The course is set-up based on process.

#### 8. Evaluation methods and criteria:

The grade forms as follows:

40% - Written exam

30% - Two group works

30% - Home assignment

Students` understanding about the content of lectures will be evaluated.

#### 9. Literature:

Bjerke, B. (2014) About Entrepreneurship. Edward Elgar.

Chell, E., Karataş-Özkan, M. (2014) Handbook of Research on Small Business and Entrepreneurship Edward Elgar.

Drucker, P. (1999) Innovation and Entrepreneurship.

Welter, F., Smallbone, D., Gils, A. Entrepreneurial Processes in a Changing Economy. Frontiers in European Entrepreneurship. Edward Elgar.

Tidd, J., Bessant, J., Pavitt, K. (2006). Innovatsiooni juhtimine. Tehnoloogiliste, organisatsiooniliste ja turu muudatuste integreerumine. Tallinn: Pegasus.

Fagerberg, J.; Mowery, D. C.; Nelson, R. R. (toim) (2004) The Oxford Handbook of Innovation, Oxford University Press.

Dodgson, M.; Gann, D. M.; Salter, A. (2008) The Management of Technological Innovation Strategy and Practice, Oxford University Press.

	Full-time (weekly hours)
Lectures	2,0
Practice / seminars	2,0
Total	4,0

Evaluation method	Evaluation criteria
Learning outcomes	<p>After successfully passing the subject the student:</p> <ul style="list-style-type: none"> <li>- explains the main concepts and processes of entrepreneurship, and relates these to R&amp;D and innovation;</li> <li>- names the main aspects of the enterprise's economic activities in Estonia and internationally;</li> <li>- identifies problems and possible solutions in establishing an enterprise;</li> <li>- demonstrates knowledge on innovation and technology management at the company level;</li> <li>- evaluates business opportunities, analyses the impact of business environment on the company's activities, and plans a business model, a business plan and a financial plan, including on a practical level;</li> <li>- proves the ability to think creatively and entrepreneurially and to develop ideas (especially technology- and innovation-intensive) in teamwork, as he/she is aware of how to generate, develop and evaluate business ideas;</li> <li>- analyzes the impact of the wider environment (including digitalization) on the company's activities and knows the entrepreneurship, research and development, and innovation policies and the support system;</li> <li>- demonstrates knowledge on the evolution of the academic discourse on entrepreneurship and the most important research topics.</li> </ul>

<p>I Group project and its presentation at the seminar (evaluates course outputs 2-7) Requirements according to the syllabus</p>	<p>Group assignment (50% of the grade) consists of written analysis (analytical paper) and presentation.</p> <p>Grading:</p> <ul style="list-style-type: none"> <li>- 91% and more: the student has acquired all core theoretical and practical concepts and can apply these for analyzing practical problems;</li> <li>- 81-90%: the student has acquired most core theoretical and practical concepts and can apply these for analyzing practical problems;</li> <li>- 71-80%: the student has acquired minimum necessary theoretical and practical concepts and can apply these for analyzing practical problems;</li> <li>- 61-70%: the student has acquired minimum necessary theoretical and practical concepts, but cannot systemize these and apply enough for analyzing practical problems;</li> <li>- 51-60%: the student has acquired minimum necessary theoretical and practical concepts, but cannot apply these for analyzing practical problems;</li> <li>- 50% and less: the student has not acquired minimum necessary theoretical and practical concepts.</li> </ul>
<p>Written exam (evaluates learning outcomes 1-8)</p>	<p>Final exam (50% of the grade) is in-class written exam based on compulsory reading materials and lectures. For positively passing the course, the exam result has to be at least 26 points of 50. Grading:</p> <ul style="list-style-type: none"> <li>- 91% and more: the student has acquired all core theoretical and practical concepts and can apply these for analyzing practical problems;</li> <li>- 81-90%: the student has acquired most core theoretical and practical concepts and can apply these for analyzing practical problems;</li> <li>- 71-80%: the student has acquired minimum necessary theoretical and practical concepts</li> </ul>

	<p>and can apply these for analyzing practical problems;</p> <p>- 61-70%: the student has acquired minimum necessary theoretical and practical concepts, but cannot systemize these and apply enough for analyzing practical problems;</p> <p>- 51-60%: the student has acquired minimum necessary theoretical and practical concepts, but cannot apply these for analyzing practical problems;</p> <p>- 50% and less: the student has not acquired minimum necessary theoretical and practical concepts.</p>
Prerequisites for grading	<p>Keeping to the deadlines; lecture-seminar participation. Missing two sessions for a good reason (health, family, extraordinary professional), when excused by the instructors, is possible. If three or more classes are missed, there is no option to make up for them, and the missed segments must be retaken during a later semester.</p>
Final Grade	<p>Differentiated grading.</p> <p>100% = Group work and presentation (50%) + Final exam (50%).</p> <p>91% and more: grade 5</p> <p>81-90%: 4</p> <p>71-80%: 3</p> <p>61-70%: 2</p> <p>51-60%: 1</p> <p>50% or less: 0</p>

## Technology, Society and the Future

1. Number of ECTS: 6

2. Grading: Exam (graded)

3. Language: English

4. Teaching semester: Fall Semester

5. Learning objectives:

General objectives of the subject are:

- to introduce the motives behind the creation and implementation of technologies and their impact on society;
- to explain possible hazards stemming from technologies, the dark side of technology as such;
- to reflect standpoints of critically-minded schools of thought towards technology and to understand the argumentation behind their positions in historical perspective;
- to survey opportunities and weaknesses deriving from the application of technologies in public administration and overall governance - the critique of e-solutions.

6. Learning outcomes:

After successfully passing the subject the student:

- explains the motives behind the positions of technology critics and schools of thought;
- demonstrates and evaluates threats stemming from technologies, especially ICT, by ethical and social criteria;
- evaluates critically competing understandings about the innovation process and the essence and impacts of technological development on society;
- compares and contrasts different e-solutions in public administration and broader governance framework;
- demonstrates the skills of critical thinking, conceptual analysis and argumentation both in written form and orally.

7. Description of the course:

The course is a classical, highly interactive but frontal talk about Technology & Society. Following a discussion of techno-determinism in its various forms, we will then use classical technology critique to see the might of techno-development. We will address ICT as a form of technology within that debate, and we will focus especially on areas such as e-Governance, the interplay of technology, innovation, and policy, and the fields of education and information. Another level of technology critique and a reading of key non-techno utopias will open the gates to the second part of the course.

8. Evaluation methods and criteria:

The grade forms as follows:

100% = Exam / Group assignment (100%)

Students` understanding about the content of lectures will be evaluated.

9. Literature:

Selection of books, articles, popular media (journals, blogs, vlogs, video clips etc) – annually uploaded and updated on Moodle.



	Full-time (weekly hours)
Lectures	2,5
Practice / seminars	1,5
Total	4,0

Evaluation method	Evaluation criteria
Learning outcomes	<p>After successfully passing the subject the student:</p> <ul style="list-style-type: none"> <li>- explains the motives behind the positions of technology critics and schools of thought;</li> <li>- demonstrates and evaluates threats stemming from technologies, especially ICT, by ethical and social criteria;</li> <li>- evaluates critically competing understandings about the innovation process and the essence and impacts of technological development on society;</li> <li>- compares and contrasts different e-solutions in public administration and broader governance framework;</li> <li>- demonstrates the skills of critical thinking, conceptual analysis and argumentation both in written form and orally.</li> </ul>
Exam / Group assignment (evaluates learning outcomes 1-5)	<p>In-class exam in which the students have to choose one out of three topics and provide an analytical discussion. The Final exam may, depending on the concrete course iteration and size, be replaced by the instructors by a take-home essay that likewise have to be chosen among three topics to be announced during the last class, of appr. 4000-6000 words and that may or may not be offered as group work.</p> <p>Grading:</p> <ul style="list-style-type: none"> <li>- 91% and more: the student has acquired all core theoretical and practical concepts and</li> </ul>

	<p>can apply these for analyzing practical problems;</p> <p>- 81-90%: the student has acquired most core theoretical and practical concepts and can apply these for analyzing practical problems;</p> <p>- 71-80%: the student has acquired minimum necessary theoretical and practical concepts and can apply these for analyzing practical problems;</p> <p>- 61-70%: the student has acquired minimum necessary theoretical and practical concepts, but cannot systemize these and apply enough for analyzing practical problems;</p> <p>- 51-60%: the student has acquired minimum necessary theoretical and practical concepts, but cannot apply these for analyzing practical problems;</p> <p>- 50% and less: the student has not acquired minimum necessary theoretical and practical concepts.</p>
Prerequisites for grading	<p>Keeping to the deadlines; lecture-seminar participation. Complete attendance is necessary. Missing two sessions for a good reason (health, family, extraordinary professional), when excused by the instructors, is possible. If three or more classes are missed, there is no option to make up for them, and the missed segments must be retaken during a later semester</p>
Final Grade	<p>Differentiated grading. 100% = exam / group assignment.</p> <p>91% and more: grade 5</p> <p>81 -90%: 4</p> <p>71 -80%: 3</p> <p>61 -70%: 2</p> <p>51 -60%: 1</p> <p>50% or less: 0</p>

## **Environmental and Social Externalities of Technology**

1. Number of ECTS: 6

2. Grading: Pass-Fail

3. Language: English

4. Teaching semester: Fall Semester

5. Learning objectives:

General objectives of the subject are:

- to understand the essence of technology;
- to discuss the environmental and social externalities of technology;
- to present existing and emerging technology-enabled initiatives and practices;
- to discuss how to transform the economy towards more democratic and sustainable societies.

6. Learning outcomes:

After successfully passing the subject the student:

- is able to analyze the environmental and social externalities of new and old/traditional technologies;
- has acquired skills for critically evaluating and designing context-specific policies that involve technology;
- can relate the commons theory to network society theories and the ICT-driven techno-economic paradigm;
- explains the opportunities and threats deriving from the emerging technology-enabled initiatives and practices.

7. Description of the course:

This course is a theoretical as well as hands-on exploration of the future trajectories enabled by new technologies. Students will engage multi-disciplinary literature about the environmental and social externalities of technology; the sharing economy; the commons; peer production; and post-growth futures. Readings will explore various practices and business models as well as discuss incentives of cooperation, and potentialities for sustainable transitions. Practical work will be organized around themes of production infrastructures and mechanisms of distributed collaborative projects. The goal of the class is to engage students in a critically creative discussion of the ICT-enabled collaborative initiatives and futures.

8. Evaluation methods and criteria:

The grade forms as follows:

100% - Homework (final report)

Attendance is mandatory and the student may miss just one class..

## 9. Literature:

Selection of books, articles, popular media (journals, blogs, vlogs, video clips etc) – annually uploaded and updated on Moodle.

### Full-time (weekly hours)

Lectures	2
Practice / seminars	2
Total	4

## 10. Independent work

Students will engage multi-disciplinary literature about the environmental and social externalities of technology; the sharing economy; the commons; peer production; and post-growth futures. Readings will explore various practices and business models as well as discuss incentives of cooperation, and potentialities for sustainable transitions.

Practical work will be organized around themes of production infrastructures and mechanisms of distributed collaborative projects. Students will be required to contribute content to Wikipedia. The content must be related with theories and practices of the commons, political ecology, science and technology studies, digital transformation, sharing economy, and/or peer production. Students may contribute content to existing entries or add a new one (or new ones). The final grade of the report will be based on the quality of the report (i.e., language and consistency of the text; quality and quantity of the contribution to Wikipedia; and the clarity of the argument).

Evaluation method	Evaluation criteria
Learning outcomes	<p>After successfully passing the subject the student:</p> <ul style="list-style-type: none"> <li>- is able to analyze the environmental and social externalities of new and old/traditional technologies;</li> <li>- has acquired skills for critically evaluating and designing context-specific policies that involve technology;</li> <li>- can relate the commons theory to network society theories and the ICT-driven techno-economic paradigm;</li> <li>- explains the opportunities and threats deriving from the emerging</li> </ul>

	technology-enabled initiatives and practices.
Report (evaluates learning outcomes 1-4)	<p>Students` understanding about the content of lectures, which is presented in a report, is evaluated.</p> <p>„Pass“ – is able present the theory and the essence of commons-based peer production and the related technologies and (governance) practices. Student has undertaken a first-hand research or development experience contributing to code, design or content. She/he has presented legal, policy, social, and managerial issues, evaluated user interfaces, or otherwise engaged directly with a peer production process. She/he can relate the experience to information/network society theories and the ICT-driven techno-economic paradigm as well as has an understanding of opportunities and threats deriving from the emerging modes of immaterial (information) and material production (manufacturing).</p> <p>Pass / fail depends on the quality of the report (i.e. the language and consistency of the text; the quality and quantity of the Wikipedia entry and the clarity of the argument).</p>
Prerequisites for grading	<p>Keeping to the deadlines; lecture-seminar participation, conduction and presentation of mid- and final reports. Participation in seminars and lectures is mandatory, absence from maximum 1 seminar-lecture is allowed. Missing more than one lecture-seminar will result in failure to pass the course. For health or serious personal reasons, a second absence may be justified.</p>
Final Grade (Pass-Fail)	100% - Report + lecture-seminar participation

**IV. In the Course/Module Descriptions, the Module Description of the Master's thesis contains the following amended version:**

**„4. Semester: Master's Thesis**

<b>Module Title:</b>	<b>Master thesis</b>
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<b>1</b>	<b>Module No:</b>	<b>State:</b> Compulsory
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<b>2</b>	<b>Turn:</b> Every term	<b>Duration:</b> 1 term	<b>Semester:</b>	<b>CP:</b> 30	<b>Workload (h):</b> 780
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3	Module Structure:					
	No	Type	Course	CP	Presence (h + CH)	Self-Study (h)
	1		Writing the thesis	25	0 h (0 CH)	650
	2		Thesis defence	5	0 h (0 CH)	130

<b>4</b>	<p><b>Contents:</b></p> <p><b>Background and relations to other modules / courses:</b></p> <p>The master thesis is written in the research context of one of the fields of study. The topic of the Master thesis is set in accordance with § 10.</p> <p><b>Main topics and learning objectives:</b></p> <p>Those are subject to the topic and area where the thesis is intended. The thesis defence covers the thesis' topic. With his/her master thesis, a student is supposed to prove his/her ability to take part in the scientific process by doing a small piece of research and write an appropriate paper on it. The thesis should have a length of approximately 80 pages. The thesis defence contains a presentation of the thesis' contents as well as a discussion.</p>
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<b>5</b>	<p><b>Learning outcomes:</b></p> <p><b>Academic:</b> The Master thesis and its defense should demonstrate that a student is capable of independently working on a topic from the field of public management, information systems</p>
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	and e-Governance within a specified period of time in accordance with scholarly methods and that he/she is able to document and present the results appropriately, see § 10. The student can handle a research topic in a scientific way and apply the results to practical problems. He or she can present and defend approaches, underlying theory and results.
	<b>Soft skills:</b> The student can handle the formal requirements associated to a research paper: investigating the research context, collecting material from the scientific literature, performing and processing bibliographical inquiries, presenting own ideas in the scientific environment of the given topic.

<b>6</b>	<b>Relevant Work:</b>		
	<b>Number and Type; Connection to Course</b>	<b>Duration</b>	<b>Part of final mark in %</b>
	Master thesis	See § 10	83
	Master thesis' defence	ca. 45 min, see § 10	17
<b>7</b>	<b>Study work:</b>		

<b>8</b>	<b>Prerequisites for Credit Points:</b> The points for the module will be credited if the module was successfully completed in total, i.e. the student has passed all examinations.
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<b>9</b>	<b>CP-Assignment:</b>
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<b>10</b>	<b>Module Prerequisites:</b> Master thesis topics can only be assigned on the condition that the student has already earned a total of 60 credits. For the Master thesis defense, additionally to the submission of the Master thesis, completing the curriculum up to defending the Master thesis shall be the precondition for being eligible to conduct the defense. The curriculum is completed once all the study modules have been completed, see § 10.
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11	<b>Presence:</b>
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12	<b>Responsible Lecturer:</b> Prof. Dr. Jörg Becker; Prof. Dr. Joep Crompvoets, Prof. Dr. Robert Krimmer
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Ausgefertigt aufgrund des Beschlusses des Fachbereichsrats der Wirtschaftswissenschaftlichen Fakultät der Westfälischen Wilhelms-Universität vom 23.11.2022. Die vorstehende Ordnung wird hiermit verkündet.

Es wird darauf hingewiesen, dass gemäß § 12 Abs. 5 des Gesetzes über die Hochschulen des Landes Nordrhein-Westfalen (Hochschulgesetz – HG NRW) eine Verletzung von Verfahrens- oder Formvorschriften des Ordnungs- oder des sonstigen autonomen Rechts der Hochschule nach Ablauf eines Jahres seit dieser Bekanntmachung nicht mehr geltend gemacht werden kann, es sei denn

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Münster, den 16.1.2023

Der Rektor

Prof. Dr. Johannes W e s s e l s