Examination and Academic Regulations for the Master’s Program in Informatics: Games Engineering at the Technische Universität München
(The German version from April 2, 2014 incl. the modification of the Examination and Academic Regulations from November 5, 2014 is the legally binding document)

2 April 2014

In accordance with Art. 13 (1) sentence 2 in conjunction with Art. 58 (1) sentence 1, Art. 61 (2) sentence 1 and Art. 43 (5) of the Bayerisches Hochschulgesetz (BayHSchG) [Bavarian Higher Education Act] the Technische Universität München issues the following Examination and Academic Regulations (Fachprüfungs- und Studienordnung, FPSO):

The English version is provided merely as a convenience and is not intended to be a legally binding document.

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§ 34
Applicability, Academic Titles, Related Degree Programs

(1) ¹These Examination and Academic Regulations for the Master's program in Informatics: Games Engineering (FPSO) complement the General Academic and Examination Regulations for Bachelor's and Master's programs at the Technische Universität München (APSO) of 18 March 2011 as amended. ²The APSO shall have precedence.

(2) ¹Upon successful completion of the Master's examination the degree "Master of Science" ("M.Sc.") is awarded. ²The academic title may also be used with the name of the university "(TUM)".

§ 35
Commencement of Studies, Standard Duration of Study, ECTS

(1) Commencement of the Master's program in Informatics: Games Engineering at the Technische Universität München is possible in the winter or summer semester.

(2) ¹The number of classes in required and elective subjects needed to obtain the Master’s degree is 90 credits (63 weekly hours per semester) spread over three semesters. ²Furthermore, a maximum of six months (30 credits) is added for the completion of the Master's thesis pursuant to § 46. ³The number of examinations in required and elective subjects to be completed in the Informatics: Games Engineering Master's program according to Appendix 1 is a minimum of 120 credits. ⁴The standard duration of study for the Master's program will be a total of four semesters.

§ 36
Eligibility Requirements

(1) Eligibility for the Master's program in Informatics: Games Engineering is demonstrated by:

1. a qualified Bachelor's degree obtained from a domestic or a foreign university in at least six semesters or an equivalent degree in the program Informatics: Games Engineering or comparable programs,

2. an adequate knowledge of the English language; students whose native language or language of instruction is not English must demonstrate proficiency through an acknowledged language test such as “Test of English as a Foreign Language” (TOEFL) (at least 88 points at TOEFL iBT), “International English Language Testing System” (IELTS) (at least 6.5 points), or “Cambridge Main Suite of English Examinations”; alternatively adequate language skills may be proven through a good grade in English (corresponding to at least 10 out of 15 points) awarded by a domestic higher education entrance qualification,

3. applicants who obtained their first degree in one of the following countries, must demonstrate specialized knowledge through a “Graduate Record Examination (GRE) General Test” or a “Graduate Aptitude Test in Engineering” (GATE): China, Bangladesh, India, Iran, Pakistan; for applicants with a first degree from a
country that is not a signatory state of the Convention on the Recognition of Qualifications concerning Higher Education in the European Region from 11 April 1997 (henceforth referred to as Lisbon Convention) a submission of the test pursuant to sentence 1 is recommended as it will be requested in case of substantial differences in regard to the competencies proven by the first degree pursuant to subsection 2; the request will not be necessary in case of degrees from the signatory states of the Lisbon Convention; details concerning the completion of the test will be announced in time on the webpages of the examination board,

4. passing of the Aptitude Test pursuant to Appendix 2.

(2) A degree is considered a qualified degree within the meaning of subsection 1 if such degree requires the successful completion of examinations that are equivalent to the examinations in the Bachelor’s program in Informatics: Games Engineering at the Technische Universität München or comparable universities and correspond to the subject-specific requirements of the Master’s program.

(3) ¹The assessment according to subsection 2 will be performed on the basis of the required modules of the Bachelor’s program in Informatics: Games Engineering. ²If certain examination results are missing for the assessment, the Aptitude Test Committee pursuant to Appendix 2 no. 3 may require that the candidates demonstrate eligibility pursuant to subsection 1 by taking those examinations as additional Fundamentals Exams pursuant to Appendix 2 no. 5.1.3. ³The candidate must be informed thereof after review of the documentation during the first stage of the Aptitude Test.

(4) The comparability of programs, the subject-specific aptitude as well as the equivalence of degrees acquired from foreign institutions will be decided upon by the examination board in compliance with Art. 63 of the Bayerisches Hochschulgesetz [Bavarian Higher Education Act].

§ 37
Modular Structure, Module Examination, Courses, Course Specialization, Language of Instruction

(1) ¹General provisions concerning modules and courses are set forth in §§ 6 and 8 of the APSO. ²For any changes to the stipulated module provisions § 12 (8) of the APSO shall apply.

(2) The curriculum listing the required and elective courses is included in Appendix 3.

(3) ¹In addition to the courses taught in the German language a sufficient number of courses will be offered in the English language. ²It is therefore possible to pursue the Master’s program in the English language exclusively. ³Pursuant to § 7 (4) no. 9 of the Immatrikulations-, Rückmelde-, Beurlaubungs- und Exmatrikulationssatzung [Statutes governing Enrollment, Re-Enrollment, Leave of Absence and Withdrawal] of the Technische Universität München of 9 January 2014, as amended, proof of proficiency in the German language is not required for enrollment.
§ 38
Examination Deadlines, Progress Monitoring, Failure to Meet Deadlines

(1) Examination deadlines, progress monitoring, and failure to meet deadlines are governed by § 10 of the APSO.

(2) ¹At least one of the module examinations listed in Appendix 1 must be successfully completed by the end of the second semester. ²In the event of failure to meet deadlines § 10 (5) of the APSO shall apply.

§ 39
Examination Board

Pursuant to § 29 of the APSO the board responsible for all decisions concerning examination matters shall be the Examination Board of the Faculty of Informatics of the Technische Universität München.

§ 40
Recognition of Periods of Study, Coursework and Examination Results

(1) The recognition of periods of study, coursework and examination results is governed by the provisions of § 16 of the APSO.

(2) ¹Examinations that were successfully completed in the course of a semester abroad at a foreign institution of higher education may, up to a total of 20 credits, be recognized and counted as electives toward the Master’s examination if they, even if there is no corresponding module in the module catalog of the Technische Universität München, comply with the remaining requirements of the Informatics: Games Engineering Master’s program and have a reasonable disciplinary connection to the contents of the Informatics: Games Engineering Master’s program. ²The examination Board, in consultation with the international student advisers of the Department of Informatics, shall decide on the recognition of these examinations.

§ 41
Continuous Assessment Procedure, Types of Examination

(1) Pursuant to § 12 and 13 of the APSO valid types of examination in this program of studies are in particular, besides written and oral exams, practical exercises, project works and presentations.

a) ¹A written exam is a supervised written test that shall prove the ability to recognize and understand problems and to find ways of their solution in a limited amount of time using specified methods and predefined auxiliaries. ²The duration of written exams is governed by § 12 (7) of the APSO. ³It shall be proven that (in a limited amount of time with given methods and predefined auxiliaries) problems can be recognized and understood, ways of their solution can be found and, if necessary, applied.
b) A practical exercise (optionally including oral examinations “Testate” ensuring its success) is the practical processing of given assignments (e.g. mathematical problems, programming exercises, modeling exercises etc.) with the objective of applying theoretical contents to solve application-oriented problems. It serves to prove knowledge of facts and details as well as knowledge of their application. The practical exercise may be conducted in written, oral or electronic form. Possible forms of examination are homework, exercise sheets, programming exercises, (electronic) tests, exercises as part of practical courses etc. Details concerning the particular practical exercise and the required qualifications are listed in the module description.

c) In the course of a project work, a project assignment shall be completed as a defined objective within a predefined period of time and using suitable auxiliaries. This should be accomplished in several phases (initiation, problem definition, distribution of roles, idea generation, development of success criteria, decision-making, implementation, presentation, written evaluation). Additionally a presentation may be part of the project to examine the communicative competence of presenting scientific topics to an audience. The components of the project work and the required qualifications are listed in the module description. The project work may also be conducted in form of teamwork. This is intended to prove that exercises can be solved in a team. The contribution of each individual which is assessed as an examination achievement must be individually recognizable and assessable. The same applies to the individual contribution to the group performance.

d) A scientific elaboration is a written examination where a student autonomously works on a challenging scientific or respectively scientific-application-oriented problem with scientific methods of the particular discipline. It is intended to prove that such problem in line with the intended study results of the respective module can be entirely treated according to the principles of academic work – from analysis to conception to realization. Possible forms, differing in their aspiration level, are thesis sheets, abstracts, essays, study work, seminar work etc. A scientific elaboration may be supported by a presentation and a colloquium to check the communicative competence regarding presenting scientific topics to an audience. In this case, also the involvement in the discussion about the work and presentation of other participants may be assessed. Detailed components of the particular scientific elaboration and the required qualifications are listed in the module description.

e) A presentation is a systematic, structured oral performance visually supported by suitable media (e.g. beamer, slides, posters, videos) which illustrates and summarizes specific topics or results and reduces complex issues to the essential. The presentation shall prove the competence of working out a certain topic within a predefined time so that it may be presented in a clear and comprehensive way to an audience. Also it shall be proven that questions, suggestions and points of discussion by the audience in reference to the particular topic are handled competently. The presentation may be supported by a short written workup. The presentation may be accomplished as team or single-person work. The contribution assessed as examination must be individually recognizable and assessable. This also must hold for the particular contribution to the group performance.

f) An oral exam is a time-limited examination dialogue about certain topics and concrete questions to be answered. By oral examination it shall be proven that the qualification objectives listed in the module description are achieved, that connections between the examination subjects were recognized and that particular
problems can be classified with respect to these coherences. The oral exam may be accomplished as individual or group examination. The duration of oral exams is governed by § 13 (2) of the APSO.

(2) The module examinations will, as a rule, be taken concurrently with the study program. Type and duration of module examinations are listed in Appendix 1. In the event of divergence from those provisions, § 12 (8) of the APSO must be complied with. The assessment of the module examination is governed by § 17 of the APSO.

(3) Where Appendix 1 provides that a module examination is either in written or oral form, the examiner must inform the students in appropriate form of the type of examination to be held no later than the first day of classes.

(4) Upon request of a student and with the agreement of the examiners, examinations may be taken in a different language than the course language.

§ 42
Registration for and Admission to the Master’s Examination

(1) Students who are enrolled in the Master’s program in Informatics: Games Engineering are deemed admitted to the module examinations of the Master’s examination. If successful completion of Fundamentals Exams pursuant to Appendix 2 no. 5.1.3 is required, the examination board has to inform the student in written form which module examinations differing from sentence 1 require proof of successful completion of these Fundamentals Exams.

(2) Registration requirements for required and elective module examinations are stipulated in § 15 (1) of the APSO. The registration requirements for repeat examinations for failed required and required elective modules are stipulated in § 15 (2) of the APSO.

§ 43
Scope of the Master’s Examination

(1) The Master’s examination consists of:
1. The module examinations in the corresponding modules pursuant to subsection 2;
2. The Master’s thesis pursuant to § 46.

(2) The module examinations are listed in Appendix 1. In addition to the module examinations in required modules in the scope of 29 credits as set out in Appendix 1 A, module examinations of at least 55 credits in elective modules from the Informatics: Games Engineering elective modules catalog according to Appendix 1B, module examinations of at least 6 credits in elective modules from the Support Electives modules catalog according to Appendix 1C must be completed. The selection of modules must be in compliance with § 8 (2) of the APSO.
§ 44
Repeat Examinations, Failed Examinations

(1) The repetition of examinations is governed by § 24 of the APSO. The repeat examination for a module examination administered at the end of the lecture period and not passed, as a rule must be taken no later than by the end of the first week of the lecture period of the following semester.

(2) Failure of examinations is governed by § 23 of the APSO.

§ 45
Coursework

Instead of the examinations to be taken in elective modules pursuant to § 43 (2) sentence 2, successful completion of coursework may be required. In this case the number of credits to be earned through examinations in elective courses pursuant to § 43 (2), sentence 2 will be reduced accordingly.

§ 45 a
Multiple-Choice Procedure

The accomplishment of Multiple-Choice Procedures is governed by § 12a of the APSO.

§ 46
Master’s Thesis

(1) As part of the Master’s examination, each student must write a Master’s thesis pursuant to § 18 of the APSO. The Master’s thesis topic may be assigned and supervised by expert inspectors of the Technische Universität München. The expert inspectors pursuant to sentence 2 are appointed by the examination board.

(2) Work on the Master’s thesis should commence after successful completion of all module examinations.

(3) The period of time between topic assignment and submission of the completed Master’s thesis must not exceed six months. The Master’s thesis is deemed taken and not passed, if it is not delivered in time and without accepted solid reasons pursuant to § 10 (7) of the APSO. The Master’s thesis may be written in either the German or the English language.

(4) The completion of the Master’s thesis consists of a written composition and a lecture on its content. The lecture does not affect the grading.

(5) If the Master’s thesis was not graded with at least “sufficient” (4.0), it may be repeated once with a new topic. Students must renew their application for admission within six weeks from receipt of the notification of the result (Bescheid).
§ 47
Passing and Assessment of the Master’s Examination

(1) The Master’s examination is deemed passed when all examinations required for the Master’s examination pursuant to § 43 (1) have been passed and a plus credits account of at least 120 credits has been achieved.

(2) ¹The grade for a module will be calculated according to § 17 of the APSO. ²The overall grade for the Master’s examination will be calculated as the weighted grade average of the modules according to § 43 (2) and the Master’s thesis. ³The grade weights of the individual modules correspond to the credits assigned to each module.

§ 48
Degree Certificate, Diploma, Diploma Supplement

¹If the Master’s examination was passed, a degree certificate, a diploma, and a diploma supplement including a transcript of records are to be issued in compliance with § 25 (1) and § 26 of the APSO. ²Issuance in electronic format is not permitted. ³The degree certificate will be dated on the day when all examination and coursework requirements have been fulfilled.

§ 49
Entry into Force

¹These Examination and Academic Regulations shall enter into force on 1 March 2014. ²They shall apply to all students who commence their studies in the Informatics: Games Engineering Master’s program at the Technische Universität München as of the winter semester 2014/15.
Appendix 1: Examination Modules

Remarks:

• SWS = Semesterwochenstunden = weekly hours per semester
  V = Vorlesung = lecture
  Ü = Übung = exercise
  P = Praktikum = practical course
  S = Seminar

• Examination types:
  s = Klausur = written examination
  m = mündliche Prüfung = oral examination

• For examinations that may be administered either in written or oral form (s/m), as a rule only the duration for the written examination is specified. In these cases the duration will be 20 – 30 minutes for oral examination.
• In the column "Duration of examination", the duration of written examinations is specified in minutes. Pursuant to the APSO, the concrete extent of project works and scientific elaborations is listed in the module description.
• The examination board will continually update the Elective Course Catalog. Modifications will be made available on the examination board’s web sites at the beginning of the semester.

<table>
<thead>
<tr>
<th>ID</th>
<th>Module name</th>
<th>Type of instruction</th>
<th>SWS</th>
<th>Credits</th>
<th>Type of Examination</th>
<th>Duration of Examination</th>
<th>Language of Instruct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Required Modules (29 Credits):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN2015</td>
<td>Image Synthesis</td>
<td>4V</td>
<td>4</td>
<td>5</td>
<td>S</td>
<td>75-125</td>
<td>E</td>
</tr>
<tr>
<td>IN2107</td>
<td>Master’s Seminar</td>
<td>2S</td>
<td>2</td>
<td>4</td>
<td>Scient. Elaboration</td>
<td>D/E</td>
<td></td>
</tr>
<tr>
<td>IN2106</td>
<td>Master’s practical course</td>
<td>6P</td>
<td>6</td>
<td>10</td>
<td>Project work</td>
<td>D/E</td>
<td></td>
</tr>
<tr>
<td>IN2257</td>
<td>Additional Master’s practical course</td>
<td>6P</td>
<td>6</td>
<td>10</td>
<td>Project work</td>
<td>D/E</td>
<td></td>
</tr>
</tbody>
</table>

B Elective Course Catalog – Informatics: Games Engineering (55 Credits):

A total of 55 credits must be earned from the following elective modules. Credits earned from module examinations taken for the first degree do not count toward the Master’s degree. The conditions set out below apply to the selection of modules:

1. Basic structure (minimum of 35 credits):
   A minimum of 5 credits must be earned from the subject area “Internet – Models, Technologies, Applications” and 6 credits must be earned from the subject area “Databases”. Two lines of specialization must be chosen from which a minimum of 10 credits each, but a total of at least 24 credits, must be earned.

2. The remaining credits (up to 20) can be chosen freely:
   a. additionally from the two subject areas mentioned above and the two elected lines of specialization
   b. or from the other lines of specialization
   c. or from the following additional elective modules
d. or from the subject areas of the elective modules from the module catalog from the Master’s program of Informatics

One module can only be recognized and counted once.

C Elective Course Catalog – Support Electives (6 Credits):

A total of 6 credits must be earned from the elective modules of the elective course catalog – support electives from the Master’s program of Informatics. Credits earned from module examinations taken for the first degree do not count toward the Master’s degree.
Appendix 2: Aptitude Assessment

1. Purpose of the Assessment

1. Eligibility for the Master’s program in Informatics: Games Engineering, in addition to the requirements pursuant to § 36 (1) no(s) 1 to 3, requires proof of aptitude pursuant to § 36 (1) no. 4 in accordance with the following provisions. 2. The special qualifications and skills of the candidates should correspond to the Informatics: Games Engineering profession.

1.1 Ability to do research work and/or basic research and methodological work;
1.2 Specialized knowledge from undergraduate studies in Informatics: Games Engineering in accordance with the Bachelor’s program in Informatics at the Technische Universität München;
1.3 Ability to solve complex and difficult problems;
1.4 Ability to abstract and transfer the Informatics methods in solving problems in the field of Games Engineering.

2. Aptitude Assessment Process

2.1 The aptitude test will be held twice a year by the Department of Informatics of the Technische Universität München.

2.2 1Applications for admission to the aptitude test must be filed online by 31 May for the winter semester and by 30 November for the summer semester to the Technische Universität München (absolute deadlines). 2In case of application for admission in a timely fashion pursuant to sentence 1 or in case of already declared admission to a Master’s program of Informatics pursuant to no. 5.2.6 already at hand, a change of track from or to the part-time Master’s programs in Informatics is possible during the week before 15 February for the summer semester resp. 15 August for the winter semester. 3Degree certificate and diploma as proof of Bachelor’s degree obtained must be filed no later than five weeks after the beginning of lectures. 4Otherwise, pursuant to § 36 the enrollment to the Master's program is not yet possible.

2.3 The application must include:

2.3.1 a transcript of records containing modules of at least 120 credits, or resp. of two-thirds of the examinations necessary for the undergraduate degree in case of degrees not being subject to the “European Credit Transfer and Accumulation System” (ECTS); the transcript of records must be issued by the responsible examining authority or the responsible office of academic affairs;
2.3.2 a curriculum vitae formatted as a table;
2.3.3 a written statement of no more than 2 DIN A4 pages in German or English of the reasons for choosing the Master’s program in Informatics: Games Engineering at the Technische Universität München in which the candidate explains those specific abilities and interests that make him/her particularly qualified for the Master’s program in Informatics: Games Engineering at the Technische Universität München; a candidate’s exceptional motivation and commitment can e.g. be demonstrated by details on program-related vocational training, internships, stays abroad, or program-related further education beyond the attendance and course requirements of the Bachelor’s program, if necessary by appropriate documentation;
2.3.4 a written essay, in English or German, of approx. 1000 words in length; the chairperson of the committee may provide one topic or a selection of several
topics for this essay; the candidates must be informed of the topic(s) not later than 1 March resp. 1 September;

2.3.5 a declaration that both the statement of the reasons for choosing the program and the essay are the candidate’s own work, and that the candidate has clearly identified any ideas taken from outside sources.

3. Aptitude Assessment Committee

3.1 The aptitude test is administered by a committee that, as a rule, consists of the Dean of Studies in charge of the Master’s program in Informatics: Games Engineering, at least two members of the professorial faculty and at least one member of the academic staff (wissenschaftlicher Mitarbeiter). At least half of the committee members must be professorial faculty. A representative of the student body will be a part of the committee, in an advisory capacity.

3.2 The members of the committee are appointed by the department council (Fakultätsrat) in consultation with the Dean of Studies. At least one member of the professorial faculty is appointed as deputy member of the committee. As a rule, the committee is chaired by the Dean of Studies. Procedural regulations will be in accordance with Art. 41 of the BayHSchG as last amended.

4. Admission to the Aptitude Assessment

4.1 Admission to the aptitude assessment requires that all documentation specified in no. 2.3 has been submitted in a timely and complete fashion.

4.2 Applicants who have fulfilled the requirements will be tested according to no 5.

4.3 Applicants who are not admitted will receive a notification specifying the reasons and providing information on legal remedies. Signatory power may be delegated.

5. The Aptitude Assessment Process

5.1 First stage of the Aptitude Assessment Process

5.1.1 The committee will assess, on the basis of the written application documents required under no. 2.3, whether or not an applicant is suitable for a program pursuant to no. 1 (First stage of the aptitude assessment process). For this purpose, the committee evaluates and grades the candidate’s documentation on a scale ranging from 0 to 100 points, 0 being the worst and 100 the best possible result.

The following criteria will be applied to the evaluation:

1. Academic qualification

The curricular analysis is not conducted in the form of a schematic comparison of the modules, but rather on the basis of competencies. It will encompass the fundamental subject groups of the Bachelor’s program in Informatics: Games Engineering at the Technische Universität München listed in the table below.
<table>
<thead>
<tr>
<th>Subject group</th>
<th>Credits TUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Games Engineering (Introduction to Informatics for Games Engineering, Game Engine Design, Interaction Methods and Devices, Social Gaming, Physical Basics for Computer Games)</td>
<td>38</td>
</tr>
<tr>
<td>Basics in Mathematics (Discrete Structures, Linear Algebra, Calculus, Numerical Programming)</td>
<td>30</td>
</tr>
</tbody>
</table>

³Where a candidate’s competencies are at least equivalent to those listed above, he or she will be awarded a maximum of 55 points. ⁴Missing competencies will be deducted in accordance with the credits of the corresponding modules of the Bachelor’s program in Informatics: Games Engineering at the Technische Universität München. ⁵There will be no negative points. ⁶Where a GRE or Gate test has to be submitted pursuant to § 36 (1) no. 3, it is assumed that, in case of successful demonstration, there are no substantial differences regarding the level of competencies demonstrated by the undergraduate degree compared to the reference criteria set out in 5.1.1 no. 1 sentence 2 and that the curricular analysis will be conducted according to the abovementioned criteria.

2. Final grade

¹For each tenth of a grade that the average grade determined for the examinations amounting to 120 credits (resp. two-thirds of the examinations necessary for the undergraduate degree) is better than 3.0, the applicant will be awarded one point. ²The maximum number of points is 20. ³There will be no negative points. ⁴Where a degree was obtained outside of Germany, the grade will be converted according to what is referred to as „Bavarian formula“ (bayerische Formel). ⁵If the applicant, at the time he or she files the application, submits a final degree certificate showing more than 120 credits, the assessment will be made on the basis of the modules that were awarded the best grades, up to 120 credits (resp. two-thirds of the examinations necessary for the undergraduate degree). ⁶The applicant must list them in the application and confirm the accuracy of the information presented in writing. ⁷The grade average is calculated from the graded module examinations up to 120 credits. ⁸The overall grade average will be calculated as the weighted grade average of the modules. ⁹The grade weights of the individual modules correspond to the credits assigned to each module. ¹⁰For the calculation of grade, one decimal place will be taken into account, all further decimal places will be dropped without rounding.

3. Letter of Motivation

¹The applicant’s written statement of purpose will be evaluated by two committee members and graded on a scale of 0 – 10 points. ²The motivation letter will be assessed using the following criteria:

1. Exceptional motivation and commitment: The applicant has relevant qualifications which exceed the knowledge and qualifications obtained at undergraduate degree level e.g.
vocational training that is specific to the degree program, internships, stays abroad (cf. no. 2.3.3)

2. Special qualification:
The applicant is able to illustrate the connection between personal interests and the content of the degree program.

3 The committee members assess each of both criteria independently. The criteria will be weighted equally. 4 The points total will be calculated as the arithmetic means of the individual assessments, rounded up to the nearest full point.

4. Essay
1 The applicant’s written essay will be evaluated by two committee members and graded on a scale of 0 – 15 points. 2 The essay will be assessed using the following criteria:
   1. formal and coherent structure
   2. complete and correct in content, coherent argumentation
   3. academic foundation.

3 The committee members assess each of the three criteria independently whereas the three criteria will be weighted equally. 4 The points total will be calculated as the arithmetic means of the individual assessments, rounded up to the nearest full point.

5.1.2 1 The applicant’s points total will be calculated as sum of the individual points awarded. 2 Decimal places must be rounded up.

5.1.3 1 Applicants who have achieved at least 70 points will receive confirmation that they have passed the aptitude assessment test. 2 In those cases where it was determined pursuant to § 36 (4) that only some subject-specific requirements from undergraduate studies are missing, the committee may make admission subject to successful completion of Fundamentals Exams from the Bachelor’s program in Informatics (so-called Brückenkurse) in the amount of a maximum of 30 credits. 3 These Fundamentals Exams must be taken in the first year of study. 4 Failed Fundamentals Exams may be repeated only once and at the next examination date. 5 The examination board may make the admission to individual module examinations dependent on the successful completion of the Fundamentals Exam.

5.1.4 1 Unsuitable applicants with a points total of fewer than 50 points will receive a rejection notice, signed by the TUM Board of Management and specifying the reasons for rejection and providing information on legal remedies. 2 Signatory power may be delegated.

5.2 Second stage of the Aptitude Assessment Process

5.2.1 1 The remaining applicants will be invited for an aptitude assessment interview. 2 In the second stage of the aptitude assessment process, the applicant’s qualification at undergraduate level and the result of the assessment interview will be evaluated, taking at least equal consideration of the qualification obtained at undergraduate level. 3 Interview appointments will be announced at least one week in advance. 4 Possible time slots for interviews must be announced before expiration of the application deadline. 5 The interview appointment must be kept by the applicant. 6 If the applicant is unable to attend an aptitude assessment interview due to reasons beyond his/her control, a later appointment may be scheduled upon a student’s well-grounded request, but no later than two weeks before the beginning of classes.
5.2.2 ¹The aptitude assessment interview is to be held individually for each applicant. ²The interview lasts at least 20 but not more than 30 minutes for each applicant. ³The interview will focus on the following topics:

1. Exceptional motivation and commitment: The applicant has relevant qualifications that exceed the knowledge and qualifications obtained at the undergraduate degree level (0 – 15 points):
   - Is there evidence of a quick, determined progress in the studies?
   - Is there any specific qualification for a concrete specialization in the field of the degree program, proved by additional modules or non-university activities (e.g. membership or activities in relevant organizations)?
   - Is there evidence of outstanding determination in the resume (e.g. additional subject-related internships, relation between previous occupations and the degree program)?
   - Is there outstanding interest or specific experience in research (e.g. specific research orientation in the previous academic studies, participation in research projects)?

2. Aptitude parameters according to no. 1.1 and 1.2 (0 - 15 points):
   - Presentation of professional knowledge, previous study focus (0 – 5 points),
   - Qualifications acquired in the undergraduate degree program in the subject groups mentioned in 5.1.1.1 (0 – 5 points),
   - Subject of the final thesis (0 – 5 points).

3. Communication skills (0 – 15 points):
   - Ability to state facts in a clear, fluent and adequate way,
   - One’s own thoughts and opinions are expressed precisely and comprehensive answers are structured logically during the interview,
   - Questions relating to the first degree and / or the study focus are answered at the same time terminologically correct and comprehensible
   - Statements are well founded and justified by arguments and reasonable examples
   - Questions regarding scientific topics as well as one’s own competencies and expectations are understood without problem or if necessary clarified through further inquiry.

⁴The above topics may cover the documentation submitted pursuant to 2.3. ⁵Any subject-specific academic knowledge that is to be taught in the Master’s program in Informatics: Games Engineering will not affect the decision. ⁶With the applicant’s approval, a representative of the student body may sit in on the interview. ⁷The interview will be conducted in English on the applicant’s request.

5.2.3 ¹The aptitude assessment interview will be conducted by at least two members of the committee. ²The committee members will grade each of the three topics set out in no. 5.2.2 independently, each with the same weighting. ³Each member will grade the result of the interview on a scale from 0 to 45, 0 being the worst and 45 being the best possible result. ⁴The points total will be calculated as the arithmetic means of the individual points. ⁵The result will be rounded up to the nearest full point.

5.2.4 ¹The applicant’s points total in the second stage will be calculated as the sum of all points obtained under 5.2.3 and the points under 5.1.1.1 (academic qualification) and 5.1.1.2 (grade). ²Applicants with 70 or more points will be deemed suitable.
5.2.5 The applicant will be notified of the result of the aptitude test determined by the committee in writing - where applicable, subject to the requirements determined in stage 1, 5.1.3 (2). The notice must be signed by the TUM Board of Management. Signatory power may be delegated. A rejection notice must specify the reasons for the rejection and provide information on legal remedies.

5.2.6 Admissions to the Master’s program in Informatics: Games Engineering shall apply to all subsequent applications for this program.

6. Record

The aptitude assessment process must be documented, including the date, duration and location of the assessment, the names of the committee members, the applicant’s name, and the decision of the members of the committee as well as the complete results. This record must contain the essential reasons for the decision and the topics discussed at the interview held with the applicants; these reasons and topics may be recorded in note form.

6. Repetition

Applicants who have failed the aptitude test for the Master’s program in Informatics: Games Engineering may register for one repetition of the Aptitude Assessment Test.
### Appendix 3: Curriculum

1. Curriculum for students first enrolled in the winter semester:

<table>
<thead>
<tr>
<th>Sem</th>
<th>Credits</th>
<th>Compulsory &amp; Elective Areas</th>
<th>Lines of Specialization</th>
<th>Elective Modules Informatics</th>
<th>Support Elective Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>IN2015 Image Synthesis 5 Credits&lt;br&gt;Module from the Elective Area “Internet – Models, Technologies, Applications” 5 Credits</td>
<td>Modules from the Lines of Specialization 12 Credits</td>
<td>Elective Modules from the Module catalog of Informatics 5 Credits</td>
<td>Support Elective Modules 3 Credits</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>Module from the Elective Area „Database Systems“ 6 Credits&lt;br&gt;IN2106 Master’s Practical Course 10 Credits</td>
<td>Module from the Lines of Specialization 6 Credits</td>
<td>Elective Modules from the Module catalog of Informatics 5 Credits</td>
<td>Support Elective Modules 3 Credits</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>IN2107 Master Seminar 4 Credits&lt;br&gt;IN2257 Additional Master’s Practical Course 10 Credits</td>
<td>Module from the Lines of Specialization 6 Credits</td>
<td>IN2169 Guided Research 10 Credits&lt;br&gt;Or&lt;br&gt;Elective Modules from the Module catalog of Informatics 10 Credits</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>Master’s Thesis 30 Credits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 2. Curriculum for students first enrolled in the summer semester:

<table>
<thead>
<tr>
<th>Sem</th>
<th>Credits</th>
<th>Compulsory &amp; Elective Areas</th>
<th>Lines of Specialization</th>
<th>Elective Modules Informatics</th>
<th>Support Elective Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>Module from the Elective Area „Database Systems“ 6 Credits</td>
<td>Modules from the Lines of Specialization 13 Credits</td>
<td>Elective Modules from the Module catalog of Informatics 5 Credits</td>
<td>Support Elective Modules 6 Credits</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>IN2015 Image Synthesis 5 Credits</td>
<td>Module from the Lines of Specialization 5 Credits</td>
<td>Elective Modules from the Module catalog of Informatics 5 Credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Module from the Elective Area „Internet – Models, Technologies, Applications“ 5 Credits</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN2106 Master’s Practical Course 10 Credits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>IN2107 Master-Seminar 4 Credits</td>
<td>IN2169 Guided Research 10 Credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IN2257 Additional Master’s Practical Course 10 Credits</td>
<td>Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Elective Modules from the Module catalog of Informatics 10 Credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>Master’s Thesis 30 Credits</td>
<td></td>
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</tr>
</tbody>
</table>

Issued due to the resolution of the Academic Senate of the Technische Universität München of 19 February 2014 and to the permission of the president of the Technische Universität München of 2 April 2014.

Munich, 2 April 2014

Technische Universität München

Wolfgang A. Herrmann
President

These Examination and Academic Regulations were recorded 2 April 2014 at the university; the recording was announced on 2 April 2014 by notice in the university. Therefore, the official date of announcement is the 2 April 2014.