

- No official announcement -

**Doctorate examination Rules
Ludwig-Maximilians-University Munich
for the Faculty of Physics
Of 19 April 1993
(KWMBI II p. 483)**

**as amended by the Second Amendment Statute of 24 November 2003
Changes in the promotion order of 19 April 1993:**

- First Amendment to the Statute of 31 May 2002 (KWMBI II 2003 p. 677)
- Second Amendment Statute of 24 November 2003 (KWMBI II 2004 p. 932)
Because of Article 6 in conjunction with Article 83 of the Bavarian Law on Higher Education (BayHSchG) shall adopt the Ludwig-Maximilians University in Munich the following promotions
Regulations for the Faculty of Physics:

Table of Contents

§ 1 Significance of the doctorate, degrees

I. Doctorate committees

§ 2 Examination Committee, Examination Board

§ 3 Decision-making

II Admission to the doctorate

§ 4 Admission Requirements

§ 5 Intermediate Examination

§ 6 Admission Request

§7 Admission

§8 Withdrawal of the request

III. Doctorate procedure

§9 Achievements under the doctorate

§ 10 Time Schedule

§ 11 Dissertation

§ 12 Supervision of the dissertation

§ 13 Evaluation of the thesis

§ 14 Oral examinations

§ 15 Result of the PhD defense

IV Print of the thesis

§ 16 Publication of the dissertation

§ 17 Submission of depositary copies

V. Doctorate degree

§ 18 Presentation of the doctorate certificate

§ 19 Renewal of the doctorate certificate

VI. Honorary Doctorate

§ 20 Procedure

VII Final provisions

§ 21 Consequences of fraud

§ 22 Entry into force

§ 1

Significance of the doctorate, degrees

(1) The doctorate serves as proof of a scientific performance - produced by the student himself - in a specialized field of physics.

(2) The successful candidate is awarded the academic title doctor of sciences (Dr. rer. nat.). Distinguished personalities can be awarded an honorary doctoral degree (Dr. rer. nat. h.c.) for outstanding scientific achievements.

I. I. Doctoral Committees

§ 2

Examination Committee, Examination Board

(1) Relevant doctoral committees in accordance with these regulations are: the Doctorate Commission, the Doctorate Board, the graduate examination committee, the faculty council, the Dean of the physics department and the chair of the graduate examination committee.

(2) The **doctoral committee** consists of a minimum of six professors (professors, honorary doctors, assistant professors). Four of them must be from the physics department. The Dean summons the committee members and the chairman. If the supervisor is a professor according to § 12 section 1, section 2, section 3 sentence 1, 1 or section 3, 2, he must be a member of the doctoral committee. The Dean assures that the scientific areas of the thesis be adequately represented by a professor of this research area.

(3) The **doctoral board** consists of the faculty of the physics department and of the departments's academics who have a permission to teach. The board is presided by the Dean.

(4) For issues relating to the intermediate examination, please refer to
Uta Le Guay

- (1) the diploma examination rules for students of physics at the Ludwig-Maximilians-Universität München dated 31 October 1984 for a PhD in physics or astrophysics and
- (2) the diploma examination rules for students of meteorology of the Ludwig-Maximilians-Universität München dated 27 July 1977 for a PhD in meteorology.

§ 3

Decision making

- (1) The doctoral committee, the doctoral board and the graduate examination committee have the quorum, if all members were summoned 1 week prior to the meeting and if 50% of the members are present and are entitled to vote. Decisions must be approved by the majority. In the event of a tie, the Chair uses his casting vote. Abstentions, ballot vote and vote assignment is not allowed.

II. Admission to the doctorate program

§4 Admission criteria

- (1) The candidate must not have failed a similar final doctoral exam. The candidate must not be subject to withdrawal of the doctoral degree.
- (2) The candidate should speak German. The Dean may allow the candidate to use a different language for the examination.
- (3) The candidate must
 - 1) have a general or specific university entry degree
 - 2) have completed a study course in science at a university
 - 3) have passed the final exam with at least the grade “gut”
- (4) The student must have studied a minimum of 2 semesters at the LMU. In exceptional cases, the Dean may acknowledge 2 semesters as guest student or as graduate assistant.
- (5) Study courses in the sense of (3) section 3 are:
 1. Diploma in meteorology or physics;
 2. First state exam for teachers at Gymnasium (grade in physics);
 3. The following exams that the faculty council has approved upon request of the student:
 - a) A final diploma exam or the first State Exam for teachers at Gymnasium in a mathematical-scientific field,
 - b) A final equivalent exam passed abroad. There are rules on equivalence stipulated by politics.

Acknowledgement of these exams may be subject to additional tests in accordance with the decision of the faculty council. Reference is also made to Article 51 section 4 of the Bayerisches Hochschulgesetz.

The intermediate exam (§5) may replace the study course in the sense of (3) 3 and an equal exam. Students are admitted who fulfill the requirements according to sections 1 and 2, and

- 1) Who have studied abroad and cannot provide evidence of an equal final exam, or
- 2) Who are students of teacher training colleges who aim at a doctorate in didactics of physics
- 3) Who have completed a diploma study course at a Fachhochschule (FH) with grade “sehr gut”. In addition, FH students must have studied physics or meteorology at a minimum of 2 semesters at LMU with a seminar on one of the subjects of the preliminary exam (§ 5 sections 4 and 5). They must also have an admission recommendation from the teacher of the seminar.

§5 Intermediate examination

- (1) In the case of § 4 section 6 the candidate needs to give evidence of sufficient knowledge and skills to successfully pass the doctorate.
- (2) The candidate needs to submit a written request for admission to the intermediate doctorate exam to the chair of the examination board (physics or meteorology), indicating 1 main and 2 subsidiary subjects. The candidate must submit the documents according to § 6 section 1 sentence 1, 3, 7 and 9 as well as evidence of the fulfillment of admission according to § 4 section 6 sentence 2. Concerning the use of a foreign language as exam language, see § 4 section 2. The time line for the decision of admission is 3 months.
- (3) The chair of the examination board checks the documents and decides whether the subsidiary subjects fulfill the requirements of section 5. He decides on the admission to the preliminary exam. He appoints 3 examiners from the faculty and appoints one of them chair. He sets the exam date. A minimum of 8 days prior to the exam date, the candidate is invited to the preliminary exam and is informed of the names of the examiners. The examiners can assign a colleague if they cannot keep the appointment.
- (4) The intermediate exam is an oral exam about 1 main and 2 subsidiary exams. The requirements are equal to those of a final exam (§ 4 section 3, 5).
- (5) The main subject is the subject chosen by the candidate for his thesis. Subsidiary subjects must differ significantly from each other and from the main subject.
- (6) The intermediate doctorate exam is taken within 2 weeks separately for each of the 3 subjects. Duration of each exam is 45 minutes. The course of the exam must be recorded in the minutes. Exclusion of professors from the exam board due to participation is stipulated in article 50 BayHSchG.
- (7) If the candidate cannot keep the appointment, § 14 section 7 applies.
- (8) The performance of the candidate must be evaluated with “passed” or “not passed”. The preliminary exam is not passed if one of the 3 subjects is “not passed”.

- (9) Upon request, the student may resit the failed exam (only the part he failed) once. The request must be made within 3 months following the notice that the intermediate exam was not passed. In exceptional cases, the chair of the exam board can extend this term to 6 months. Only in exceptional cases can the student resit the exam a second time and only in 1 subject.
- (10) The candidate gets a certificate for the passed intermediate exam, stating the subjects. If the candidate has not passed the exam, he gets a written notice containing instruction on the right to appeal.

§ 6 Admission Request

- (1) The applicant submits a written request for admission to the doctoral exam. The request must contain the following:
1. Short CV, giving evidence of the school education and professional experience, if any.
 2. Evidence according to § 4 section 3 and 4
 3. The Dean's decision about the admission of a foreign language as exam language, according to § 4 section 2 sentence 2.
 4. The ready-to-print version of the doctoral thesis (§ 11 section 2), eight-fold, off-prints of the preliminary publications according to § 11 section 1 sentence 3, as well as a copy of the abstract (§ 11 section 2 sentence 3) on a separate sheet.
 5. The applicant's declaration by whom the thesis was supervised and the decision of the faculty council on the admission of the doctoral thesis according to § 12 section 4 sentence 3.
 6. The applicant's declaration that he was the sole author of the thesis, that he has not used other resources than those indicated; that he has indicated all word and phrases copied indicated as such. If the applicant chose a language other than his mother tongue, he must add a declaration as to who helped with the stylization.
 7. A declaration as to whether he definitely failed an equal doctoral exam in the past.
 8. A declaration as to whether the doctoral thesis was submitted to a different exam board.
 9. A certificate of good conduct ("Führungzeugnis"), if the applicant has been exmatriculated for more than 3 months and is not working in public service.
- (2) Upon request of the applicant, the Dean can take the decision whether the admission request meets the requirements prior to the submission of the request. See § 7 section 1.
- (3) If the applicant fails to furnish the required documents, the Dean may allow him to provide evidence of the fulfillment of the requirements in a different way. See § 7 section 2.

§ 7 Admission

- (1) According to the documents submitted, the Dean assesses whether the admission requirements according to § 4 are fulfilled. He may ask for a decision of the faculty council about the fulfillment of single admission requirements.
- (2) If the documents are incomplete, the Dean invites the applicant with a written notice to complete the application, failing which the Dean must reject the request.

- (3) The Dean decides about admission to the doctoral thesis. Admission can only be rejected if
1. The documents contain mistakes
 2. The applicant does not meet the requirements according to § 4
 3. The dissertation was submitted to a different exam board

The written grounds of refusal must be sent immediately to the applicant. Instructions on the right to appeal need to be communicated.

§ 8 Withdrawal of the Request

If the applicant withdraws the request for admission after the expiry of the layout term 8 (§ 13 section 6 sentence 1), the doctoral procedure is closed. The Dean informs the applicant hereof in writing. If the applicant withdraws the request for admission before the expiry of the layout term, the request is considered as not made.

III. Doctoral Procedure

§ 9 Achievements under the Doctorate

Achievements under the doctorate are the dissertation and the oral exam.

§ 10 Time Line

If possible, decisions in connection with the doctorate should be made immediately. The expertise on the dissertation (§ 13) should be written within 3 months following the admission. This term is extended for 2 months if other professors' expertises are requested.

§ 11 Dissertation

- (1) The dissertation must be scientific and the findings must be new. The student must have produced the thesis independently. It must treat a special area represented by a professor of the physics department. Novelty in the sense of the above include a dissertation that has already been partly published by the student. Students are encouraged to publish in international journals during their doctoral phase. Provided the Dean's consent, the dissertation can also be a detailed resumé of various scientific publications, under the condition that the applicant was an important co-author thereof.
- (2) The dissertation must be a ready-to-print manuscript, the original copy whereof must be DIN A 4 and the copies must be DIN A 5. It must be paginated and must have an index. An abstract in German, containing problem and results, must precede the dissertation. The dissertation may contain insertions or a separate addendum which are not for print but must be marked. Pictures and maps may be photocopies.
- (3) The dissertation should be either in German or in English. For the use of another language, see § 4 section 2 sentence 2.

§ 12 Supervision of the dissertation

- (1) The dissertation is generally supervised by a professor of the physics department. Provided the consent of one of the professors of the physics department, the supervisor may be a professor from another department or from a research institute or from industry. The physics professor must have the possibility to follow-up closely on the progress of the thesis, as he represents the thesis among the faculty and is the supervisor in the sense of these rules.
- (2) Professors who leave the University to become a professor elsewhere, may be asked by the Dean to continue supervision of the thesis.
- (3) Should the supervising professor be unable to pursue supervision of the dissertation, the assures that the supervision continues through
 1. Assigning another professor of the faculty
 2. Assigning a professor in the sense of section 1 sentence 2 or
 3. Assigning a supervision board of the physics department

In case the supervisor is a professor according to section 1 sentence 2, the Dean at the same time assigns a professor of the physics department who must have the possibility to follow-up closely on the progress of the dissertation. See section 1 sentence 5.

- (4) In exceptional cases, a dissertation without supervision may be allowed. A request must be made to the Dean. The decision is made by the faculty council.

§ 13 Expertise of the dissertation

- (1) Upon admission of the thesis (§ 7), the Dean sends a copy thereof to the members of the doctoral board; the remaining copies stay at the Dean's office.
- (2) For the expertise according to § 12 section 1, section 2 sentence 1, 1 or section 3 sentence 1, 2, the Dean assigns the supervisor as the first expert (= Gutachter) and a further member of the doctoral board as a second expert. In the sense of § 12 section 1 sentence 1, 3 and section 4, the faculty council assigns 2 professors as first and second expert. One of the experts must imperatively be of the physics department. The votes should be presented within 2 months.
- (3) Each vote shall evaluate the student's performance and shall contain a recommendation as to acceptance, acceptance with remarks for revision prior to publication, restitution for revision or refusal of the dissertation.
- (4) The evaluation must contain a recommendation for grading, according to the following scale:

“magna com laude” (sehr gut)	= 1,00 for outstanding performance
“com laude” (gut)	= 2.00 for performance beyond average
“rite” (befriedigend)	= 3.00 for performance according to requirements
“insufficienter” (unzureichend)	=4.00 for performance that does not meet the requirements

Grades in between (+- 0,30) are allowed. The grade 3,30 is “insufficenter”. The grade “insufficenter” can only be given in connection with a refusal of the work.

- (5) The Dean distributes the votes of the experts to the members of the doctoral board who were not assigned experts. The latter can make written comments on the dissertation, within 2 weeks, and may make grade suggestions according to section 4.
- (6) Upon receipt of the experts' votes, the dissertation is being layed out for a period of two weeks in the Dean's offices, together with copies of the votes of other professors according to (5). The Dean informs the professors of the layout by sending them a copy of the abstract according to § 11 section 2 sentence 3. During the layout period, all professors of the physics department have the right to examine the dissertation and write a comment thereon.
- (7) Failing objections from the votes or comments of the faculty, the dissertation is considered accepted. If the professors agree on the grades, than the grade suggested by the experts is confirmed. Otherwise, the doctoral board decides on the grade of the accepted dissertation. The confirmation according to sentence 1 comes from the chair of the doctoral board.
- (8) The dissertation is considered rejected, if the experts' votes and all comments according to sections 5 and 6 are related to the grade suggestion “insufficenter” or recommend rejection. The confirmation according to sentence 1 comes from the chair of the doctoral board.
- (9) In case of objection against the acceptance of the dissertation after the votes and comments according to section 7 sentence 1, the doctoral board decides about the acceptance, acceptance with comments for revision prior to publication, restitution to the student for revision or rejection of the dissertation, as well as about grading or additional expertise from professors of the physics department. The doctoral board can make the acceptance of the subject to consideration of suggestions for change or completion prior to publication, if the deficiencies do not justify refusal or restitution for revision. Professors who raise objections according to section 6 can be summoned to oral hearings.
- (10) In case the dissertation is restituted to the student for amendment, one copy remains on file. The edited version must be re-submitted within 2 years. Instead of delivering a revised version, the student may hand in a new piece of work within this term. The edited version of the dissertation or the new one must be provided to the members of the original doctoral board, if available. See sections 2 – 9. A second amendment or repeated submission of the new thesis is not allowed. The thesis is considered rejected if the term is not complied with.
- (11) The Dean informs the applicant about acceptance and evaluation, restitution for amendment or rejection of the dissertation. The written ground for refusal must contain instructions on the right to appeal.

§ 14 Oral Exam

- (1) If the dissertation is accepted, the Dean summons the student to the oral exam with an 8 days written notice.
- (2) The oral exam takes approx. 1 hour and is a broad scientific discussion which shall show that the student on the one hand is proficient in his special field and adjacent areas, and on the other hand knows the main structures and modern developments of his research focus. If the subject of his dissertation is didactics of physics, the oral exam must focus on physical questions.
- (3) The oral exam is subsidized by the first and second expert (Gutachter), the chair and one more member of the doctoral board, to be assigned by the Dean. If an expert is not available, the Dean assigns another member of the doctoral board as examiner. The president of the doctoral board has the chair.
- (4) Provided the student's consent, professors and students of the physics department may be admitted in the oral exam as audience. The announcement of the result happens in camera. A member of the doctoral board assigned by the chair writes minutes that need to be signed by the chair.
- (5) The examiners discuss the evaluation of the student's performance, according to the scale in § 13 section 4. The chair calculates the grade for the oral exam which is the average of the grades of each professor cut after 2 decimals. The grades correspond to the following:

Between 0,70 – 1,49	– “magna cum laude”
Between 1,50 – 2,39	-“cum laude”
Between 2,40 – 3,29	“rite”

If the student's performance is below 3,39 “rite”, the oral exam is failed.

- (6) The oral exam can only be resit one. The student must request a repetition of the oral exam within 1 year from the notification that the oral exam was failed.
- (7) Should the student be unable to appear for the oral exam (due to sickness), he needs to immediately request that the oral exam be rescheduled. In case of sickness, a doctor's note is required. In case of unexcused no show, the oral exam is failed.

§ 15 Result of the thesis

- (1) The doctoral thesis is passed if both the dissertation and the oral exam are evaluated with at least “rite” (3,29).
- (2) The overall grade of the doctorate is calculated as follows: [(Grade of the dissertation multiplied by 1,5) plus (Grade of oral exam)] divided by 2,5. If the grade of both the dissertation and the oral exam is > 1,00, the grade “summa cum laude” (excellent) can be given, if all professors agree and in accordance with § 14 section 3 sentence 1.

- (3) Following the oral exam, the student must be informed of the result. The chair of the doctoral board sends the student a preliminary communication of the passed exam. This communication contains overall grade, title and grading of the dissertation, as well as the grade of the oral exam. The preliminary communication does not entitle the student to hold a PhD. The preliminary communication must contain this note.
- (4) If the student fails the exam or if the exam is considered failed, he gets a written communication. The communication about the definitively failed exam must contain instructions on the right to appeal.

IV. Print of the dissertation

§ 16 Publication of the dissertation

- (1) Following the passed doctoral examination, the student must make the dissertation accessible to the public through copying and distribution. If there were comments for amendments prior to publication in connection with the acceptance of the dissertation, or if the doctoral board has suggested changes in accordance with § 13 section 9 sentence 2, the revised version must be submitted to the principal expert (Gutachter), prior to publication.
- (2) If possible, the footnote should state “Dissertation of the physics department of the LMU”, date of submission, names of the experts (Gutachter) and the date of the oral exam.
- (3) If the dissertation is voluminous, the Dean may allow the student to copy only part of it. This part needs to be consistent and must contain the main results of the dissertation. The footnote should say that it’s a part of the dissertation.

§ 17 Submission to the LMU

- (1) Within 1 year following the preliminary grant of the doctoral award, the candidate must submit the following copies free of charge to the Dean:
 1. 3 printable copies together with the original copy and a further 40 copies in microfiches
 2. 6 archival copies in book version together with electronic version or
 3. 40 copies in book version
- (2) The format and data medium according to section (1) 2 must be coordinated with the LMU library. The candidate shall grant the LMU library, the DDB (Die Deutsche Bibliothek) and the DFG libraries the right to publish the electronic version. The LMU library assures that the electronic version is legible and meets the requirements. Electronic versions that do not meet the requirements in terms of format and data medium, shall not be recognized as a publication.

- (3) If the dissertation is published in a scientific magazine or if a bookseller handles the dissemination, the candidate may submit 6 copies of the dissertation instead of the copies according to section 1. In this case, a minimum of 150 books must be printed.
- (4) Pursuant to section 1 the candidate must assign the right to the University to produce and disseminate further copies of the dissertation.
- (5) If, pursuant to § 16 section 3, only a part of the dissertation was published, the candidate must submit a further two complete copies.
- (6) Upon request stating substantial grounds, the term for submission of the dissertation may be extended by a maximum of 2 years by the Dean.
- (7) Pursuant to section (1) 1 or 2, the Dean may deem the dissertation to have been filed on time, even if the dissertation is provided with a log flag due to the filing of a patent application, and its publication is therefore withheld. Prerequisites are: Fulfillment of submission requirements, confidentiality clause must state the deadline for publication, the LMU library can proceed with the publication without further action by the candidate or third parties. The maximum period for a log flag is 2 years and must be requested by the LMU library with a special form. The LMU library issues a receipt for the submission of the dissertation deemed to be in accordance with the requirements.
- (8) If the candidate does not observe the deadline for submission of the copies of the dissertation, he loses all his rights from the successfully passed doctoral examination procedure.

V. Doctorate Certificate

- (1) Subsequent to successful completion of the doctorate program, a doctoral certificate is handed to the candidate, that states that the candidate is awarded the doctoral degree.
- (2) The certificate is in German and confirms the passed doctoral examination, states the title of the dissertation and bears the signatures of the Rector of the LMU and the Dean, as well the seal of the LMU. The certificate carries the date of the oral examination.

§ 19 Renewal of the Doctorate Certificate

Upon decision of the faculty council (Fachbereichsrat), the Doctoral Certificate may be renewed after 50 years.

VI. Honorary Doctorate

- (1) Upon request of a minimum of 2 professors from the physics department, stating substantial grounds, a candidate may be awarded the grade Dr. rer. Nat. h.c. The examination committee decides on the request in a meeting. The summons to this meeting must explicitly state, that the topic is to decide on the award of a honorary doctorate.
- (2) The honorary doctorate certificate is in latin and honors the candidate's outstanding performance.

VII. Final Provisions

- (1) In case of fraud, the doctoral committee must retroactively declare the dissertation as failed and withdraw the doctoral certificate.
- (2) If the admission requirements were not met without the candidate's fault, this deficiency is remedied by the successfully passed doctoral examination.

§ 22 Effective date

This Regulations become effective upon announcement and replace the regulations of 27 March 1979.