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HEIDELBERG UNIVERSITY EXAMINATION RULES AND REGULATIONS FOR THE MASTER'S DEGREE PROGRAMME IN TRANSLATIONAL MEDICAL RESEARCH

as of 11 November 2009

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Preliminary remarks

For reasons of readability, the male form is used in these programme rules and regulations. Naturally, all titles in this document, be they official, job, status or functions that are used in masculine form refer to men and women equally. The corresponding feminine forms of titles may be used at any time by those who hold them.

Section I: General provisions

§ 1 Purpose of the academic programme and examination

- The objective of the Master's degree programme in Translational Medical (1) Research is the study of translational medical research, with particular focus on the application of experimental scientific research to clinical treatment, as well as the development of innovative research studies based on clinical observations. In particular, advances in molecular and cellular biology will be effectively linked to clinical practice, including targeted reverse translation. Dynamic developments in molecular and cellular research present challenging demands to the training of future clinicians preparing to work in the translational research field. At the same time, these developments require that scientists be able to understand the molecular cellular and system-physiological basis for biologically-oriented diagnosis and therapy, to define conditions for using molecular therapies for individual patients, and to be committed to a highly efficient and speedy transfer of knowledge of molecular processes to clinical and therapeutic applications. In keeping with this approach, the Master's degree programme in Translational Medical Research is interdisciplinary and research-oriented. The programme systematically fosters the training of young scientists within individually-selected specialisations chosen from the research areas offered by the Medical Faculty Mannheim.
- (2) Successful completion of the Master's degree programme in *Translational Medical Research* leads to conferment of the academic title, "Master of Science", qualifying students to enter this profession.

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- (3) The purpose of the Master's examinations is to assess whether students have mastered the interrelationships between the individual disciplines of their subject, are able to apply advanced scientific methods and findings, and are able to work independently, employing scientific principles.
- (4) The requirements for admission to this degree programme are set forth in the Admission Regulations, published separately.

§ 2 Master's degree

Upon successful completion of the Master's examination, Heidelberg University, represented by the Medical Faculty Mannheim, will confer the academic degree of "Master of Science" (abbreviated "M.Sc.").

§ 3 Standard period of study, programme structure and range of courses offered

- (1) The Master's degree programme may be studied as a full-time or part-time programme. If taken as full-time programme, the standard period of study for the Master's degree programme is two semesters, including the Master's examinations. If the degree programme is taken on a part-time basis, all necessary credits may be earned over a period of up to 3.5 years. This includes the time allotted for completion of the Master's thesis.
- (2) Lectures and courses do not take place within the normal lecture period, but within modules that constitute a workload of approx. 23 weeks. A period of 5 months is allotted for the completion of the Master's thesis. The total workload required for successful completion of the Master's degree programme comprises a total of 60 ECTS credits (based on the European Credit Transfer System).
- (3) The language of instruction and examinations is English. Upon request, the Master's thesis may be completed in German.

§ 4 Examinations board

(1) The examinations board is responsible for the organisation of examinations and the tasks required by the examination rules and regulations. It is made up of three professors or associate professors and a student representative, who serves in an advisory capacity. The members of the examinations board and their deputies are appointed by the faculty council. The examinations board student member is appointed by the faculty council based on a proposal from the departmental

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student committee. The chairperson must be a professor. The members are appointed for three years; the student member is appointed for one year. Members may be re-elected.

- (2) The examinations board ensures that the examination rules and regulations are upheld. The board ensures that course assessments can be completed and subject examinations taken within the timeframes stated in the examination rules and regulations. The board reports to the faculty on a regular basis regarding changes to examinations, study periods (including actual processing times for Master's theses), subject grades and overall grades. Furthermore, the board provides recommendations for further improving the curriculum and the examination rules and regulations. This report is published in a suitable form. The examinations board appoints examiners and observers. The board may be called upon for all questions regarding examinations.
- (3) The chairperson manages the business of the examinations board, prepares and chairs meetings and, in the event of a tie vote, has the deciding vote.
- (4) The examinations board may confer further responsibility on its chairperson, provided this does not violate applicable law. Such a decision may be revoked at any time.

The examinations board must be informed on a regular basis about the execution of these tasks.

- (5) Members of the examinations board have the right to attend examinations.
- (6) Members of the examinations board, examiners and observers are obligated to maintain professional confidentiality. Members who are not civil servants are sworn to secrecy by the chairperson.
- (7) The candidate must be informed of negative decisions of the examinations board immediately and in writing; the reasons for the decision must be stipulated and information on the procedure for appeal must be provided.

§ 5 Examiners

(1) In general, examinations which are not completed during the course of study may only be carried out by professors, associate professors, or research associates who, due to longstanding teaching experience. have been granted the right by the rector to conduct examinations. Research assistants, research associates, adjunct lecturers and lecturers with special responsibilities may only be appointed to conduct examinations under exceptional circumstances, when there is not

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enough qualified faculty personnel available to conduct examinations.

- (2) If external examiners are to conduct examinations, their rank must be equivalent to that of German professors and associate professors.
- (3) Observers must have sat the corresponding Master's examination or equivalent.
- (4) The chairperson of the examinations board ensures that candidates are given sufficient advance notice of examiners' names.

§ 6 Recognition of study periods, course credits and examination results

(1) Study periods, course credits and examination results obtained in degree programmes at German universities or at a comparable institution of higher education will be recognised, provided there is equivalence. Equivalence will be recognised if the periods of study, course credits and examination results obtained correspond, in terms of their content, scope and requirements, to the Master's programme in Translational Medical Research at Heidelberg University.

Programmes will not be compared schematically, but rather considered and assessed as a whole.

- (2) When recognising periods of study, as well as course credits and examination results obtained outside the Federal Republic of Germany, Equivalency Agreements and agreements between partner universities approved by the Conference of German Ministers of Education (Kultusministerkonferenz, KMK) and German Rectors' Conference (Hochschulrektorenkonferenz, HRK) must be taken into account.
- (3) For examination prerequisites completed and results obtained at state-recognised universities of cooperative education and distance learning institutions, paragraph 1 shall apply accordingly.
- (4) If examination prerequisites and results are recognised, grades, provided that the grading systems are similar, must be transferred and used when calculating the overall grade in accordance with these examination rules and regulations. If grading systems are not comparable, examination prerequisites and results are graded as a "pass". This recognition can be indicated in the diploma.
- (5) The examinations board renders decisions in the matters outlined in paragraphs 1 to 4. Students must submit all documents necessary for recognition.
- (6) If a student requests recognition of more than half of all course credits, the final

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oral examination, or the Master's thesis, then recognition of individual portions of the Master's examination may be denied.

(7) Courses and examinations that have already been taken as a part of the Bachelor's programme will not be recognised. The same applies for other degree programmes required for admission to this Master's programme. Should the programme rules and regulations require a course to be taken a second time, it may be possible to earn credit for the repeated course. Approval must be granted by the examinations board.

§ 7 Unexcused absence, withdrawal, exceeding of deadlines and deception

- (1) An examination is graded as "failed" (5.0) if a candidate fails to appear without being able to state a valid reason for their absence, or, if the candidate withdraws after the examination has started. The same applies if the candidate fails to provide a written examination by the established deadline.
- (2) Reasons for withdrawal or absence according to paragraph 1 must be plausible and must immediately be submitted in writing to the examinations board. If the candidate, or a child for whom the candidate is generally the sole caregiver, is ill, a medical certificate must be provided. In the event of doubt, a medical certificate from a designated physician may be required.
 - . If the reasons stated are accepted, a new examination appointment will be scheduled. In this case, examination results that are already available will be taken into account.
- (3) When deciding whether the candidate is responsible for exceeding the deadline for registering and taking an examination, or for registering and submitting the Master's thesis, the examinations board must respect the provisions stated in the Maternity Protection Act and the legal regulations concerning parental leave, and allow candidates to make appropriate use of these provisions.
- (4) If the candidate tries to influence the examination results through deception or by using unauthorised aids, the examination will be graded as "failed" (5.0). If a candidate disrupts the proper course of the examination, the examiner or examination supervisor may not allow them to continue the examination, in which case the examination result will be graded as "failed" (5.0). In extreme cases, the examinations board may exclude the candidate from all further examinations.
- (5) With regard to paragraph 4, sentences 1 and 2, the candidate may request that the decision be validated by the examinations board within a period of one week. The candidate must be informed of negative decisions immediately and in writing;

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the reasons for the decision must be stipulated and information on the procedure for appeal must be provided.

§ 8 Types of examination components

- (1) The examination components are:
 - 1. written examinations in the modules completed during the course of study
 - 2. oral examinations in the modules completed during the course of study
 - 3. Master's thesis, including presentation and defence.
- (2) If candidates provide a medical certificate that plausibly proves that they are not able to take examinations in the form prescribed, whether completely or partially, due to permanent or chronic health problems, the examinations board may allow them to take an equivalent examination. The same applies for other course requirements.

§ 9 Written examination components

- (1) In written examination components, candidates should show that they are able to recognise problems relating to their subject and find solutions for them using subject-specific methods with limited time and resources.
- (2) In accordance with § 8, paragraph 1, number 1, a written examination in a module lasts between 90 and 180 minutes. Multiple choice questions are permitted.
- (3) If a written examination is taken in the form of a term paper, candidates must assure that they are the authors of their work and have used no sources or aids other than those indicated.

§ 10 Oral examination components

- (1) In oral examination components, candidates are required show that they are able to identify interconnections within the subject of the examination and relate specific problems to these interconnections. Furthermore, candidates should demonstrate that they have adequate fundamental knowledge relating to their academic programme.
- (2) Generally, oral examinations are carried out by two examiners, or an examiner and a qualified observer.
- (3) An oral examination lasts between 30 and 60 minutes.

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(4) The topics examined and the results of the oral examination must be recorded in a written report. Following the oral examination, candidates must be notified of examination results.

§ 11 Assessment of examinations

(1) Grades for the individual examinations are determined by the respective examiners. The following grades must be used for assessment of examinations:

1 an outstanding performance; very good 2 good a performance which lies substantially above average requirements; = performance which fulfils average 3 satisfactory requirements; 4 sufficient = a performance which, despite deficiencies, still meets the requirements; 5 a performance which, due to considerable failed deficiencies, does not meet the requirements.

For more detailed assessment of examination performance, grades may be further differentiated by increasing or decreasing the individual grades by 0.3; however, the grade 0.7 and incremental grades above 4.0 may not be used.

(2) In accordance with § 18, paragraph 2, the overall grade of the Master's examination is calculated as the average of the grades of the individual examinations. The overall grade is determined as follows: average of up to and including 1.5 very good; average of between 1.6 and up to/including 2.5 good; average of between 2.6 and up to/including 3.5 satisfactory; average of between 3.6 and up to / including 4.0 sufficient

If all components of the Master's examination are passed with the grade 1.0, the degree will be conferred with the notation: "with distinction".

- (3) When calculating the overall grade, only the first decimal after the point is taken into account. The other decimals are dropped without rounding.
- (4) In addition to the German-system grades, students who have passed the examinations will also be awarded a letter grade according to the following scale:

A for the top 10 % B the following 25 % C the following 30 %

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D the following 25 % E the following 10 %

The grades achieved by at least two previously graduating year groups may also be taken into account when calculating the relative grades for the current graduating year group, depending on the size of the graduating cohort. For degree grades, the ECTS grade must be included. For individual modules, the ECTS grade may be listed when possible and necessary.

Section II: Master's examination

§ 12 Master's examination admission requirements

Admission to the Master's examination will only be authorised for those who:

- hold a general higher education entrance qualification, a relevant subject-related higher education entrance qualification, or an equivalent university entrance qualification legally recognised by the relevant authorities, and provide documentation of the completion of an academic degree comprising a minimum of 240 ECTS,
- 2) are enrolled in the Master's degree programme in Translational Medical Research at Heidelberg University,
- 3) have not lost their entitlement to take the final examinations in the Master's degree programme in Translational Medical Research.

The application for admission to the Master's thesis must include documentation of successful participation in the modules set forth in Appendix 1.

§ 13 Master's examination admission procedure

- (1) The application for admission to the examination must be made in writing, and addressed to the chair of the examinations board. The application must include the following documents:
 - evidence of fulfilment of the admission requirements in accordance with § 12,
 - 2) candidates' declarations stating whether they have already failed their final attempt at the Master's examination in the Master's degree programme in Translational Medical Research and whether they are currently undergoing an examination procedure.
- (2) If the candidate is unable to provide such evidence, the examinations board may accept other documents as proof.

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- (3) The application is the basis for the examinations board's decision as to whether the candidate may be admitted to the examination. Rejections must be substantiated and notified in writing along with instructions for appeal.
- (4) The application for admission to the examination may only be denied if:
 - 1) conditions are not fulfilled in accordance with § 12, or
 - 2) documents set forth in section 1 are not complete, and have not been completed upon request, or
 - 3) candidates have failed their final attempt at the Master's examination in the degree programme in *Translational Medical Research* or have lost the entitlement to take the final examinations, or
 - 4) the candidate is currently undergoing examination procedures in such a degree programme.

§ 14 Scope and nature of the Master's examination

- (1) The Master's examination consists of:
 - successful completion of the modules set forth in Appendix 1,
 - the Master's thesis
 - the oral presentation and defence of the Master's thesis.
- (2) The examinations referred to in paragraph 1, number 1 are taken as an integrated part of the respective lectures or courses. In accordance with § 9 and §10, they may be in written or oral form.

§ 15 Master's thesis

- (1) The purpose of the Master's thesis is for candidates to prove that they are able to work independently, within a given period of time and using academic methods, to address a problem from the field of translational medical research.
- (2) The topic of the Master's thesis will be determined by the chairperson of the examinations board. The candidate is permitted to propose topics; however, this does not constitute entitlement to a particular topic. The date of assignment must be recorded.
- (3) In accordance with § 13, paragraph 1, number 1, the candidate must begin work on the Master's thesis no later than four weeks following successful completion of the last examination component, or, must have by that time submitted an application to the chairperson of the examinations board for the assignment of a

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topic. If the deadline is not met, the Master's thesis will be graded as "failed" (5.0), unless the candidate is not at fault for exceeding the deadline. For students in the part-time programme, this period will be extended in accordance with § 3 (1).

- (4) The deadline for submission of the thesis is five months following assignment of the topic. In exceptional cases, the examinations board, in consultation with the supervisor, may extend this deadline by up to two months. If the deadline is not met, the Master's thesis will be graded as "failed" (5.0) unless the candidate is not at fault for exceeding the deadline.
- (5) The topic, task and scope of the Master's thesis must be limited in such a way that the candidate should be able to complete the thesis within the given time frame. The topic may only be rejected once, and only within the first month after the date of assignment.

§ 16 Submission and assessment of Master's thesis

- (1) Three copies of the Master's thesis must be submitted to the examinations board before the established deadline; the submission date must be recorded. The thesis must contain a summary. If the Master's thesis has been written in German, an English summary must be provided.
- (2) When submitting a Master's thesis, candidates must certify in writing that they are the authors of their work and have used no sources or aids other than those indicated.
- (3) The Master's thesis will be assessed by two examiners, one of whom must be a professor, who are appointed by the examinations board. One of the examiners must be the supervisor of the thesis. The candidate is permitted to make a proposal; however, this does not constitute entitlement to be examined by a particular examiner. The assessment period should not exceed six weeks.
- (4) The grade is calculated as the mean of both assessments; § 11, paragraph 2 applies accordingly. If the two assessments differ by more than one grade, the examinations board will determine the grade for the Master's examination after consulting both examiners. In such cases, a third examiner may be consulted.
- (5) 25 ECTS credits are awarded for the Master's thesis.

§ 17 Presentation and defence of Master's thesis

(1) The Master's thesis will be presented orally before the assigned examiners and be defended in a subsequent academic discussion, which will last approximately

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30 minutes. Fifty percent of the defence will focus on the topic of the Master's thesis, and the other fifty percent on the entire content of the modules taken.

- (2) The presentation of the Master's thesis must take place no later than eight weeks following submission of the document. The date will be scheduled by the examinations board. The candidate will be informed of the date no later than two weeks before the presentation.
- (3) The grade for the presentation and defence will be calculated as the mean of the individual grades given by the examiners; § 10 applies accordingly.
- (4) The topics examined and the results of the oral examination must be recorded in a written report, which must be signed by the chairperson of the examinations board.

§ 18 Passing the examination

- (1) The Master's examination is passed when all examinations have been graded as "sufficient" (4.0) or higher.
- (2) For the calculation of the overall grade in accordance with § 11, paragraph 2, the grades of the modules completed during the course of study, in accordance with § 14, paragraph 1, number 1, will be added together. This will constitute 50% of the overall grade; the grade for the Master's thesis constitutes the remaining 50%.
- (3) The overall grade of the Master's thesis is calculated from the grades earned for the written thesis and the oral presentation with its defence. The grade for the written thesis is weighted by a factor of three; the grade for the oral presentation and defence is not weighted.

§ 19 Retaking an examination; deadlines

- (1) If examination components are not passed, they may be retaken once. This includes failed examinations taken at other universities. A second re-examination is permitted only under exceptional circumstances and only for a maximum of two examinations; a second re-examination is not permitted for the Master's thesis. Approval must be granted by the examinations board.
- (2) It is not permitted to retake an examination component which has been graded as passed.
- (3) Failed examinations must be retaken no later than during the following semester.

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If candidates fail to meet this deadline, they will lose entitlement to take this examination, unless they are not responsible for the deadline being exceeded.

§ 20 Master's diploma and certificate

- (1) Upon successful completion of the Master's examination in the degree programme in Translational Medical Research, a diploma will be issued. This will list all individual modules with their respective grades and ECTS credit points, as well as the topic and grade for the Master's thesis and the overall grade. The diploma will be dated with the date of the last examination component. It must be signed by the chairperson of the examinations board and the dean of the Medical Faculty Mannheim.
- (2) A Diploma Supplement and a Transcript of Records, in English, will also be provided.
- (3) Along with the diploma, a Master's certificate will also be issued, bearing the same date. It certifies conferment of the academic degree "Master of Science". The certificate is signed by the chairperson of the examinations board and the dean of the Medical Faculty Mannheim, and bears the university seal.
- (4) If the Master's examination in the degree programme in *Translational Medical Research* is failed on the final attempt or is considered not to have been passed, the chairperson will issue a written notification, providing information on the procedure for appeal.

A certificate will be issued upon request, and upon presentation of documentation of proof and a certificate of withdrawal, listing passed examinations and their grades, missing examinations required for obtaining the Master's degree, and a statement that, on the final attempt, the Master's examination has not been passed.

Section III: External students' examination

§ 21 External students' examination

- (1) Students who are not enrolled at Heidelberg University may also be permitted to take the Master's examination for the Master's degree programme in *Translational Medical Research* (external student examination).
- (2) Admission to the external students' examination is authorised for those who: a) hold a general higher education entrance qualification, a relevant subject-

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related higher education entrance qualification, or an equivalent university entrance qualification legally recognised by the relevant state authorities,

- b) provide proof of either a relevant professional education and a minimum of two years of relevant professional experience, or a minimum of five years of relevant professional experience,
- c) can provide evidence of adequate preparation for the examination in accordance with paragraph 4,
- d) are not enrolled as students at a German university,

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- e) have not lost their entitlement to take the final examinations in the Master's degree programme in *Translational Medical Research*.
- (3) The application for admission to the external students' examination must be made in writing, no later than the date of assignment of the topic for the Master's thesis. It is to be addressed to the examinations board. The application must include the following documents:
 - a) evidence of fulfilment of the admission requirements in accordance with paragraph 2 a e,
 - b) candidates' declarations stating whether they have already failed a Master's examination or external students' examination in the degree programme in *Translational Medical Research* and whether they are currently undergoing an examination procedure.
- (4) The successful completion of the modules set forth in Appendix 1 will be recognised as evidence of adequate preparation for the examination in accordance with paragraph 4. With respect to the proof of successful completion, the provisions stated in these examination rules and regulations apply accordingly.
- (5) The topic for the Master's thesis will be assigned following admission to the external students' examination. Regulations concerning the Master's thesis, oral presentation and defence and passing the Master's examination apply accordingly.

Section IV: Final provisions

§ 22 Invalidity of examinations

- (1) If a candidate has cheated on an examination component and this is not discovered until after the diploma has been issued, the examinations board maintains the right to alter the grade awarded for all examination components concerned, and declare the examination partially or completely failed.
- (2) If the requirements for admission to the examination were not fulfilled, but without any intent on the candidate's part to cheat, and this is not discovered until after

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the diploma has been issued, the passed examination will be considered as compensation for this shortcoming. If the candidate intentionally gained admission to the examination through deceit, the examinations board will make a decision on the matter.

- (3) Before a decision is made, the candidate will be given the opportunity to provide an explanation.
- (4) Fraudulent examination diplomas will be confiscated and, if necessary, a new diploma will be issued. If the examination has been graded as "failed" due to cheating or deceit, the Master's certificate will be confiscated along with the fraudulent examination diploma. The statute of limitations for rendering a decision such as described in paragraph 1 and paragraph 2, sentence 2, is five years from the date on the examination diploma.

§ 23 Access to examination documents

After the examination procedure has been completed, the candidate has the right to request access to examination documents within a reasonable period of time. Requests must be made in writing and within a period of up to three months after completion of the examination process. The chairperson of the examinations board will decide when and where such access will be given.

§ 24 Coming into force

These examination rules and regulations will come into force on the first day of the month following publication in the President's bulletin (Mitteilungsblatt des Rektors).

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Appendices to the examination rules and regulations:

Modules for the Master's degree programme in *Translational Medical Research*

Please note:

elective modules representing the three specialisations are marked

as: MO = Molecular Oncology

NB = Neurobiology

VM = Vascular Medicine

ECTS based on a 30h workload per 1 credit

1. Foundation Module

Modul e	title	ECTS	Student Workload	date
1 A	Fundamental Aspects of Cellular and Molecular Biology	3.0	90h	September
1 B	Fundamental Aspects of Medical Science and Practice	3.0	90h	September

grade:

Module 1 A: compulsory for students with medical background

Module 1 B: compulsory for students with non-medical science background

2. The Molecular and Cellular Basis of Medical Disorders

Modul e	title	ECTS	Student Workload	date
2.1	Advanced Cell and Molecular Biology I	1.5	45 h	September

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2.2	Advanced Cell and Mole	ecular Biology II	1.5	45 h	September – October

2.3	Advanced Cell and Molecular Biology III	1.5	45 h	October
2.4	MO: Molecular Genetics of Tumorigenesis NB: Molecular and Cellular Regulation of the Nervous System VM: Molecular and Cellular Regulation of the Vasculature	1.5	45 h	October
2.5	Practical: Molecular Biology Methods	1.5	45 h	October
2.6	Practical: Molecular Biology Methods	1.5	45 h	October

3. Understanding Disease Processes

Module	title	ECTS	Student Workload	date
3.1	Stem Cell Biology: From Basic Principles to Disease Processes	1.5	45 h	November
3.2	Molecular and Cellular Basis of Cell Motility and Invasiveness	1.5	45 h	November
3.3	Metastasis Concept and General Aspects	1.5	45 h	November

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3.4	MO: Metastasis II – tumor progre host tissue, micrometastasis and NB/ VM: Disease processes invol pathophysiology of neuro-vascula	dormancy lving the vasculature and	1.5	45 h	December

3.5	MO: Pathophysiology of Cancer/ Tumor-host Interaction NB: Pathologies of the Nervous System VM: Pathologies of the Vasculature	1.5	45 h	December
3.6	Practical: Live Cell Imaging	1.5	45 h	December

4. Diagnosis and Therapy

Module	title	ECTS	Student Workload	date
4.1	Therapeutic Strategies: Established & Experimental	1.5	45 h	January
4.2	Principles of Tissue Banking	1.5	45 h	January
4.3	MO: Animal Models in Research and Experimental Therapy in Molecular Oncology NB: Animal Models of Nervous System Disorders and Behavioural Neurobiology VM: Animal Models in Research and Experimental Therapy in Vascular Medicine	1.5	45 h	January February

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4.4	MO: Cancer Diagnostics and Imaging NB: Diagnosis, Imaging and Therapy of Vascular Disorders VM: Diagnosis, Imaging and Therapy of Nervous System Disorders		1.5	45 h	February
4.5	Case studies: Therapeutic Targeting / Translational Medicine		1.5	45 h	February
4.6	Prognostic and Clinical Studies, Epidemiology & Bioinformatics		1.5	45 h	February
5.1	Master's	s Thesis	25.00	5 months	individual

5.2

Public presentation of thesis and final examination

(incl. preparation)

Published in the Bulletin of the President (Mitteilungsblatt des Rektors) from 12 January 2010, p. 41.

1.0

30h

individual