English Summary of the academic regulations for the Master of Science Programs at the University of Freiburg

The following document provides a summary of the most important points in the academic regulations governing the Master of Science programs at the University of Freiburg. It is not a literal translation and is not legally binding. The official regulations remain the German-language *Prüfungsordnung für den Studiengang Master of Science*. For questions in this regard, please see your academic advisor or the Dean of Studies.

Course structure

Coursework in the Master's program is divided into modules; each module addresses a particular aspect of microsystems engineering. A module may consist of a lecture, discussion section or laboratory, or a combination of these.
Successful completion of each module will result in the award of a number of ECTS (European Credit Transfer System) credits. The number of credits awarded is listed for each module in Annex B. ECTS credits are calculated on the basis of the estimated student's work load; in Microsystems Engineering.1 ECTS credit corresponds to 30 hours of work expected per semester.

To complete the Master's program, the student needs to complete 120 ECTS credits. The minimum duration of a Master of Science program is 4 semesters.

Mentors

Each student is assigned to a professor who acts as his/her mentor. Your mentor will invite you to a meeting in each term. S/he will be looking after you during your studies and will help you with any kind of problem you have.

Examination committee

The examination committee is responsible for the organization of the examinations. It also decides on the recognition of transfer credits and their equivalence. The examination committee comprises 4 professors, 1 scientific staff member and 1 student. They are nominated by the Faculty Council.

If a student fails a performance evaluation or any other examination, the examination committee will notify the student and inform him about the deadlines for re-examination.

Decisions taken by the examination committee will be notified to the student in writing. Appeals pertaining to the decisions of the examination committee shall be directed to the examination committee (Prüfungsausschuss MSc. Microsystems Engineering, Georges-Köhler-Allee 101, 79110 Freiburg) in writing within one month after receipt of the notification.

Course requirements and examinations

The final module grade is based on performance in all parts of the module. The final grade may be based on individual grades achieved in performance evaluations, such as:
- final examinations (oral or written exams)
- one or more mid-term examinations
- oral examinations
- Graded exercises
- Laboratory reports
- Other written or oral reports.

In some modules, admission to the final examination may be based on a required minimum grade in other performance evaluations, such as exercises or a laboratory.

At the beginning of each term, the instructor will inform the students about the exact nature of the performance evaluations and examinations for each course.

The type of examinations employed in the required modules depends on the nature of the course:

a) Lectures including exercises (Übungen) are assessed by the use of an examination and marked exercises. The grade of the exercises constitutes 1/3 and the grade of the examination 2/3 of the final grade.
b) Lectures with practical exercises: The grade of the exam constitutes 2/3 and the grade of the practical exercise 1/3 of the final grade.

Registration for examinations

Students shall register online (or by filling out a form and submitting it to the examination office) for each examination within the deadlines given by the examination committee.

Oral performance evaluations

Oral performance evaluations may consist of oral examinations or oral presentations. Oral examinations are held individually or in groups. The duration of an oral examination shall be at least 10 minutes per candidate, but not more than 20 minutes (for mid-term examinations), not more than 45 minutes (for final module examinations).

Oral examinations are usually held in the presence of one examiner and one assessor or in the presence of two examiners. The result of an oral examination shall be notified to the student at the end of the examination. Other students, who will take the same examination in a future semester, may attend the examination if the candidate does not object.

An oral presentation of a paper may be required as a performance evaluation, in which the student can prove his/her ability to deal with a specific object of his/her field of studies. The presentation shall take at least 15 minutes but not longer than 90 minutes.

Oral examinations and presentations shall be held in German or in the language of instruction of the course.

Written performance evaluations

Written performance evaluations may include written examinations, papers or a report. Written examinations have a minimum duration of 60 and a maximum duration of 240 minutes. Papers written by the student shall give proof of his/her ability to discuss a specific object of his/her field of studies in writing. A report may be required to show that he/she participated successfully in a seminar course, project, internship or any other form of course. Written examinations, papers and reports shall be written in German or in the language of instruction of the respective course. Written examinations given to the student in a language other than German may be answered by the student in German.

The time for grading of written performance evaluations shall not exceed four weeks.

Grading of performance evaluations

Each final module examination or mid-term examination will be marked with one of the following grades:

1,0/1,3	excellent	= performance which significantly exceeds the average requirements
1,7/2,0/2,3	good	= performance which exceeds the average requirements
2,7/3,0/3,3	satisfactory	= performance fulfilling the average requirements
3,7/4,0	passed	= performance which in spite of its deficiencies meets the requirements
5,0	failed	= performance which due to its deficiencies does not meet the requirements

If a module is completed by taking a final module examination, the grade of this final module examination is the final grade for this module.
If a module includes several mid-term examinations, the final grade is derived from the average of those examination grades (unless the module components are weighted differently). Each one of the different module component examinations shall be accomplished with at least 4,0.

Master's thesis

Students are admitted to the master's thesis when they have completed at least 56 out of 120 ECTS points. Students shall register for the master's thesis at least 3 months after having taken the last required examination. If they fail to do that, the master's thesis is graded 5,0.

The topic of the master's thesis is assigned to the student by a professor or lecturer. The student may suggest a topic. The student shall be offered a topic at least 6 weeks after having applied for the master's thesis. A candidate can only decline one topic offered to him and only within the first two months of the time period given for submission of the thesis.

The time period for writing the master's thesis is

- For students working part-time on the thesis: 12 months
  Part-time means, that the student has not fulfilled the 90 ECTS point yet and still has to visit lectures, exercises and labs while s/he is working on the thesis.
- For students working full-time on the thesis: 6 months
  Full-time means, that the student has already 90 ECTS points and the thesis is his/her last module.

The thesis starts on the day that the topic is assigned to the student. It is not possible to postpone the deadline for submission of the thesis. If it is submitted after the deadline, it is graded 5,0, unless the student cannot be held responsible for missing the deadline.
The student shall submit 3 copies of the thesis to the examination committee. When submitting the thesis, the student shall add a signed statement, declaring that the submitted thesis is his own, that all major sources have been appropriately referenced and that the submitted thesis has not been submitted in substantially the same form towards the award of a degree or other qualificatory work by the candidate or any other person.

The master's thesis shall be written in English or German. If written in English, a German summary is required.

The oral presentation of the thesis is held in the presence of two examiners and one assessor. The presentation will be done in a group or individually. The oral presentation of the thesis is usually open to the public. Exceptions may be granted by the examination committee.

The master's thesis and its presentation are worth 30 ECTS. The master's thesis is worth 4/5 and the oral presentation 1/5 of the master's thesis grade. The thesis shall be graded within 6 weeks by two examiners. One of the examiners is the one who assigned the topic to the student, the second one is named by the examination committee in consultation with the first examiner. The final thesis grade is the average of the individual grades of both examiners. If the difference between the individual grades of both examiners exceeds two grades, the examination committee shall ask a third examiner to mark the thesis. The final grade will then be awarded by the examination committee.

Grading the master's degree

The master's degree is awarded if all modules were passed with a grade of at least 4,0. The weighting of the different modules can be seen in Annex B.

The final grade of the master's degree can be:

If the CGPA is 1,5 or better	Sehr gut (excellent)
If the CGPA is between 1,6 – 2,5	Gut (good)
If the CGPA is between 2,6 and 3,5	Befriedigend (satisfactory)
If the CGPA is between 3,6 and 4,0	Ausreichend (passed)
If the CGPA is 4,0 or worse	Nicht ausreichend (failed)

Passing and failing of examinations

If a student fails a performance evaluation or any other examination, the examination committee will notify the student and inform him about the deadlines for re-examination.

If a student does not pass a re-examination, the examination has been definitively failed. If a student definitively fails a performance evaluation, the master's thesis or its oral presentation, he definitively failed the master's degree and will be excluded from the university.

Re-examination of performance evaluation

Failed examinations may not be repeated more than once. Excluded from this rule are two examinations, which may be freely chosen by the student, that he may repeat twice. The first repeat shall occur at the earliest possible date. The second repeat shall occur at the latest at the second possible date after the first one.

Examinations in two modules that the student has passed during the first 2 semesters may be repeated once to improve the grade. The first examination must have occurred in the latest possible date mentioned in the study plan. The better result of both examinations is the one that will be valid. The re-examination for improving the grade shall occur at the next possible examination date.

Re-examination of the master's thesis, its presentation or other additional requirements

A failed master's thesis, oral presentation or other additional requirement of the master's thesis may not be repeated more than once. The request for a re-examination shall be submitted at least 2 months after the grade of the first thesis has been communicated.

It is not possible to resubmit a master's thesis that has not been failed.

Transcript, degree, certificate

After passing the performance evaluations for the master's degree, a master's degree is awarded including the cumulative grade point average, the modules taken, the module grades and the grade of the master's thesis.

A student who failed the final examinations may receive a grade sheet showing the examinations s/he passed and stating that the final examination was failed.

Absence, withdrawal, cheating, academic malpractice

An examination is graded with 5,0 if a student misses the examination without compelling reasons or if he withdraws from the examination after having started it.

In the above mentioned cases, the student shall inform the examination committee immediately in written and fully document the reasons. In case of illness of the student (or of the student's child) the student shall submit a medical certificate to the examination office within 3 work days after the exam date.

If a student tries to influence the result of an examination by cheating or using unauthorized material, the examination will be graded with 5,0.

Invalid degree

If a case of academic malpractice only becomes known after the award of the master's degree, the grades will be amended accordingly and the master's degree may become invalid.

Access to corrected examinations

Marked examinations, evaluation reports of the examiners or minutes of oral examinations may be inspected by the students on request within one year after the examination.

Marked examination performance evaluation may be inspected within 4 weeks after the examination.

The head of the examination committee decides about the time and place of the inspection.

Curriculum

Students in the master's program in Microsystems Engineering are required to successfully complete all modules in the area "Advanced Microsystems Engineering".

Furthermore, they shall successfully complete the modules "Mathematics" and "Master's thesis".

In addition, they have to choose two elective areas for a total of 24 ECTS in the area “Microsystems concentrations” from the following list:

1. Circuits and systems
2. Design and simulation
3. Life sciences: Biomedical engineering
4. Life sciences: Lab-on-a-chip
5. Materials
6. MEMS processing
7. Sensors and actuators
8. Personal profile

In each of the chosen areas, the student shall take courses of minimum 9 ECTS.

MSc in Microsystems Engineering

Study plan

Total: 120

Module	Sem	Type	Exam	ECTS
Modules in **Advanced microsystems engineering** Mandatory				**61**
MST technologies and processes	1	VÜ	KÜ	**5**
Microelectronics	1	VÜ	KÜ	**5**
Micro-mechanics	1	VÜ	KÜ	**5**
MST design laboratory I	1	P	P	**3**
Optical microsystems	1	VÜ	KÜ	**5**
Sensors	1	VÜ	KÜ	**5**
Signal processing	2	VÜ	KÜ	**5**
Biomedical microsystems	2	VÜ	KÜ	**5**
Dynamics of MEMS	2	VÜ	KÜ	**5**
Micro-actuators	2	VÜ	KÜ	**5**
Micro-fluidics	2	VÜ	KÜ	**5**
MST design laboratory II	2	P	P	**3**
Assembly and packaging technology	2	VÜ	KÜ	**5**
Module **Mathematics** Mandatory				**5**
Probability and statistics	1	VÜ	KÜ	**5**
Elective modules: **Microsystem concentrations** Students have to complete 24 ECTS in two different concentration areas				**24**
Circuits and systems	2–4	VÜP	KÜP	12
Design and simulation	2–4	VÜP	KÜP	12
Life sciences: Biomedical engineering	2–4	VÜP	KÜP	12
Life sciences: Lab-on-a-chip	2–4	VÜP	KÜP	12
Materials	2–4	VÜP	KÜP	12
MEMS Processing	2–4	VÜP	KÜP	12
Sensors and actuators	2–4	VÜP	KÜP	12
Personal profile	2–4	VÜP	KÜP	12
Module **Master's thesis** Mandatory				**30**
Master's thesis	3–4			**30**

Module	Sem	Art	Prüf	ECTS