Regulations

for the

Course of Studies, **Sensor Systems Technology**

Title on Completion: Master of Science

B. Special Section
Version 5

§ 29-ST/m Structure of the Course
(1) The Masters course of studies, Sensor Systems Technology, covers four semesters.
(2) The Masters thesis is written in the fourth semester.
(3) The total number of credits for the compulsory and optional courses for successful completion of the course of study is 120 ECTS credits.
(4) All courses and examinations are held in English.

§ 30-ST/m Course, Study and Examination Plan
(1) The compulsory and optional study modules as well as the respective assessed assignments and examinations required for successful completion of the course of study are shown in Tables 1-1 and 1-2.
(2) The subject examinations of the Masters exam, the respective examinations and assessed assignments as well as weighting of the grades of the individual examinations to calculate the subject grades are shown in Table 2. Weighting of the module grades of a subject exam is made in accordance with the CPs allocated to the modules.
(3) Students create two specialist areas when selecting their focal subjects. In the second and third semester, two courses with at least 2 CPs each are to be selected from both specialist areas. The faculty notifies the courses offered on the notice board prior to commencement of each semester. The focal subjects form a module which overlaps semesters.
(4) The examination modalities in the field of Languages and Management are specified in the Study and Examination regulations of the respective faculty. In the module, Management, examinations with at least 6 CP must be included. The faculty notifies the courses offered on the notice board prior to commencement of each semester.
(5) The first study year can be completely recognized for the Combined Certificate with VIT University in Velore/India, if at least 30 ECTS credits have been achieved per semester. Conversion of grades is made on agreement with the deans.
(6) On a content fitting bachelor degree with more than 180 ECTS credits additional credits may be

transferred. The examinations committee decides on these transfers.
(7) Parts of module exams (MPL) have to be passed separately.

§ 31-ST/m Masters Thesis
(1) The Masters thesis can only be started if the following minimum preconditions all are fulfilled:

- All exams of first semester but the module Management.
- All exams of second and third semester but max. 6 ECTS credits in each semester.
- The MPL Projects (STM08) in any case has to be passed.

(2) Processing time is 6 months. The time of the start and ending is to be documented.
(3) During the Masters thesis, the student has to execute work in research in the form of a completed project himself/herself. Components of the project include project management, project execution and presentation of the results with interim reports. A Masters thesis is written based on this project, which also includes a final examination. The project has been successfully completed, if the Masters thesis and the final examination have been graded with Satisfactory or better and other examinations according to Table 1-2 have been completed.
(4) The Masters thesis can also be processed at the university or at a research institute within the scope of a research project at a company in an English-speaking environment. The Chairman of the Examination Committee decides in individual cases.

§ 32-ST/m Grades and Certificate
(1) The specialist areas of the optional subject block and the projects are listed in the certificate.

(2) The course of study successfully completed is specified in the certificate. The title is:
Sensor Systems Technology (Master)

(3) The Masters certificate also has the addition: Master of Science – M.Sc. -

§ 33-ST/m Tables concerning the Course of Study

Explanation of column contents and abbreviations in the tables:

1. Column — EDP name of the course module (EDP code)
2. Column — Name of course module (course module)
3. Column — Semester in which the course module is offered (sem.)
4. Column — Semester weekly lessons (SWL) or credit points (CP) in the lecture time of a semester.
5. Column — Type of course (type)
   L = lecture S = seminar
   E = exercise P = project lecture
   Lab = laboratory
6. Column — Prerequisites. These courses have to be passed before registration to that exam is possible.
7. Column — type of course work/assessed assignment specifying duration in minutes, unless another unit is specified (CW/AA/Duration)
   7a gives assignments/mid-term exams that are evaluated separately from the end exam.
   7b gives assignments/pre-exams/mid-term exams that have to be passed in order to take part in the end exam.
8. Column — Type of examination specifying duration in minutes, unless another unit is specified (Exam/duration)

Re. 7. And 8. The following can be included as course work/assessed assignments (CW/AA) or examinations (Exam)

OE = Oral examination
Wt = Written test
Cw = Course work (other written work)
Ex = Exercises
Hw = Homework
Sp = Seminar paper
Lw = Lab work
Dr = Draft
Pw = Practical work
OW = Oral exam or written exam. The mode of exam will be notified within the first two weeks of lectures.

The following abbreviations refer to duration:
S = semester W = week(s) D = day(s)

9. Column — Weighting for forming a specialist grade (WSG)
10. Allocation of examination to specialist exam (SE)
11. Remark

Re. 6 and 11. The following abbreviations are used:

Block = Block course
SE = specialist examination
oE = examination overlapping (courses)
crE = (course)-related examination
CS = Course
ME = module examination over several semesters, calculation as for oE
Os = Optional subject

Course of Study **Sensor System Technology**					Title: Master of Science							Table 1-1		
1	2	3	4a	4b	5	6	7a	7b	7c	8a	8b	9	10	11
EDP code	Course module	Sem.	SWL	CP	Type	Prereq.	CW/AA con-current	CW/AA pre-exam	Duration	Exam	Duration	WSG	SE	Remark
STM 11	Advanced Physics	1	4	6	L					Cw	120	1	1	
STM 12	Analog Signal Processing	1	4	6	L+Lab		Lw		1 S	Ow	20/120	1	2	
STM 13	Digital Signal Processing	1	4	6	L+Lab		Lw		1 S	OW	20/120	1	2	
STM 14	Advanced Chemistry	1	6	6	L					OW	180	1	1	
STM 15	Management	1	6	6						Cw		1	3	§ 30(4)-ST/m
Totals	Semester 1		24	30			2			4 crE				

Course of Study **Sensor System Technology** Title: Master of Science Table 1-1

1	2	3	4a	4b	5	6	7a	7b	7c	8a	8b	9	10	11
EDP code	Course module	Sem.	SWL	CP	Type	Prereq.	CW/AA con-current	CW/AA pre-exam	Duration	Exam	Duration	WSG	SE	Remark
STM 21	Sensors A	2	6	6	L	STM11 + STM14				OW	30/180	1	4	
STM 22	Sensor Actor Networks	2	4	6	L+Lab	STM12 + STM 13	Lw		1 S	OW	20/120	1	5	
STM 23	Realtime Data Processing	2	4	6	L+Lab	STM 13		Lw	1 S	Cw	120	1	6	
STM 24	Focal Subjects A (Module Focal Subjects)	2	4	4	L					OW+ OW	20/120	1 + 1	7	§30(3)-ST/m, ME
STM 25	Language A (Module Language)	2	4	4								1	3	§ 30(4)-ST/m, ME
STM 26	Project A (Module Projects)	2	2	4	PL	STM11 to STM14	CW		1 S	Sp	60		8	ME
Totals	Semester 2		24 SWL	30 CP			1	1		6				

Course of Study **Sensor System Technology** Title: Master of Science Table 1-1														
1	2	3	4a	4b	5	6	7a	7b	7c	8a	8b	9	10	11
EDP code	Course module	Sem.	SWL	CP	Type	Prereq.	CW/AA con-current	CW/AA pre-exam	Duration	Exam	Duration	WSG	SE	Remark
STM 31	Sensors B	3	6	6	L	STM 11				OW	30/ 180	1	4	
STM 32	Automotive Sensors Application	3	4	6	L+ Lab	STM 12	Lw		1 S	Wt	60	1	5	
STM 33	System Integration	3	4	6	L+ Lab			Lw	1 S	Wt	120	1	6	
STM 34	Focal Subjects B (Module Focal Subjects)	3	4	4	L					OW + OW	20/ 120	1	7	§30(3)-ST/M, ME
STM 35	Language B (Module Language)	3	4	4								1	3	§30(4)-ST/m, ME
STM 36	Project B (Modules Projects)	3	2	4	PL	STM 26			1 S	Sp	60	1	8	ME
Totals	Semester 3		24	30 CP			1	1		6				

Course of Study **Sensor System Technology** Title: Master of Science Table 1-1

1	2	3	4a	4b	5	6	7a	7b	7c	8a	8b	9	10	11
EDP code	Course module	Sem.	SWL	CP	Type	Prereq.	CW/AA con-current	CW/AA pre-exam	Duration	Exam	Duration	WSG	SE	Remark
STM 41	Thesis	4		27	PL	§31(1)				Hw	6 M	1	9	
STM 42	Final Examination	4		3	PL	STM 41				OE	60	1	10	
Totals	Semester 4			30 CP						2				
Totals	Masters Studies		72 SWL	120 CP			4	2		18				

Course of Study **Sensor System Technology** Title: Master of Science			Table 2		
EDP name	Name of Exam	Exam Code	Allocated module	Weighting of overall grade	Remark
STM 01	Advanced Natural Sciences	FP 01	Advanced Physics Advanced Chemistry	2	
STM 02	Basic Signal Processing	FP 02	Analog Signal Processing Digital Signal Processing	2	
STM 03	Languages and Management	FP 03	Language A Language B Management	2	§ 30(4)-ST/m
STM 04	Principles of Sensor Systems	FP 04	Sensors A Sensors B	3	
STM 05	Computer Aided Sensorics	FP 05	Sensor Actor Networks Automotive Sensors Applications	2	
STM 06	Sensor Signal Processing	FP 06	System Integration Real Time Data Processing	2	
STM 07	Areas of Specialization	FP 07	Focal Subjects	3	§ 30(3)-ST/m
STM 08	Projects	FP 08	Projects	3	
STM 09	Master Thesis	FP 09	Thesis	6	
STM 10	Final Examination	FP 10	Final Examination	3	

Part C:

§ 34-ST/m Effective date

These study and examination regulations for the Masters Course of Studies, ‘Sensor Systems Technology’, come into effect on 1. March 2013 and is valid for all students of this course.

Karlsruhe, 20.02.2013

signed Prof. Dr. K.-H. Meisel, President

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signed Daniela Schweitzer, Vice-President