

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Satellite Technology as a Master's with 1 major with the degree "Master of Science" (120 ECTS credits)

Responsible: Faculty of Mathematics and Computer Science
Responsible: Institute of Computer Science

Examination regulations version: 2018
Examination regulations version: 2018

Abbreviations used: Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions for the modules in this SFB: Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Information on assessment procedures: Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

15-May-2018 (2018-35)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

Every module will be described using the following form:

Abbreviation	Module title						
	ECTS		Duration	(in semesters)	Method of grading		Module level
	Courses		To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y				
	Method of assessment						
	Only after successful completion of		if applicable				
	Other prerequisites		if applicable				
	Participants and allocation of places		if applicable				
	Additional information		if applicable				
	Referred to in LPO I		if applicable (examination regulations for teaching-degree programmes)				

Compulsory Electives (90 ECTS credits)							
System Analysis (20 ECTS credits)							
10-I-SP-182-m01	Space Physics						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (4) + Ü (2) Module taught in: English					
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus					
10-I=CE1-182-m01	Control Engineering in Space 1						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (2) + Ü (2) Module taught in: English					
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus					
10-I=CS-SE1-182-m01	Computer Science for Space Engineering						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (2) + Ü (2) Module taught in: English					
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus					
10-I=SSA-182-m01	Spacecraft System Analysis						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (4) + Ü (2) + E (2) Module taught in: English					
	Method of assessment	written examination (approx. 90 to 120 minutes) and field trip report (4 to 8 pages) Language of assessment: English creditable for bonus					
10-I=SD-182-m01	Space Dynamics						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (2) + Ü (2) Module taught in: English					
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus					

10-I=STSA-182-m01	Selected Topics System Analysis							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) project (project documentation approx. 20 pages with presentation 30 to 45 minutes and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups (groups of up to 2 candidates, approx. 15 minutes per candidate) Language of assessment: English creditable for bonus						
System Design (30 ECTS credits)								
10-I=TSD-182-m01	Telecommunication System Design							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (4) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						
10-I=PEB-182-m01	Performance Engineering and Benchmarking of Computer Systems							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						
10-I=RS-182-m01	Remote Sensing							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						
10-I=CE2-182-m01	Control Engineering in Space 2							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						

10-l=ASS-182-m01	Advanced Sensory Systems and Sensor Data Processing							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						
10-l=TOR-182-m01	Trajectory Optimization and Reliability							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						
10-l=P2-182-m01	Internship							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	R (6) Module taught in: English						
	Method of assessment	project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) Language of assessment: English						
	Additional Information	Additional information on module duration: block taught sessions project, duration 4 to 6 weeks.						
10-l=STSD-182-m01	Selected Topics System Design							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) project (project documentation approx. 20 pages with presentation 30 to 45 minutes and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups (groups of up to 2 candidates, approx. 15 minutes per candidate) Language of assessment: English creditable for bonus						

System Implementation (20 ECTS credits)							
10-I=RO1-152-m01	Robotics 1						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (4) + Ü (2)					
	Method of assessment	written examination (approx. 60 to 90 minutes) creditable for bonus					
	Additional Information	Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IS,ES,LR,HCI					
Referred to in LPO I	§ 22 II Nr. 3 b)						
10-I=STL-182-m01	Satellite Telecommunication Lab						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (2) + Ü (2) + E (2) Module taught in: English					
	Method of assessment	a) written examination (approx. 90 to 120 minutes) and field trip report (4 to 8 pages) or b) oral examination of one candidate each (approx. 20 minutes) and field trip report (4 to 8 pages) or c) oral examination in groups (groups of up to 3 candidates, approx. 15 minutes per candidate) and field trip report (4 to 8 pages) Language of assessment: English					
10-I=ADP-182-m01	Advanced On-Board Data Processing						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level graduate
	Courses	V (4) + Ü (2) Module taught in: English					
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus					
10-M-MWR-182-m01	Modelling and Computational Science						
	ECTS	8	Duration	1 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (4) + Ü (2) Module taught in: English					
	Method of assessment	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: English creditable for bonus					

10-l=RSM-182-m01	Radar systems and missions							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus						
10-l=APR-182-m01	Advanced Programming							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	written examination (90 to 120 minutes) Language of assessment: English creditable for bonus						
10-l=SA-182-m01	Aerospace Seminar							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	a) written examination (90 to 120 minutes) or b) project (project documentation approx. 20 pages with presentation 30 to 45 minutes and subsequent discussion on the topic) Language of assessment: English creditable for bonus						
10-l=P1-182-m01	Project Workshop							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	R (6) Module taught in: English						
	Method of assessment	project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) Language of assessment: English						
	Additional Information	Additional information on module duration: block taught sessions project, duration 4 to 6 weeks. Project in industry or university in the field rover, planetary exploration, earth observation, tele communication.						

10-I=STSI-182-mo1	Selected Topics System Implementation							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) project (project documentation approx. 20 pages with presentation 30 to 45 minutes and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups (groups of up to 2 candidates, approx. 15 minutes per candidate) Language of assessment: English creditable for bonus						
Prototype Design & Implementation (20 ECTS credits)								
10-I=TDP-182-mo1	Team Design Project							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	R (8) Module taught in: English						
	Method of assessment	project (project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) Language of assessment: English						
10-I=CD-W-182-mo1	CanSat Design Lab							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	R (8) Module taught in: English						
	Method of assessment	practical project (development, construction and presentation of a "can sized satellite", project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) Language of assessment: English						
10-I=FDW-182-mo1	FloatSat Design Lab							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	R (8) Module taught in: English						
	Method of assessment	practical project (development, construction and presentation of a satellite control system, project documentation (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic) Language of assessment: English						

10-I=ISS-182-m01	International Summer School							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	R (6) Module taught in: English						
	Method of assessment	a) written examination (approx. 60 to 90 minutes) or b) project (project documentation approx. 20 pages with presentation 30 to 45 minutes and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups (groups of up to 3 candidates, approx. 15 minutes per candidate) Language of assessment: English						
	Additional Information	Additional information on module duration: block taught sessions project, duration 4 to 6 weeks.						
10-I=STPDI-182-m01	Selected Topics Prototype Design and Implementation							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	V (2) + Ü (2) Module taught in: English						
	Method of assessment	a) written examination (approx. 90 to 120 minutes) or b) project (project documentation approx. 20 pages with presentation 30 to 45 minutes and subsequent discussion on the topic) or c) oral examination of one candidate each (approx. 20 minutes) or d) oral examination in groups (groups of up to 2 candidates, approx. 15 minutes per candidate) Language of assessment: English creditable for bonus						
	Additional Information							
Thesis (30 ECTS credits)								
10-I=ThesisSat-Tec-182-m01	Master's Thesis SatTec Advanced Technology Systems							
	ECTS	25	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses	No courses assigned to module Module taught in: English						
	Method of assessment	Master's thesis (50 to 100 pages) Language of assessment: English						
	Additional Information	Time to complete: 6 months						
10-I=DefSat-Tec-182-m01	Oral Examination Space Science and Technology							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	graduate
	Courses	K (0)						
	Method of assessment	final colloquium (approx. 60 minutes) comprising: talk on thesis (45 minutes) and subsequent defence of thesis (15 minutes) Language of assessment: English						