Annex 2: Master's Programme in Engineering Science: Defence Systems

Title	Type	Credits	Type of Examination	Admission Requirements	Assigned Term
Technical Studies					
Numerical Mathematics	C	4	K1.5	-	1
Operating Systems and Secure Computer Networks	C	8	Alt2	-	3, 4
Specialisation stage	E	4 * 4	Alt2 each	-	1, 2, 3, 4
Students must choose one of the following specialisation stages, from which they need to complete four modules:					
High Performance Computing and Applications:					
Hardware Architecture of HPC Systems					2
Advanced Numerical Mathematics					2
Computational Fluid Dynamics					2
Computational Electromagnetics					3
HPC Techniques and Software Development					3
Parallel Computing for Multiscale and Multiphysics Problems					4
Special Applications of HPC in Defence Technology					4
Computational Material Design:					
Continuum Mechanics					1
Materials Modelling					2
Modelling Advanced Processing Technologies					3
Simulating High Strain Deformation					3
Statistical Thermodynamics					3
Computational Design of Surfaces and Interfaces					4
Electro-Optics:					
Laser Technology					1
Technical Optics					2
High-Power Electromagnetics and Laser Systems *)					4
Infrared Technologies and Applications					4
Complementary stage	E	5 * 4	Alt2 each		2, 3, 4
Students must complete another five modules from the specialisation stages offered with at least one module each from the areas not chosen previously.					
Defence Systems and Technologies	E	total of 24	Alt2 each	-	1, 2, 3
Modules amounting to a total of at least 24 credits must be completed:					
Failure Analysis and Maintenance		4			1 or 2
Material Handling and Warehouse Technology		4			1 or 2
Electrochemical Power Sources for Military Applications		4			1 or 2
Improvised Explosive Devices Disposal		4			1 or 2
Corrosion and Corrosion Protection		4			1 or 2
CBRN		8			2, 3
Naval Shipbuilding		8			2, 3
Systems Engineering for Land Vehicles		8			2, 3
Ammunition and Weapon Technology		8			2, 3
Ballistics 1		4			2
Ballistics 2		4			3
Terramechanics and Off-Road Vehicle Engineering		4			3
Laboratory Project	C	9	PA	-	4
Master Thesis	C	30	AA	-	**)
General Professional Skills					
Interdisciplinary Studies	IDS	3 * 3	Alt2 each	-	1-4
		120			

*) Courses and examinations in these modules may also take place in German.
**) See Supplementary Provisions on Section 14(6) and Section 16(7)

Key:
Type:
- C = compulsory module
- E = compulsory elective module. Not all modules stated will be offered in every academic year.
- IDS = compulsory elective modules from "Interdisciplinary Studies" in accordance with Annex 3

Type of examination:
- AA = final thesis in accordance with Section 14
- Kx = written examination over a total of x hours
- x+y = module examination consisting of course examinations x and y (or more) each of which must be passed individually
- M = oral examination
- PA = project paper
- Alt2 = K2 or M