

Master Degree Programme in Computational Science (Curriculum 01.10.2013)

A. For graduates with a BSc in the Natural Sciences: Astronomy, Geosciences, Physics, Chemistry, Biology

1. Core-Programme (42 ECTS)

- 1.SEM** {
- . **Compulsory modules: Computational Concepts in Natural Science Part 1 (PM-CCNW1, 12 ECTS)**
 - . CO-AST1 Computational Concepts in Astronomy and Geosciences I (VO, 3 ECTS)
 - . CO-PHY1 Computational Concepts in Physics I (VO, 3 ECTS)
 - . CO-CHE1 Computational Concepts in Chemistry I (VO, 3 ECTS)
 - . CO-BIO1 Computational Concepts in Biology I (VO, 3 ECTS)
 - . **Alternative group of compulsory modules: Basic Courses in Mathematics and Computer Science (APMG 2a, 18 ECTS)**
 - . CO-MAT1 Introductory Courses in Mathematics I (VO 4 ECTS, UE 2 ECTS)
 - . CO-MAT2 Introductory Courses in Mathematics II (VO 4 ECTS, UE 2 ECTS)
 - . CO-INF1 Introductory Courses in Computer Science (VO 3 ECTS, UE 3 ECTS)
 - . **Block of Elective Modules: Mathematics, Computer Science, Computational Concepts in Natural Science Part 2 (WMG MAT-INF-CCNW2, 12 ECTS) (Select modules in dimension of 12 ECTS)**
 - . CO-MAT3 Advanced Courses in Mathematics (VO 3 ECTS, VO 3 ECTS)
 - . CO-INF2 Advanced Courses in Computer Science I (VO 3 ECTS, UE 3 ECTS)
 - . CO-INF3 Advanced Courses in Computer Science II (VU 3 ECTS, VU 3 ECTS)
 - . CO-AST2 Computational Concepts in Astronomy and Geosciences II (VO 3 ECTS)
 - . CO-PHY2 Computational Concepts in Physics II (VO 3 ECTS)
 - . CO-CHE2 Computational Concepts in Chemistry II (VO 3 ECTS)
 - . CO-BIO2 Computational Concepts in Biology II (VO 3 ECTS)
- 2.SEM** {
- + 18 ECTS out of the Shell-Programme

2. Shell-Programme (48 ECTS)

- 3. SEM** {
- . **Compulsory modules: Shell-focus (PM S-SP, 24 ECTS) (Deepening in one of the following 6 areas)**
 - . Focus Mathematics
 - . Focus Computer Science
 - . Focus Astronomy
 - . Focus Physics
 - . Focus Chemistry
 - . Focus Biology
 - . **Compulsory shell supplement (PM S-E, 24 ECTS) (Courses from at least 3 of the 6 following areas, which cannot be the same as the shell-focus)**
 - . Focus Mathematics
 - . Focus Computer Science
 - . Focus Astronomy
 - . Focus Physics
 - . Focus Chemistry
 - . Focus Biology
- + Graduation of the open 30 ECTS (48-18=30) out of the Shell-Programme

4.SEM { **3. Master Thesis (27 ECTS)**

4. Defense (Master's Examination) (3 ECTS)