

## C. For graduates with a BSc in Computer Science:

### 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)
  - + 6 ECTS out of the Shell-Programme
  - . **Alternative group of compulsory modules: Basic and Advanced Courses in Mathematics (APMG 2c, 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-MAT3 Advanced Courses in Mathematics (VO 3 ECTS, VO 3 ECTS) → **2.SEM**
- 2.SEM** {
- . **Group of compulsory modules: Computational Concepts in Natural Science Part 2 (PMG-CCNW2, 12 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)
  - + CO-MAT3
  - + 12 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 36 ECTS (48-18=30) out of the Shell-Programme

- 4.SEM** {
- . **3. Master Thesis (27 ECTS)**
  - . **4. Defense (Master's Examination) (3 ECTS)**