

## Attachment 2, Part 1

### Study Schedule

the module type and its duration (lecture hours per week (LHPW) is indicated and the necessary assessment, type, scope and structure is to be found in the module descriptions.

| Module No.                                                                                                               | Module Name                                                                       | First semester       | Second semester   | Third semester (M) | Fourth semester | CP | Total CP |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------|-------------------|--------------------|-----------------|----|----------|
|                                                                                                                          |                                                                                   | L/E/S/T/RP/P/LC      | L/E/S/T/RP/P/LC   | L/E/S/T/RP/P/LC    |                 |    |          |
| Compulsory Modules of Basic Education                                                                                    |                                                                                   |                      |                   |                    |                 |    | 25       |
| CMS-SKL                                                                                                                  | Soft Skills                                                                       | 2/0/0/0/0/0/2 2GW    |                   |                    |                 | 5  |          |
| CMS-PRO                                                                                                                  | Research Project                                                                  |                      |                   | 0/0/0/0/12/0/0 2GW |                 | 15 |          |
| CMS-SEM                                                                                                                  | Literature Studies in Computational Modeling                                      |                      | 0/0/4/0/0/0/0 GW* |                    |                 | 5  |          |
| Elective <b>Compulsory Modules</b> of the Basic Education (3 of 10), (for the track "Computational Life Science" 3 of 9) |                                                                                   |                      |                   |                    |                 |    | 15       |
| CMS-COR-MLD                                                                                                              | Machine Learning and Data Mining                                                  | 2/2/0/0/0/0/0 GW     |                   |                    |                 | 5  |          |
| CMS-COR-HPC                                                                                                              | Parallel Programming and High-Performance Computing                               | 2/2/0/0/0/0/0 GW     |                   |                    |                 | 5  |          |
| CMS-COR-NUM                                                                                                              | Basic Numerical Methods                                                           | 2/2/0/0/0/0/0 GW     |                   |                    |                 | 5  |          |
| CMS-COR-SAP                                                                                                              | Stochastics and Probability                                                       | 2/2/0/0/0/0/0 GW     |                   |                    |                 | 5  |          |
| CMS-COR-VIZ                                                                                                              | Data Visualization                                                                | 2/2/0/0/0/0/0 GW     |                   |                    |                 | 5  |          |
| CMS-COR-SED                                                                                                              | Statistical Principles and Experimental Design (not selectable for the Track CLS) | 2/2/0/0/0/0/0 PEW GW |                   |                    |                 | 5  |          |

|                                                            |                                        |                                                      |    |    |                                |   |                 |
|------------------------------------------------------------|----------------------------------------|------------------------------------------------------|----|----|--------------------------------|---|-----------------|
| CMS-COR-FAI                                                | Foundations of Artificial Intelligence | 2/2/0/0/0/0/0 GW                                     |    |    |                                | 5 |                 |
| CMS-COR-KM                                                 | Knowledge Models                       | 2/2/0/0/0/0/0 GW                                     |    |    |                                | 5 |                 |
| CMS-COR-DBM                                                | Database Management                    | 2/2/0/0/0/0/0 GW                                     |    |    |                                | 5 |                 |
| CMS-COR-SSE                                                | Scientific Software Engineering        | 2/2/0/0/0/0/0 GW                                     |    |    |                                | 5 |                 |
| <b>Compulsory elective for professional profiling</b>      |                                        |                                                      |    |    |                                |   |                 |
| Choice of a track of six according to attachment 2, Part 2 |                                        | Compulsory modules according to attachment 2, Part 2 |    |    |                                |   | <b>50</b>       |
|                                                            |                                        |                                                      |    |    | <b>Master's Thesis Defence</b> |   | <b>29<br/>1</b> |
|                                                            |                                        | 30                                                   | 30 | 30 | 30                             |   | <b>120</b>      |

\* The type and extent of the individual forms of teaching and learning, as well as the number of assessments vary, depending on the student's choice.

## Attachment 2, Part 2

### Curriculum of the professional profiling – compulsory modules in the selected track

the module type and its duration (lecture hours per week (LHPW)) is indicated and the necessary assessment, type, scope and structure is to be found in the module descriptions.

| Module No                          | Module Name                                    | First semester    | Second semester | Third semester (M)) | Fourth semester | CP | Total CP |
|------------------------------------|------------------------------------------------|-------------------|-----------------|---------------------|-----------------|----|----------|
|                                    |                                                | L/E/S/T/RP/P/LC   | L/E/S/T/RP/P/LC | L/E/S/T/RP/P/LC     |                 |    |          |
| Choice of a track from six options |                                                |                   |                 |                     |                 |    |          |
| Computational Life Science         |                                                |                   |                 |                     |                 |    | 50       |
| CMS-CLS-IBC                        | Introduction to Biochemistry                   | 2/0/0/0/0/2/0 2GW |                 |                     |                 | 5  |          |
| CMS-COR-SED                        | Statistical Principles and Experimental Design | 2/2/0/0/0/0/0 GW  |                 |                     |                 | 5  |          |
| CMS-CLS-ELG                        | Computational Life Science Basic               |                   | 4 LHPW* GW*     | 4 LHPW* GW*         |                 | 10 |          |

|                                  |                                           |                      |                      |                     |  |    |           |
|----------------------------------|-------------------------------------------|----------------------|----------------------|---------------------|--|----|-----------|
| CMS-CLS-ABI                      | Applied Bioinformatics                    |                      | 2/2/0/0/0/0/0 GW     |                     |  | 5  |           |
| CMS-CLS-MOS                      | Modeling and Simulation in Biology        |                      | 2/2/0/0/0/0/0 GW     |                     |  | 5  |           |
| CMS-COR-TEA                      | Computational Life Science<br>Teamproject |                      | 0/0/0/0/8/0/0<br>2GW |                     |  | 10 |           |
| CMS-CLS-ELV                      | Computational Life Science Advanced       |                      |                      | 8 LHPW* GW*         |  | 10 |           |
| <b>Computational Mathematics</b> |                                           |                      |                      |                     |  |    | <b>50</b> |
| CMS-CMA-ELG                      | Computational Mathematics Basics          | 4 LHPW* GW*          | 4 LHPW* GW*          |                     |  | 10 |           |
| CMS-CMA-FEM                      | Finite Element Methods                    | 3/1/0/0/0/0/0 PEW GW |                      |                     |  | 5  |           |
| CMS-CMA-MODSEM                   | Modeling Case Studies                     |                      | 0/0/4/0/4/0/0 GW     |                     |  | 10 |           |
| CMS-CMA-PROJ                     | Computational Mathematics Project         |                      |                      | 0/0/2/0/2/0/0<br>GW |  | 5  |           |
| CMS-CMA-ELV1                     | Computational Mathematics Advanced        |                      | 4 LHPW* GW*          | 4 LHPW* GW*         |  | 10 |           |
| CMS-CMA-ELV2                     | Computational Mathematics<br>Applications |                      | 4 LHPW* GW*          | 4 LHPW* GW*         |  | 10 |           |

| Module No.                                         | Module Name                                          | First semester       | Second semester                | Third semester (M)          | Fourth semester | CP | Total CP  |
|----------------------------------------------------|------------------------------------------------------|----------------------|--------------------------------|-----------------------------|-----------------|----|-----------|
|                                                    |                                                      | L/E/S/T/RP/P/LC      | L/E/S/T/RP/P/LC                | L/E/S/T/RP/P/LC             |                 |    |           |
| <b>Visual Computing</b>                            |                                                      |                      |                                |                             |                 |    | <b>50</b> |
| CMS-VC-ELG                                         | Visual Computing Basics                              | 8 LHPW* GW*          |                                |                             |                 | 10 |           |
| CMS-VC-ELV1                                        | Visual Computing Advanced                            |                      | 6 LHPW* GW*                    | 6 LHPW* GW**                |                 | 15 |           |
| CMS-VC-ELV2                                        | Visual Computing Applications                        |                      | 1/1/0/0/0/0/0 GW + 4 LHPW* GW* | 1/1/0/0/0/0/0 + 4 LHPW* GW* |                 | 15 |           |
| CMS-VC-TEA                                         | Visual Computing Teamproject                         |                      | 0/0/0/0/8/0/0 2GW              |                             |                 | 10 |           |
| <b>Computational Modelling in Energy Economics</b> |                                                      |                      |                                |                             |                 |    | <b>50</b> |
| CMS-EE-EPM                                         | Electric Power Markets                               | 2/2/0/0/0/0/0 GW     |                                |                             |                 | 5  |           |
| CMS-EE-EL1                                         | Computational Modelling in Energy Economics Basics   | 4 LHPW* GW*          | 4 LHPW* GW*                    |                             |                 | 10 |           |
| CMS-EE-SCEE                                        | Case Studies in Energy Economics                     |                      | 0/0/2/0/0/0/0 2GW              |                             |                 | 10 |           |
| CMS-EE-LSEE                                        | Literature Studies in Energy Economics               |                      | 0/0/2/0/0/0/0 2GW              |                             |                 | 5  |           |
| CMS-EE-REEP                                        | Resource Economics and Environmental Policy          |                      |                                | 2/2/0/0/2/0/0 2GW           |                 | 10 |           |
| CMS-EE-EL2                                         | Computational Modelling in Energy Economics Advanced |                      | 4 LHPW* GW*                    | 4 LHPW* GW*                 |                 | 10 |           |
| <b>Computational Engineering</b>                   |                                                      |                      |                                |                             |                 |    | <b>50</b> |
| CMS-CMA-FEM                                        | Engineering Finite Element Methods                   | 3/1/0/0/0/0/0 PEW GW |                                |                             |                 | 5  |           |
| CMS-CE-EL1                                         | Computational Engineering Basics                     |                      | 4 LHPW* GW*                    | 4 LHPW* GW*                 |                 | 10 |           |
| CMS-CE-AT                                          | Advanced Topics in Finite Element Analysis           |                      | 2/2/0/0/0/0/0 GW               |                             |                 | 5  |           |
| CMS-CE-MBD                                         | Multibody Dynamics                                   |                      | 2/2/0/0/0/0/0 GW               |                             |                 | 5  |           |
| CMS-CE-MP                                          | Multifield Problems                                  |                      | 2/2/0/0/0/0/0 GW               |                             |                 | 5  |           |
| CMS-CE-CFD                                         | Computational Fluid Dynamics                         | 2/2/0/0/0/0/0 GW     |                                |                             |                 | 5  |           |

|                           |                                    |             |                      |             |  |    |           |
|---------------------------|------------------------------------|-------------|----------------------|-------------|--|----|-----------|
| CMS-CE-EL2                | Computational Engineering Advanced |             | 6 LHPW* GW*          | 6 LHPW* GW* |  | 15 |           |
| <b>Logical Modeling</b>   |                                    |             |                      |             |  |    | <b>50</b> |
| CMS-LM-BAS                | Foundations of Logical Modelling   | 8 LHPW* GW* |                      |             |  | 10 |           |
| CMS-LM-MOC                | Models of Computation              |             | 6 LHPW* GW*          | 6 LHPW* GW* |  | 15 |           |
| CMS-LM-AI                 | Artificial Intelligence            |             | 6 LHPW* GW*          | 6 LHPW* GW* |  | 15 |           |
| Choice one module from 2: |                                    |             |                      |             |  |    |           |
| CMS-LM-ADV                | Advanced Logical Modelling         |             | 8 LHPW* GW*          |             |  | 10 |           |
| CMS-LM-TEA                | Logical Modelling Teamproject      |             | 0/0/0/0/8/0/0<br>2GW |             |  | 10 |           |

\* The type and extent of the individual forms of teaching and learning, as well as the number of examination performances vary, depending on the student's choice.

#### Explanations:

|     |                              |
|-----|------------------------------|
| L   | Lecture                      |
| E   | Exercise                     |
| S   | Seminar                      |
| T   | Tutorial                     |
| M   | Mobility window              |
| RP  | Research project             |
| P   | Practical                    |
| LC  | Language Course              |
| PEW | Preliminary Examination Work |
| CP  | Credit Points                |
| GW  | Graded Work                  |