Appendix 1 – Guidelines of the conversion rules.

A. Study plan and conversion rules for a student enrolled at INSUBRIA

Three mandatory courses from Tabella A
(analysis, geometry, algebra, mathematical logic)
to be attended at Insubria
FULFILL the requirements of:

(COURSE 1, 8 ECTS) →
● 6 ECTS: Introduction to Partial Differential Equations (Michael Multerer)
● 3 ECTS: Introduction to Ordinary Differential Equations (Rolf Krause)

(COURSE 2 AND 3, 16 ECTS) →
● 16 ECTS: Electives

Three mandatory courses from Tabella B
(numerical analysis, mathematical physics, probability and statistics)
to be attended at Insubria
FULFILL the requirements of:

(COURSE 1, 8 ECTS) →
● 6 ECTS: Stochastic methods (Ilya Horenko)
● 3 ECTS: Bayesian methodology and advanced Monte Carlo simulation (A. Mira)

(COURSE 2 AND 3, 16 ECTS) →
● 6 ECTS: Advanced discretization methods (Igor Pivkin)
● 6 ECTS: Bioinformatics (Vittorio Limongelli)
● 6 ECTS: Analysis of Social Networks (Alessandro Lomi)

Two courses from Tabella C
(other disciplines)
their requirements are fulfilled by the following courses
to be mandatorily attended at USI

(COURSE 1, 8 ECTS) ←
● 6 ECTS: Machine learning (Jurgen Schmidhuber)
● 3 ECTS: Geometric deep learning (Michael Bronstein)

(COURSE 2, 8 ECTS) ←
● 6 ECTS: Software Atelier: Simulation, Data Science & Supercomputing (Olaf Schenk)
● 2 ECTS from: Solution and Optimization methods for Large Scale Problems (R. Krause)

Electives
(16 ECTS) ←
their requirements are fulfilled by the following courses
to be mandatorily attended at USI
● 4 ECTS from: Solution and Optimization methods for Large Scale Problems (R. Krause)
● 6 ECTS: High performance computing (Olaf Schenk)

● 6 ECTS: Introduction to Data Science (Ernst Wit)

Other competences
(5 ECTS) →
if attended at Insubria
FULFILL the requirements of:
● 3 ECTS. Introduction to Computational Science (E. Wit, V. Limongelli, I. Pivkin)
● 3 ECTS Electives

Thesis
(35 ECTS) →
FULFILLS the requirements of:
● 24 ECTS: Master thesis (Faculty)
● 3 ECTS: Preparation MSc thesis
● 8 ECTS Electives

B. Study plan and conversion rules for a student enrolled at USI

Three mandatory courses from Tabella A
(analysis, geometry, algebra, mathematical logic)
to be attended at Insubria
FULFILL the requirements of:

(COURSE 1, 8 ECTS) →
● 6 ECTS: Analysis of Social Networks (Alessandro Lomi)
● 3 ECTS: Geometric deep learning (Michael Bronstein)

(COURSE 2 AND 3, 16 ECTS) →
● 16 ECTS: Electives

One mandatory course from Tabella B
(numerical analysis, mathematical physics, probability and statistics)
to be attended at Insubria
FULFILLS the requirements of:

(COURSE 1, 8 ECTS) →
 one course chosen among:
● 6 ECTS: Advanced discretization methods (Igor Pivkin)
● 6 ECTS: Bioinformatics (Vittorio Limongelli)
● 6 ECTS: Software Atelier: Simulation, Data Science & Supercomputing (Olaf Schenk)
● 6 ECTS: Stochastic methods (Ilya Horenko)
plus:
● 3 ECTS: Bayesian methodology and advanced Monte Carlo simulation (A. Mira)

Two courses from Tabella B
(numerical analysis, mathematical physics, probability and statistics)
their requirements are fulfilled by the following courses
to be mandatorily attended at USI

(COURSE 2 AND 3, 16 ECTS) ←
three courses chosen among:
● 6 ECTS: Advanced discretization methods (Igor Pivkin)
● 6 ECTS: Bioinformatics (Vittorio Limongelli)
● 6 ECTS: Software Atelier: Simulation, Data Science & Supercomputing (Olaf Schenk)
● 6 ECTS: Stochastic methods (Ilya Horenko)

Two courses from Tabella C
(other disciplines)
their requirements are fulfilled by the following courses
to be mandatorily attended at USI

(COURSE 1, 8 ECTS) ←
● 6 ECTS: Introduction to Partial Differential Equations (Michael Multerer)
● 3 ECTS: Introduction to Ordinary Differential Equations (Rolf Krause)

(COURSE 2, 8 ECTS) ←
● 6 ECTS: Machine learning (Jurgen Schmidhuber)
● 2 ECTS from: Solution and Optimization methods for Large Scale Problems (R. Krause)

Electives
(16 ECTS) ←
their requirements are fulfilled by the following courses
to be mandatorily attended at USI
● 4 ECTS from: Solution and Optimization methods for Large Scale Problems (R. Krause)
● 6 ECTS: High performance computing (Olaf Schenk)
● 6 ECTS: Introduction to Data Science (Ernst Wit)

Other competences
(5 ECTS) ←
their requirements are fulfilled by the following courses
to be mandatorily attended at USI
● 3 ECTS: Introduction to Computational Science (E. Wit, V. Limongelli, I. Pivkin)
● 3 ECTS: Electives

Thesis
(35 ECTS) ←
its requirements are fulfilled by the following
● 24 ECTS: Master thesis (Faculty)
    ● ● 3 ECTS: Preparation MSc thesis
● 8 ECTS: Electives