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**Bioinformatics and Systems Biology - Compulsory (24 + 18 ec)**

- Fundamentals of Bioinformatics (6 ec) VU + UvA
- Introduction to Systems Biology (6 ec) VU + UvA
- Algorithms in Sequence Analysis (6 ec) VU
- Systems Biology in Practice (6 ec) UvA
- Biosystems Data Analysis (6 ec) UvA
- Basic Models of Biological Networks (6 ec) VU
- Structural Bioinformatics (6 ec) VU
- Bioinformatics for Translational Medicine (6 ec) VU
- Advanced Modeling in Systems Biology (6ec) VU

**Optional Recommended Courses**

- Computational Biology (6ec) UvA
- Synthetic Biology and Biomedicine (6ec) VU/UvA
- Molecular Microbial Physiology (6 ec) UvA

**Preparatory Bachelor Courses**

- Inleiding Programmeren (Python) (6ec) VU
- Machine Learning (6 ec) VU
- Probleemoplossen (3ec) VU
- Lineaire algebra voor BWI en N (6ec) VU
- Lineaire algebra I (6ec) VU
- Calculus 1 (3ec) VU
- Physical Biology o/t Cell I (3 ec) VU
- Biochemie I (3ec) VU
- Moleculaire Celbiologie en Genetica (6ec) VU
- Biochemie II (3ec) VU

**Optional Courses Other Masters (possibly in second year)**

- Neural Networks (6 ec) VU
- Stochastic Simulation (6 ec) UvA
- Understanding Molecular Simulation (6ec) UvA
- Scientific Computing (6 ec) UvA
- Data Mining Techniques (6 ec) VU
- Complex System Simulation (6ec) UvA
- Evolutionary Computing (6 ec) VU
- Computer Graphics (6 ec) VU
- Advanced Selforganisation (6ec) VU
- Parallel Programming (6 ec) VU
- Physical Biology o/t Cell II (3 ec) VU
- Signal Transduction in Health and Disease (6ec) VU
- Principles of Neuroscience (6 ec) VU
- Genomes and Gene Expression

**Key:**

- Compulsory:
  - 42 ects are compulsory:
  - 24 ects are compulsory for all students
  - 18 ects are chosen from the Bioinformatics and Systems Biology profiles
  - 18 ects are can be chosen freely.
- Recommended Optional Courses:
  - Choose one out of Advanced Modeling in Systems Biology or Programming in R
  - Choose one out of Proposal Writing (6 ec – VU) or Thesis Writing (6 ec – UvA). Both are individual work that can be flexibly scheduled.
- Supplementary Courses
- Optional Courses

First year:
- 42 ects are compulsory:
  - 24 ects are compulsory for all students
- Second year:
  - 60 ects of projects:
    - major (max. 42 ects) must match profile
    - minor (min. 18 ects)