Recommended course plan for the MSc degree course Bioinformatics, type A

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by:
Prof. Dr. Kay Nieselt (program coordinator, Bioinformatics)
Prof. Dr. Daniel Huson (chair of the board of examiners, Bioinformatics)

The MSc degree course Bioinformatics variant A has been designed for students with a Bachelor's degree in Bioinformatics.

The present course plan is based on the exam regulations effective as of 1 October 2021. Its sole function is to explain these regulations and to provide recommendations as to which courses may be taken in each respective semester. For binding information please contact the examination board.
Detailed information regarding studies and exams can also be found in the exams and study regulations at: https://uni-tuebingen.de/de/74351

The MSc degree course Bioinformatics variant A comprises the following modules:

Module *Sequence Bioinformatics*	**compulsory, 9 ECTS**
Module *Structure and Systems Bioinformatics*	**compulsory, 9 ECTS**
Seminar Bioinformatics (BIO-SEM)	**compulsory, 3 ECTS**
Study area Practical Bioinformatics (BIO- PRAK)	**2 courses, 3 ECTS each**
Study area Bioinformatics (BIO-BIO), incl. Group Project (latter is compulsory)	**in total 15 ECTS**
Study area Practical Computer Science (INFO-PRAK)	**in total 6 ECTS**
Study area Theoretical Computer Science (INFO-THEO)	**in total 6 ECTS**
Study area Advanced Computer Science (INFO-INFO)	**In total 18 ECTS (ECTS can also be obtained by attending Bachelor courses)**
Study area Advanced Life Sciences (BIO-LIFE)	**In total 18 ECTS**
Master thesis	**30 ECTS**

The following course plan is a recommendation only – students are not required to follow this plan. We explicitly encourage students to design their own course of study within the provisions of the exam and study regulations.

However, we do recommend to attend the courses of the Sequence Bioinformatics and Structure Bioinformatics modules in the first and second subject-specific semesters, and to write the master thesis at the end of your studies during or after the 4th semester.

Please note, in addition the regulations concerning the Research Project in the study area BIO-BIO; for this, see the information in the module handbook at https://uni-tuebingen.de/en/74348

Recommended course plan MSc Bioinformatics Variant A; start: WS21/22

	1st semester WS21/22	
lecture + tutorials	Module **Sequence Bioinformatics**	9 ECTS
Group project	Group project, study area **BIO-BIO**	3 ECTS
lecture + tutorials	Study area *Theoretical Computer Science* (**INFO-THEO**) or, alternatively, study area *Advanced Computer Science* (**INFO-INFO)**	6 ECTS
lecture + tutorials	Study area **Practical Computer Science** (**INFO-PRAK**), or alternatively, study area *Advanced Computer Science* (**INFO-INFO)**	6 ECTS
lecture +/ seminar	Study area **BIO-LIFE** (Biology / (Bio)Chemistry / Pharmacy MSc courses)	6 ECTS
	Total	30 ECTS

Here are a few recommended Computer Science, Bioinformatics and Life Sciences courses offered in the winter semester 2021/2022 (English)

Study area Practical Computer Science (INFO-PRAK):
- ML4102   Data Literacy, lecture+tutorials, 6 ECTS

Study area Advanced Computer Science (INFO-INFO):
- ML4103   Deep Learning, lecture+tutorials, 6 ECTS

Study area Advanced Bioinformatics (BIO-BIO):
- BIO4364   Visualisation of Biological Data, lecture+tutorials, 6 ECTS
- BIO4372   Cheminformatics, lecture+tutorials, 6 ECTS

Study area Advanced Life Sciences (BIO-LIFE):
Please note that credit points obtained from courses offered by the Biology department that introduce math- or computer science-related topics or similar topics (e.g. Matlab for biologists) do not count towards the number of credits necessary for the study area Life Sciences (**BIO-LIFE**).

- *Introduction to Computational Neuroscience*, Mallot, 3 ECTS lecture plus 3 ECTS seminar
- *Current Topics in Proteome Research*, Macek, seminar (please ask explicitly for a grade)
- *Introduction to Nanopore Sequencing*, Macek, compact course
- *Integrative Neurobiology: Systems,* Veit & Nieder, Lecture, 3 ECTS
- *Frontiers in Applied Drug Design*, (Pharmacy), Böckler et al., research practical course, 9 ECTS

- *Concepts of Molecular Cell Biology*, 3 ECTS lecture plus 3 ECTS seminar; it might be difficult to register as a bioinformatician, but try anyway if you are interested in the content of the course.

2nd semester (summer semester)		
lecture + tutorials	Module **Structure Bioinformatics**	9 ECTS
lecture / seminar/	Study area *Advanced Life Sciences* (**BIO-LIFE**, (Biology / Chemistry / Pharmacy MSc courses)	6 ECTS
lecture / seminar	Study area *Advanced Computer Science* (**INFO-INFO**) or, alternatively, **INFO-THEO** or **INFO-PRAK**	6 ECTS
lecture / seminar	Study area *Bioinformatics* (**BIO-BIO**)	6 ECTS
practical course	Study area *Practical Bioinformatics* (**BIO-PRAK**) (during the lecture-free period after the semester)	3 ECTS
	Total	30 ECTS

3rd semester (winter semester)		
lecture / seminar/	Study area **BIO-PRAK** (**BIO-LIFE**, Biology / Chemistry / Pharmacy MSc courses)	6 ECTS
seminar	Bioinformatics, seminar (**BIO-SEM**)	3 ECTS
lecture + tutorials	Study area *Advanced Computer Science* (**INFO-INFO**)	6 ECTS
lecture + tutorials	Study area *Advanced Computer Science* (**INFO-INFO**)	6 ECTS
lecture / seminar/	Study area *Bioinformatics* (**BIO-BIO**)	6 ECTS
practical course	Study area *Practical Bioinformatics* (**BIO-PRAK**) (during the lecture-free period after the semester)	3 ECTS
	Total	30 ECTS

4th semester (summer semester)		
module	Master thesis	30 ECTS
	Total	30 ECTS