CBB-Master: Study Plan (Programme Regulation 2017)

Student's name: …………………………………………………………………………………………………

Student's ID no.: …………………………………………………………………………………………………

Mentor's name: …………………………………………………………………………………………………

Please indicate for each course in which semester you plan to participate (autumn semester 2019 = **AS19**, spring semester 2020 = **SS20**). If you do not plan to take a certain course, leave the column "planned semester" blank.

Course Number	Course Name	Credits	Univ.	Location	Planned Semester
Additional Requirements (All additional requirements need to be attended during the first year of study)					
252-0002-AAL	**Data Structures and Algorithms**	**7**	**ETH**	**ZH**	**SS20**

Course Number	Course Name	Credits	Univ.	Location	Planned Semester
Core Courses (40 ECTS total, at least 1 ECTS in every subcategory) Closed list. No other course can be added as core course. Also assignment of courses to core subcategories cannot be changed. Core courses marked with an asterisk are mutually exclusive courses (students cannot take both/three marked courses within the same subcategory)					
Bioinformatics (all courses from this subcategory are offered in Autumn semester only)					
636-0017-00L	Computational Biology *	6	ETH	Alternating live/stream in BS/ZH & rec..	AS**19**
262-6110-00L	Bioinformatics Algorithms	4	UBas	BS	AS
636-0009-00L	Evolutionary Dynamics	6	ETH	BS live / ZH stream & rec.	AS
262-6100-00L	Evolutionary Genetics*	4	UBas	BS	AS
401-6282-00L	Statistical Analysis of high-throughput….	5	UZH	ZH	AS**20**
Biophysics					
262-5100-00L	Protein Biophysics (UZH Module Code: BCH304)	6	UZH	ZH	SS**20**
636-0104-00L	Biophysical Methods	4	ETH	BS	AS
529-0004-00L	Classical Simulation of (Bio)Molecular Systems	7	ETH	ZH	AS
151-0980-00L	Biofluiddynamics	4	ETH	ZH	SS
Tbd	Current Topics in Biophysics	tba	UBas	BS	tba
Biosystems					
636-0007-00L	Computational Systems Biology	6	ETH	ZH	AS**19**
636-0111-00L	Synthetic Biology I	4	ETH	Alternating live/stream in BS/ZH & rec.	SS**20**
636-0706-00L	Spatio-Temporal Modelling in Biology	4	ETH	ZH & rec.	AS

636-0016-00L	Computational Systems Biology: Stochastic Approaches	4	ETH	BS & rec.	SS
636-0117-00L	Mathematical Modelling for Bioengineering and Systems Biology	4	ETH	BS & rec.	AS
Big Data					
636-0018-00L	Data Mining I	6	ETH	BS live / ZH stream & rec.	AS**19**
636-0019-00L	Data Mining II	6	ETH	BS live / ZH stream & rec.	SS**20**
551-0364-00L	Functional Genomics	3	UZH	ZH	SS
252-0535-00L	Advanced Machine Learning*	8	ETH	ZH & rec.	AS
262-6190-00L	Machine Learning*	8	UBas	BS	SS
252-0220-00L	Introduction to Machine Learning*	8	ETH	ZH & rec.	SS
636-0702-00L	Statistical Models in Computational Biology	6	ETH	BS live / ZH stream & rec.	SS
636-0101-00L	Systems Genomics	4	ETH	BS & rec.	SS
Seminar – Compulsory (the seminar will be offered in Basel in autumn semester and in Zurich in spring semester)					
636-0704-00	Computational Biology and Bioinformatics Seminar	2	ETH	BS&ZH	AS/SS**20**

Advanced Courses (32 ECTS total, at least 18 ECTS in Theory, 12 ECTS in Biology, 2 ECTS in SiP) Open list (see ETH course catalogue, CBB programme regulation 2017). Other courses can be added as advanced courses by approval of the mentor, this may include courses from the core course category that are not already taken as such.

Theory (18 credits)					
636-0117-00L	**Mathematical Modelling for Bioengineering and Systems Biology**	**4**	**ETH**	**BS**	**AS19**
263-5210-00L	**Probabilistic Artificial Intelligence**	**8**	**ETH**	**ZH**	**AS20**
636-0009-00L	**Evolutionary Dynamics**	**6**	**ETH**	**ZH**	**AS20**

Biology (12 credits)					
551-0313-00L	**Microbiology (Part I)**	**3**	**ETH**	**ZH**	**AS19**
551-0307-00L	**Molecular and Structural Biology I**	**3**	**ETH**	**ZH**	**AS19**
636-0109-00L	**Stem Cells: Biology and Therapeutic Manipulation**	**4**	**ETH**	**ZH**	**AS20**
BIO 228	**Evolutionary Medicine**	**2**	**UZH**	**ZH**	**AS20**

Science in Perspective (2 credits)					
363-1027-00L	**Introduction to Health Economics and Policy**	**2**	**ETH**	**ZH**	**AS19**

Lab Rotations (18 ECTS total, at least two lab rotations in two different groups)
Either choose Lab Rotation Short 1, Lab Rotation Short 2 and Lab Rotation Short 3
Or choose lab Rotation Long 1 and Lab Rotation Long 2
Or choose Lab Rotation Short 1 and Industry Internship

262-0100-00L	Lab Rotation Short 1	6			
262-0101-00L	Lab Rotation Short 2	6			
262-0102-00L	Lab Rotation Short 3	6			
262-0103-00L	Lab Rotation Long 1	9			**SS21**
262-0104-00L	Lab Rotation Long 2	9			**SS21**
262-0105-00L	Industry Internship	12			
636-0507-00L	**Synthetic Biology II (iGEM)**	**9 (if without report)** **12 (if with report)**	**ETH**	**ZH**	

Note:
- Minimum 4 weeks per lab (1.5 CP/week full-time), no constraints on topics, but lab rotations not in the same group (supervisor)
- Industry or team or individual projects are possible

Master's Thesis (30 ECTS total)
The master's thesis duration is 28 weeks (full-time), thereof 2 weeks for compensation of public holidays, sick leave and other short term absences

262-0800-00L	Master's Thesis	30	?	?	AS/SS21

Note:
Students can only register for the master's thesis if
- The BSc programme has been completed successfully
- Assigned additional requirements for the admission to the master's programme have been passed
- All credits in the core course category (40 ECTS) and lab rotations category (18 ECTS) have been acquired for the master's program

Date:	**Date:**
Signature Mentor:	**Signature Student:**

The signed study plan needs to be submitted (hardcopy or pdf) to the CBB study administration by the end of the first semester at the latest.

In order to be involved in ongoing discussions about teaching (CBB study programme) related matters, we strongly encourage D-BSSE students to join the teaching commission of D-BSSE as student representatives. If you are interested, please apply by sending an email to student-admin@bsse.ethz.ch