

Study and Examination Plan

Mathematics BSc

Matriculation Fall 2022

Program-Specific Modules		Type	Assessment	Period	Status ¹	Sem.	CP
Year 1 - CHOICE							45
<i>Take the mandatory CHOICE modules listed below, this is a requirement for the Math program.</i>							
Unit: Foundations of Mathematics (default minor)							15
CH-200 Module: Analysis I (default minor)							m 1 7.5
CH-200-A	Analysis I	Lecture	Written examination	Examination period			5
CH-200-B	Tutorial Analysis I	Tutorial					2.5
CH-201 Module: Linear Algebra (default minor)							m 2 7.5
CH-201-A	Linear Algebra	Lecture	Written examination	Examination period			5
CH-201-B	Tutorial Linear Algebra	Tutorial					2.5
Unit: Applied Mathematics							7.5
CH-202 Module: Applied Mathematics							m 2 7.5
CH-202-A	Advanced Calculus	Lecture	Written examination	Examination period			5
CH-202-B	Numerical Software Lab	Lab	Lab report				2.5
Unit: CHOICE (own selection)							me 1/2 22.5
<i>Students take three further CHOICE modules (22.5 CP) from those offered for all other study programs.²</i>							
Year 2 - CORE							45
<i>Take all modules listed below or replace mandatory elective ("me") modules (15 CP) with suitable CORE modules from other study programs.</i>							
Unit: Default Minor Track							15
CO-500 Module: Number Theory							me 3 5
CO-500-A	Number Theory	Lecture	Written examination	Examination period			5
CO-501 Module: Discrete Mathematics							me 4 5
CO-501-A	Discrete Mathematics	Lecture	Written examination	Examination period			5
CO-502 Module: Undergraduate Seminar							m 3+4 5
CO-502-A	Undergraduate Seminar I	Seminar					3 2.5
CO-502-B	Undergraduate Seminar II	Seminar	Presentation	During the semester			4 2.5
Unit: Core Mathematics							15
CO-503 Module: Introductory Algebra							m 3 7.5
CO-503-A	Introductory Algebra	Lecture	Written examination	Examination period			5
CO-503-B	Tutorial Introductory Algebra	Tutorial					2.5
CO-504 Module: Analysis III							m 4 7.5
CO-504-A	Analysis III	Lecture	Written examination	Examination period			5
CO-504-B	Tutorial Analysis III	Tutorial					2.5
Unit: Profile Mathematics or Minor Study Program							me 3+4 15
Take 15 CP of Mathematics Specialization modules or substitute Specialization modules to pursue a minor							
Year 3 - CAREER							45
CA-INT-900 Module: Internship / Startup and Career Skills							m 4/5 15
CA-INT-900-0	Internship / Startup and Career Skills		Report / Business Plan	During the 5 th semester			15
CA-MATH-800 Module: Seminar / Thesis Mathematics							m 6 15
CA-MATH-800-T	Thesis Math		Thesis	15 th of May			12
CA-MATH-800-S	Thesis Seminar Math	Seminar	Presentation	During the semester			3
Unit: Specialization Mathematics							me 5+6 15
<i>Take a total of 15 CP of specialization modules.³</i>							
CA-S-MATH-802 / 801	Module Rotation: Complex Analysis (A) – Real Analysis (B)	Lecture	Written examination	Examination period			3/5 5
CA-S-MATH-809 / 806	Module Rotation: Topology (A) – Foundations of Mathematical Physics (B)	Lecture	Written examination	Examination period			3/5 5
CA-S-MATH-810 / 811	Module Rotation: Applied Dynamical Systems Lab (A) – Stochastic Methods Lab (B)	Lecture	Project	During the semester			3/5 7.5
CA-S-MATH-807 / 805	Module Rotation: Partial Differential Equations (A) – Dynamical Systems (B)	Lecture	Written examination	Examination period			4/6 5
CA-S-MATH-808 / 812	Module Rotation: Algebra (A) – Algebraic Topology (B)	Lecture	Written examination	Examination period			4/6 5
CA-S-MATH-803 / 804	Module Rotation: Stochastic Processes (A) – Numerical Analysis (B)	Lecture	Written examination	Examination period			4/6 5
Total CP							180

¹ Status (m = mandatory, me = mandatory elective)

² For a full listing of all CHOICE / CORE / CAREER / Jacobs Track modules please consult the CampusNet online catalogue and /or the study program handbooks.

³ Each of the listed specialization modules is offered biennially; the letter A refers to odd-numbered calendar years, the letter B refers to even-numbered calendar years.

Jacobs Track Modules (General Education)		Type	Assessment	Period	Status ¹	Sem.	CP
Unit: Methods / Skills							10
JTMS-MAT-09 Module: Calculus and Elements of Linear Algebra I							m 1 5
JTMS-09	Calculus and Elements of Linear Algebra I	Lecture	Written examination	Examination period			5
JTMS-MAT-10 Module: Calculus and Elements of Linear Algebra II							m 2 5
JTMS-10	Calculus and Elements of Linear Algebra II	Lecture	Written examination	Examination period			5
Unit: Language							5
German is the default language. Native German speakers take modules in another offered language.							
JTLA Module: Language 1							m 1 2.5
JTLA-xxx	Language 1	Seminar	Various	Various			me 2.5
JTLA Module: Language 2							m 2 2.5
JTLA-xxx	Language 2	Seminar	Various	Various			me 2.5
Unit: Methods / Skills							10
JTMS-MAT-12 Module: Probability and Random Processes							m 3 5
JTMS-12	Probability and Random Processes	Lecture	Written examination	Examination period			5
JTMS-MAT-13 Module: Numerical Methods							m 4 5
JTMS-13	Numerical Methods	Lecture	Written examination	Examination period			5
Unit: Language							5
German is default language. Native German speakers take modules in another offered language.							
JTLA Module: Language 3							m 3 2.5
JTLA-xxx	Language 3	Seminar	Various	Various			me 2.5
JTLA Module: Language 4							m 4 2.5
JTLA-xxx	Language 4	Seminar	Various	Various			me 2.5
Unit: Big Questions							10
JTBQ Module: Big Questions							m 5/6
Take a total of 10 CP of Big Questions modules with each 2.5 or 5 CP							
Unit: Community Impact Project							5
JTCI-CI-950 Module: Community Impact Project							m 5 5
JTCI-950	Community Impact Project	Project	Project	Examination period			
Total CP							180