

**Appendix 1 - Mandatory Module and Examination Plan**

<b>Mathematics BSc</b>							
<b>Matriculation Fall 2021</b>							
<b>Program-Specific Modules</b>				Type	Assessment	Period	Status <sup>1</sup> Sem. CP
<b>Year 1 - CHOICE</b>							<b>45</b>
<i>Take the mandatory CHOICE modules listed below, this is a requirement for the Math program.</i>							
<b>Unit: Foundations of Mathematics</b> (default minor)							<b>15</b>
<b>CH-200</b>	<b>Module: Analysis I</b> (default minor)						<b>m 1 7.5</b>
CH-200-A	Analysis I	Lecture	Written examination	Examination period			5
CH-200-B	Tutorial Analysis I	Tutorial					2.5
<b>CH-201</b>	<b>Module: Linear Algebra</b> (default minor)						<b>m 2 7.5</b>
CH-201-A	Linear Algebra	Lecture	Written examination	Examination period			5
CH-201-B	Tutorial Linear Algebra	Tutorial					2.5
<b>Unit: Applied Mathematics</b>							<b>7.5</b>
<b>CH-202</b>	<b>Module: Applied Mathematics</b>						<b>m 2 7.5</b>
CH-202-A	Advanced Calculus	Lecture	Written examination	Examination period			5
CH-202-B	Numerical Software Lab	Lab	Lab report				2.5
<b>Unit: CHOICE (own selection)</b>							<b>me 1/2 22.5</b>
<i>Students take three further CHOICE modules (22.5 CP) from those offered for all other study programs.<sup>2</sup></i>							
<b>Year 2 - CORE</b>							<b>45</b>
<i>Take all modules listed below or replace mandatory elective ("me") modules (15 CP) with suitable CORE modules from other study programs.</i>							
<b>Unit: Default Minor Track</b>							<b>15</b>
<b>CO-500</b>	<b>Module: Number Theory</b>						<b>me 3 5</b>
CO-500-A	Number Theory	Lecture	Written examination	Examination period			5
<b>CO-501</b>	<b>Module: Discrete Mathematics</b>						<b>me 4 5</b>
CO-501-A	Discrete Mathematics	Lecture	Written examination	Examination period			5
<b>CO-502</b>	<b>Module: Undergraduate Seminar</b>						<b>m 3+4 5</b>
CO-502-A	Undergraduate Seminar I	Seminar	Presentation	During the semester			3 2.5
CO-502-B	Undergraduate Seminar II	Seminar					4 2.5
<b>Unit: Core Mathematics</b>							<b>15</b>
<b>CO-503</b>	<b>Module: Introductory Algebra</b>						<b>m 3 7.5</b>
CO-503-A	Introductory Algebra	Lecture	Written examination	Examination period			5
CO-503-B	Tutorial Introductory Algebra	Tutorial					2.5
<b>CO-504</b>	<b>Module: Analysis III</b>						<b>m 4 7.5</b>
CO-504-A	Analysis III	Lecture	Written examination	Examination period			5
CO-504-B	Tutorial Analysis III	Tutorial					2.5
<b>Unit: Profile Mathematics or Minor Study Program</b>							<b>me 3+4 15</b>
<i>Take 15 CP of Mathematics Specialization modules or substitute Specialization modules to pursue a minor</i>							
<b>Year 3 - CAREER</b>							<b>45</b>
<b>CA-INT-900</b>	<b>Module: Internship / Startup and Career Skills</b>						<b>m 4/5 15</b>
CA-INT-900-0	Internship / Startup and Career Skills		Report / Business Plan	During the 5 <sup>th</sup> semester			15
<b>CA-MATH-800</b>	<b>Module: Seminar / Thesis Mathematics</b>						<b>m 6 15</b>
CA-MATH-800-T	Thesis Math	Thesis	Thesis	15 <sup>th</sup> of May			12
CA-MATH-800-S	Thesis Seminar Math	Seminar	Presentation	During the semester			3
<b>Unit: Specialization Mathematics</b>							<b>me 5+6 15</b>
<i>Take a total of 15 CP of specialization modules.<sup>3</sup></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
<b>Total CP</b>							<b>180</b>

<sup>1</sup> Status (m = mandatory, me = mandatory elective)

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

<sup>3</sup> 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.

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