

Think.

Critically assess
technology's
impact on society.

Code.

Understand and
build information
systems.

Transform.

Become a leader,
problem solver,
and innovator.



Philosophy & Computer Science

Supplementary
Information



UNIVERSITÄT
BAYREUTH

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About the Program

The master's program *Philosophy & Computer Science* (P&CS) at University of Bayreuth (UBT) aims to empower its graduates to navigate the challenges that a modern, increasingly digital, society faces in research, business, and politics.

The interdisciplinary curriculum is tailored to students who already have an undergraduate degree in philosophy, computer science, or a related (interdisciplinary) field. The first year of study is dedicated to establishing a common ground between all students while the second year offers opportunities for thematic specializations.

First Year: Foundations in Four Tracks

In the first year, introductory courses to both philosophy and computer science can be taken depending on the students' specific backgrounds. Those with a degree in computer science will usually take the *Computer Scientist's Track* to gain philosophical training while those with a degree in philosophy will usually take the *Philosopher's Track* to gain basic training in computer science. Those with interdisciplinary backgrounds (e.g., in cognitive science, computer linguistics, ...) will be assigned individual foundational modules in the *Mixed Track*. Students who have already covered the basics of both the Computer Scientist's and the Philosopher's Track in their prior studies will be admitted into the *Development Track* which allows them to take specialization courses instead of foundational ones. Where students have covered the foundational modules of a field, they can choose advanced or specialization courses already in the first year.

Second Year: Specialization and Master Thesis

Throughout the second year, students can delve into various topics at the intersection between philosophy and computer science. These may include topics such as Intelligent Systems, Ethics of New Technologies, Policy & Regulation, Data Analysis & Data Processing, Machine

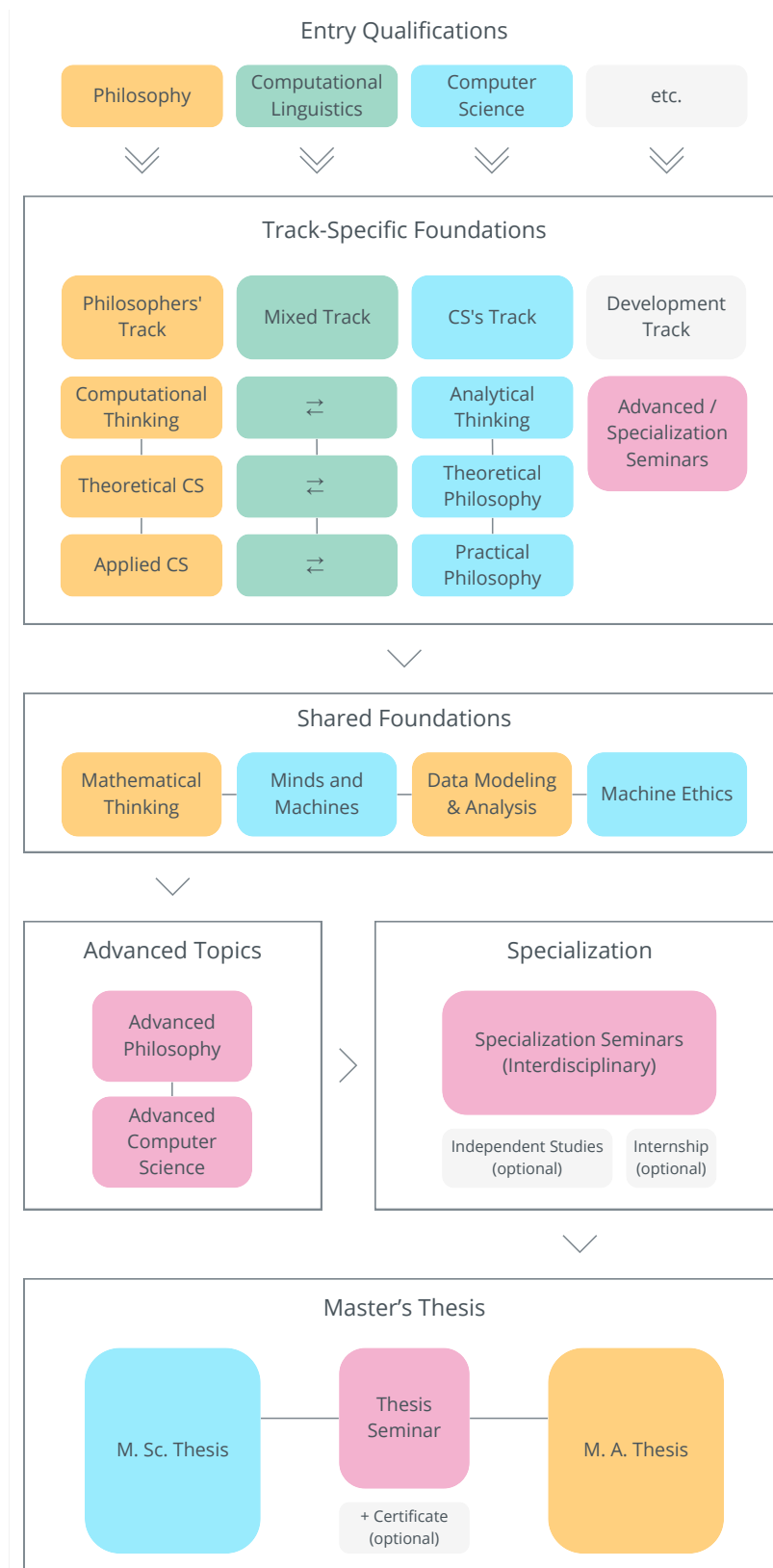
Learning & Computation, or Human-Computer Interaction. Students can take seminars, conduct individual research projects, and incorporate internships or participation in academic conference into their studies. In the final semester, students will write either a *Master of Arts* or *Master of Science* thesis which will determine which degree will be awarded to them.

For those who focus on a specific thematic area, a specialization certificate can be issued by the head of the program. To apply for a specialization certificate, students must write their thesis in the respective specialization area *and* be credited at least 30 ECTS in coursework relating to the specialization. Available specializations will mirror the course contents; a full list and instructions for application will be published on the program website.

Schedule & Modules

The exact schedule will be tailored to students' interests and needs. *Sample study plans* can be found at the end of this document. *For part-time students, study plans can be adjusted* to a load of only 15 ECTS per semester; advice on this matter will be available from the program coordinator. A full *module handbook*, along with the official *study regulations*, is published on the program website.

Module Overview



Sample Study Plans

Philosopher's Track (Philosophy Background)				
	<i>Semester 1 (winter)</i>	<i>Semester 2 (summer)</i>	<i>Semester 3 (winter)</i>	<i>Semester 4 (summer)</i>
<i>Track-Specific Foundations</i>	Computational Thinking	Applied Computer Science (e.g., IUI)		
	Theoretical Computer Science			
<i>Shared Foundations</i>	Data Modeling & Analysis	Minds and Machines		
	Mathematical Thinking (e.g., Logic for CS)	Machine Ethics		
	Mathematical Thinking (e.g., Data Analysis in R)			
<i>Advanced Topics</i>	Advanced Philosophy Seminar	Advanced Computer Science Seminar		
<i>Specialization</i>		Specialization Seminar 1	Specialization Seminar 2-6	
			Independent Study Project	
<i>Master Thesis</i>				Thesis Seminar
				Master Thesis
ECTS	30	25	30	35
Philosopher's Track (Philosophy Background) with Internship				
	<i>Semester 1 (winter)</i>	<i>Semester 2 (summer)</i>	<i>Semester 3 (winter)</i>	<i>Semester 4 (summer)</i>
<i>Track-Specific Foundations</i>	Computational Thinking	Applied Computer Science (e.g., IUI)		
	Theoretical Computer Science			
<i>Shared Foundations</i>	Data Modeling & Analysis	Minds and Machines		
	Mathematical Thinking (e.g., Logic for CS)	Machine Ethics		
	Mathematical Thinking (e.g., Data Analysis in R)			
<i>Advanced Topics</i>	Advanced Philosophy Seminar	Advanced Computer Science Seminar		
<i>Specialization</i>		Specialization Seminar 1+2	Internship (12 weeks)	
<i>Master Thesis</i>				Thesis Seminar
				Master Thesis
ECTS	30	30	25	35

Computer Scientist's Track (Computer Science Background)				
	<i>Semester 1 (winter)</i>	<i>Semester 2 (summer)</i>	<i>Semester 3 (winter)</i>	<i>Semester 4 (summer)</i>
<i>Track-Specific Foundations</i>	Analytical Thinking			
	Practical Philosophy (e.g., Ethics)			
	Theoretical Philosophy (e.g., Epistemology)			
<i>Shared Foundations</i>	Data Modeling & Analysis	Minds and Machines		
	Mathematical Thinking (e.g., Mathematics for ML)	Machine Ethics		
	Mathematical Thinking (e.g., Causal Inference)			
<i>Advanced Topics</i>		Advanced Computer Science Seminar	Advanced Philosophy Seminar	
<i>Specialization</i>		Specialization Seminar 1+2	Specialization Seminar 3-6	
			Independent Study Project	
<i>Master Thesis</i>				Thesis Seminar
				Master Thesis
ECTS	30	25	30	35
Computer Scientist's Track (Computer Science Background) with Internship				
	<i>Semester 1 (winter)</i>	<i>Semester 2 (summer)</i>	<i>Semester 3 (winter)</i>	<i>Semester 4 (summer)</i>
<i>Track-Specific Foundations</i>	Analytical Thinking			
	Practical Philosophy (e.g., Ethics)			
	Theoretical Philosophy (e.g., Epistemology)			
<i>Shared Foundations</i>	Data Modeling & Analysis	Minds and Machines		
	Mathematical Thinking (e.g., Mathematics for ML)	Machine Ethics		
	Mathematical Thinking (e.g., Causal Inference)			
<i>Advanced Topics</i>		Advanced Philosophy Seminar		
		Advanced Computer Science Seminar		
<i>Specialization</i>		Specialization Seminar 1+2	Internship (8 weeks)	
			Independent Study Project	
<i>Master Thesis</i>				Thesis Seminar
				Master Thesis
ECTS	30	30	25	35

Mixed Track (Exemplary Cognitive Science Background)				
	<i>Semester 1 (winter)</i>	<i>Semester 2 (summer)</i>	<i>Semester 3 (winter)</i>	<i>Semester 4 (summer)</i>
<i>Track-Specific Foundations</i>	Practical Philosophy (e.g., Ethics)	Applied Computer Science (e.g., IUI)		
	Theoretical Philosophy (e.g., Epistemology)			
<i>Shared Foundations</i>	Data Modeling & Analysis	Minds and Machines		
	Mathematical Thinking (e.g., Logic for CS)	Machine Ethics		
	Mathematical Thinking (e.g., Statistical Inference)			
<i>Advanced Topics</i>	Advanced Philosophy Seminar	Advanced Computer Science Seminar		
<i>Specialization</i>		Specialization Seminar 1+2	Specialization Seminar 3-6	
			Independent Study Project	
<i>Master Thesis</i>				Thesis Seminar
				Master Thesis
ECTS	30	30	25	35
Development Track				
	<i>Semester 1 (winter)</i>	<i>Semester 2 (summer)</i>	<i>Semester 3 (winter)</i>	<i>Semester 4 (summer)</i>
<i>Track-Specific Foundations</i>				
<i>Shared Foundations</i>	Data Modeling & Analysis	Minds and Machines		
	Mathematical Thinking (e.g., Mathematics for ML)	Machine Ethics		
	Mathematical Thinking (e.g., Statistical Inference)			
<i>Advanced Topics</i>	Advanced Philosophy Seminar	Advanced Computer Science Seminar		
<i>Specialization</i>	Specialization Seminar 1+2	Specialization Seminar 3	Internship (4 weeks)	
		Independent Study Project 1	Specialization Seminar 4+5	
			Independent Study Project 2	
<i>Master Thesis</i>				Thesis Seminar
				Master Thesis
ECTS	30	30	25	35