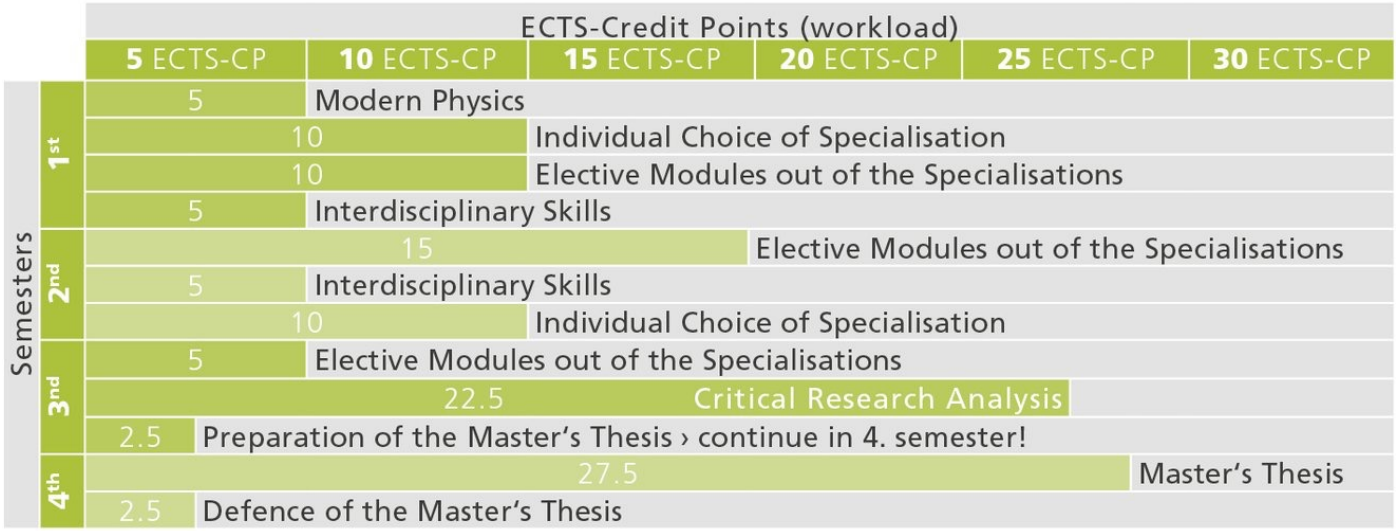
Master's program in Physics



- 30 ECTS Elective Modules out of the Specialisations
- 20 ECTS Individual Choice of Specialisations
- 10 ECTS Interdisciplinary Skills

Master Physics: Six Specialisations

- Quantum Sciences
- Quantum Engineering
- Ion and Applied Physics
- Many-Body Physics
- Computational Physics
- Astrophysics and Particle Physics

Studying without a specialization is possible, but not recommended.
Specializations prepare you specifically for the Master's thesis!

Specialization Ion and Applied Physics

	ECTS-Credit Points (workload)					
	5 ECTS-CP	**10** ECTS-CP	**15** ECTS-CP	**20** ECTS-CP	**25** ECTS-CP	**30** ECTS-CP
1st	5	Modern Physics				
	10		Individual Choice of Specialisation			
	10		Elective Modules out of the Specialisations			
	5	Interdisciplinary Skills				

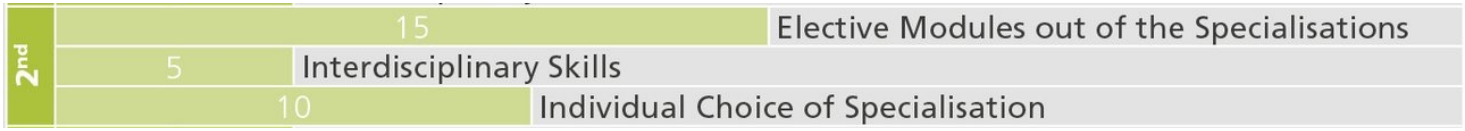
Elective Modules out of the Specializations (20 ECTS, Deviating from the curriculum):

- VO Ion Physics (Beyer, Wester) and PS Ion Physics (van der Linde)
- PR Advanced Laboratory Classes A and B

Individual Choice of Specialization / Interdisciplinary Skills (5 ECTS):

- VU Environmental Physics (Hansel)
- VU Modern Methods of Quantum Chemistry (Ončák)
- VU Methodology of scientific simulation (Kendl)
- VU Chemistry for Physics Students (Ončák)
- VO Technical applications of plasma physics (Ionita-Schrittwieser)
- PR Lab Course in LabVIEW (Wild)
- any other VU3 course in physics on master level

Specialization Ion and Applied Physics



Elective Modules out of the Specializations (10 ECTS, deviating from the curriculum):

- VU Special Topics in Ion Physics A: Mass spectrometry and analytical applications (Hansel)
- VU Special Topics in Ion Physics B: Molecular Symmetry and Spectroscopy (Erath-Dulitz)

Individual Coice of Specialization / Interdisciplinary Skills (20 ECTS):

- PR Specialized laboratory course A: ion physics and applied physics (Laboratory experiments in the institute‘s working groups)
- PR Specialized laboratory course B: Mass Spectrometry and Spectroscopy (2 weeks working in group of your choice)
- VU Nano and cluster physics (Beyer, van der Linde)
- VU Ionkinetics and –reaction dynamics (Wester)
- VU Aerosol Physics (Hansel)
- VU Electron-induced reactions in atoms and molecules (Denifl)
- VU Nonlinear dynamics and turbulence (Kendl)
- VU Theoretical plasma physics and fusion research(Kendl)
- SE Institute Seminar
- any other VU3 course in physics on master level

together 10 ECTS-AP

Specialization Ion and Applied Physics

Elective Modules out of the Specializations:

- Already fulfilled in the 1st and 2nd semester, instead

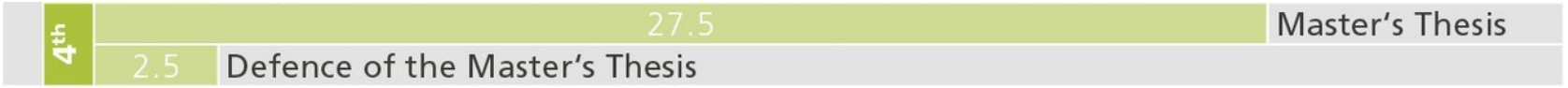
Individual Coice of Specialization / Interdisciplinary Skills (5 ECTS):

- compare to 1st semester, offer varies every year

Compulsory Module Critical Research Analysis:

- VU Research Analysis (Beyer, Hansel, Scheier, Wester) 5 ECTS
- SE Research Seminar (Seminar der AG der Masterarbeit) 5 ECTS
- PJ Research Study (practical laboratory work) 12,5 ECTS

Specialization Ion and Applied Physics



Summary of recommended elective modules winter / summer

Elective Modules out of the Specializations (30 ECTS):

- VO Ion Physics (Beyer, Wester) und PS Ion Physics (van der Linde)
- PR Advanced Laboratory Classes A and B
- VU Special Topics in Ion Physics A: Mass spectrometry and analytical applications (Hansel)
- VU Special topics in ion physics B: Molecular Symmetry and Spectroscopy (Erath-Dulitz)

Individual Choice of Specialization / Interdisciplinary Skills (30 ECTS):

- PR Specialized laboratory course A: ion physics and applied physics (Laboratory experiments in the institute's working groups)
- PR Specialized laboratory course B: Mass Spectrometry and Spectroscopy (2 weeks working in group of your choice)
- further courses amounting to 20 ECTS credits as offered, ideally in line with the planned research direction/Master's thesis