

Courses for graduate students (2019)

Courses with * can be instructed in English

Module	Course title	Credit	Semester	Compulsory/ Elective	Taken into GPA or not	Remark
Major fundamental courses	* Quantum mechanics for graduate students*	4	Fall	Alternative	N	The course are available to choose as long as the total credits meet the requirement.
	Advanced quantum mechanics	3	Fall		N	
	Advanced electrodynamics and analytical mechanics	4	Fall	N		
	I Mathematical and numerical methods for physics (I)	3	Fall	N		
	* Fundamentals of quantum field theory*	4	Fall	N		
	* Fundamentals of particle and nuclear physics*	4	Fall	N		
	* Plasma physics*	3	Fall	N		
	* 	4	Spring	N		

	Advanced condensed matter physics*				
	* Nonlinear optics*	4	Spring		N
	Quantum optics	4	Spring		N
	* Advanced statistical physics*	4	Spring		N
Major frontier courses	Scientific writing, integrity and ethics	1	Fall/Spring	Compulsory	N
	* Selected topics on the experimental frontiers of particle and nuclear physics*	3	Spring		N
	* Selected topics on the theoretical frontiers of particle and nuclear physics*	3	Spring		N
	Laser plasma physics	3	Spring		N
	Ultrafast optics	2	Fall		N
	* Nanophotonics*	3	Spring		N

Major elective courses	II				
	Mathematical and numerical methods for physics (II)	2	Spring		N
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	Experimetal methods for particle and nuclear physics*	4	Spring		N
	Normative field theory	3	Spring		N
	Nuclear theory	3	Fall		N
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	Modern laser technology	3	Fall		N
	Applied Optics	2	Spring		N
	Frontiers of atomic and molecular physics	3	Spring		N
Experimental methods of solid matter physics	4	Spring		N	
Surface and low-dimensional physics	3	Fall		N	
Surface analysis technology of material sciences	3	Fall		N	
	2	Spring		N	

Material preparation and crystal growth science				
Solid spectrum and light scattering	2	Spring		N
Introduction to Fourier optics and statistical optics	2	Fall		N
Quantum Electronics	3	Spring		N
Atomic and molecular spectroscopy	3	Spring		N
Solid multibody theory	3	Fall		N
Calculating material physics	2	Fall		N
* Biophysics*	3	Spring		N
Condensed matter transport theory	3	Spring		N
Introduction to soft matter physics	3	Fall		N