



## Master program of Solid state physics

### First Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	670	Solid State Physics	3	-	Compulsory
PHYS	641	Statistical Physics	3	-	Compulsory
PHYS	651	Quantum Mechanics (1)	3	-	Compulsory
Total			9		

### Second Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	671	Physics of Semiconductors and Modern Electronics	3	-	Compulsory
PHYS	679	Physics of Nano Technology and Thin Films	3	-	Compulsory
PHYS	-	Elective	3	-	Elective
Total			9		



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### Third Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	-	-	3	-	Elective
PHYS	-	-	3	-	Elective
PHYS	-	-	3	-	Elective
Total			9		

### Fourth Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	699	Project	6	-	-
PHYS	-	-	3	-	Elective
Total			9		



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### Compulsory courses

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	670	Solid State Physics	3	-	Compulsory
PHYS	641	Statistical Physics	3	-	Compulsory
PHYS	651	Quantum Mechanics (1)	3	-	Compulsory
PHYS	671	Physics of Semiconductors and Modern Electronics	3	-	Compulsory
PHYS	679	Physics of Nano Technology and Thin Films	3	-	Compulsory
PHYS	699	Project	6	-	-
Total			21		



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### Elective courses

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	601	Mathematical Physics (1)	3	-	Elective
PHYS	621	Classical Electrodynamics (1)	3	-	Elective
PHYS	672	Material Science	3	-	Elective
PHYS	673	Applications of group theory to solid state physics	3	-	Elective
PHYS	674	Atomic and Molecular	3	-	Elective
PHYS	675	Magnetism and Superconductivity	3	-	Elective
PHYS	676	Physics of Magnetic Resonance	3	-	Elective
PHYS	677	Crystallography and X-rays	3	-	Elective
PHYS	679	Renewable Energy	3	-	Elective
PHYS	695	Compulsory Advanced Experiments	3	-	Elective
Total			15		



## Master program of Theoretical physics

### First Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	601	Mathematical Physics	3	-	Compulsory
PHYS	641	Statistical Physics	3	-	Compulsory
PHYS	651	Quantum Mechanics (1)	3	-	Compulsory
Total			9		

### Second Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	611	Classical mechanics	3	-	Compulsory
PHYS	621	Classical Electrodynamics	3	-	Compulsory
PHYS	-	Elective	3	-	Elective
Total			9		



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## Master program of Theoretical physics

### Third Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	-	-	3	-	Elective
PHYS	-	-	3	-	Elective
PHYS	-	-	3	-	Elective
Total			9		

### Fourth Level

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	699	Project	6	-	-
PHYS	-	-	3	-	Elective
Total			9		



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## Master program of Theoretical physics

### Compulsory courses

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	601	Mathematical Physics (1)	3	-	Compulsory
PHYS	621	Classical Electrodynamics (1)	3	-	Compulsory
PHYS	641	Statistical Physics	3	-	Compulsory
PHYS	651	Quantum Mechanics (1)	3	-	Compulsory
PHYS	611	Classical mechanics	3	-	Compulsory
PHYS	699	Project	6	-	-
Total			21		



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### Elective courses

Course Code	Course Number	Course	Credit Hours	Pre-requisite	Observations
PHYS	612	General Relativity	3	-	Elective
PHYS	652	Quantum mechanics (2)	3	PHYS651	Elective
PHYS	653	Quantum Field Theory	3	PHYS651	Elective
PHYS	654	Quantum information Theory	3	PHYS651	Elective
PHYS	673	Applications of group theory to solid state physics	3	PHYS601	Elective
PHYS	613	Non-Linear dynamical systems	3	PHYS601&PHYS611	Elective
PHYS	688	Elementary Particles	3	PHYS653	Elective
PHYS	689	Electroweak and Gauge Theory	3	PHYS688	Elective
Total			15		