DIDACTIC PLAN - COHORT 2017/2018

Curriculum

ASTROPHYSICS

NAME OF SUBJECT	SCIENTIFIC SECTOR	ECTS	DIDACTIC HOURS			DIDACTIC PERIOD	YEAR	ACTIVITY *	AREA OF INTEREST
			LESSONS	LAB/EXCERC	FINAL EXAM				
ADVANCED QUANTUM MECHANICS	FIS/02	6	35	15	0	1	1	B	Theoretical and Fundamentals of Physics
ADVANCED STATISTICAL MECHANICS/ MAGNETOHYDRODYNAMICS AND PLASMA PHYSICS	FIS/02 FIS/06	6	35/ 42	15/ 0	0	1	1	C	Similar or Supplementary
ASTROPHYSICS	FIS/05	6	42	0	0	1	1	B	Astrophysical, Geophysical and Spatial
ASTROPHYSICS LABORATORY I	FIS/01	6	28	30	0	1	1	B	Sperimental and Practicle
SPACE PHYSICS	FIS/05	6	42	0	0	2	1	B	Astrophysical, Geophysical and Spatial
RADIOASTRONOMY/ HIGH ENERGY ASTROPHYSICS	FIS/05	6	42	0	0	2	1	B	Astrophysical, Geophysical and Spatial
SOLAR PHYSICS/ GENERAL RELATIVITY	FIS/05	6	42	0	0	2	1	B	Astrophysical, Geophysical and Spatial

NUCLEAR ASTROPHYSICS	*FIS/04*	*6*	*42*	*0*	*0*	*2*	*1*	*B*	*Microphysical and Matter Structure*
ELECTIVE COURSE	*====*	*6*	*42*	*0*	*0*	*2*	*1*	*D*	*Elective*
EXTRAGALACTIC ASTRONOMY AND COSMOLOGY / COSMIC RAY PHYSICS	*FIS/05*	*6*	*42*	*0*	*0*	*1*	*2*	*B*	*Astrophysical, geophysical and spatial*
SPECTROSCOPY	*FIS/03*	*6*	*42*	*0*	*0*	*1*	*2*	*B*	*Microphysical and Matter Structure*
ASTROPHYSICS LABORATORY II/ ASTROPARTICLE PHYSICS	*FIS/01*	*6*	*28/ 42*	*30/ 0*	*0*	*1*	*2*	*C*	*Similar or Supplementary*
ELECTIVE COURSE	*====*	*6*	*42*	*0*	*0*	*1*	*2*	*D*	*Elective*
INTERNSHIP	*====*	*2*	*0*	*50*	*0*	*2*	*2*	*F*	*Educational training*
MASTER THESIS AND FINAL EXAM	*====*	*40*		*400*	*600*	*2*	*2*	*E*	*Final exam*
Total number of ECTS		*120*							

*** Legend:**

B: characterizing

C: similar or supplementary

D: elective

E: for final exam

F: educational training

Curriculum

PHYSICS APPLI ED TO CULTURAL HERITAGE, ENVIRONMENT AND MEDICINE

NAME OF SUBJECT	SCIENTIFIC SECTOR	ECTS	DIDACTIC HOURS			DIDACTIC PERIOD	YEAR	ACTIVITY *	AREA OF INTEREST
			LESSONS	LAB/EXCERC	FINAL EXAM				
ADVANCED QUANTUM MECHANICS	FIS/02	6	35	15	0	1	1	B	Theoretical and Fundamentals of Physics
SOLID-STATE PHYSICS	FIS/03	6	42	0	0	1	1	B	Microphysical and Matter Structure
NUCLEAR AND SUBNUCLEAR PHYSICS	FIS/04	6	42	0	0	1	1	B	Microphysical and Matter Structure
ENVIRONMENTAL PHYSICS/BIOPHYSICS	FIS/07	6	42	0	0	1	1	B	Sperimental and Practicle
ENVIRONMENTAL RADIOACTIVITY	FIS/01	6	42	0	0	1	1	B	Sperimental and Practicle
ENVIRONMENTAL PHYSICS LABORATORY/ ELECTRONICS AND APPLICATIONS	FIS/01	6	21/ 42	45/ 0	0	2	1	B	Sperimental and Practicle
ACCELERATOR PHYSICS AND APPLICATIONS/ IMAGING ANALYSIS AND FUNDAMENTALS OF DOSIMETRY	FIS/07	6	42	0	0	2	1	B	Sperimental and Practicle
SISMOLOGY/ARCHAEOMETRY	GEO/10 FIS/07	6	42	0	0	2	1	C	Similar or Supplementary
ELECTIVE COURSE	====	6	42	0	0	2	1	D	Elective
SPECTROSCOPY	FIS/03	6	42	0	0	1	2	B	Microphysical and Matter Structure
APPLIED PHYSICS TO THE EARTH/ NUCLEAR AND SUBNUCLEAR PHYSICS	FIS/07	6	42/	0/	0	1	2	B	Sperimental and

LABORATORY	***FIS/01***		***21***	***45***					***Practicle***
COMPUTER SCIENCE FOR PHYSICS/ COMPUTER LAB/ ADVANCED NUCLEAR TECHNIQUES APPLIED TO MEDICINE	***INF/01 FIS/07***	***6***	***35/ 21/ 42***	***15/ 45/ 0***	***0***	***1***	***2***	***C***	***Similar or Supplementary***
ELECTIVE COURSE	***====***	***6***	***42***	***0***	***0***	***1***	***2***	***D***	***Elective***
INTERNSHIP	***====***	***2***	***0***	***50***	***0***	***2***	***2***	***F***	***Educational training***
MASTER THESIS AND FINAL EXAM	***====***	***40***		***400***	***600***	***2***	***2***	***E***	***Final exam***
Total number of ECTS		***120***							

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E: for final exam

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Curriculum

CONDENSED MATTER PHYSICS

NAME OF SUBJECT	SCIENTIFIC SECTOR	ECTS	DIDACTIC HOURS			DIDACTIC PERIOD	YEAR	ACTIVITY *	AREA OF INTEREST
			LESSONS	LAB/EXCERC	FINAL EXAM				
ADVANCED QUANTUM MECHANICS	FIS/02	6	35	15	0	1	1	B	Theoretical and Fundamentals of Physics
SOLID-STATE PHYSICS	FIS/03	6	42	0	0	1	1	B	Microphysical and Matter Structure
ADVANCED STATISTICAL MECHANICS	FIS/02	6	35	15	0	1	1	C	Similar or Supplementary
PHYSICS OF MATERIALS	FIS/01	6	42	0	0	1	1	C	Similar or Supplementary
MATERIALS AND NANOSTRUCTURES LABORATORY	FIS/01	6	21	45	0	2	1	B	Sperimental and Practicle
PHOTONICS	FIS/03	6	42	0	0	2	1	B	Microphysical and Matter Structure
QUANTUM OPTICS/ QUANTUM PHASES OF MATTER	FIS/02	6	42	0	0	2	1	B	Theoretical and Fundamentals of Physics
SEMICONDUCTORS AND SUPERCONDUCTORS	FIS/03	6	42	0	0	2	1	B	Microphysical and Matter Structure
ELECTIVE COURSE	====	6	42	0	0	2	1	D	Elective
PHYSICS OF NANOSTRUCTURES	FIS/01	6	42	0	0	1	2	B	Sperimental and Practicle
NUCLEAR AND SUBNUCLEAR PHYSICS/ NUCLEAR STRUCTURE	FIS/04	6	42	0	0	1	2	B	Microphysical and Matter Structure

SPECTROSCOPY/ QUANTUM INFORMATION	***FIS/03***	***6***	***42***	***0***	***0***	***1***	***2***	***B***	***Microphysical and Matter Structure***
ELECTIVE COURSE	***====***	***6***	***42***	***0***	***0***	***2***	***2***	***D***	***Elective***
INTERNSHIP	***====***	***2***	***0***	***50***	***0***	***2***	***2***	***F***	***Educational training***
MASTER THESIS AND FINAL EXAM	***====***	***40***	***0***	***400***	***600***	***2***	***2***	***E***	***Final exam***
Total number of ECTS		***120***							

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Curriculum

NUCLEAR AND PARTICLE PHYSICS

NAME OF SUBJECT	SCIENTIFIC SECTOR	ECTS	DIDACTIC HOURS			DIDACTIC PERIOD	YEAR	ACTIVITY *	AREA OF INTEREST
			LESSONS	LAB/EXCERC	FINAL EXAM				
ADVANCED QUANTUM MECHANICS	FIS/02	6	35	15	0	1	1	B	Theoretical and Fundamentals of Physics
SOLID-STATE PHYSICS	FIS/03	6	42	0	0	1	1	B	Microphysical and Matter Structure
NUCLEAR AND SUBNUCLEAR PHYSICS	FIS/04	6	42	0	0	1	1	B	Microphysical and Matter Structure
NUCLEAR AND SUBNUCLEAR PHYSICS LABORATORY	FIS/01	6	21	45	0	1	1	B	Sperimental and Practicle
QUANTUM FIELD THEORY – I / NUCLEAR REACTION THEORY	FIS/02	6	28/ 35	30/ 15	0	1 2	1	C	Similar or Supplementary
THEORY OF STRONG INTERACTIONS	FIS/02	6	35	15	0	2	1	C	Similar or Supplementary
ELEMENTARY PARTICLES PHYSICS-I/ NUCLEAR ASTROPHYSICS	FIS/04	6	42	0	0	2	1	B	Microphysical and Matter Structure
EXPERIMENTAL METHODS FOR PARTICLE PHYSICS/ EXPERIMENTAL METHODS FOR NUCLEAR PHYSICS/ DATA ANALYSIS TECHNIQUES FOR NUCLEAR AND PARTICLE PHYSICS	FIS/01	6	21/ 42/ 28	45/ 0/ 30	0	2	1	B	Sperimental and Practicle
ELECTIVE COURSE	====	6	42	0	0	2	1	D	Elective
ASTROPARTICLE PHYSICS/ HEAVY IONS PHYSICS	FIS/01	6	42	0	0	1	2	B	Sperimental and Practicle
HADRONIC PHYSICS WITH ELECTROWEAK PROBES/ HIGH ENERGY NUCLEAR PHYSICS	FIS/04	6	42	0	0	1	2	B	Microphysical and Matter Structure

ELEMENTARY PARTICLE PHYSICS-II/ NUCLEAR STRUCTURE	*FIS/04*	*6*	*35*	*15*	*0*	*1*	*2*	*B*	*Microphysical and Matter Structure*
ELECTIVE COURSE	*====*	*6*	*42*	*0*	*0*	*1*	*2*	*D*	*Elective*
INTERNSHIP	*====*	*2*	*0*	*50*	*0*	*2*	*2*	*F*	*Educational training*
MASTER THESIS AND FINAL EXAM	*====*	*40*	*0*	*400*	*600*	*2*	*2*	*E*	*Final exam*
Total number of ECTS		*120*							

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Curriculum
THEORETICAL PHYSICS

NAME OF SUBJECT	SCIENTIFIC SECTOR	ECTS	DIDACTIC HOURS			DIDACTIC PERIOD	YEAR	ACTIVITY *	AREA OF INTEREST
			LESSONS	LAB/EXCERC	FINAL EXAM				
ADVANCED QUANTUM MECHANICS	FIS/02	6	35	15	0	1	1	B	Theoretical and Fundamentals of Physics
SOLID-STATE PHYSICS	FIS/03	6	42	0	0	1	1	B	Microphysical and Matter Structure
ADVANCED STATISTICAL MECHANICS	FIS/02	6	35	15	0	1	1	C	Theoretical and Fundamentals of Physics
QUANTUM FIELD THEORY-I	FIS/02	6	28	30	0	1	1	B	Theoretical and Fundamentals of Physics
GENERAL RELATIVITY	FIS/05	6	42	0	0	2	1	B	Astrophysical, Geophysical and Spatial
QUANTUM FIELD THEORY-II	FIS/02	6	28	30	0	2	1	B	Theoretical and Fundamentals of Physics
PHYSICS OF COMPLEX SYSTEMS/ THEORY OF STRONG INTERACTIONS/	FIS/02	6	35/ 35	15/ 15	0	2	1	C	Similar or Supplementary
NUCLEAR REACTION THEORY/ CLASSICAL ELECTRODYNAMICS	FIS/02	6	42	0	0	2	1	C	Similar or Supplementary
ELECTIVE COURSE	====	6	42	0	0	2	1	D	Elective
STANDARD MODEL THEORY	FIS/02	6	35	15	0	1	2	B	Theoretical and Fundamentals of Physics

MANY-BODY THEORY/ QUANTUM INFORMATION/ NUCLEAR AND SUBNUCLEAR PHYSICS	***FIS/03 FIS/04***	***6***	***42***	***0***	***0***	***1***	***2***	***B***	***Microphysical and Matter Structure***
ASTROPARTICLE PHYSICS/ HEAVY IONS PHYSICS	***FIS/01***	***6***	***42***	***0***	***0***	***1***	***2***	***B***	***Sperimental and Practicle***
ELECTIVE COURSE	***====***	***6***	***48***	***0***	***0***	***2***	***2***	***D***	***Elective***
INTERNSHIP	***====***	***2***	***0***	***50***	***0***	***2***	***2***	***F***	***Educational training***
MASTER THESIS AND FINAL EXAM	***====***	***40***	***0***	***400***	***600***	***2***	***2***	***E***	***Final exam***
Total number of ECTS		***120***							

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Curriculum

NUCLEAR PHENOMENA AND THEIR APPLICATIONS

NAME OF SUBJECT	SCIENTIFIC SECTOR	ECTS	DIDACTIC HOURS			DIDACTIC PERIOD	YEAR	ACTIVITY *	AREA OF INTEREST
			LESSONS	LAB/EXCERC	FINAL EXAM				
ADVANCED QUANTUM MECHANICS	FIS/02	6	35	15	0	1	1	B	Theoretical and Fundamentals of Physics
ADVANCED STATISTICAL MECHANICS	FIS/02	6	35	15	0	1	1	C	Similar or Supplementary
NUCLEAR AND SUBNUCLEAR PHYSICS/ NUCLEAR STRUCTURE	FIS/04	6	42	0	0	1	1	B	Microphysical and Matter Structure
NUCLEAR AND SUBNUCLEAR PHYSICS LABORATORY	FIS/01	6	21	45	0	1	1	B	Sperimental and Practicle
ADVANCED NUCLEAR TECHNIQUES APPLIED TO MEDICINE/ ENVIRONMENTAL RADIOACTIVITY	FIS/07 FIS/01	6	42	0	0	1	1	B	Sperimental and Practicle
THEORY OF NUCLEAR REACTION	FIS/02	6	35	15	0	2	1	B	Theoretical and Fundamentals of Physics
THEORY OF STRONG INTERACTIONS	FIS/02	6	35	15	0	2	1	C	Similar or Supplementary
NUCLEAR ASTROPHYSICS	FIS/04	6	42	0	0	2	1	B	Microphysical and Matter Structure
EXPERIMENTAL METHODS FOR NUCLEAR PHYSICS/ LABORATORY OF ENVIRONMENTAL PHYSICS	FIS/01	6	42/ 21	0/ 45	0	2	1	B	Sperimental and Practicle
ARCHEOMETRY/ACCELERATOR PHYSICS AND APPLICATIONS	FIS/07	6	42	0	0	2	1	B	Sperimental and Practicle

COMMON ADVANCED COURSE	***FIS/04***	***6***	***42***	***0***	***0***	***1***	***2***	***B***	***Microphysical and Matter Structure***
ELECTIVE COURSE	***-------***	***12***	***84***	***0***	***0***	***1***	***2***	***D***	***Elective***
RESEARCH INTERNSHIP	***====***	***12***	***0***	***300***	***0***	***2***	***2***	***F***	***Educational training***
MASTER THESIS AND FINAL EXAM	***====***	***30***	***0***	***0***	***750***	***2***	***2***	***E***	***Final exam***
Total number of ECTS		***120***							

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