



**AGH**

AGH UNIVERSITY OF SCIENCE  
AND TECHNOLOGY

Faculty of: Physics and Applied Computer Science

Field of study: Technical Physics

Study level: Second-cycle studies

Form and type of study: Full-time studies

Annual: 2018/2019

Lecture language: Polish

Code	Module name	Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Others	E-learning	ECTS	E
<b>Semester 1</b>														
Engineering														
JFT-2-102-s	Modern Electronics	30	0	45	0	0	0	0	0	0	0	0	6	No
JFT-2-103-s	Advanced Data Analysis	15	0	30	10	0	0	0	0	0	0	0	4	Yes
JFT-2-105-s	Scientific Text Edition and Presentation	15	0	15	0	0	15	0	0	0	0	0	4	No
Non-technical														
JFT-2-106-s	Coordination and Funding of Scientific Research	15	0	0	15	0	0	0	0	0	0	0	2	No
Physics														
JFT-2-101-s	Quantum Mechanics	45	30	0	0	0	15	0	0	0	0	0	8	Yes
JFT-2-104-s	Seminar (Technical Physics)	0	0	0	0	0	45	0	0	0	0	0	4	No
Suma ECTS													28	
<b>Semester 2</b>														
Thesis														
JFT-2-204-s	Thesis-oriented Internship	0	0	0	0	0	0	110	0	0	0	0	4	No
<b>Electives Humanities II</b>													3	
The rules for selecting groups/modules: Student wybiera przedmioty obieralne o łącznej liczbie ECTS nie mniejszej od 3.														
JFT-2-202-s	Modern marketing activities	15	30	0	0	0	0	0	0	0	0	0	3	No
JFT-2-214-s	Zarządzanie rozwojem startupu	15	15	0	0	0	0	0	0	0	0	0	3	No
<b>Electives Humanities II</b>													2	
The rules for selecting groups/modules: Student wybiera przedmioty obieralne o łącznej liczbie ECTS nie mniejszej od 2.														

## Study programme - Technical Physics - 2018/2019

Code	Module name	Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Others	E-learning	ECTS	E
JFT-2-203-s	Sociology of religion and non-religion	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-207-s	Organisation management	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-211-s	Blank spots in Polish history. Disputes and controversies	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-212-s	The Anthropology of Everyday Life. From Birth to Death	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-213-s	Philosophical cancelling and coaching	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-215-s	Współczesne społeczeństwo polskie	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-216-s	From Tolkien to Brown. XX and XXI century popular literature	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-217-s	Główne nurty muzyki popularnej	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-218-s	Who is the man? Contemporary controversy	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-219-s	Myślenie krytyczne. Współczesne wyzwania kultury i cywilizacji	30	0	0	0	0	0	0	0	0	0	0	2	No
<b>Foreign language</b>													2	
The rules for selecting groups/modules: Jeden przedmiot z grupy													2	
JFT-2-205-s	Spanish B2+ course - compulsory course for students of SECOND-CYCLE STUDIES	0	30	0	0	0	0	0	0	0	0	0	2	Yes
JFT-2-206-s	English B2+ course - compulsory ESP course for students of SECOND-CYCLE STUDIES at the Faculty of Physics and Applied Computer Science	0	30	0	0	0	0	0	0	0	0	0	2	Yes
JFT-2-208-s	Russian B2+ course - compulsory course for students of SECOND-CYCLE STUDIES	0	30	0	0	0	0	0	0	0	0	0	2	Yes
JFT-2-209-s	French B2+ course - compulsory course for students of SECOND-CYCLE STUDIES	0	30	0	0	0	0	0	0	0	0	0	2	Yes
JFT-2-210-s	German B2+ course - compulsory course for students of SECOND-CYCLE STUDIES at the Faculty of Physics and Applied Computer Science	0	30	0	0	0	0	0	0	0	0	0	2	Yes
<b>Electives FT II.2</b>													21	
The rules for selecting groups/modules: Student wybiera przedmioty obieralne o łącznej liczbie ECTS nie mniejszej od 21, w tym przedmiot w całości prowadzony w języku obcym, za który może uzyskać co najmniej 3 ECTS.													21	
Suma ECTS													32	
<b>Semester 3</b>														
Thesis														
JFT-2-301-s	Seminar (M.Sc. Thesis)	0	0	0	0	0	45	0	0	0	0	0	5	No
JFT-2-303-s	Master's thesis	0	0	0	90	0	0	0	0	0	0	0	20	Yes
<b>Electives FT II.3</b>													5	
The rules for selecting groups/modules: Student wybiera przedmioty obieralne o łącznej liczbie ECTS nie mniejszej od 5.													5	
Suma ECTS													30	
<b>Semester 0 - Completion of modules in any semester</b>														
Engineering														
JFT-2-007-s	Working with Scripting Languages	15	0	15	0	0	0	0	0	0	0	0	3	No
JFT-2-008-s	Modelling of environmental processes	15	0	0	30	0	0	0	0	0	0	0	4	No
JFT-2-009-s	Geochemistry	30	15	0	15	0	0	0	0	0	0	0	5	Yes
JFT-2-024-s	Radiochemistry	30	0	30	0	0	0	0	0	0	0	0	5	No
JFT-2-029-s	Data Acquisition Systems	0	0	20	20	0	20	0	0	0	0	0	6	No
JFT-2-031-s	Cryogenics	30	0	15	0	0	0	0	0	0	0	0	4	No
JFT-2-034-s	Python in the Enterprise	15	0	20	10	0	0	0	0	0	0	0	5	Yes
JFT-2-035-s	Multicore programming	15	0	18	10	0	0	0	0	0	0	0	4	No

## Study programme - Technical Physics - 2018/2019

Code	Module name	Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Others	E-learning	ECTS	E
JFT-2-039-s	Applications for Mobile Devices	15	0	30	0	0	0	0	0	0	0	0	4	No
JFT-2-041-s	Modern Measurement Methods	30	0	45	0	15	0	0	0	0	0	0	7	No
JFT-2-045-s	Hardware Description Language	20	0	22	15	0	0	0	0	0	0	0	6	No
JFT-2-052-s	VPython: 3D Simulations of Physical Processes for Everybody	15	0	30	0	0	0	0	0	0	0	0	3	No
JFT-2-056-s	Trace Analysis	15	0	15	0	0	0	0	0	0	0	0	3	No
JFT-2-058-s	Introduction to X-ray Fluorescence Analysis	30	0	0	0	0	0	0	0	14	0	0	4	Yes
JFT-2-060-s	Microtomography	22	0	15	0	8	0	0	0	0	0	0	4	No
JFT-2-063-s	Methodology of Air Quality Measurements	15	0	12	6	0	0	0	15	0	0	0	4	No
JFT-2-068-s	Parallel and Distributed Systems	30	0	26	4	0	0	0	0	0	0	0	5	Yes
JFT-2-069-s	Nanotechnologies and their Applications in Natural Sciences	15	7	7	0	0	0	0	0	0	0	0	3	Yes
JFT-2-070-s	Design of integrated circuits in CMOS technology	15	0	30	15	0	0	0	0	0	0	0	4	Yes
JFT-2-072-s	Design of integrated circuits in CMOS technology	15	0	30	15	0	0	0	0	0	0	0	4	Yes
Mathematics														
JFT-2-028-s	Introduction to Game Theory	30	0	0	0	0	0	0	0	0	0	0	3	Yes
Other Basic														
JFT-2-042-s	Photosynthesis	30	0	20	0	0	8	0	0	0	0	0	5	No
JFT-2-043-s	Small Course of Photosynthesis	22	0	0	0	0	6	0	0	0	0	0	3	No
JFT-2-055-s	Podstawy obliczeń kwantowych	30	0	0	0	0	30	0	0	0	0	0	5	Yes
Physics														
JFT-2-010-s	Radioactivity in the Environment	30	0	15	0	0	0	0	0	0	0	0	3	No
JFT-2-011-s	Solid State Structures and Symmetries	30	0	15	0	0	0	0	0	0	0	0	4	Yes
JFT-2-012-s	Experimental Methods of Condensed Matter Physics	30	0	15	0	0	15	0	0	0	0	0	4	No
JFT-2-013-s	Soft Matter Physics	28	14	0	0	0	14	0	0	0	0	0	4	Yes
JFT-2-014-s	Semiconductor Materials and Devices	30	0	0	0	0	30	0	0	0	0	0	4	No
JFT-2-015-s	Physics of Disordered Matter	30	0	15	0	0	0	0	0	0	0	0	4	No
JFT-2-016-s	Laboratory of Condensed Matter Physics	0	0	45	0	0	0	0	0	0	0	0	5	No
JFT-2-017-s	Physics of Surface, Thin Films and Nanostructures	30	0	0	0	0	0	15	0	0	0	0	4	Yes
JFT-2-018-s	Analytical Methods in Environmental Studies	30	0	15	0	0	0	6	0	0	0	0	4	Yes
JFT-2-019-s	Environmental Monitoring	0	0	0	0	0	0	0	0	0	0	0	5	Yes
JFT-2-022-s	Global Biogeochemical Cycles	25	0	0	8	0	12	0	0	0	0	0	4	No
JFT-2-023-s	X-Ray Applications	30	0	15	0	0	0	0	0	0	0	0	3	Yes
JFT-2-025-s	Magnetism and Physics of Metals	30	0	10	0	0	5	0	0	0	0	0	3	Yes
JFT-2-030-s	Group Theory and Symmetries in Physics	30	15	0	0	0	0	0	0	0	0	0	4	No
JFT-2-038-s	Physics of Sailing	30	0	0	0	0	0	0	0	0	0	0	2	No
JFT-2-044-s	Introduction to Data Analysis in Experimental Particle Physics	15	0	0	15	0	0	0	0	0	0	0	3	No
JFT-2-049-s	Introduction to Quantum Optics	30	30	0	0	0	0	0	0	0	0	0	4	No
JFT-2-050-s	Scattering Theory	30	30	0	0	0	0	0	0	0	0	0	4	Yes
JFT-2-051-s	Introduction to Atomic and Molecular Physics	30	30	0	0	0	0	0	0	0	0	0	4	Yes
JFT-2-059-s	Laboratory of Advanced Nuclear Techniques	0	0	30	0	0	0	0	0	0	0	0	3	No
JFT-2-061-s	Introduction to Quantum Theory of Electronic Transport	30	0	0	0	0	0	0	0	0	0	0	4	No

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Code	Module name	Lectures	Auditorium classes	Laboratory classes	Project classes	Conversation seminar	Seminar classes	Practical classes	Fieldwork classes	Workshops	Others	E-learning	ECTS	E
IJT-2-062-s	Introduction to Eddy Covariance	16	0	16	0	0	0	0	8	0	0	0	4	Yes
IJT-2-064-s	Introduction to synchrotron radiation and its applications	15	0	0	15	0	0	0	0	0	0	0	3	No
IJT-2-065-s	Disperse Modelling in Physics of Atmosphere	4	12	0	0	0	0	0	12	0	0	0	2	No
IJT-2-066-s	X-ray Physics	30	15	15	0	0	0	0	0	0	0	0	6	Yes
IJT-2-071-s	Methods of Structural and Diffractive Analysis of Aperiodic Systems	10	0	20	0	0	0	0	0	0	0	0	2	No
<b>Elektronika i systemy detekcyjne</b>														
The rules for selecting groups/modules:														
IJT-2-026-s	Nuclear Electronics	45	15	30	0	0	0	0	0	0	0	0	7	Yes
IJT-2-027-s	Position-sensitive Ionizing Particles and X-rays Detectors	15	0	15	0	0	15	0	0	0	0	0	3	No
IJT-2-036-s	Design of CMOS Integrated Circuits	15	0	30	15	0	0	0	0	0	0	0	5	Yes
IJT-2-046-s	Digital Systems Design	30	0	30	15	0	0	0	0	0	0	0	5	No
IJT-2-047-s	Microprocessor Techniques	20	0	22	15	0	0	0	0	0	0	0	5	No
IJT-2-067-s	Designing Electronic Modules	15	0	30	15	0	0	0	0	0	0	0	5	No
<b>Fizyka cząstek elementarnych</b>														
The rules for selecting groups/modules:														
IJT-2-001-s	Introduction to Hadron-Hadron Interactions	30	15	0	0	0	0	0	0	0	0	0	4	No
IJT-2-002-s	Physics of Ultrarelativistic Heavy-ion Collisions	20	8	0	0	0	0	0	0	0	0	0	3	No
IJT-2-003-s	Cosmic Rays and Neutrinos	20	8	0	0	0	0	0	0	0	0	0	3	No
IJT-2-004-s	Introduction to Standard Model	30	8	0	6	0	0	0	0	0	0	0	4	No
IJT-2-005-s	Methods for the Analysis of Experimental Data	30	15	0	15	0	0	0	0	0	0	0	5	No
IJT-2-006-s	Experimental Methods in High Energy Physics	20	0	22	0	0	0	0	0	0	0	0	4	No
IJT-2-033-s	Particle Accelerators	30	15	0	0	0	0	0	0	0	0	0	3	No
IJT-2-040-s	CP Violation in Heavy Flavour Physics	16	6	0	6	0	0	0	0	0	0	0	3	No
IJT-2-048-s	Introduction to the Particle Physics Data Analysis	15	0	21	0	0	4	0	0	0	0	0	4	No