

PHP 4 3 2 1					Speciality Physics / Master degree program "Plasma technologies and Thermonuclear fusion "-3 terms training									
PHP432119					for a course started in 2019/2020 academic year (regular education)									
№	course code				Subject	Comulsory/Optional course	Term	ECTS credits	Total Hours				Hours per week	Form of exams* E, OE
									Total	Lectures	Seminars	Practicum		
1	2				3	4	5	6	7	8	9	10	11	12
<b>Common courses</b>														
1	M	8	1	4	Fundamentals of Plasma Physics	C	1	6.0	180	60	15	0	4 1 0	E
2	M	8	1	5	Plasma diagnostics	C	1	4.0	120	60	0	0	4 0 0	E
3	M	8	1	6	Practicum on Plasma diagnostics	C	1	3.0	90	0	0	30	0 0 2	OE
4	M	8	1	7	Vacuum technique	C	1	4.0	120	30	15	0	2 1 0	E
5	M	8	1	8	Practicum on Vacuum technique	C	1	3.0	90	0	0	30	0 0 2	OE
6	M	8	1	9	Fundamentals of plasma electrodynamics	C	1	5.0	150	45	15	0	3 1 0	E
<b>Module A</b>														
7	M	8	2	0	Gas discharge plasma sources	C	2	8.0	240	45	15	30	3 1 2	E
8	M	8	2	1	Space and Gas-Discharge Plasma Simulations	C	2	7.0	210	30	0	45	2 0 3	E
<b>Module B</b>														
9	M	8	2	2	Fusion reactors	C	2	5.5	150	30	30	0	2 2 0	E
10	M	8	2	3	Fusion plasma heating	C	2	8.0	240	45	15	30	3 1 2	E
11	M	8	2	4	Numerical models for high-temperature plasma simulation	C	2	7.0	210	30	0	45	2 0 3	OE

#### Optoinal courses

<b>OPTIONAL COURSES for Module A (total number of credits should not be less than 20 (1-st. term - 5 credits, 2 -nd - 15 credits))</b>														
12	M	8	2	5	Low-temperature plasma kinetics	O	1	3.5	105	30	15	0	2 1 0	OE
13	M	8	2	6	Seminar on current topics in plasma physics	O	1	1.5	45	0	15	0	0 1 0	OE
14	M	8	2	7	Plasma applications in ecology and medicine	O	1	3.5	105	30	15	0	2 1 0	OE
15	M	8	2	8	Principles and basic operations of planar technologies	O	2	5.0	150	30	0	30	2 0 2	OE
16	M	8	2	9	Nano-structural materials and devices of information technologies	O	2	3.5	105	30	0	15	2 0 1	OE

17	M	8	3	0	Plasma technologies in the industry	O	2	5.0	150	30	0	30	2 0 2	OE
18	M	8	3	1	Atomic and Molecular spectra	O	2	5.0	150	60	15	0	4 1 0	OE
19	M	8	3	2	Seminar on current topics in plasma physics	O	2	1.5	45	0	15	0	0 1 0	OE
20	M	8	3	3	Plasma technologies in analytical chemistry	O	2	5.0	150	30	15	15	2 1 1	OE
21	M	8	3	4	Optional courses from Module B or another master's program	O	1	5.0	150					OE

<b>OPTIONAL COURSES for Module B (total number of credits should not be less than 15 (1 st term -5 credits, 2 nd -10 credits))</b>														
22	M	8	3	5	Charged particles beams for fusion application	O	1	5.0	150	30	15	15	2 1 1	OE
23	M	8	3	6	Optional courses from Module A or another master's program	O	1	5.0	150					OE
24	M	8	3	7	High-temperature plasma diagnostics	O	2	6.0	180	45	15	15	3 1 1	OE
25	M	8	3	8	Modern materials for fusion reactors	O	2	5.0	150	45	0	15	3 0 1	OE
26	M	8	3	9	Interaction of fusion plasmas with walls	O	2	5.0	150	45	15	0	3 1 0	OE
27	M	8	4	0	Programming in UNIX Environment	O	2	2.0	60	30	0	0	2 0 0	OE
28	M	8	4	1	Practicum - Programming in UNIX Environment	O	2	4.5	135	0	0	45	0 0 3	OE
29	M	8	4	2	Seminar on current topics in high temperature plasma physics	O	2	1.5	45	0	15	0	0 1 0	OE
30	M	8	4	3	Introduction to high-performance calculations	O	2	4.0	120	30	0	15	2 0 1	OE
31	M	8	4	4	Neutron Physics	O	2	6.0	180	45	30	0	3 2 0	OE
32	M	8	4	5	Computer data processing and visualization	O	2	5.0	150	30	0	30	2 0 2	OE
33	M	8	4	6	Nuclear Reactions	O	2	4.5	135	45	0	0	3 0 0	OE
34	M	8	4	7	Active spectroscopy methods for plasma diagnostics	O	2	5.0	150	30	0	30	2 0 2	OE

#### Work-related practice and course works

No	code				Subject	Comulsory/Optional course	Term	ECTS - credits	Weeks	Hours	Form of exams* - E; OE
1	M	8	5	0	Laboratory practice-module A	C	3	15	15	150	OE
2	M	8	5	1	Laboratory practice-module B	C	3	15	15	150	OE

**Graduation**

Graduation procedure	Сессия	session	public
Defense of master thesis - Module A	15	February	July
Defense of master thesis - Module B	15	February	July

The curriculum was approved at a meeting of the Faculty Council with a protocol № .18. of .18.12.2018. ....

DEAN:.....  
Prof. DSc A. Dreischuh



