

Tomsk State Pedagogical University
(TSPU)



Approved by Scientific Council of TSPU

_____ 20__ г.

Chairman of Scientific Council, rector

_____ V.V. Obukhov

Curriculum

Title conferred: Master

Length of programme: 2 years

Mode of study: full time

Access Requirements: higher education

Name of the qualification 011200.68 Physics
Master degree program: Theoretical and Mathematical Physics

I. Schedule of the learning

Year	September				October				November				December				January				February				March				April				May				June				July				August							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
I																P	P	P	E	E	E	V	V																P	P	P	E	E	E	V	V	V	V	V	V	V	V
II	P	P	P	P	P	P	P	P	P	P								E	V	V	R	R	R	R	R	R	R	R	R	R	R	F	F	F	F	F	F	F	F	F	F	F	F	F	V	V	V	V	V	V	V	V

Notations:

E – examinations

V – vacations

P – Practicum

R – research

F – Final Examinations

II. Time budget in weeks

Theoretical study	Examinations	Practicum and Research	Final examination	Vacations	Total	Year of study
29	4	10	0	9	52	I
12	3	10	20	7	52	II
41	7	20	20	16	104	Total

III. Curriculum

Code	Course	Credit units	Workload, hours						Hours per week			
			Total	Contact hours				Home Work	1 st year		2 nd year	
				Total	lectures	labs	seminars		1	2	3	4
									15	15	7	0
1	2	5	6	7	8	9	10	11	12	13	14	15
M.1	General Module	32	1152	284	105	0	179	868				
M.1.00	Basic part	8	288	74	15	0	59	214				
	Philosophy of natural sciences*	4	144	30	15	0	15	114	1/1			
	Physics Laboratory	4	144	44	0	0	44	100	1/1	1/1	1/2	
M.1.B.00	Variable part	24	864	210	90	0	120	654				
	Courses defined by department	20	720	150	60	0	90	570				
	Foreign language	6	216	60	0	0	60	156	1/2	1/2		
	Lie group theory	6	216	45	30	0	15	171	2/1			
	Advanced Quantum Mechanics	8	288	45	30	0	15	243	2/1			
	Optional courses	4	144	60	30	0	30	84				
	Differential Geometry/Modern Electrodynamics	2	72	30	15	0	15	42		1/1		
	Hamiltonian Systems with Constrains / Mathematical Methods of	2	72	30	15	0	15	42		1/1		
M.2	Professional Module	28	1008	232	116	0	116	776				
M.2.00	Basic part	8	288	60	30	0	30	228				
	Modern Problems in Physics	4	144	30	15	0	15	114	1/1			
	History and Methodology of Physics	4	144	30	15	0	15	114		1/1		
M.2.B.00	Variable part	20	720	172	86	0	86	548				
	Courses defined by department	14	504	116	58	0	58	388				
	Classical Fields	4	144	58	29	0	29	86		1/1	2/2	
	Quantum Field Theory	3	108	28	14	0	14	80			2/2	
	General Relativity	3	108	30	15	0	15	78		1/1		
	Supersymmetric Field Theory	2	72	0	0	0	0	72				1/1
	String Theory	2	72	0	0	0	0	72				2/2
	Optional courses	6	216	56	28	0	28	160				
	Cosmology	3	108	28	14	0	14	80			2/2	
	Quantum Gauge Theory / Quantum Theory of Radiation	3	108	28	14	0	14	80			2/2	
M.3	Practicum and Research	40	1440	0	0	0	0	1440				
M.4	Final Examinations	20	720	0	0	0	0	720				
	Total workload	120	4320	516	221	0	295	3804				
									13	13	18	6
	Average hours per week								165	195	126	0
	13,95				10				3	3	3	1
					9				2	4	2	1

* - lectures/labs/seminars

Agreed

Vice Rector for Education M.A. Chervonny

Director of the Department of Education I.G. Sannikova

Dean of the Faculty of Physics and Mathematics A.N. Makarenko