

**Faculty of Science
University of Kragujevac
Serbia**

Undergraduate academic studies of physics

Undergraduate studies last four years. In the third year, students choose one of four modules:

A - general physics

B - teacher of physics and computer science

C - information technology and electronics

D - medical physics

Acquired titles upon completion of the selected module are:

A - Bachelor of physicist - for general physics

B - Bachelor of physicist - teacher of physics and informatics

C - Bachelor of physicist - information technology and electronics

D - Bachelor of physicist - medical physics

STRUCTURE OF STUDY PROGRAMS:

First year

Semester I

1	FIZ035	Physics mechanics
2	FIZ036	Physics mechanics laboratory
3	FIZ037	Mathematics 1
4	FIZ038	Chemistry
5 election block	FIZI07	
	FIZ055	English A1
	FIZ056	English B1

Semester II

6	FIZ040	Molecular physics
7	FIZ041	Molecular physics laboratory
8	FIZ042	Mathematics 2
9	FIZ043	Informatics
10 election block	FIZI08	

	FIZ057	English A1
	FIZ058	English B1

Second Year Semester III

11	FIZ045	Electromagnetism 1
12	FIZ046	Laboratory in Electromagnetism 1
13	FIZ047	Mathematics 3
14 election block	FIZI09	
	FIZ059	Programming languages of new generations
	IN1022	Operating systems 1
15 election block	FIZI10	
	FIZ061	Application of microcomputers in physics
	IN1027	Introduction to artificial intelligence

Semester IV

16	FIZ050	Electromagnetism 2
17	FIZ051	Optics
18	FIZ053	Mathematical Physics 1
19	FIZ052	Laboratory in Electromagnetism and Optics
20	FIZ054	Theoretical mechanics

MODULES:

A - general physics

Third Year Semester V

1	FI1016	Electrodynamics
2	FI1017	Mathematical Physics 2
3	FI1018	Analog electronics
4 election block	FI1I04	
	FI1036	Numerical methods and simulations in physics
	FI1037	Photonics

Semester VI

5	FI1020	Quantum mechanics
6	FI1021	Digital electronics
7	FI1022	History of physics
8 election block	FI1105	
	FI1038	Development of scientific thought
	FI1039	Philosophy of natural sciences

Fourth year

Semester VII

9	FI1024	Atomic physics
10	FI1025	Laboratory in Atomic physics
11	FI1026	Statistical physics
12	FI1027	Metrology
13 election block	FI1106	
	FI1040	Parallel programming
	FI2009	Physics teaching aids
14	FI1029	Professional practice

Semester

VIII

15	FI1030	Subatomic physics
16	FI1031	Laboratory in Subatomic physics
17	FI1032	Solid state physics
18	FI1033	Laboratory of Modern Physics
19 election block	FI1107	
	FI1041	Educational software
	FI1042	Software engineering
20 election block	FI1108	
	FI1043	Plasma physics
	FI1044	Physics of materials

B - teacher of physics and computer science

Third Year

Semester V

1	FI2008	Classical theoretical physics
2	FI1018	Analog electronics
3	FI2009	Physics teaching aids
4 election block	FI2104	
	FI1036	Numerical methods and simulations in physics
	FI1037	Photonics
5	KOP098	Psychology

Semester VI

6	FI2011	Quantum theoretical physics
7	FI2012	Object-oriented programming
8	FI2013	Computer architecture
9 election block	FI2105	
	FI1038	Development of scientific thought
	FI1039	Philosophy of natural sciences
10	KOP094	Pedagogy

Fourth Year

Semester VII

11	FI1024	Atomic physics
12	FI1025	Laboratory in Atomic physics
13	FI2015	Informatics teaching methodology
14	FI2001	Methodology of working with talented students
15	FI2016	Physics and informatics in school
16 election block	FI2106	
	FI2020	Visual programming
	FI2021	Information systems 1
17	FI1029	Professional practice

Semester

VIII

18	FI1030	Subatomic physics
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19	FI1031	Laboratory in Subatomic physics
20	FI1032	Solid state physics
21 election block	FI2107	
	FI2022	Client web technologies
	FI2023	Logical and functional programming
22 election block	FI2108	
	FI1043	Plasma physics
	FI1044	Physics of materials
23	FI2006	Physics teaching methodology

C - information technology and electronics

Third Year

Semester V

1	FI2008	Classical theoretical physics
2	FI1018	Analog electronics
3	FI3009	Electrical measurements and sensors
4	FI3001	Databases 1
5	FI3008	Software packages

Semester VI

6	FI2011	Quantum theoretical physics
7	FI2012	Object-oriented programming
8	FI1021	Digital electronics
9 election block	FI3104	
	FI2022	Client web technologies
	FI2023	Logical and functional programming

Semester VII

10	FI1024	Atomic physics
11	FI1025	Laboratory in Atomic physics
12	FI3011	Microcontroller systems
13 election block	FI3105	
	FI2020	Visual programming
	FI2021	Information systems 1

14 election block	FI3106	
	FI3017	Mobile device programming
	FI3018	Game physics
15	FI1029	Professional practice

Semester VIII

16	FI1030	Subatomic physics
17	FI1031	Laboratory in Subatomic physics
18	FI3014	Application of electronic circuits
19	FI1032	Solid state physics
20 election block	FI3107	
	FI1041	Educational software
	FI1042	Software engineering
21 election block	FI3108	
	FI3019	Internet of things
	FI3020	Electronic circuit design

D - medical physics

Third Year

Semester V

1	FI2008	Classical theoretical physics
2	FI1018	Analog electronics
3	FI3009	Electrical measurements and sensors
4	FI4008	Fundamentals of biophysics
5 election block	FI4104	
	BIO050	Cell biology
	BIO059	Biochemistry

Semester VI

6	FI2011	Quantum theoretical physics
7	FI4010	Fundamentals of anatomy and physiology
8	FI1021	Digital electronics
9	FI4011	Physical basics of electrical therapy and electrical diagnostics

10 election block	FI4I05	
	FI1038	Development of scientific thought
	FI1039	Philosophy of natural sciences

Fourth Year Semester VII

11	FI1024	Atomic physics
12	FI1025	Laboratory in Atomic physics
13	FI4013	Medical instrumentation 1
14	FI1003	Radiation physics
15 election block	FI4I06	
	FI3008	Software packages
	FI4018	Dosimetry and radiation protection
16 election block	FI4I07	
	FI3011	Microcontroller systems
	FI4019	Physical bases of radio therapy and radio diagnostics
17	FI1029	Professional practice

Semester VIII

18	FI1030	Subatomic physics
19	FI1031	Laboratory in Subatomic physics
21	FI4016	Medical image 1
21	FI1032	Solid state physics
22 election block	FI4I08	
	FI3019	Internet of things
	FI3020	Electronic circuit design