

RUSSIAN STATE HYDROMETEOROLOGICAL UNIVERSITY

REGIONAL METEOROLOGICAL TRAINING CENTRE
of WORLD METEOROLOGICAL ORGANIZATION

EDUCATIONAL PROGRAMMES

Curricula

St Petersburg

2004

The Educational Programmes is second edition in English on the full-time programmes at undergraduate and postgraduate levels in Russian State Hydrometeorological University, St Petersburg. The edition provides details of offered programmes and short information about the University. RSHU taught courses follow a modular pattern by Ministry of Education of the Russian Federation. It is meant to be main source of information for those who are willing to make an assessment of the education quality of University graduates.

The edition is supplemented by new materials.

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INTRODUCTION

Russian State Hydrometeorological University (RSHU) is the first in the world and the only in Russia educational institution for training specialists in the field of Hydrometeorology. It was founded in 1930 in Moscow, transferred then to Leningrad (at present Saint Petersburg) in 1944 and named Leningradski Hydrometeorological Institute. Then in 1992 it was renamed as State Hydrometeorological Institute of the Russian Federation. In 1995 the institute was declared as Regional Meteorological Training Center of World Meteorological Organization (WMO). In 1998 it took the university status and since then it bears present name. At the present every year over 3 000 students study at the University including foreign students from all over the world. The RSHU's diplomas are world-wide recognized.

The University includes seven faculties:

- * Faculty of Meteorology
- * Faculty of Hydrology
- * Faculty of Oceanography
- * Faculty of Ecology and Environmental Physics
- * Faculty of Economics and Socio-Humanitarian Sciences
- * Faculty of Correspondence Learning
- * Faculty of Professional Development and Retraining.

Programmes of full-time study are realized at the faculties of Meteorology, Hydrology, Oceanography, Ecology and Environmental Physics, Economics and Socio-Humanitarian Sciences. Programmes of part-time study are carried out at the faculties of Correspondence Learning, Professional Development and Retraining.

The University realizes educational programmes to have been accredited by Ministry of Education RF in following Fields of study:

- * Hydrometeorology
- * Ecology and Natural Resource Management
- * Shipboard Equipment
- * Information Security
- * Management
- * Journalism.

In a field of study students may choose Specialties and Specializations.

Study is provided by high-qualified professor and teaching staff at more than 20 chairs of the University and in the laboratories equipped special devices for training purposes. Also other facilities are available for research and teaching goals: a Educational practice bases situated in various regions of Russia, the ocean-going research vessel.

University programmes meet all requirements set by Ministry of Education of the Russian Federation to university education quality. The taught courses leading to the degrees of Bachelors of Science, Masters of Sciences, Diploma Specialists (qualification) provide a structured programme of multilevel study. The educational programmes are designed to meet the needs of graduates working or intending to work in the industry, commerce and public services, although many students also undertake such courses in preparation for study for a research degree.

GENERAL STRUCTURE OF RSHU

Contact mails

FACULTIES

Meteorology dekanat_mf@rshu.ru
Hydrology dekanat_gf@rshu.ru
Oceanography ocean@rshu.ru
Ecology and Environmental Physics eco_dekanat@rshu.ru
Economics and Socio-Humanitarian Sciences rshu@rshu.ru
Correspondence Learning rshu@rshu.ru
Professional Development and Retraining rshu@rshu.ru

Academic
Council

Rector, rector@rshu.ru
 Vice-rector for Educational Matters, sakov@rshu.ru
 Vice-rector for Science Research, vnv@rshu.ru
 Vice-rector for Educational Approaches, rshu@rshu.ru
 Vice-rector for International Relations, bogush@rshu.ru
 Vice-rector for Executive Matters, rshu@rshu.ru

Executive Services
Research Center vnyv@rshu.ru
Library rshu@rshu.ru
International Relations Office bogush@rshu.ru
Information Technologies Center admin@rshu.ru

CHAIRS OF RSHU

At Faculty of Meteorology:

Chair of Hydrometeorological Forecasts
Chair of Meteorology, Climatology and Atmosphere Protection
Chair of Atmosphere Dynamics and Space Research of Earth
Chair of Experimental Physics of Atmosphere

At Faculty of Hydrology:

Chair of Hydrometry
Chair of Hydrogeology and Geodesy
Chair of Hydrology of Inland Waters
Chair of Hydrophysics and Hydrological Forecasts

At Faculty of Oceanography:

Chair of Oceanography
Chair of Integrated Coastal Zone Management
Chair of Fishery Oceanography and Nature Waters Protection
Chair of Marine Information Technologies

At Faculty of Ecology and Environmental Physics:

Chair of Mathematics
Chair of Physics
Chair of Environmental Chemistry
Chair of Ecology
Chair of Applied Ecology

At Faculty of Economics and Socio-Humanitarian Sciences

Chair of Economics and Management
Chair of Socio-Humanitarian Sciences
Chair of Foreign Languages
Chair of Russian Language and Public Relations
Chair of Physical Training

Part-time programmes (or courses) of study at **faculties of Correspondence Learning and Professional Development and Retraining** are realized on facility base of first five faculties.

GENERAL ACADEMIC INFORMATION

General entry requirements

To enter an undergraduate programme at RSHU applicant should be aged between 17 and 35, have a school certificate and have passed entry written examinations. The subjects of examinations are defined by faculty which applicant want to be applied (usually Mathematics, Physics, Essay in Russian or History of Russia). Entry examinations are conducted on fixed dates in several phases from April till July. Olympiads on the subjects above take place in April and May, its successful results are to be considered as entry's.

Usually the number of submitted applications to the first-year of study exceeds the number of educational places that University can provide. The number of applications submitted to one educational place defines passing score in RSHU as well as the rating of the University in the city. Successful applicants who get no less then passing score can be only admitted to the University.

To enter an postgraduate programme at RSHU applicant should have a Bachelor's degree or Specialist Diploma in appropriate fields of knowledge.

The academic year

RSHU's academic year follows an semester calendar consisting of fall (from September 1) and spring (early February) semesters. In addition to the two semesters, a four-week intersession and six-week summer session are available for examinations.

Classes are conducted in each semester for a period of fifteen weeks in average in according to the requirements for semester. At the end of each semester, there is an examination period preceded by one week for tests passing. Classes periods are forty five minutes long and called an academic hour. The average students enrolls in 30 academic hours per week.

For successfully graduation student on full-time study usually have 10 exams and 12 test per academic year in both forms, oral and written, a year. Students on part-time study should implement most of tests at home and send them by regular post to course's tutors for

checking up. They come to the University twice a year in autumn and spring for approximately one month to take short courses and pass the exams in according to their programmes of study.

Grading system

To complete a course in RSHU each student should pass all examinations or tests during sessions. The qualities of academic performance indicates following grades (foreign analogue of the grade is given in parentheses):

- 5 — exceptional achievement (excellent);
 - 4 — extensive achievement (good, satisfactory);
 - 3 — acceptable or minimal achievement (satisfactory, poor);
- passed — acceptable achievement for tests.

There is no “failure” grade in Russian universities. If student fails one of examinations in period of session he reserves a time during next semester to re-pass it. In the case of continual failure of the examination student is withdrawn and is to start from the beginning semester with failed course again next academic year. Naturally, successful results of completed courses are to be transferred next year.

Tuition fees

Most of programmes in RSHU are for free (the students don't pay for their education) — free education, sufficient students even get the monthly scholarship. But there are programmes of study as students should pay tuition fees — chargeable education. Study by some specialties is only chargeable.

Teaching approaches

Study on all programmes at RSHU is provided in Russian and determined by Curricula and Standards of Ministry of Education of RSHU.

The exception is only one group of students at the Faculty of Meteorology who are taught most part of courses in English.

International students are to attend one-year preparatory programme in RSHU or other University as they learn Russian Language and general courses of Secondary School in Russian.

All necessary skills students can get on lectures, seminars, colloquiums, in laboratories, during field works and practical trainings. The results of self-work students present in the form of course works and research project

Requirement for graduation

Certified student for all period of their study is permitted to work further for research project. Student is to present his project to Examination Commission, pass State Examination on field of study (speciality), depending on faculty. Examination Commission includes outstanding academics from Research Institutes and university professors who estimate student's research project. Successful students are awarded by academic degree or Diploma.

EDUCATIONAL PROGRAMMES

Faculty of Meteorology

Award Duration of study	Field of Study Speciality	Specializations	Code by Ministry of Education RF
Bachelor of Science (BSc) 4 years	Hydrometeorology	* Meteorology	02060062
Master of Science (MSc) 2 years	Hydrometeorology	* Meteorological Forecasting * Atmosphere Pollution and Protection * Climatology * Agricultural Meteorology * Aeronautical Meteorology * Information Measuring Systems in Hydrometeorology * Management and Marketing * Biological Meteorology	02060068
Diploma Specialist 5 years	Hydrometeorology Meteorology	* Meteorology * Hydrodynamic Forecasting in Meteorology * Agricultural Meteorology * Information Measuring Systems in Hydrometeorology	02060265

Faculty of Hydrology

Award Duration of study	Field of Study Speciality	Specializations	Code by Ministry of Education RF
Bachelor of Science (BSc) 4 years	Hydrometeorology	* Hydrology	02060062
Master of Science (MSc) 2 years	Hydrometeorology	* Water Reservoir Hydrology * Channel Flow Processes * Hydrological Forecasting * Rational Use and Protection of Water Resources	02060068
Diploma Specialist 5 years	Hydrometeorology Hydrology	—	02060165

EDUCATIONAL PROGRAMMES

Faculty of Oceanography

Award Duration of study	Field of Study Speciality	Specializations	Code by Ministry of Education RF
Bachelor of Science (BSc) 4 years	Hydrometeorology	* Oceanography	02060062
Master of Science (MSc) 2 years	Hydrometeorology	* Technical Oceanography * Fishery Oceanography * Physical Oceanography	02060068
Diploma Specialist 5 years	Hydrometeorology Oceanography	* Technical Oceanography * Fishery Oceanography * Physical Oceanography	02060365
	Shipboard Equipment Marine Information Systems and Equipment	—	18030465
	Information Security Information Security of Telecommunication Systems	—	09010665
	Management Management of Organization	* Integrated Coastal Zone Management	08050765

EDUCATIONAL PROGRAMMES

Faculty of Ecology and Environmental Physics

Award Duration of study	Field of Study Speciality	Specializations	Code by Ministry of Education RF
Bachelor of Science (BSc) 4 years	Ecology and Natural Resource Management	* Ecological Expertise * Social Ecology	02080062
	Physics	—	01070062
Master of Science (MSc) 2 years	Ecology and Natural Resource Management	* Geoecology * Geoecological Monitoring	02080068
Diploma Specialist 5 years	Ecology and Natural Resource Management Geoecology	* Ecological Expertise * Social Ecology	02080465
	Management Management of Organization	* Management in Ecological Tourism	08050765

EDUCATIONAL PROGRAMMES

Faculty of Economics and Socio-Humanitarian Sciences

Award Duration of study	Field of Study Speciality	Specializations	Code by Ministry of Education RF
Diploma Specialist 5 years	Journalism Public Relations	* Public Relations in the Environment	03060265
	Management Economics and Management at Environmental Enterprise	—	08050265
	Management Management of Organization	—	08050765

CURRICULA

Faculty of Meteorology

Field of study "Hydrometeorology"

Duration: 4 years

Award: Bachelor of Science (code 02060062)

Specialization: Meteorology

Bold-typed Courses are taught in English

Course	Total	In-door	Lectures	Semesters	Completion requirements
Russian Language and Oral Presentation Skills	134	54	18	1	Test
History of Russia	149	84	50	1 — 2	Test, Examination
* Computer Organization and Programming	193	118	68	1 — 2	Examinations, Test
Chemistry	146	86	52	1 — 2	Examinations
Engineering Drawing	143	68	34	1 — 2	Tests
Mathematics	678	358	186	1 — 4	Examinations, Test
Physics	411	306	136	1 — 4	Examinations
English Language	316	136	—	1 — 4	Tests, Examination
Physical Education	402	402	—	1 — 8	Tests
Geophysics	98	48	32	2	Test
General Electrotechnics and Electronics	155	72	54	3	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Theoretical Mechanics	128	18	18	3	Test
Philosophy	154	84	50	3 — 4	Test, Examination
* Physics of the Atmosphere	208	188	102	3 — 4	Examinations
Materials Science	71	16	16	4	Test
Physics of Oceans	64	32	16	4	Test
Mechanics of Fluids and Gases	342	172	34	4 — 5	Test, Examination
Methods and Devices of Hydrometeorological Measurements	209	184	100	4 — 6	Examinations
Numerical Methods of Differential Equations Solving	89	54	36	5	Examination
Theory of Probability and Mathematical Statistics	107	72	36	5	Examination
Elective Natural Science Courses	256	36	36	5	Test
Physics of Inland Waters	72	36	36	5	Test
Hydraulics	102	52	18	5	Test
Metrology, Standardization and Certification	76	36	18	5	Test
Economics	184	84	50	5 — 6	Test, Examination
Law	112	32	16	6	Test
Climatology	78	48	32	6	Test

Faculty of Meteorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Elective Professional Courses	82	32	32	6	Test
Satellite Meteorology	98	48	32	6	Test
Dynamic Meteorology	85	80	48	6	Examination
Methods and Analysis of Processing for Hydrometeorological Information	144	64	32	6	Examination
* Synoptic Meteorology	219	154	68	6 — 7	Examinations
Remote Sensing of the Environment	144	54	36	7	Examination
Satellite Sensing of the Environment	89	54	18	7	Examination
Advanced Synoptic Meteorology or Physics of the Atmosphere	129	54	18	7	Examination
Fundamentals of Climate Theory	165	90	54	7	Examination
Life Safety	108	54	18	7	Test
Agricultural Meteorology	105	75	44	7 — 8	Test, Examination
Elective Humanitarian Courses	282	62	62	7 — 8	Tests
Ecology	77	52	26	8	Examination
Control of Environment Pollution	78	39	26	8	Test
Geographical Information Systems	114	39	26	8	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Hydrodynamic Forecasts	76	36	26	8	Examination
Aeronautical Meteorology	74	39	26	8	Examination
Mesoscale Meteorology and Now-casting	74	39	26	8	Examination
Meteorological Information Supply for National Economy	66	26	13	8	Test
Additional Courses for International Students					
Foreign Meteorological Equipment	72	72	54	5	Test
Methods in Regional Long-range Weather Prediction in Tropical Regions	48	48	32	6	Test
Tropical Meteorology	108	108	54	7	Test
TOTAL hours					
	7204	3935	1913	—	—
Supplements					
<p>There are held also educational practices on "Computer classes" in 2nd semester for two weeks, on "Physics of the Atmosphere, Inland Waters and Ocean" in 4th semester for four weeks as well as field works at Educational Meteorological Station in 3-4th semesters, practical trainings in 6th semester for four weeks in Educational Weather Bureau in 6—8th semesters, at Upper-air (aerologic) and Weather Radar Stations in 6—7th semesters.</p>					
<p>Students should pass course works on Courses marked with (*) in table in addition to course work on Bachelor research project.</p>					
<p>State Examination is passed on "Physics of the Atmosphere, Inland Waters and Oceans", "Inland Hydrology", "Oceanography" and "Methods and Devices of Hydrometeorological Measurements".</p>					

Field of study "Hydrometeorology"

Duration: 2 years

Award: Master of Science (code 02060068)

Specialization: Meteorology, Atmosphere Pollution and Protection, Climatology, Agricultural Meteorology, Aeronautical Meteorology, Information Measuring Systems in Hydrometeorology, Management and Marketing, Biological Meteorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Advanced Physics of the Atmosphere, Inland Waters and Oceans	275	72	54	9	Examination
Philosophy	187	54	36	9	Examination
Hydrodynamic Modelling of Natural Processes	110	72	36	9	Examination
English Language	175	32	16	9 — 10	Test, Examination
Information Measuring Systems in Hydrometeorology	187	51	34	10	Examination
Aerospace Sensing of the Environment	77	51	34	10	Examination
Environmental Resource Management	88	54	36	11	Examination
Scientific Oral Presentation Skills	66	36	36	11	Test
Special Courses for studying "Meteorology"					
Numerical Methods in Atmospheric Modelling	105	105	70	9 — 10	Tests, Examinations

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Short-range and Medium-range Hydrodynamic Forecasting	51	51	34	10	Examination
Long-range Hydrodynamic Forecasting	88	88	70	10 — 11	Test, Examination
Physical and Statistical Forecasting	36	36	36	11	Examination
Initial Data for Hydrodynamic Forecasting	72	72	36	11	Test, Examination
Vortical Dynamics	72	72	36	11	Examination
Special Courses for studying "Atmosphere Pollution and Protection"					
Theory of Atmospheric Turbulence and Admixture Transferring	105	105	70	9 — 10	Tests, Examinations
Ecological Information and Land Cadastre	105	105	70	10	Examination
Mathematical Modelling in Atmosphere Protection	70	70	52	10 — 11	Test, Examination
Methods of Ecological Expertise	36	36	36	11	Examination
Admixture Transformation in the Atmosphere	54	54	36	11	Test, Examination
Air Quality Monitoring in Megapolises	54	54	36	11	Examination

Faculty of Meteorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Special Courses for studying "Climatology"					
Climatological Processing of Meteorological Information	54	54	36	9	Test, Examination
Climatography	34	34	17	10	Test, Examination
Applied Climatography	51	51	34	10	Examination
Physical Fundamentals of Climate Forms	87	87	52	10 – 11	Test, Examination
Circulation Forms Classification	72	72	36	11	Examination
Theory of the Atmosphere Circulation and Climate	54	54	36	11	Examination
Paleographical, Historical and Contemporary Climate Change	72	72	36	11	Examination
Special Courses for studying "Agricultural Meteorology"					
Soil Science	54	54	36	9	Test, Examination
Mathematical Modelling in Agricultural Meteorology	122	122	70	10 – 11	Test, Examinations
Geographical Information Systems	122	122	70	10 – 11	Tests, Examinations

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Agricultural Meteorology	54	54	36	11	Examination
Agricultural Chemistry	72	72	36	11	Examination
Special Courses for studying "Aeronautical Meteorology"					
Fundamentals of Aviation	54	54	36	9	Test, Examination
Advanced Synoptic Meteorology	122	122	70	10 — 11	Tests, Examination
Very Short-range Forecasting for Aviation	122	122	70	10 — 11	Tests, Examinations
Aeronautical Weather Forecasting	54	54	36	11	Examination
Aeronautical Meteorology	72	72	36	11	Examination
Special Courses for studying "Information Measuring Systems in Hydrometeorology"					
Fundamentals of Experiment Theory	54	54	36	9	Test, Examination
Nowcasting	122	122	70	10 — 11	Tests, Examination
Weather Modification	122	122	70	10 — 11	Tests, Examinations
Physics of Dangerous Phenomena	54	54	36	11	Examination
Microprocessor-based Equipment	72	72	36	11	Examination

Faculty of Meteorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Special Courses for studying "Management and Marketing"					
Economics of Hydrometeorological Information Supply	54	54	36	9	Test, Examination
Probabilistic Forecasting	34	34	17	10	Test, Examination
Statistical Theory of Decision Making	51	51	34	10	Examination
Byes Approach Applications in Meteorology	87	87	52	10 — 11	Test, Examination
Advanced Theory of Probability	72	72	36	11	Examination
Probabilistic Assessment of Multifactor Events	54	54	36	11	Examination
Optimal Decision Making in National Economy	72	72	36	11	Examination
Special Courses for studying "Biological Meteorology"					
Methods of Mathematical Statistics in Biometeorology	36	36	18	9	Examination
Meteorological and Heliophysical Aspects in Biometeorology	18	18	18	9	Test
Medical Geography	34	34	34	10	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Statistical Program Packages	122	122	70	10 — 11	Tests, Examination
Assessment of Biometeorological Potential	88	88	70	10 — 11	Test, Examination
Information Technologies in Biometeorology	54	54	36	11	Examination
Medical Weather Forecasting	72	72	36	11	Examination
Supplements					
TOTAL hours	1589	954	513	—	—
<p>There are held also teaching practices in 10th semester for two weeks as well as self-work before presentation of Master research project.</p>					

Field of study "Hydrometeorology"

Duration: 5 years

Award: Diploma Specialist

Speciality: Meteorology (code 02060265)

Specializations: Meteorology,

Hydrodynamic Forecasting in Meteorology,

Agricultural Meteorology,

Information Measuring Systems in Hydrometeorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Russian Language and Oral Presentation Skills	134	54	18	1	Test
History of Russia	154	84	50	1 — 2	Test, Examination
* Computer Organization and Programming	193	118	68	1 — 2	Examinations, Test
Chemistry	146	86	52	1 — 2	Examinations
Engineering Drawing	143	68	34	1 — 2	Tests
English Language	336	136	—	1 — 4	Tests, Examination
Physics	401	306	136	1 — 4	Examinations
Mathematics	678	358	186	1 — 4	Examinations, Test
Physical Education	406	406	—	1 — 8	Tests
Geophysics	98	48	32	2	Test
Theoretical Mechanics	66	36	18	3	Test
General Electrotechnics and Electronics	145	72	54	3	Examination
Philosophy	154	84	50	3 — 4	Test, Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
* Physics of the Atmosphere	208	188	102	3 — 4	Examinations
Physics of Oceans	46	36	36	4	Test
Materials Science	66	16	16	4	Test
Mechanics of Fluid and Gases	312	172	86	4 — 5	Test, Examination
Methods and Devices of Hydrometeorological Measurements	209	184	100	4 — 6	Examinations
* Elective Natural Science Courses	246	36	36	5	Test
Physics of Inland Waters	42	32	16	5	Test
Hydraulics	128	18	18	5	Test
Theory of Probability and Mathematical Statistics	97	72	36	5	Examination
Metrology, Standardization and Certification	66	36	18	5	Test
Numerical Methods of Differential Equations Solution	79	54	36	5	Examination
Economics	184	84	50	5 — 6	Test, Examination
Elective Professional Courses	76	32	32	6	Tests
Satellite Meteorology	98	48	32	6	Test
Climatology	78	48	32	6	Test
Dynamic Meteorology	85	80	48	6	Examination

Faculty of Meteorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Methods and Analysis of Processing for Hydrometeorological Information	144	64	32	6	Examination
Law	112	32	16	6	Test
Synoptic Meteorology	199	154	68	6 — 7	Examinations
Remote Sensing of the Environment	144	54	36	7	Examination
Life Safety	99	54	18	7	Test
Elective Humanitarian Courses	279	99	66	7 — 8	Tests
Agricultural Meteorology	101	81	48	7 — 8	Test, Examination
Hydrodynamic Forecasting	100	60	30	8	Examination
Ecology	75	60	30	8	Examination
Geographical Information Systems	75	45	30	8	Test
Control of Environment Pollution	75	45	30	8	Test
Mesoscale Meteorology and Now-casting	70	45	30	8	Examination
Aeronautical Meteorology	70	45	30	8	Examination
Weather Modification	84	54	36	9	Examination
Natural Disasters Forecasting	72	54	36	9	Test
Economic Meteorology	69	54	36	9	Examination

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Course	Total	In-door	Lectures	Semesters	Completion requirements
Additional Courses for International Students					
Foreign Meteorological Equipment	72	72	54	5	Test
Regional Methods of Long-range Weather Prediction in Tropical Regions	48	48	32	6	Test
Tropical Meteorology	108	108	54	7	Test
Specialized Courses for studying "Meteorology"					
Advanced Synoptic Meteorology	84	54	18	7	Examination
Climate Theory	120	90	54	7	Examination
Meteorological Information Supply for National Economy	55	30	15	8	Test
Satellite Sensing of the Environment	84	54	36	7	Examination
Methods of Meteorological Forecasting	84	54	36	9	Test
Advanced Dynamic Meteorology	84	54	36	9	Examination
Regional Synoptic Processes and Forecasting	142	72	36	9	Examination
Long-range Forecasting	142	72	36	9	Examination
Meteorological Information Supply for Aircrafts	104	54	36	9	Test

Faculty of Meteorology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Medium-range Forecasting	38	18	18	9	Test
Specialized Courses for studying "Hydrodynamic Forecasting"					
Parametrisation of Physical Processes	119	54	36	9	Examination
Invariants of Atmosphere Models	101	36	36	9	Test, Examination
Spectral Forecasting Models	104	54	36	9	Test
Hydrometeorological Data Assimilation	92	72	36	9	Test
Specialized Courses for studying "Agricultural Meteorology"					
Agrophysics	106	36	18	9	Test
Long-range forecasts	142	72	36	9	Examination
Methods of Mathematical Modelling	104	54	36	9	Examination
Fundamentals of Land-utilization	56	36	36	9	Test
Agricultural Forecasting	18	18	18	9	Test
Specialized Courses for studying "Information Measuring Systems in Hydrometeorology"					
Electro and Radio Measurements in Hydrometeorology	74	54	36	5	Examination
Fundamentals of Radars	179	154	68	6 — 7	Examinations
Methods and Means of Nowcasting	95	75	30	8	Test, Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Microprocessor-based Systems in Hydrometeorology	65	45	30	8	Test
Hydrometeorological Systems Exploitation	195	175	64	8 — 9	Examinations
Special Methods of Environment Sensing	54	34	34	9	Examination
Technics for Information Collecting and Transferring	111	85	34	9	Examination
Fundamentals of Experiment Theory	76	51	34	9	Test
Mathematical Modelling in Ecology	93	68	34	9	Test
TOTAL hours	7750	4985	3149	—	—
Supplements					
<p>There are held also educational practices on "Computer classes" in 2nd semester for two weeks, on "Physics of the Atmosphere, Inland Waters and Ocean" in 4th semester for four weeks as well as field works at Educational Meteorological Station in 3—4th semesters, practical trainings in 6th semester for four weeks in Educational Weather Bureau in 6—8th semesters, at Upper-air (aerologic) and Weather Radar Stations in 6—7th semesters. In 10th semester students have a self-work before presentation of their Specialist research projects.</p>					
<p>Students should pass course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p>					
<p>State Examination is passed on "Physics of the Atmosphere, Inland Waters and Oceans", "Inland Hydrology", "Oceanography" and "Methods and Devices of Hydrometeorological Measurements".</p>					

Faculty of Hydrology

Field of study "Hydrometeorology"

Duration: 4 years

Award: Bachelor of Science (code 02060062)

Specialization: Hydrology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Engineering Drawing	66	36	18	1	Test
* Computer Organization and Programming	188	118	68	1 — 2	Test, Examination
Geophysics	194	104	52	1 — 2	Examination, Test
Chemistry	206	86	52	1 — 2	Examinations
History of Russia	164	84	50	1 — 2	Test, Examination
Mathematics	394	294	156	1 — 3	Examinations
Physics	424	324	136	1 — 4	Examinations
English Language	316	136	—	1 — 4	Tests, Examination
Physical Education	410	410	—	1 — 8	Tests
Russian Language and Oral Presentation skills	92	32	16	2	Test
Hydrochemistry	146	36	18	3	Test
Theoretical Mechanics	94	54	36	3	Test
Computational Mathematics	114	54	36	3	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Philosophy	164	84	50	3 — 4	Test, Examination
Geodesy	192	102	52	3 — 4	Examinations
Hydrogeology	132	102	68	3 — 4	Examinations
Mechanics of Fluid and Gases	78	48	32	4	Test
Electrotechnics and Electronics	94	64	48	4	Test
Theory of Probability and Mathematical Statistics	98	48	32	4	Test
Mathematical Physics	98	48	32	4	Test
Materials Science	76	36	18	5	Test
Physics of the Atmosphere	194	54	36	5	Examination
Climatology	94	54	36	5	Examination
Elective Natural Science Courses	204	54	36	5	Test
* Physics of Inland Waters	102	72	18	5	Examination
Water Balance Studies	58	18	18	5	Test
Hydraulics	140	110	46	5 — 6	Examinations
Economics	148	78	46	5 — 6	Test, Examination
* Methods and Devices of Hydrometeorological Measurements	194	174	78	5 — 7	Examinations, Test

Faculty of Hydrology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Oceanography	198	28	28	6	Test
Law	58	28	14	6	Test
Life Safety	72	42	14	6	Test
Analysis and Statistical Methods of Processing for Hydrometeorological Information	196	56	28	6	Test
Modelling of Hydrological Processes	72	42	14	6	Examination
Elective Humanitarian Courses	275	105	70	6, 8	Tests
* Hydrology of Inland Waters	190	120	60	6 — 7	Test, Examination
Hydrotechnics and Irrigation	94	64	32	7	Examination
Hydrological Computations	94	64	32	7	Examination
Elective Professional Courses	192	32	32	7	Test
Metrology, Standardization and Certification	46	16	16	7	Test
Hydrometeorological Information Systems	102	32	16	7	Test
* Biology with elements of Ecology	82	32	16	7	Test
Political Science	88	48	32	7	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Economics of Environmental Resource Management	93	63	42	8	Test
Psychology and Pedagogy	72	42	42	8	Test
Protection and Monitoring of Surface Inland Waters	213	63	42	8	Test
Contemporary Methods of Processing for Hydrological Information	61	21	21	8	Test
Hydrological Forecasting	114	84	42	8	Examination
Fundamentals of Hydrological Processes Management	114	84	42	8	Test
Dynamics of Watercourses and Processes	114	84	42	8	Examination
Supplements					
<p>There are held educational practices on "Geophysics" in 2nd semester for one week, on "Physics of Inland Waters" in 7th semester for two weeks, a field works in 4th semester on "Geodesy" for 4,5 weeks and "Hydrogeology" for 1,5 week, on "Methods and Devices of Hydrometeorological Measurements" in 5th semester for two weeks in addition to a practical training in 6th semester for five weeks.</p> <p>Students should pass course works on Courses marked with (*) in table in addition to course work on Bachelor research project.</p> <p>State Examination is passed on "Hydrological Computations", "Hydrology of Inland Waters", "Methods and Devices of Hydrometeorological Measurements", "Hydrological Forecasting".</p>					
TOTAL hours	7544	4064	1961	—	—

Field of study "Hydrometeorology"
Duration: 2 years
Award: Master of Science (code 02060068)
Specializations: Water Reservoir Hydrology,
Channel Flow Processes,
Hydrological Forecasting,
Rational Use and Protection of Water Resources

Course	Total	In-door	Lectures	Semesters	Completion requirements
Advanced Physics of the Atmosphere, Inland Waters and Oceans	54	54	36	9	Examination
Information Measuring Systems in Hydrometeorology	54	54	36	9	Test
Philosophy	54	54	36	9	Examination
Aerospace Sensing of the Environment	54	54	36	9	Examination
English Language	140	140	140	9 – 10	Test, Examination
Hydrodynamic Modelling of Natural Processes	51	51	34	10	Test
Economics of Environmental Resource Management	54	54	36	11	Test
Special Courses for studying "Water Reservoir Hydrology"					
Inland Reservoir Hydrology	72	72	36	9	Examination
Mooring of Lakes and Reservoirs	51	51	34	10	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Dynamic Processes in Reservoirs	51	51	34	10	Examination
Hydrological Engineering Constructions	72	72	36	11	Examination
Forecasting of Water and Ice Regimes of Lakes and Reservoirs	54	54	36	11	TEst
Hydrological Operative Information Supply for Reservoir Exploitation	72	72	36	11	Examination
Special Courses for studying "Channel Flow Processes"					
Self-Regulating System "Basin — Stream — Channel"	72	72	36	9	Test
Hydraulic Resistance of Water Channels	68	68	34	10	Examination
Erosion Studies at Water Collection	34	34	17	10	Test
Physical Modelling of Channel Flow Processes	68	68	34	10	Test
Flood-plains of Lowland Rivers (morphology and hydrology)	54	54	36	11	Examination
Ecological Problems of Channel Flow Processes	36	36	18	11	Examination
Channel Transformation	36	36	36	11	Examination

Course	Total	In-door	Lectures	Semesters	Completion requirements
Special Courses for studying "Hydrological Forecasting"					
Advanced Forecasting of Lowland River Run-off	54	54	36	9	Test
Advanced Forecasting of Mountain River Run-off	51	51	34	9	Test
Advanced Forecasting of Ice Phenomena	34	34	17	10	Test
Statistical and Regime Control of Initial Information for Hydrological Forecasting	70	70	35	10	Examination
Channel Flow and Erosion Forecasting	70	70	35	10 — 11	Test, Examination
Advanced Modelling of Hydrophysics Processes in Hydrophysics	54	54	36	11	Examination
Numerical Methods in Hydrology	54	54	36	11	Examination
Special Courses for studying "Rational Usage and Protection of Water Resources "					
World Water Resources Use and Geocological Regulation	36	36	18	9	Test
Interaction of Surface and Underground Waters	54	54	36	9	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Mathematical Methods of Analysis in Hydrology	51	51	34	10	Test
Hydrological and Ecological Monitoring of Water Bodies	51	51	34	10	Test
Advanced Theory and Experience of Hydrological Calculations	68	68	34	10	Examination
Advanced Water Resource Management and Computations	72	72	36	11	Examination
Ecological State and Monitoring of Underground Waters	54	54	36	11	Test
Supplements					
TOTAL hours	1105	875	610	—	—
<p>There are held also teaching practices in 10th semester for two weeks as well as self-work before presentation of Master research project.</p>					

Field of study "Hydrometeorology"
Duration: 5 years
Award: Diploma Specialist
Speciality: Hydrology (code 02060165)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Engineering Drawing	156	36	18	1	Test
Introduction in Speciality	86	36	18	1	Test
History of Russia	164	84	50	1 – 2	Test, Examination
* Computer Organization and Programming	188	118	68	1 – 2	Test, Examination
Geophysics	154	104	52	1 – 2	Examination, Test
Chemistry	156	86	52	1 – 2	Examinations
Mathematics	394	294	156	1 – 3	Examinations
Physics	424	324	136	1 – 4	Examinations
English Language	316	136	—	1 – 4	Tests, Examination
Physical Education	400	400	—	1 – 8	Tests
Russian Language and Oral Presentation skills	92	32	16	2	Test
Hydrochemistry	96	36	18	3	Test
Theoretical Mechanics	144	54	36	3	Test
Computational Mathematics	114	54	36	3	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Philosophy	164	84	50	3 — 4	Test, Examination
Hydrogeology	182	102	68	3 — 4	Examinations
Geodesy	182	102	52	3 — 4	Examinations
Theory of Probability and Mathematical Statistics	98	48	32	4	Test
Mechanics of Fluid and Gases	138	48	32	4	Test
Electrotechnics and Electronics	84	64	48	4	Test
Mathematical Physics	98	48	32	4	Test
Materials Science	56	36	18	5	Test
Elective Natural Science Courses	184	54	36	5	Test
Physics of the Atmosphere	102	72	36	5	Examination
Water Balance Studies	48	18	18	5	Test
Climatology	74	54	36	5	Examination
* Physics of Inland Waters	102	72	18	5	Examination
Economics	148	78	46	5 — 6	Test, Examination
Hydraulics	140	110	46	5 — 6	Examinations
* Methods and Devices of Hydrometeorological Measurements	204	174	78	5 — 7	Examinations, Test

Faculty of Hydrology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Analysis and Statistical Methods of Processing for Hydrometeorological Information	156	56	28	6	Test
Modelling of Hydrological Processes	92	42	14	6	Examination
Life Safety	102	42	14	6	Test
Law	58	28	14	6	Test
Elective Humanitarian Courses	260	90	60	6, 8	Tests
* General Hydrology	200	120	60	6 — 7	Test, Examination
Hydrological Laboratory Modelling	36	16	—	7	Test
Political Science	88	48	32	7	Examination
Elective Professional Courses	62	32	32	7	Test
Hydrological Computations	104	64	32	7	Examination
Metrology, Standardization and Certification	56	16	16	7	Test
* Ecology	82	32	16	7	Test
Stochastic Modelling of Hydrological Processes	94	64	16	7	Examination
Hydrotechnics and Irrigation	94	64	32	7	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Dynamics of Watercourses and Processes	84	64	32	8	Examination
Economics of Environmental Resource Management	78	48	32	8	Test
Psychology and Pedagogy	62	32	32	8	Test
Protection and Monitoring of Surface Inland Waters	98	48	32	8	Examination
Fundamentals of Hydrological Processes Management	114	64	32	8	Test
Contemporary Methods of Processing for Hydrological Information	46	16	16	8	Test
* Hydrological Forecasting	216	136	68	8 — 9	Examinations
Economics of Hydrometeorological Information Supply for National Economy	66	36	18	9	Test
* River Run-off	102	72	36	9	Examination
Water Resource Economy	84	54	36	9	Examination
Hydrotechnics	74	54	36	9	Test
Ecological Channel Studies	120	90	36	9	Examination

Faculty of Hydrology

Course	Total	In-door	Lectures	Semesters	Completion requirements
Assessment of Hydrological Regime Modification under Anthropogenic Impact	56	36	36	9	Test
Assessment and Forecasting of Channel Flow Process under Anthropogenic Impact	56	36	36	9	Test
Elements of Infinite Modelling of Hydrological Processes	38	18	18	9	Examination
TOTAL hours	7666	4476	2164	—	—
<p>Supplements</p> <p>There are held educational practices on "Geophysics" in 2nd semester for one week, on "Physics of Inland Waters" in 7th semester for two weeks, a field works in 4th semester on "Geodesy" for 4,5 weeks and "Hydrogeology" for 1,5 week, on "Methods and Devices of Hydrometeorological Measurements" in 5th semester for two weeks and in 6th semester for two weeks in addition to a practical training in 8th semester for four weeks. In 10th semester students has a self-work before presentation of their Specialist research projects.</p> <p>Students should pass course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p> <p>State Examination is passed on "Hydrological Computations", "Hydrology of Inland Waters", "Methods and Devices of Hydrometeorological Measurements", "Hydrological Forecasting".</p>					

CURRICULA

Faculty of Oceanography

Field of study "Hydrometeorology"

Duration: 4 years

Award: Bachelor of Science (code 02060062)

Specialization: Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Russian Language and Oral Presentation Skills	97	36	—	1	Test
Geophysics	100	54	36	1	Examination
* Computer Organization and Programming	202	122	70	1 — 2	Examinations, Test
Chemistry	165	105	70	1 — 2	Test, Examination
History of Russia	150	87	52	1 — 2	Test, Examination
Mathematics	600	300	159	1 — 3	Examinations
Physics	431	311	138	1 — 4	Examinations
English Language	338	138	—	1 — 4	Tests, Examination
Physical Education	414	414	—	1 — 8	Tests
Engineering Drawing	150	34	17	2	Test
* General Oceanography	250	140	70	2 — 3	Test, Examination
General Electrotechnics and Electronics	150	72	54	3	Test

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Fundamentals of Hydrochemistry	80	54	36	3	Test
Theoretical Mechanics	70	54	36	3	Test
* Methods and Devices of Hydrometeorological Measurements	200	136	68	3 — 4	Test, Examination
Philosophy	154	84	50	3 — 4	Test, Examination
Numerical Mathematics	100	48	32	4	Test
Geodesy and Cartography	60	48	32	4	Test
Mechanics of Fluid and Gases	314	64	32	4	Test
Physics of the Atmosphere	171	171	102	4 — 6	Test, Examination
Theory of Probability and Mathematical Statistics	100	54	36	5	Examination
Mathematical Physics and Methods of Functional Analysis	150	72	36	5	Examination
* Analysis and Methods of Processing for Hydrometeorological Information	150	140	70	5 — 6	Examinations
Information Measuring Systems in Hydrometeorology	150	122	70	5 — 6	Test, Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Economics	187	87	52	5 — 6	Test, Examination
* Physics of Oceans	200	170	68	5, 8	Examinations
Geophysical Hydrodynamics	130	51	34	6	Test
Ocean Chemistry	70	51	34	6	Test
Life Safety	100	51	17	6	Test
* Ocean Dynamics	200	140	70	6 — 7	Examinations
Elective Humanitarian Courses	260	33	—	6 — 8	Tests
Elective Courses: Law, Psychology and Pedagogy	200	36	18	7	Test
Ecology	130	54	36	7	Test
Materials Science	70	36	18	7	Test
Regional Oceanography	80	72	36	7	Examination
Mathematical Methods of Oceanography Problems Solving	72	72	36	7	Test
Theory of Near-surface Layer	80	72	36	7	Examination
Remote Measurements in Hydrometeorology	60	54	36	7	Test
Experimental Oceanography	70	64	32	8	Test
Economics of Hydrometeorological Information Supply	70	64	32	8	Examination

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Pollution Control of the Environment	60	48	32	8	Test
Fundamentals of Fishery Oceanography	70	64	32	8	Test
Ecosystems Modelling	40	32	16	8	Test
Marine Hydrological Forecasting	50	32	16	8	Test
Supplements					
<p>There are held also educational practices on "Maritime Business" in 2nd semester for two weeks, on "Methods and Devices of Hydrometeorological Measurements" in 4th semester for one week, on "Fundamentals of Oceanography" in 4th semester for four weeks as well as a practical training at Educational Bureau of Marine Forecasts (field work) in 8th semester.</p> <p>Students should pass course works on Courses marked with (*) in table in addition to course work on Bachelor research project.</p> <p>State Examination is passed on "Physics of the Atmosphere, Inland Waters and Oceans", "Fundamentals of Oceanography".</p>					
TOTAL hours	7015	4211	1951	—	—

CURRICULA

Field of study "Hydrometeorology"

Duration: 2 years

Award: Master of Science (code 02060068)

Specializations: Technical Oceanography,
Fishery Oceanography, Physical Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Philosophy	90	54	36	9	Examination
Interaction between Oceans and the Atmosphere	90	54	36	9	Examination
Geographical Information Systems in Hydrometeorology	114	54	36	9	Examination
Theory of Forecasting	144	108	72	9 — 10	Test, Examination
Modelling of Natural Systems	144	108	72	9 — 10	Test, Examination
English Language	216	144	—	10	Examination
Marketing	54	36	18	11	Test
Intellectual Property	50	36	18	11	Test
Special Courses for studying "Technical Oceanography"					
Laboratory Modelling of Oceanographic Processes	54	54	36	9	Test
Technical Oceanography	180	180	144	9 — 11	Tests, Examination
Applied Oceanography	144	108	72	9 — 10	Tests
Marine Technologies	108	108	54	10 — 11	Test, Examination
Marine Remote-control Research Systems	90	90	54	11	Examination

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Special Courses for studying "Fishery Oceanography"					
Fishery Oceanography	72	54	36	9	Test
Theory of Marine Ecosystem Modelling	72	54	36	9	Test
Oceanographic Resource Use Law	90	54	36	9	Test
Fundamentals of Aquaculture	36	18	18	9	Test
Economics of Oceanographic Information Supply	72	54	36	10	Examination
Hydrodynamic Modelling of Dangerous Phenomena	72	54	36	10	Test
Multifactor Analysis	144	108	72	10 — 11	Test, Examination
Information Supply for Fishery Forecasting	90	54	36	11	Test
Modelling of Environmental Modification under Anthropogenic Impact	108	90	54	11	Examination
Biological Geography	54	54	36	11	Test
Applied GIS-based Modelling	90	54	36	11	Examination
Special Courses for studying "Physical Oceanography"					
Shelf Oceanography	54	36	18	9	Test
Applied Oceanography	144	108	72	9 — 10	Tests
Advanced Multifactor Analysis	90	54	36	10	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Thermohydrodynamics	144	108	54	10 — 11	Test, Examination
Ice Studies	108	72	36	11	Examination
Laboratory Modelling of Oceanographic Processes	108	72	36	11	Examination
Advanced Regional Oceanography	90	54	36	11	Test
Hydrology of Seashores	90	54	36	11	Test
Supplements					
TOTAL hours	1670	1176	660	—	—
There are held also teaching practices in 10th semester for two weeks as well as self-work before presentation of Master research project.					

Field of study "Hydrometeorology"

Duration: 5 years

Award: Diploma Specialist

Speciality: Oceanography (code 02060365),

Specializations: Fishery Oceanography,
Technical Oceanography, Physical Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Russian Language and Oral Presentation Skills	97	36	—	1	Test
Geophysics	100	54	36	1	Examination
* Computer Organization and Programming	202	122	70	1 — 2	Examinations, Test
Chemistry	165	105	70	1 — 2	Test, Examination
History of Russia	150	87	52	1 — 2	Test, Examination
Mathematics	600	300	159	1 — 3	Examinations
Physics	431	311	138	1 — 4	Examinations
English Language	338	138	—	1 — 4	Tests, Examination
Physical Education	414	414	—	1 — 8	Tests
Maritime Business	70	68	34	2	Test
Engineering Drawing	150	34	17	2	Test
* General Oceanography	250	140	70	2 — 3	Test, Examination
General Electrotechnics and Electronics	150	72	54	3	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Fundamentals of Hydrochemistry	80	54	36	3	Test
Theoretical Mechanics	70	54	36	3	Test
* Methods and Devices of Hydrometeorological Measurements	200	136	68	3 — 4	Test, Examination
Philosophy	154	84	50	3 — 4	Test, Examination
Mechanics of Fluid and Gases	314	64	32	4	Test
Geodesy and Cartography	60	48	32	4	Test
Computational Mathematics	100	48	32	4	Test
Physics of the Atmosphere	171	171	102	4 — 6	Test, Examination
Theory of Probability and Mathematical Statistics	100	54	36	5	Examination
Mathematical Physics and Methods of Functional Analysis	150	72	36	5	Examination
* Analysis and Methods of Processing for Hydrometeorological Information	150	140	70	5 — 6	Examinations
Information Measuring Systems in Hydrometeorology	150	122	70	5 — 6	Test, Examination

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Economics	187	87	52	5 — 6	Test, Examination
* Physics of Oceans	200	170	68	5, 8	Examinations
Ocean Chemistry	70	51	34	6	Test
Geophysical Hydrodynamics	130	51	34	6	Test
Life Safety	100	51	17	6	Test
Ocean Dynamics	200	140	70	6 — 7	Examinations
Elective Humanitarian Courses	260	33	—	6 — 8	Tests
Elective Courses: Law, Psychology and Pedagogy	200	36	18	7	Test
Mathematical Methods of Oceanography Problems Solving	72	72	36	7	Test
Remote Measurements in Hydrometeorology	60	54	36	7	Test
Ecology	130	54	36	7	Test
Materials Science	70	36	18	7	Test
Regional Oceanography	80	72	36	7	Examination
Experimental Oceanography	70	64	32	8	Test
Economics of Hydrometeorological Information Supply	70	64	32	8	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Marine Hydrological Forecasting	132	90	54	9	Examination
Geographical Information Systems in Hydrometeorology	60	54	36	9	Examination
Fundamentals of Marketing	50	36	18	9	Test
Interaction between Oceans and the Atmosphere	150	72	36	9	Examination
Specialized Courses for studying "Fishery Oceanography"					
Fishery Oceanography	70	54	36	9	Examination
Modelling of Environmental Modification under Anthropogenic Impact	60	54	36	9	Test
Elective Courses: Economics of Oceanographic Information Supply, Fundamentals of Aquaculture	54	54	36	9	Test
Specialized Courses for studying "Technical Oceanography" and "Physical Oceanography"					
Marine Technologies	100	54	36	9	Test
Specialized Measuring Methods	96	72	54	9	Examination

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Intellectual Property	96	72	54	9	Test
Supplements					
<p>There are held also educational practices on "Maritime Business" in 2nd semester for two weeks, on "Methods and Devices of Hydrometeorological Measurements" in 4th semester for one week, on "Fundamentals of Oceanography" in 4th semester for four weeks as well as field works at Educational Bureau of Marine Forecasts in 8th semester . In 10th semester students have a self-work before presentation of their Specialist research project.</p>					
<p>Students should pass course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p>					
<p>State Examination is passed on "Physics of the Atmosphere, Inland Waters and Oceans", "Dynamics of Ocean", "Marine Hydrological Forecasting" as well as on Specialized Courses.</p>					
TOTAL hours	7437	3520	1669	—	—

CURRICULA

Field of study "Shipboard Equipment"

Duration: 5 years

Award: Diploma Specialist

Speciality: Marine Information Systems
and Equipment (code 18030465)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Russian Language and Oral Presentation Skills	100	36	—	1	Test
Computer Organization and Programming	130	90	54	1	Examination, Test
Hardware of Computational Techniques	50	36	36	1	Examination
Chemistry	130	105	70	1 — 2	Test, Examination
History of Russia	162	87	52	1 — 2	Test, Examination
English Language	340	159	—	1 — 3	Tests, Examination
Mathematics	440	300	159	1 — 3	Examinations
Physics	600	315	140	1 — 4	Examinations
Physical Education	420	420	—	1 — 8	Tests
Engineering Drawing	80	34	17	2	Test
Maritime Business	82	68	34	2	Test
* Methods and Means for Programming	200	140	70	2 — 3	Tests, Examination

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Electro and Radio Elements and Materials	160	72	54	3	Test
Theory of Probability and Mathematical Statistics	70	54	36	3	Test
Theoretical Mechanics	150	54	36	3	Test
Theory of Electrical Circuits	220	140	88	3 – 4	Test, Examination
Philosophy	150	87	52	3 – 4	Test, Examination
Mechanics of Fluid and Gases	150	68	34	4	Test
General Electrotechnics and Electronics	80	51	34	4	Test
* Computer Graphics	150	51	34	4	Test
Discrete Mathematics	120	51	34	4	Examination
Theory of Information	80	51	51	4	Examination
Computational Mathematics	70	51	34	4	Examination
Fundamentals of Meteorology	82	72	36	5	Test
Statistical Methods in Information Technologies	120	90	54	5	Examination
Electrodynamics and Radiowaves Propagation	150	105	70	5 – 6	Test, Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Economics	180	87	52	5 — 6	Test, Examination
* Information-control Technologies in Theory of Connection	270	140	88	5 — 6	Test, Examination
Operational Systems and Computer Networks	100	87	70	5 — 6	Test, Examination
Fundamentals of Oceanography	120	105	70	5 — 6	Tests
* Electronic Circuit Technique in Marine Information Systems	300	212	159	5 — 7	Examinations, Test
Life Safety	140	51	17	6	Test
Metrology, Standardization and Certification	100	51	34	6	Test
Elective Humanitarian Courses	260	34	—	6, 8	Tests
Constructing and Testing of Information Systems	150	72	54	7	Test
Law	100	36	18	7	Test
Marine Hydrometry	140	123	70	7 — 8	Test, Examination
Marine Information Systems	150	105	88	7 — 8	Examinations
Microprocessors	200	105	70	7 — 8	Test, Examination
Psychology and Pedagogy	100	32	34	8	Test

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Methods of Signals Digital Processing	150	85	51	8	Examination, Test
Geographical Information Systems	90	68	51	8	Examination
Methods of Ocean Remote Sensing	180	123	105	8 — 9	Examinations, Test
Economics of Enterprise Management	100	72	54	9	Examination
Automatic Machinery of Marine Information Systems	200	90	54	9	Examination, Test
Environmental Monitoring	100	72	54	9	Examination, Test
Methods and Means of Information Protection	70	54	36	9	Test
System Modelling	70	54	36	9	Examination, Test
TOTAL hours	7824	4699	2580	—	—
Supplements					
<p>There are held educational practice on "Maritime Business" in 2nd semester for three weeks, on "Computational Calculations" in 4th semester for four weeks in addition to practical training in 6th and 8th semesters for four weeks. In 10th semester students have a self-work before presentation of their Specialist research projects.</p>					
<p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research projects.</p>					
<p>State Examination is passed on "Marine Information Systems", "Methods of Ocean Remote Sensing", "Geographical Information Systems", "Methods of Signals Digital Processing".</p>					

CURRICULA

Field of study "Information Security"

Duration: 5,5 years

Award: Diploma Specialist

Speciality: Information Security of Telecommunication
Systems (code 09010665)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Russian Language and Oral Presentation Skills	100	36	—	1	Test
Hardware of Computational Techniques	100	36	36	1	Examination
Computer Organization and Programming	130	90	54	1	Examination, Test
History of Russia	162	87	52	1 — 2	Test, Examination
Chemistry	130	105	70	1 — 2	Test, Examination
Mathematics	440	300	159	1 — 3	Examinations
English Language	340	159	—	1 — 3	Tests, Examination
Physics	600	315	140	1 — 4	Examinations
Physical Education	420	420	—	1 — 8	Tests
Engineering Drawing	80	34	17	2	Test
Maritime Business	68	68	34	2	Test
* Methods and Means for Programming	250	140	70	2 — 3	Tests, Examination
Theoretical Mechanics	90	54	36	3	Test

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Electro and Radio Elements and Materials	100	72	54	3	Test
Philosophy	150	87	52	3 — 4	Test, Examination
Theory of Electrical Circuits	250	140	88	3 — 4	Test, Examination
Information Technologies	80	68	34	4	Test
General Electrotechnics and Electronics	80	51	34	4	Test
Discrete Mathematics	120	51	34	4	Examination
Computational Mathematics	70	51	34	4	Examination
Theory of Information	80	51	51	4	Examination
* Computer Graphics	100	51	34	4	Test
Quantum and Optic Electronics	100	54	36	5	Test
Operational Systems and Computer Networks	150	87	70	5	Examination
Statistical Methods in Information Technologies	120	90	54	5	Examination
Fundamentals of Meteorology	72	72	36	5	Test
Fundamentals of Oceanography	160	105	70	5 — 6	Tests

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
* Electronic Circuit Technique in Marine Information Systems	220	140	105	5 — 6	Examinations, Test
* Information-control Technologies in Theory of Connection	300	140	88	5 — 6	Examinations, Test
Electrodynamics and Radiowaves Propagation	160	105	70	5 — 6	Test, Examination
Economics	180	87	52	5 — 6	Test, Examination
Transmission of Discrete Messages	120	34	—	6	Test
Metrology, Standardization and Certification	80	51	34	6	Test
Elective Humanitarian Courses	260	34	—	6, 8	Tests
Life Safety	100	51	17	6	Test
Fundamentals of Information Security	80	54	36	7	Examination, Test
Law	100	36	18	7	Test
Ecology	70	54	36	7	Test
Microprocessors	120	105	70	7 — 8	Examination, Test
Hydrometeorological Information Measuring Systems	140	123	70	7 — 8	Examination, Test
Telecommunication Radio Electronic Means	170	123	88	7 — 8	Examination, Test

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
Systems and Networks for Information Transmission	250	88	17	7 — 8	Test, Examinations
Psychology and Pedagogy	100	32	34	8	Test
Cryptographic Methods in Information Security	150	102	51	8	Examination, Test
System Modelling	80	72	36	9	Examination, Test
Soft hardware Means for Information Security Supply	100	54	36	9	Examination, Test
Technical Means and Methods in Information Protection	100	54	36	9	Examination
Information Security Law	100	54	36	9	Test
Fundamentals of Management	80	72	54	9	Test
Information Systems Monitoring	80	54	36	9	Test, Examination
Projecting of Protected Telecommunication Systems	100	36	18	9	Test
Exploitation of Protected Telecommunication Systems	100	34	—	10	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
GIS in Information-control Systems	110	85	51	10	Test, Examination
Signals Digital Processing in Protected Information Systems	110	85	51	10	Test, Examination
Theory of Automatic Control	100	85	51	10	Test, Examination
Paths of Information Leakage in Hydrometeorology	90	68	51	10	Test, Examination
Supplements					
<p>There are held educational practice on "Maritime Business" in 2nd semester for three weeks, on "Numerical Computations" in 4th semester for four weeks in addition to practical trainings in 6th and 8th semesters for four weeks. In 11th semester students have a self-work before presentation of their Specialist research projects.</p> <p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p> <p>State Examination is passed on "Theory of Electrical Circuits", "Systems and Networks for Information Transmission", "Cryptographic Methods in Information Security", "Soft hardware Means for Information Security Supply", "Technical Means and Methods in Information Protection".</p>					
TOTAL hours	8832	5144	2784	—	—

Field of study "Management"

Duration: 5 years

Award: Diploma Specialist

Speciality: Management of Organization (code 08050765)

Specialization: Integrated Coastal Zone Management

Specialized Courses has got ECTS.

Course	Total	In-door	Lectures	Semesters	Completion requirements
Culture Studies	108	54	36	1	Test
Introduction in Specialization	72	36	36	1	Test
Russian History	144	84	50	1 — 2	Test, Examination
Concepts of Contemporary Natural Sciences	172	102	68	1 — 2	Examinations
Economic Theory	250	136	102	1 — 2	Examinations
* Computer Organization and Programming	154	118	68	1 — 2	Test, Examination
Russian Language and Oral Presentation Skills	136	68	—	1 — 2	Tests
English Language	336	156	—	1 — 3	Tests, Examination
Mathematics	482	272	136	1 — 4	Examinations
Physical Educational	406	406	—	1 — 8	Tests
Psychology and Pedagogy	138	32	32	2	Test
Elective Humanitarian Courses	134	64	—	2, 4	Tests

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Bibliography	68	36	18	3	Test
Philosophy	136	54	36	3	Examination
Meteorology	84	72	54	3	Test
* Oceanography	166	136	68	3 — 4	Test, Examination
Coastal Hydrometry	132	102	68	3 — 4	Tests
Hydrology of River Outlets	116	102	68	3 — 4	Tests
Fundamentals of Hydrochemistry	100	48	32	4	Test
Ecology	100	48	32	4	Test
Sociology	124	64	48	4	Examination
Law	64	32	16	4	Test
World Economics	152	72	54	5	Examination
Organizational policy	162	72	36	5	Examination
Marketing	186	36	36	5	Examination
Fundamentals of Management	250	136	68	5 — 6	Examinations
* Information Technologies (incl. GIS)	284	120	68	5 — 6	Test, Examination
Finances and Credit	152	102	68	5 — 6	Test, Examination
Statistics	152	102	68	5 — 6	Test, Examination
Theory of Organization	152	64	32	6	Test

Faculty of Oceanography

Course	Total	In-door	Lectures	Semesters	Completion requirements
European Ecological Law	64	32	32	6	Test
Morphology and Lithodynamics	76	64	32	6	Test
Accounting	148	48	32	6	Test
* Public Relations	164	72	36	7	Examination
Managerial Documentation	129	72	36	7	Test
Quality Management	122	54	36	7	Examination
Satellite Monitoring	72	72	36	7	Test
Fundamentals of Marine Engineering	92	72	36	7	Examination
Logistics	108	72	36	7	Examination
Coastal Law (ECTS 7.5)	96	54	36	7	Test
* Economics of Coastal Zones (ECTS 7.5)	85	60	30	8	Test
Innovational Management	142	60	30	8	Examination
Contemporary aspects of Economics	75	45	30	8	Test
Economics of Hydrometeorological Information Supply	77	45	30	8	Examination
Water Resource Management	76	60	30	8	Test
Administrational Decision Making	75	45	30	8	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Life Safety	97	45	15	8	Test
Strategic Management	124	60	30	8	Examination
Economic Law	182	72	36	9	Test
Management Systems Studies	134	72	36	9	Examination
Crisis-proof Management	122	72	36	9	Examination
Human Resource Management	124	54	36	9	Examination
Elective Courses: International Experience in Integrated Coastal Zone Management, Fishery Management	64	54	36	9	Test
Integrated Coastal Management Planning Strategies (ECTS 9.0)	118	72	36	9	Test
* Coastal Policy (ECTS 9.0)	134	72	36	9	Test
Supplements					
<p>There are held educational practice on "Computer Organization and Programming" in 2nd semester for two weeks, "Coastal Hydrometry" in 4th semester for four weeks in addition to practical training on "Management" in 6th semester for four weeks, on Specialization in 8th semester for two weeks. In 10th semester students have a self-work before presentation of their Specialist research projects.</p> <p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p> <p>State Examination is passed on "Integrated Coastal Zone Management".</p>					
TOTAL hours	7562	4426	2223	—	—

Faculty of Ecology and Environmental Physics

Field of study "Physics"

Duration: 4 years

Award: Bachelor of Science (code 01070062)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Cultural Anthropology	74	54	36	1	Test
* Computer Organization and Programming	202	102	68	1 — 2	Tests
Chemistry	150	150	100	1 — 2	Examinations
Geology	108	68	34	1 — 2	Tests
History of Russia	104	84	50	1 — 2	Test, Examination
Mathematics	802	492	254	1 — 4	Examinations
Fundamentals of Physics	812	472	236	1 — 4	Examinations, Tests
English Language	336	136	—	1 — 4	Tests, Examination
Physical Education	394	394	394	1 — 8	Tests
Russian Language and Oral Presentation Skills	51	36	—	3	Test
Philosophy	104	54	36	3	Examination
Electrotechnics	126	72	36	3	Test
Theoretical Mechanics	172	102	68	3 — 4	Test, Examination
Ecology	112	102	68	3 — 4	Examinations
Methods and Devices of Hydrometeorological Measurements	144	48	32	4	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Physics of the Atmosphere and the Hydrosphere	136	96	64	4 — 5	Test, Examination
Geophysics	68	32	16	5	Test
Methods in Mathematical Physics	108	48	32	5	Examination
Fundamentals of Natural Resource Management	138	48	32	5	Examination
Statistical Hydrodynamics	128	48	32	5	Test
Economics	138	48	32	5	Examination
Electrodynamics	168	48	32	5	Examination
Elective Professional Courses	198	138	122	5 — 8	Tests, Examination
Thermodynamics and Statistical Physics	138	48	32	6	Examination
Physical and Chemical Control Methods of Ecological Toxic Matters	66	48	32	6	Test
Theory of Fluctuations and Waves	116	48	32	6	Examination
Quantum Physics	174	64	48	6	Test
Analysis and Methods of Processing for Ecological Information	162	128	64	6 — 7	Tests
Geophysical Hydrodynamics	196	96	64	6 — 7	Examinations
Physics of Condensed State	108	32	16	7	Test

Faculty of Ecology and Environmental Physics

Course	Total	In-door	Lectures	Semesters	Completion requirements
Law	72	32	16	7	Test
Life safety	98	48	16	7	Test
Geocology	98	48	32	7	Examination
Geographical Information Systems	137	87	58	7 — 8	Tests
Civil Engineering Constructions and Ecological Risk	143	87	58	7 — 8	Tests
Theory of Electromagnetic Radiation Propagation in Gases	119	39	26	8	Test
Environmental Monitoring and Control Methods	99	39	26	8	Examination
Mathematical Modelling of Anthropogenic Impact on Water Ecosystems	112	52	26	8	Test
Human Ecology	99	39	26	8	Test
Supplements					
<p>There are held also educational practices in 2nd semester on "Biology" for two weeks, on "Geology" for two weeks, on "Geology" for two weeks, field works on "Methods and Devices of Hydrometeorological Measurements" in 4th semester for four weeks in addition to a practical training in 6th semester for four weeks.</p> <p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Bachelor research project.</p> <p>State Examination is passed on "Fundamentals of Ecology", "Fundamentals of Natural Resource Management", "Environmental Monitoring and Control Methods", "Physics".</p>					
TOTAL hours	6710	3807	2346	—	—

CURRICULA

Field of study "Ecology and Natural Resource Management"

Duration: 4 years

Award: Bachelor of Science (code 02080062)

Specializations: Ecological Expertise,
Social Ecology

Course	Total	In-door	Lectures	Semesters	Completion requirements
* Biology	192	102	68	1	Test
Geography	104	54	36	1	Examination
Elective Humanitarian Courses	51	36	36	1	Test
* Chemistry	240	150	100	1 — 2	Examinations, Test
History of Russia	104	84	50	1 — 2	Test, Examination
* Computer Organization and Programming	196	136	68	1 — 3	Tests
Physics	218	208	104	1 — 3	Examinations
English Language	336	136	—	1 — 4	Tests, Examination
Mathematics	322	272	136	1 — 4	Examinations, Tests
Physical Education	394	394	—	1 — 8	Tests
Atmosphere Studies	72	36	36	2	Test
Philosophy	104	54	36	3	Examination
Geology	104	54	36	3	Examination
Methods and Devices of Hydrometeorological Measurements	90	54	36	3	Test

Faculty of Ecology and Environmental Physics

Course	Total	In-door	Lectures	Semesters	Completion requirements
Geobotany	104	54	36	3	Test
* General Ecology	208	188	102	3 — 4	Examinations
Computer Applications for Geocology	94	64	32	4	Test
* Fundamentals of Hydrochemistry	96	64	32	4	Test
Landscape Studies	78	39	26	4	Examination
Hydrosphere Science	64	32	16	4 — 5	Examinations
Fundamentals of Cartography and Geodesy	148	80	48	4 — 5	Test
Geophysics	72	32	16	5	Test
Elective Natural Science Courses	78	48	32	5	Test
* Fundamentals of Natural Resource Management	144	64	32	5	Examination
Economics	148	48	32	5	Examination
Natural and Anthropogenic Atmospheric Chemistry	73	48	32	5	Test
Environmental Geochemistry	143	68	34	5	Test
* Methods and Analysis of Processing for Geocological Information	168	128	64	5 — 6	Examinations

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Environmental Management	114	39	26	6	Test
Hydrometry	80	48	32	6	Test
* Social Ecology	98	48	32	6	Examination
Ecological Cartography	102	52	18	6	Test
Geocology	78	48	32	6	Test
Environmental Protection	116	96	64	6 — 7	Test, Examination
Ecological Management	68	48	32	7	Examination
Life Safety	148	48	16	7	Test
Banks and Data Bases for Geocology	88	48	32	7	Test
* Environmental Monitoring and Control Methods	128	18	18	7	Examination
Law	72	32	16	7	Test
Civil Engineering Constructions and Ecological Risk	155	72	54	7 — 8	Test, Examination
Geographic Information Systems	76	36	26	7 — 8	Tests
Soil Science	104	54	36	8	Examination
Human Ecology	209	184	100	8	Examination
Fundamentals of Environmental Law	144	54	36	8	Test

Faculty of Ecology and Environmental Physics

Course	Total	In-door	Lectures	Semesters	Completion requirements
Specialized Courses for studying "Ecological Expertise"					
Field Ecological Studies	118	48	32	6	Examination
Inland Waters Ecology	61	48	32	7	Examination
Ecological Regulation and Assessment of Natural Ecosystem Stability	79	39	26	8	Test
Mathematical Modelling of Anthropogenic Impact on the Atmosphere	65	39	26	8	Test
Mathematical Modelling of Anthropogenic Impact on Water Ecosystems	65	39	26	8	Test
Bioindication and Biotesting	69	39	26	8	Test
Specialized Courses for studying "Social Ecology"					
Sociology	74	64	32	6	Test
Elective Courses	80	45	45	6, 8	Tests
Ecological Problems of the Russian Federation	80	48	32	7	Examination
Especially Protected Territories	71	39	26	8	Test
Regional Ecological Geography	50	26	26	8	Test
European Ecological Law	50	26	13	8	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Pedagogy and Psychology	41	26	26	8	Test
Supplements					
<p>There are held also educational practices in 2nd semester on "Biology" for two weeks, on "Geology" for two weeks, on "Geology" for two weeks, a field works on "Methods and Devices of Hydrometeorological Measurements" in 4th semester for four weeks in addition to a practical training on in 6th semester for four weeks.</p> <p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Bachelor research project.</p> <p>State Examination is passed on "Fundamentals of Ecology", "Fundamentals of Natural Resource Management", "Environmental Monitoring and Control Methods", "Physics".</p>					
TOTAL hours	6375	3912	2026	—	—

Faculty of Ecology and Environmental Physics

Field of study "Ecology and Natural Resource Management"

Duration: 2 years

Award: Master of Science (code 02080068)

Specialization: Geocology, Geocological Monitoring

Course	Total	In-door	Lectures	Semesters	Completion requirements
Advanced Philosophy	104	54	36	9	Examination
Ecological Audit and Insurance	104	54	36	9	Examination
Ecological Problems of Big Industrial Zones and Cities	76	36	36	9	Test
Geocological Design and Assessment	90	54	36	9	Examination
English Language	244	144	—	9 — 10	Test, Examination
Information for Ecological Studies	226	126	54	10 — 11	Test, Examination
Multifactor Statistical Analysis	206	126	54	10 — 11	Examinations
Domestic Waste	86	36	36	11	Test
Engineering for Environment Protection Operations	94	54	36	11	Test
Specialized Courses for studying "Geocology"					
Ecological Chemistry and Toxicology	94	54	36	9	Test
Electromagnetic Non-ionizing Radiation Effects on Biological Bodies	76	36	36	9	Test
System Ecology	94	54	36	9	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Human Development and Ecology	94	54	36	9	Test
Medical Ecology	74	54	36	10	Test
Bioindication and Biotesting	56	36	36	10	Test
Dynamics of animal population under Anthropogenic Impact	74	54	36	11	Test
Specialized Courses for studying "Geocological Monitoring"					
Ecological Monitoring	94	54	36	9	Examination
Fundamentals of Radioecology	94	54	36	9	Test
Hydroecology	94	54	36	9	Test
Geocological Assessment of Territories	76	36	36	9	Test
Analysis of Time Series	94	54	36	10	Test
Methods for Forecasting of Admixture Transfer in the Atmosphere	76	36	36	11	Test
Methods for Forecasting of Admixture Transfer in Water Bodies	76	36	36	11	Test
TOTAL hours	1810	1026	576	—	—
Supplements					
There are held also teaching practices in 10th semester for two weeks as well as self-work before presentation of Master research project.					

Faculty of Ecology and Environmental Physics

Field of study "Ecology and Natural Resource Management"

Duration: 5 years

Award: Diploma Specialist

Speciality: Geoecology (code 02080465)

Specializations: Ecological Expertise,
Social Ecology

Training for 1—4 semesters is conducted in according
to the BSc curriculum

Course	Total	In-door	Lectures	Semesters	Completion requirements
Soil Ecology	106	36	18	9	Examination
Hydrogeoecology	94	54	36	9	Examination
Geourbanistics	96	36	36	9	Test
Geoecological Designing and Expertise	104	54	36	9	Examination
Engineering Hydrology	90	54	36	9	Examination
Environmental Chemistry and Toxicology	72	54	36	9	Test
System Ecology	90	54	36	9	Test
Biological Geography	86	36	18	9	Examination
Specialized Courses for studying "Geoecology"					
Ecological risk	76	36	36	9	Test
Engineering Ecological Investigations	74	54	36	9	Test
Elective Courses	76	36	36	9	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Specialized Courses for studying "Social Ecology"					
Environmental Resource Management	76	36	36	9	Test
Natural and Cultural Heritage	76	36	36	9	Test
Ecological Parties and Organizations	76	36	36	9	Test
TOTAL hours	964	504	360	—	—
Supplements					
In 10th semester there are a practical training for two weeks and self-work before presentation of Specialist research project.					
State Examination is passed on "Geoecology", "Geoecological Designing and Expertise", "System Ecology".					

Field of study "Management"

Duration: 5 years

Award: Diploma Specialist

Speciality: Management of Organization (code 08050765)

Specialization: Management in Ecological Tourism

Course	Total	In-door	Lectures	Semesters	Completion requirements
Concepts of Contemporary Natural Sciences	112	72	36	1	Examination
Introduction in Speciality	86	36	36	1	Test
Russian Language and Oral Presentation Skills	88	68	—	1 — 2	Tests
History of Russia	84	84	50	1 — 2	Test, Examination
Biology	142	102	68	1 — 2	Examinations
Computer Organization and Programming	118	118	68	1 — 2	Tests
Economic Theory	286	136	102	1 — 2	Examinations
Mathematics	524	244	122	1 — 3	Examinations
English Language	396	336	—	1 — 6	Tests, Examination
Geology	78	48	32	2	Test
Physical Education	404	404	404	2, 4	Tests
Philosophy	184	54	36	3	Examination
Chemistry	102	72	36	3	Test
Soil Science	84	54	36	3	Examination
Geography	102	72	36	3	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Computer Applications for Management	81	36	—	3	Test
Excursions and Museums	48	48	32	4	Test
General Ecology	154	64	32	4	Examination
Law	102	32	16	4	Test
Sociology	114	64	48	4	Examination
Field Tourism	104	64	48	4	Test
Landscape Geography	98	48	32	4	Examination
Geobotany	78	48	16	4	Test
Theory of Organization	114	64	32	4	Examination
Economic Law	142	72	36	5	Test
Organizational policy	142	72	36	5	Test
Fundamentals of Management	212	72	36	5	Examination
Territorial Planning	80	54	36	5	Examination
Fundamentals of Environmental Resource Management	124	54	36	5	Examination
World Economics	112	72	36	5	Examination
Finances and Credit	216	96	64	5 — 6	Test, Examination
Statistics	236	96	64	5 — 6	Test, Examination
Economics of Environmental Resource Management	98	28	28	6	Test

Faculty of Ecology and Environmental Physics

Course	Total	In-door	Lectures	Semesters	Completion requirements
Fundamentals of Ecological Tourism	92	42	28	6	Examination
Local Folk Traditions, History and Economy	92	42	28	6	Test
Recreation Natural Resources Geography	68	28	28	6	Test
Geography of Tourism	102	42	28	6	Test
Accounting	152	42	28	6	Test
Management in Ecological Tourism	126	96	64	6 — 7	Examinations
Marketing	242	72	36	7	Examination
Socio-Economical Geography	92	72	36	7	Test
Public Relations and Advertising	102	72	36	7	Test
Life Safety	104	54	18	7	Test
Innovational Management	112	72	36	7	Examination
Logistics	112	72	36	7	Test
Human Ecology	114	54	36	7	Examination
Environmental Protection	94	54	36	7	Examination
National Parks Economics	78	48	32	8	Test
Strategic Management	112	32	32	8	Examination
Quality Management	108	48	32	8	Examination
Ecological Safety in Tourism	98	48	32	8	Examination
Marketing in Tourism	68	48	32	8	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Managerial Decision Making	113	48	32	8	Examination
Economics of Tourism	108	48	32	8	Test
International Tourism	104	54	36	9	Examination
Management Systems Studies	112	72	36	9	Test
Information Technologies for Management in Tourism	112	72	36	9	Test
Crisis-proof Management	112	72	36	9	Examination
Human Resource Management	104	54	36	9	Examination
Tourist Agency Establishment	122	54	36	9	Test
Ethnography, Ecology in Geography of Tourism	84	54	36	9	Examination
Natural and Cultural Heritage	66	36	36	9	Test
TOTAL hours					
	6571	3594	2064	—	—
Supplements					
<p>There are held also educational practices on "Biology" in 2nd semester for two weeks, on "Geology" for one week, a field work on Ecological Studies in 4th semester for four weeks, on "Ecological Tourism" in 6th semester for six weeks in addition to a practical work in 8th semester for four weeks and self-work in 10th semester before presentation of Specialist research project.</p>					
<p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p>					
<p>State Examination is passed on "Management of Organization" and "Ecological Tourism".</p>					

**Faculty of Economics
and Socio-Humanitarian Sciences**

Field of study "Journalism"

Duration: 5 years

Award: Diploma Specialist

Speciality: Public Relations (code 030602)

Specialization: Public Relations
in the Environment (code 350400)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Economics of Natural Resource Management	118	54	36	1	Examination
Earth Sciences	60	36	18	1	Examination
Russian Language and Oral Presentation Skills	266	136	68	1 — 2	Examinations
History of Russia	136	68	36	1 — 2	Test, Examination
Law	132	68	36	1 — 2	Tests
Mathematics	101	68	34	1 — 2	Test, Examination
Computer Organization and Programming	100	68	34	1 — 2	Tests
Introduction in Specialization	72	52	36	1 — 2	Examination, Test
Concepts of Contemporary Natural Sciences	132	68	34	1 — 2	Tests
Economics	136	68	34	1 — 2	Test, Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Physical Education	408	408	—	1 — 8	Tests
Ecology	82	32	32	2	Test
English Language	1480	816	—	2 — 8	Tests, Examination
* Theory and Experience of Public Relations	150	84	50	3	Test
Fundamentals of Communication Theory	60	54	36	3	Examination
Rhetoric	72	36	18	3	Examination
Stylistics and Literature Editing	118	68	18	3 — 4	Test, Examination
Philosophy	132	68	34	3 — 4	Test, Examination
Russian Literature	136	86	68	3 — 4	Test, Examination
* Theory and Experience of Mass media	376	222	172	3 — 5	Test, Examinations
Foreign Literature	178	122	104	3 — 5	Test, Examinations
Elective Humanitarian Courses	70	32	32	4	Test
Logic and Theory of Argumentation	61	48	32	4	Examination
Fundamentals of Statistics	58	32	16	4	Test
Political Science	76	36	18	5	Examination

Faculty of Economics and Socio-Humanitarian Sciences

Course	Total	In-door	Lectures	Semesters	Completion requirements
Methods and Means in Hydrometeorology	64	36	18	5	Test
Fundamentals of Accounting	120	36	36	5	Test
World Economics and Foreign-economic Activity	132	68	52	5 – 6	Test, Examination
The Environment and Human Health	132	68	68	5 – 6	Test, Examination
Anthropogenic Environment Modification	124	68	68	5 – 6	Test, Examination
Elective Natural Sciences Courses	132	68	68	6	Test
Marketing	64	32	32	6	Test
Psychology and Pedagogy	70	32	32	6	Test
Contemporary Management	118	68	68	6	Test
Environmental Monitoring	64	32	16	6	Examination
* PR Actions	62	32	16	6	Test
Social Ecology	68	32	32	6	Test
Communication Management	68	36	18	7	Examination
* Advertising in Communication Processes	128	104	52	7	Examination
* PR in Environmental Protection	124	68	68	7	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Religion Studies	60	36	36	7	Examination
Social Informatics	124	68	34	7 — 8	Test, Examination
International Cooperation in Environmental Protection	122	68	68	7 — 8	Tests
Elective Courses: Efficiency from Hydrometeorological Information Supply, Ecological Consulting	122	68	68	7 — 8	Tests
Management of PR Unit	124	68	34	7 — 8	Test, Examination
Marketing in Hydrometeorology	124	68	34	7 — 8	Test, Examination
Psychological Training	52	32	—	8	Test
PR in State Apparatus	62	36	18	8	Test
Press-cutting service	60	32	16	8	Examination
TOTAL hours	7030	4086	1948	—	—
Supplements					
<p>There are held also educational practices on "Theory and Experience of Mass media" in 4th semester for four weeks in addition to practical training in 6th semester for six weeks. In 10th semester students have a self-work before presentation of their Specialist research projects.</p> <p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p> <p>State Examination is passed on "Advertising in Communication Processes", "Communication Management", "Marketing in Hydrometeorology", "Theory and Experience of Mass media", "Fundamentals of Communication Theory"</p>					

Faculty of Economics and Socio-Humanitarian Sciences

Field of study "Management"

Duration: 5 years

Award: Diploma Specialist

Speciality: Economics and Management at Environmental Enterprise (code 08050265)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Engineering Drawing and Design	112	72	36	1	Examination
Chemistry	150	72	36	1	Examination
Elective Natural Science Courses	75	70	70	1, 4	Tests
Economic Theory	230	105	70	1 — 2	Test, Examination
* Computer Organization and Programming	200	105	70	1 — 2	Examinations
Physics	200	88	35	1 — 2	Test, Examination
History of Russia	100	87	52	1 — 2	Test, Examination
English Language	340	140	—	1 — 4	Tests, Examination
Mathematics	600	280	140	1 — 4	Examinations, Tests
Physical Education	418	418	—	1 — 8	Tests
Russian Language and Oral Presentation Skills	270	34	—	2	Test
Ecology	80	34	17	2	Test
Law	159	34	17	2	Test

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Elective Humanitarian Courses	270	87	70	2 — 3	Test, Examination
Psychology and Pedagogy	112	36	36	3	Test
Life Safety	100	54	18	3	Test
Fundamentals of Meteorology	75	72	54	3	Examination
Information Technologies in Economics and Management	125	105	70	3, 6	Tests
Philosophy	143	87	52	3 — 4	Test, Examination
Statistics	213	140	70	3 — 4	Examinations
Methods and Devices of Hydrometeorological Measurements	102	68	51	4	Test
* Climatology	212	102	68	4	Test
World Economics	80	54	36	5	Examination
Managerial Documentation	80	54	36	5	Test
Assessment of Environment Modification under Anthropogenic Impact	184	54	36	5	Examination
Methods of Meteorological Forecasting	107	72	54	5	Examination
Economics of Enterprise	154	72	54	5	Test

Faculty of Economics and Socio-Humanitarian Sciences

Course	Total	In-door	Lectures	Semesters	Completion requirements
Applied Meteorology	245	123	88	5 — 6	Test, Examination
Methods and Models in Management	200	105	70	5 — 6	Test, Examination
* Accounting	283	105	70	5 — 6	Test, Examination
Remote Sensing of the Environment	133	68	34	6	Test
Economic Assessment of Investments	130	51	34	6	Test
Labour Regulations (labour organization, salary) at Environmental Enterprise	149	51	34	6	Test
* Management	252	51	34	6	Examination
Finances and Credit	150	105	70	6 — 7	Test, Examination
Real Estate Economics	76	36	18	7	Examination
Organization of Business	111	36	18	7	Examination
Technologies of Environment Adoption	149	54	36	7	Examination
Systems and Constructions for Environmental Protection	139	54	36	7	Test
Technological Complexes in Rational Natural Resource Use	88	36	36	7	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Aeronautical Meteorology	167	102	68	7 — 8	Test, Examination
Ecology in Business	110	68	34	7 — 8	Tests
Marketing	186	86	52	7 — 8	Test, Examination
Exploitation of Environmental Systems and Constructions	138	64	32	8	Test
Technologies for Natural Resource Use	106	32	32	8	Examination
* Economic Meteorology	214	64	32	8	Examination
Technologies for Protection and Reproduction of Natural Resources	148	48	32	8	Test
Quality Management	102	48	32	8	Test
Analysis of Enterprise Economy	228	87	58	8 — 9	Test, Examination
Planning at Enterprise	245	87	58	8 — 9	Test, Examination
Geographical Information Systems	100	39	26	9	Test
Elective Professional Courses	300	52	26	9	Test
Organization of production at Environmental Enterprise	136	52	39	9	Test

Faculty of Economics and Socio-Humanitarian Sciences

Course	Total	In-door	Lectures	Semesters	Completion requirements
Price Formation in Meteorology	154	39	26	9	Test
Supplements					
<p>There are held educational practice on "Computer Organization and Programming" in 2nd semester for two weeks, on "Management" in 4th semester for two weeks, on "Accounting" in 6th semester for two weeks in addition to practical training in 8th semester for five weeks. In 10th semester students have a self-work before presentation of their Specialist research projects.</p> <p>Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research project.</p> <p>State Examination is passed on "Economic Theory", "Economics of Natural Resource Management", "Technologies for Natural Resource Use", "Marketing", "Analysis of Enterprise Economy", "Economic Meteorology".</p>					
TOTAL hours	9330	4339	2373	—	—

CURRICULA

Field of study "Management"

Duration: 5 years

Award: Diploma Specialist

Speciality: Management of Organization (code 08050765)

Course	Total	In-door	Lectures	Semesters	Completion requirements
Psychology and Pedagogy	106	36	36	1	Test
Culture Studies	112	54	36	1	Test
Elective Natural Science Courses	100	70	70	1, 4	Tests
History of Russia	87	87	52	1 — 2	Test, Examination
Economic Theory	290	105	70	1 — 2	Test, Examination
Fundamentals of Management	298	105	70	1 — 2	Examinations
* Computer Organization and Programming	122	122	70	1 — 2	Tests
English Language	340	140	—	1 — 4	Tests, Examination
Mathematics	576	280	140	1 — 4	Examinations, Tests
Physical Educational	418	418	—	1 — 8	Tests
Russian Language and Oral Presentation Skills	270	34	—	2	Test
Law	104	34	17	2	Test
Humanitarian Elective Courses	261	139	96	2 — 3, 9	Tests, Examination

Faculty of Economics and Socio-Humanitarian Sciences

Course	Total	In-door	Lectures	Semesters	Completion requirements
History of Management	80	54	36	3	Examination
Fundamentals of Meteorology	72	72	54	3	Examination
Life Safety	54	54	18	3	Test
Information Technologies in Management	166	105	70	3, 6	Tests
Statistics	244	140	70	3 — 4	Test, Examination
Philosophy	192	87	52	3 — 4	Test, Examination
Concepts of Contemporary Natural Sciences	112	68	51	4	Test
Methods and Devices of Hydrometeorological Measurements	68	68	51	4	Test
* Climatology	124	102	68	4	Test
World Economics	114	54	36	5	Examination
Theory of Organization	142	72	54	5	Examination
Managerial Documentation	75	54	36	5	Test
Methods of Meteorological Forecasting	124	72	54	5	Examination
Crisis-proof Management	112	72	54	5	Examination

CURRICULA

Course	Total	In-door	Lectures	Semesters	Completion requirements
Methods and Models in Management	105	105	70	5 — 6	Test, Examination
Applied Meteorology	194	123	88	5 — 6	Test, Examination
* Accounting	155	105	70	5 — 6	Test, Examination
Remote Sensing of the Environment	124	68	34	6	Test
Logistics	112	68	34	6	Test
Elective Professional Courses	250	66	33	6, 8	Tests
Finances and Credit	226	105	70	6 — 7	Test, Examination
Administrational Decision Making	112	72	54	7	Examination
Management Systems Studies	112	54	36	7	Test
Innovational Management	112	72	54	7	Examination
Organizational Policy	142	54	36	7	Examination
* Marketing	246	86	52	7 — 8	Test, Examination
Aeronautical Meteorology	124	102	68	7 — 8	Test, Examination
* Economic Meteorology	209	64	32	8	Examination
Economy Law	144	64	48	8	Test
Strategic Management	112	64	48	8	Examination

Faculty of Economics and Socio-Humanitarian Sciences

Course	Total	In-door	Lectures	Semesters	Completion requirements
Quality Management	110	64	48	8	Test
Theory of Economic Analysis	120	64	32	8	Test
Functional Diagnostics of Industrial Organization	130	52	26	9	Examination
Elective Special Courses	250	78	52	9	Test
Price Formation in Hydrometeorology	39	39	26	9	Test

TOTAL hours	7891	4267	2372	—	—
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Supplements

There are held educational practice on "Computer Organization and Programming" in 2nd semester for two weeks, on "Management" in 4th semester for two weeks, on "Accounting" in 6th semester for two weeks in addition to practical training in 8th semester for five weeks. In 10th semester students have a self-work before presentation of their Specialist research projects.

Students should pass also course works on Courses marked with (*) in table in addition to course work on Specialist research project.

State Examination is passed on "Economic Theory", "Strategic Management", "Innovational Management", "Marketing", "Fundamentals of Management", "Economic Meteorology".

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