



UNIVERSITY OF SILESIA
FACULTY OF EARTH SCIENCES



ECTS INFORMATION PACKAGE

GEOPHYSICS

for geophysical studies started before 2011/2012



SOSNOWIEC 2012/2013

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ECTS Information Package Geophysics was created due to the collaborative effort of scholars of the Faculty of Earth Sciences and individuals from other university units. The Information Package is available in English and Polish and can be found on the internet (<http://www.us.edu.pl/>).

INTRODUCTION

The Information Package is addressed to candidates and students who wish to study geology at the Faculty of Earth Sciences. It includes the basic procedures of the European Credit Transfer System (ECTS) developed by the Commission of the European Communities to ensure that student's achievements obtained at host institutions abroad will receive academic recognition at the home institution. ECTS enables the participating higher education institutions to recognize student's achievements in learning thanks to commonly accepted assessment tools – credits and grades. ECTS can also be used within a single institution or among numerous institutions within a single country.

Principles of ECTS

ECTS is based on the principle of mutual trust and confidence between the participating higher education institutions. Three elements are the foundation of ECTS: **information** (on curriculum and student's achievements), **agreement** (between the participating institutions and a student), and **use of ECTS credits**. In practice, these three elements are related to three key documents:

ECTS INFORMATION PACKAGE – this is the major source of information on curriculum. It is updated annually and serves as a guide to the higher education institution and its units. It contains information on requirements for admission, academic calendar, student's accommodation etc. The description of courses is an essential part of the information package and it includes contents of courses and their status, level, prerequisites, timetable, types of assessment, ECTS credits etc.

LEARNING AGREEMENT – includes the curriculum and number of credits available at the host institution and is drawn up by the student and institutions involved before the student goes abroad.

TRANSCRIPT OF RECORDS – includes the learning achievements of the student prior to and after the period of study abroad. Every course taken by the student is recorded on the transcript of records with not only the ECTS credits but also the grade awarded according to the local grading scale and the ECTS grading scale. The combination of grades and ECTS credits reflects the student's performance both qualitatively and quantitatively.

ECTS credits

ECTS credits constitute a value allocated to course units to describe a student's workload which is required to complete successfully. They reflect the quantity of work each course requires in relation to the total quantity of work required to complete a full academic year of study at the institution including lectures, classes, laboratory practicals and field trainings, seminars, individual work – in a library or at home – and examinations or other forms of assessment. Thus credits express a relative value. In ECTS, 60 credits represent the workload of a year of study; usually 30 credits are given for a semester. ECTS credits can be awarded for practical projects and to thesis preparation when these activities are an assessed part of the official programme of study. ECTS credits are allocated to courses and awarded to students who successfully complete those courses by passing examinations or other assessments.

ECTS GRADING SCALE

Results of examinations and other types of assessment are usually expressed in grades. There are many grading systems in Europe. The ECTS grading scale has been developed to help institutions to interpret grades given to a student by a host institution. The ECTS grading scale provides additional information on student's performance and it does not replace the grading system of the home institution. The higher education institutions make their own decision on how to adopt the ECTS grading system to their own systems.

ECTS grades and definitions			Polish grades	
A	EXCELLENT	-outstanding performance with only minor error	5.0	BARDZO DOBRY
B	VERY GOOD	-above the average standard but with some errors	4.5	DOBRY PLUS
C	GOOD	-generally sound work with a number of notable errors	4.0	DOBRY
D	SATISFACTORY	-fair but with significant shortcomings	3.5	DOSTATECZNY PLUS
E	SUFFICIENT	-performance meets the minimum criteria	3.0	DOSTATECZNY
FX	FAILED	-some more work required before the credit can be awarded		-
F	FAILED	-considerable further work is required	2.0	NIEDOSTATECZNY

UNIVERSITY OF SILESIA

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Vice-Rector for Education and Student Affairs: Prof. UŚ dr. hab. Ryszard Koziółek

Vice-Rector for Finance and Development: Prof. dr. hab. Stanisław Kucharski

Vice-Rector for Internationalisation, Institutional Affairs and Public Relations: dr hab. Mirosław Nakoneczny

University of Silesia was founded in 1968 as the ninth university in Poland. The University resulted from the fusion of the Higher School of Pedagogy and the Branch of the Jagiellonian University. The latter had been established in Katowice in 1963. University of Silesia is spread over six cities: Katowice, Sosnowiec, Cieszyn, Rybnik, Jastrzębie Zdrój and Chorzów. Most of the university buildings are located in Katowice.

University of Silesia is a state university and it comprises twelve faculties:

Faculty of Biology and Environmental Protection

Faculty of Ethnology and Educational Sciences

Faculty of Philology

Faculty of Mathematics, Physics and Chemistry

Faculty of Earth Sciences

Faculty of Social Sciences

Faculty of Pedagogics and Psychology

Faculty of Law and Administration

Faculty of Radio and Television

Faculty of Engineering Sciences
Faculty of Art
Faculty of Theology

In addition, there are also numerous inter-faculty units, among others:

International School of Political Sciences
School of Management
Center for Studies on Human and Environment
School of the Polish Language, Literature and Culture
Inter-faculty Individual Studies in Humanities
Inter-faculty Individual Studies in Science and Mathematics
Center of Practical Study of Foreign Languages
Center of Sport
University Main Library

Teaching staff

total: 2055
including:
professors: 215
doctors with habilitation: 378
doctors 1063

Total number of students: 30092

ECTS university co-ordinator: Prof. UŚ dr hab. Aldona Skudrzyk

Academic calendar

The academic year begins no later than on October 1st and ends by September 25th of the next calendar year. There are two semesters: winter and summer. The Winter semester begins on October 1st and ends on January 31st. The Summer semester begins in mid-February and ends at the beginning of June. Both semesters end with the exam period lasting for 2 to 3 weeks. Holidays:

All Saints Day	1 st November
Independence Day	11 th November
Winter break	Christmas - New Year
Spring break	Easter
Labor Day	1 st May
Constitution Day	3 rd May

Requirements for admission

There are limited numbers of candidates for the first year of courses that can be admitted to the University of Silesia for one of the three types of studies, i.e. full-time, part-time, and continuing education. The limits are set annually for each of the subjects of study by the University Senate. Candidates for the first year courses are required to pay the registration fee stated by the Ministry of Education.

The candidates for studies should contact the central registration office in the Rector's Office, 12 Bankowa Street, Katowice. Detailed rules and criteria for recruitment are published at the beginning of the academic year in the guide-

book for the candidates. People who are interested in studying at the University of Silesia in 2011/2012 can also find information on the university web pages recruitment: the criteria of entering, the decision of the Senate concerning the rules of entering the university and the number of candidates for one place at university studies in the academic year 2011/2012. Further information is also available in the Section of Teaching (dn@us.edu.pl , phone: 32 359 17 70, 359 18 80).

Accommodation and Health Care

The University of Silesia has about 3300 places in 11 students halls of residence. There are students' refectories located near the halls of residence. Students of the University receive a GP's treatment as well as a medical checkup which is practiced in appropriate outpatients' cleanic.

Students clubs

There are four students clubs linked to the University of Silesia:

„Straszny Dwór” – located in the Hall of Residence number 3 in Katowice

„Za Szybą” – located in the Hall of Residence number 7 in Katowice

„Antidotum” – located in the Hall of Residence number 1 in Sosnowiec

„Pod Rurą” – located at the Faculty of Pedagogics and Psychology in Katowice.

Library

More than 1 million books and 1200 journals are available for students at the University Main Library. The Library has a computerized system of information and is connected to the major data bases and InfoWare CD/HD.

Important addresses

OFFICE OF FOREIGN RELATIONS	Katowice, ul. Bankowa 12	Tel. +48 32 3592052
OFFICE OF EDUCATION	Katowice, ul. Bankowa 12	Tel. +48 32 3592047
OFFICE OF SCIENTIFIC AFFAIRS	Katowice, ul. Bankowa 12	Tel. +48 32 3591610
OFFICE OF STUDENT'S SOCIAL AFFAIRS	Katowice, ul. Bankowa 12	Tel. +48323591340
UNIVERSITY LIBRARY	Katowice, ul. Bankowa 14	Tel. +48 32 3591373



FACULTY OF EARTH SCIENCES

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Tel. (Dean's office) +48 32 36 89 400
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Dean: Prof. dr. hab. Adam Idziak

Vice-Dean for Research: Dr. Andrzej Tyc

Vice-Dean for Education (geography): Dr. Damian Absalon

Vice-Dean for Education (geology, geophysics): dr. hab. Jerzy Cabala

ECTS coordinators: dr. hab. Jerzy Cabala,

Students in the Faculty of Earth Sciences have an opportunity to study Geography, Geology and Geophysics. Research and educational activities are carried out in geographical (GG) and geological (GL) departments, laboratories, faculty and inter-faculty units:

Physical Geography (GG)

Economic Geography (GG)

Geomorphology (GG)

Climatology (GG)

Paleogeography and Paleocology of Quaternary (GG)

Regional Geography and Tourism (GG)

Geochemistry, Mineralogy and Petrology (GL)

General Geology (GL)

Paleontology and Stratigraphy (GL)

Applied Geology (GL)

Hydrogeology and Engineering Geology (GL)

and: Laboratory of the Waters Analyses, Laboratory of the Soils, Grounds and Rocks Analyses, Meteorological Observatory and Laboratory of the Dynamics of Environment, Laboratory of Structural Research, Museum of the Earth, Maps Store and Library, Office for the Teaching and Research Service, Office for the International Projects Service.

There are 230 staff members including 46 professors and doctors with habilitation, 95 PhD's, and 5 assistants (junior research staff). There are 1100 students both full-time and part-time at the Faculty and 50 PhD students. The Faculty is also involved in education of students from the Individual Studies in Mathematics and Natural Sciences, studies in Environmental Protection as well in Geophysics. The Faculty cooperates with domestic and foreign research institutions including numerous universities from Europe, USA, Japan and Egypt. The following journals are edited by the Faculty members: *Geographia*, *Studia et Dissertationes*, *Geologia* (Geology), *Kras i Speleologia* (Karst & Speleology), *Wyprawy Polarne* (Polar Expeditions), *Landform Analysis*.

Following Student Scientific Groups work actively in the Faculty such as Geographers (co-ordinator: Prof. UŚ dr hab. M. Rzętała), Geologists (co-ordinator: prof. dr hab. J. Żaba), Geophysicists (co-ordinator: dr R. Dubiel), Gemmologists (co-ordinator: dr E. Szełęg), Paleontologists (co-ordinator: dr W. Krawczyński), Explorers (co-ordinator: prof. dr hab. L. Teper) and Hydrogeologists (co-ordinator: dr P. Siwek). In the past years they organized numerous conferences, excursions and field camps within Poland, the Czech Republic, Slovakia, Ukraine, Russia, Belarus, former Yugoslavia, Georgia and Spain. Students' interests in the Faculty are represented by Student Government.

GEOPHYSICAL SCIENCES

Full time studies in Geophysics are interfaculty studies realised by Faculty of Earth Sciences with the Institute of Physics of the University of Silesia. Geophysics studies are realised in two-level scheme (I level + II level). Enrolment on the I level (BSc) studies is based on the competition of the results documented by the High School Matriculation Certificates (credits are counted for two subjects selected from following: geography, mathematics, physics, chemistry, biology, computer science and foreign language. I level studies are lasting 3 years and students are obtaining general education in geophysics. Terms of graduation at I level studies are to obtain credits from all courses indicated at programme reception of at least 180 ECTS credits and to pass of BSc examination. Undergraduates are obtaining certificate of licenced geophysicists (BSc) and are allowed to apply for enrolment on II level (MSc) studies:

geophysics
physics
geology

Undergraduates in geophysics who obtain their BSc degrees can continue the two-year MSc degree studies in one of the following specialities;

Geochemistry and Mineralogy
Stratigraphy and Prospecting Geology
General and Prospecting Geology
Hydrogeology and Protection of the Water Environment
Protection of the Lithosphere and Deposits Resources
Paleontology and Stratigraphy
Medical Physics
Experimental Physics
Theoretical Physics
Computer Physics
Physics of Nanosystems and Quantum Computer Techniques

To obtain MSc degree, students are required to complete successfully all compulsory and chosen optional courses, collect at least 120 ECTS credits, pass all exams, including the final master's exam, and to submit a MSc dissertation. The MSc degree in geophysics or/and physics is awarded to graduates depending where the MSc dissertation is submitted e.i. at the Faculty of Earth Science or/and at Institute of Physics.

A graduate of BSc degree studies should have the knowledge of the subjects included in the programme of the studies, to the extent of being able to assist in geological work. They shall be able to participate in a team work and be prepared to take on specialized studies on the MSc level. A graduate of MSc degree studies shall be independent in using the knowledge of his specialization, be creative and have good organizing skills. Distinctive graduates shall be prepared to take on PhD degree studies and scientific research. The best MSc degree graduates recommended by professors are invited to apply for admission to the four-year PhD degree studies in Earth Sciences.

DEPARTMENT OF APPLIED GEOLOGY

Head: prof. dr hab. inż. Adam Idziak

Department structure:

Geology of Deposits Group (head: prof. dr hab. Lesław Teper)

Applied Geophysics Group (head: prof. dr hab. Adam Idziak)

Research activities:

- prospecting, investigation and documentation of deposits
- protection of deposits and environment in mining areas
- contaminants in natural environment connected with exploitation and ore treatment
- tectonophysics and investigation of the processes of rocks destruction
- mining seismology, seismoacoustics and microseismology
- geophysical investigation of pollutant migration in groundwater and soil
- application of geophysics to archeology

Teaching activities: participation in general geophysical and geological education at the Bachelor`s level and in special courses within Geophysics and Geology with specialization in Protection of Lithosphere and Deposits Resources (MSc degree and PhD degree studies). The Department trains experts in mining geophysics, geophysics and physics of lithosphere, atmosphere and hydrosphere, economic geology, protection of mining areas, environment protection. Students learn geophysical methods (seismic, geoelectrical and magnetic) and how to investigate raw materials and recognise the effects of their exploitation. Students also acquire knowledge on waste disposal management and protection of mining area. Students learn also geological legislation and how to operate modern scientific equipment.

DEPARTMENT OF GEOCHEMISTRY, MINERALOGY AND PETROGRAPHY

Head: prof. dr hab. Janusz Janeczek

Department structure:

Geochemistry Group (head: prof. dr hab. Łukasz Karwowski)

Mineralogy Group (head: prof. dr hab. Janusz Janeczek)

X-ray Laboratory (head: dr Tomasz Krzykowski)

Petrology Group (head: prof. dr hab. Krystyna Kruszewska)

Research activities:

- mineralogy and petrography of the Tatra Mts, Sudety Mts, and Upper Silesia
- radioactive minerals as analogues for the radioactive waste forms
- physics of minerals
- organic matter and trace elements in minerals and rocks
- mineralogy of atmospheric dust from Upper Silesia

Teaching activities: participation in general geology education at the Bachelor`s level, and in special courses within Geochemistry and Mineralogy for both MSc and PhD students. Students in the Department gain knowledge of the investigation of minerals and rocks and about the behaviour of elements in litho- and biosphere. Students also acquire knowledge on methods of investigating organic matter and fluid inclusions. Students are familiarized with the theory of the manufacturing of glass, semiconductors and ceramics.

DEPARTMENT OF GENERAL GEOLOGY

Head: prof. dr hab. Jerzy Żaba

Department structure:

General Geology Group (head: prof. dr hab. Jerzy Żaba)

Physical Geology and Geotectonics Group (head: prof. dr hab. Jerzy Żaba)

Research activities:

- geodynamics of platforms in Poland and in neighbouring countries
- the Quaternary paleomorphology of central Poland
- dynamics of clastic and carbonate sedimentation
- geotectonics and exodynamics

Teaching activities: participation in general geology education at the Bachelor`s level, and in special courses within Prospecting Geology (MSc degree and PhD degree studies). The Department educates experts in geological prospecting and geological mapping. Students learn modern methods of geological data collection, processing and visualization of the geological data etc.

DEPARTMENT OF HYDROGEOLOGY AND ENGINEERING GEOLOGY

Head: prof. dr hab. Andrzej Kowalczyk

Research activities:

- hydrogeological and zoological mapping
- management of groundwater resources in mining areas
- protection and monitoring of groundwater quality in Upper Silesia
- regional hydrogeological characterisation of the Upper Silesia massif
- hydrochemical zonation in sedimentary basins

Teaching activities: participation in general geology education at the Bachelor`s level and in special courses within Hydrogeology and Protection of the Water Environment (MSc degree and PhD degree studies). Students are educated to solve both theoretical and practical problems related to hydrogeology especially in Upper Silesia. Students are familiarized with field and laboratory methods in hydrogeology, they learn basics of hydrogeological modelling, documentation and monitoring of groundwater resources.

DEPARTMENT OF STRATIGRAPHY AND PALEONTOLOGY

Head: prof. dr hab. Edward Głuchowski

Research activities:

- Late Paleozoic miospores and acritarchs in Poland
- palynological studies in the Upper Silesia area
- faunal successions in Devonian, Carboniferous and Triassic of southern Poland
- taxonomy of selected groups of fossils (conodonts, brachiopods, corals, ammonites, gastropods, echinoderms)
- paleoecology and biogeography of faunal communities in Paleozoic and Mesozoic, mostly in Devonian and Cretaceous
- integrated ecosystem analysis of geological events, as exemplified by late Devonian mass extinction

Teaching activities: participation in general geology education at the Bachelor`s level and in special courses within Paleontology and Stratigraphy (MSc degree and PhD degree studies). The trains experts in fossil animals and plants and in chronology of events within the litho- and biosphere. Students learn principles and methods of investigation of fossils, reconstruction of the paleoenvironments, correlation and biostratigraphy.

STUDY PROGRAMME:

GEOPHYSICS



EXPLANATIONS:

Each course in the geophysics programme (GF) is assigned to a consecutive number which helps to use the part of the Information Package containing their descriptions. To make it easier, the course numbers are preceded by codes of the research discipline (SOCRATES CODE).

Courses written in bold are obligatory
Courses written in italics are optional

- A, B** - suggested version of the course
- E/Z** - examination/other form of assessment
- l** - summer semester
- z** - winter semester
- *** - possibility of taking an examination without attending the course
- **** - summer vacation
- ***** - to be chosen from the list of proposed special and/or monographic lectures
- ****** - obligatory for students who wish to continue Master's degree programme at the Institute of Physics
- ******* - obligatory for students who wish to continue Master's degree programme at the Faculty of Earth Sciences
- BW** - individual student's work
- WnoZ** - realized at the Faculty of Earth Sciences (WNoZ), according to the rules set by WNoZ
- IF** - realized at the Institute of Physics (IF), according to the rules set by IF
- L** - lectures
- P** - practicals
- Lab** - laboratory

Attention: the students are obligated to participate in the library skill training and get acquainted with the workplace safety and ergonomics principles during the first semester.

GEOPHYSICS: Bachelor's degree programme (GF I)

Semester 1

Course number	Course title	Hours			ECTS credits	E/Z
		L.	P.	Lab.		
GF001	Introduction to physics: mechanics	45	30		7	E
GF002	Introduction to mathematical analysis	30	30		7	E
GF003	Introduction to error analysis	15			2	Z
GF004	Physical geology I	30		30	6	Z
GF005	Physical chemistry	30		30	6	E
	English 1*		30		1	Z
	Physical education 1		30		1	Z

Semester 2

Course number	Course title	Hours			ECTS credits	E/Z
		L.	P.	Lab.		
GF006	Introduction to physics: electricity and magnetism	45	30		5	E
GF007	Mathematical analysis	30	30		5	E
GF008	Physical geology II	30		30	5	E
GF009	Physics laboratory I			45	3	Z
GF010	Mineralogy, Petrography, geochemistry	45		45	8	E
	English 2*		30		1	Z
	Physical Education 2		30		1	Z
GF038	FIELD COURSE **: General geology	14 days			2	Z

Semester 3

Course number	Course title	Hours			ECTS credits	E/Z
		L.	P.	Lab.		
GF011	Introduction to physics: optics structure of matter	45	30		5	E
GF012	Physics laboratory I			45	3	Z
GF013	Physics of the Earth	45	30		6	E
GF014	Introduction to computer science	30			2	Z
GF015	Applied geophysics I	30		30	5	Z
GF016	Historical geology, stratigraphy and paleontology	45		45	8	E
	English 3		30		1	Z

Semester 4

Course number	Course title	Hours			ECTS credits	E/Z
		L.	P.	Lab.		
GF017	Introduction to physics: thermodynamics and statistical physics	30	30		4	E
GF018	Computer methods in geophysics			45	4	Z
GF019	Introduction to Solid State Physics B	30			3	E
GF020	Physics laboratory II			120	7	Z
GF021	Applied geophysics II	30		30	6	E
	English 4*		30		2	E
GF040	FIELD COURSE **: General geophysics	10 days			2	Z
GF041	Applied geophysics	10 days			2	Z

