



COURSES IN FOREIGN LANGUAGES for ERASMUS INCOMING STUDENTS

2021/2022 academic year

Faculty of Geology and Geography

Faculty coordinator: Assoc. prof. Bilyana Borissova, PhD, billiana@gea.uni-sofia.bg

BA Tourism Programme

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGG040 114Z012	ECONOMICS OF TOURISM	English	BA	summer	3	30	10	5	Assoc. Prof. Elena Petkova, PhD	epetkova@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The aim of the subject is that students acquire both knowledge in economics and skills in applying this knowledge in the field of tourism. In this regard students are offered an understanding of some theory and practicalities of macroeconomics and microeconomics, as well as of economic tools, which are applied to tourism sector and to the operation of tourism companies. Topics include: characteristics of economics of tourism, of tourism sector and tourism organizations, tourism markets, principles of supply and demand of tourism services, pricing of tourism companies, investments in tourism sector, balance of payments, economic impacts of tourism, economic analysis and economic indicators in tourism.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of

lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z015	HOTEL OPERATIONS	English	BA	winter	4	45	10	5	Assoc. Prof. Elena Petkova, PhD	epetkova@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The subject focuses on the management of operations of hotel companies. Students could gain understanding of some theory and practicalities of technology, economics and management of activities, processes and operations of companies in the lodging industry. Topics include: characteristics of lodging industry, hotel classification, terminology of hotel processes and operations, types and quality of hotel services, human and material resources in hotel industry, development and categorization of hotel companies, planning, organizing, leading and controlling lodging organizations, marketing and sales of hotel companies and management of hotel front office and back office operations of: service during the reservation, during the arrival, during the stay and during the departure of clients, housekeeping and laundry operations, food and beverage service, provision of additional services by hotel organizations, security, engineering and maintenance, human resources management, finance and accounting of lodging companies.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z017	RESTAURANT OPERATIONS	English	BA	summer	4	45	10	5	Assoc. Prof. Elena Petkova, PhD	epetkova@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The subject focuses on the management of operations of food and beverage companies. Topics include: characteristics of food service industry and types of food and beverage organizations, system of categorization of food and beverage establishments, furnishing and equipment of

restaurant companies, menu planning, calculating costs, pricing, and principles of management of the activities of purchasing, receiving, storing and issuing food and beverage products, of food and beverage production, of food and beverage sales and of serving clients										
Requirements for enrollment: NO										
If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.										
Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z018	BUSINESS SIMULATIONS IN TOURISM	English	BA	summer	2			30	Assist. Prof. Atanas Kazakov, PhD	anatas@gea.uni-sofia.bg
Short description of the course (done in the language of instruction):										
The course is based on Hotel Operations Training Simulation. It reveals students the essence of Hotel Business – Price strategies, Market segmentation, Product diversification, Promotion and Advertising. They learn how to write a Business strategy. The simulation is developed through fixed number of periods. Several student teams are created. They compete against each other. Students take their team decisions for each period. After that decisions are processed and results are announced. There are regular discussions of received results. The main purpose of simulation is to stabilize a financially ruined hotel and to make it profitable again. At the end an official ceremony for everybody is arranged.										
Requirements for enrollment: NO										
If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.										
Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z021	MARKETING IN TOURISM	English	BA	summer	4	30	20	10	Assoc. Prof. Mariana Assenova, PhD	mariana@gea.uni-sofia.bg

Short description of the course (done in the language of instruction):

The course aims to familiarize students with the modern understanding of marketing and its application in tourism. Students acquire basic knowledge about the process of marketing planning and basic tools of the marketing mix - tourism product, prices and pricing in tourism, distribution channels and communication activities. Significant attention is paid to advertising as the main tool of the communication policy and its role in tourism.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z023	TRAVEL AGENTS AND TOUR OPERATORS ACTIVITY	English	BA	winter	5	45	20	10	Assoc. Prof. Mariana Assenova, PhD	mariana@gea.uni-sofia.bg

Short description of the course (done in the language of instruction):

The aim of the course is to acquaint students with one of the most important sectors in the tourist servicing – the intermediary sector, as well as to prepare them to work in travel agencies. Knowledge on specific functions and activities of tour-operators and travel agents is provided. Specific skills are trained to elaborate and calculate tourist programs and terms of contracting of service suppliers are discussed. Special attention is paid to online sales.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		

GGG040 114Z026	DEVELOPMENT AND CURRENT PROBLEMS OF TOURISM IN BULGARIA	English	BA	Winter	5	45	20	10	Assoc. Prof. Elka Dogramadjieva, PhD	elka@gea.uni-sofia.bg
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Short description of the course (in the language of instruction):

The course introduces the past development, recent trends and current problems of tourism in Bulgaria. Key factors of the country's tourism development and the main components of the tourism system at national and regional level are discussed as well as the different types of tourism products, and their resource and market potential.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z029	WORLD TOURISM REGIONS AND DESTINATIONS	English	BA	winter	5	45	15	15	Assist. Prof. Atanas Kazakov, PhD	anatas@gea.uni-sofia.bg

Short description of the course (done in the language of instruction):

Students will learn about some of the most important tourism organizations like World Tourism Organization, World Travel & Tourism Council, Pacific Asia Travel Association, International Air Transport Association, International Hotel and Restaurant Association, etc. They will learn about the sources of tourism statistics. Knowledge about the main world tourism regions after United Federation of Travel Agents Associations is received and analyzed – area, statistic about international tourist arrivals, international tourism receipts, and international tourism expenditures. In the second part of the course we analyze tourism development in different chosen destination countries. There will be at least one country per tourist region. National specifics for different topics in tourism are discussed.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114I017	GEOGRAPHY FOR TRAVEL AGENTS	English	BA	winter	3	30	10	5	Assist. Prof. Atanas Kazakov, PhD	anatas@gea.uni-sofia.bg

Short description of the course (done in the language of instruction):

All the different sectors of tourism are examined during the course. We learn how to sell destinations with the help of world geography. The specifics of travel documentation, air and rail transport, rent a car and rent a camper, accommodation, ferries and cruises, and tours is studied. At the end we will make a test in order to verify the gained results and to learn how to analyze them.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114I021	CUSTOMER CARE	English	BA	winter	3	30	10	5	Assist. Prof. Atanas Kazakov, PhD	anatas@gea.uni-sofia.bg

Short description of the course (done in the language of instruction):

Students learn about tourist patterns of different nations. This will help them to serve better tourists from every source market. Beside these we will get to know the specifics of some distant and unknown but perspective nations like Chinese, Japanese and Indians. Part of the efforts would be aimed at analysis and discussion of gathered through different sources information. Team work would be used to get right to the results.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114I022	SUSTAINABLE TOURISM DEVELOPMENT – STANDARDS AND CERTIFICATION	English	BA	winter	3	30	10	5	Assoc. Prof. Mariana Assenova, PhD	mariana@gea.uni-sofia.bg

Short description of the course (done in the language of instruction):

The aim of the course is to form an understanding, knowledge and skills for sustainable tourism development - the essence, principles and aspects of sustainability. The course also examines a variety of international and national certification schemes and standards for sustainable tourism development at regional and company level – labels, award criteria, rules and certification mechanism and control.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGG040 114Z030	TOURISM DESTINATIONS MANAGEMENT	English	BA	summer	3	30	10	5	Assoc. Prof. Mariana Assenova, PhD	mariana@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The aim of the course is to develop knowledge, understanding and skills for management and marketing of tourism destinations. It examines the essence, the key elements, the evolution and attractiveness and competitiveness factors of the destination, the essence, legal forms and organizational structure of destinations management organisations, the role of partnership as well as the approaches and problems in establishing and functioning of destination management organisations.

Requirements for enrollment: NO

If any, please describe the specific requirements: The full course will be delivered for a group of at least 6 students, reduced number of lectures will be delivered for a group of at least 3 students. If the group comprises less than 3 students the training will be in the form of consultations.

BA Programme Geography

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGA010 117Z102	Climatology I	English	BA	Winter semester	4	30	15	15	Prof.Nina Nikolova, PhD	nina@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The course of **Climatology I** clarifies the physical mechanisms of climate and interdependences among the elements of climate system. The factors for genesis of climate at global and regional scale are analysed. The peculiarities of the regime and spatial distribution of climate elements are presented. On the background of global and regional climate the microclimatic differences are analysed. Practical work is related to meteorological measurement and data base creation as well as to the application of statistical methods for climate analysis.

Requirements for enrollment: NO

If any, please describe the specific requirements:

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGA010 117Z107	Climatology II	English	BA	Summer semester	4	30	15	15	Prof.Nina Nikolova, PhD	nina@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The course of **Climatology II** extends the knowledge about climate systems with the accent on the impact of atmospheric circulation, earth surface and anthropogenic activity on climate. The special attention is given to the climatic classification schemes of Koppen, Alissov and Thornthwaite. The physical bases of climate changes are clarified. Practical work is related to the application of statistical methods for calculation of specific climate indices in order to study temporal variability of climate.

Requirements for enrollment: YES										
If any, please describe the specific requirements: Knowledge about climate factors and elements; basic computer skills										
Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGA010 117Z111	Hydrology 1	English, Polish	BA	Summer	4	30	15	15	Assis. Prof. Kalina Radeva, PhD	kradeva@gea.uni-sofia.bg
Short description of the course (in the language of instruction):										
The course "Hydrology 1" provide a basis for understanding the hydrologic processes of the hydrologic cycle, such as precipitation, evaporation and transpiration, runoff, infiltration and ground water and an exploration of anthropogenic effects on the water cycle. The course outline includes field excursions with practical data collections.										
Requirements for enrollment: NO										
If any, please describe the specific requirements:										
Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGA010 117Z113	Hydrology 2	English, Polish	BA	Winter	4	30	15	15	Assis. Prof. Kalina Radeva, PhD	kradeva@gea.uni-sofia.bg
Short description of the course (in the language of instruction):										
The course "Hydrology 2" This course will present an overview of hydrological characteristics of rivers, lakes, swamps, glaciers, seas and oceans. The course also examines water management policies and prepares for a skillful and rational use of water resources in respect of the natural environment.										
Requirements for enrollment: NO										
If any, please describe the specific requirements:										
Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		

GGA010 117Z110	Geomorphology I	English	BA	winter	4	30	15	15	Assoc. Prof. Ahinora Baltakova, PhD Assis.Prof. Dimitar Krenchev, PhD	abaltakova@gea.uni-sofia.bg dkrenchev@gea.uni-sofia.bg
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Short description of the course (in the language of instruction):

The course of **Geomorphology I** aims to give students an introductory understanding of geomorphological concepts, process mechanics, and relationships between landforms and processes. The first part of this course consistently considers the mechanism and landforms variety (large-scale and small-scale tectonic and structural landforms) of endogenic processes: plate tectonic, diastrophic, volcanic and plutonic processes, as well as processes of folding, faulting, and jointing of rocks. Exercises are empirical and practical and follow the lectures topics.

Requirements for enrollment: YES

If any, please describe the specific requirements: Students should have some background in basic geological courses.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercise s/Semin	Practica I work		
GGA010 117Z112	Geomorphology II	English	BA	summer	4	30	15	15	Assoc. Prof. Ahinora Baltakova, PhD Assis.Prof. Dimitar Krenchev, PhD	abaltakova@gea.uni-sofia.bg dkrenchev@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The second part of the course **Geomorphology II** considersthe exogenous processes of weathering, the chieftypes of sediment transport (fluvial, aeolian, coastal, glacial), andsediment deposition, which belong to the cycle of formation of sediment rocks and the landscape evolution. Exercises are empirical and practical and follow the lectures topics.

Requirements for enrollment: YES

If any, please describe the specific requirements:

Students should have some background in basic geological courses or topics discussed in **Geomorphology I** course.

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGA010 117P34	Geomorphology (field work)	English	BA	summer	1			15	Assoc. Prof. Ahinora Baltakova, PhD Assis.Prof. Dimitar Krenchev, PhD	abaltakova@gea.uni-sofia.bg dkrenchev@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The field work in Geomorphology follows the courses Geomorphology I and II and it aims to demonstrate some basic field techniques, used in geomorphological investigations. Geomorphological research is impossible without field observations and measurements, which are inseparable from the laboratory analyses and the morphometrical techniques. This course takes place outdoors during a field excursion and it is preceded from a pre-fieldwork taken during the exercises in the Geomorphology I and II (delineation of the studied area and preliminary morphometrical analysis using topographical maps, satellite images and DEM). Fieldwork involves investigation of the rock units, soil units, tectonic elements and active geomorphic processes; taking samples for laboratory analyses; complementing and updating the information obtained from the morphometrical analysis. The course ends with a field report with field data interpretation and relating to mass wasting weathering and erosion processes and geomorphological schemes preparation.

Requirements for enrollment: YES

If any, please describe the specific requirements: Students should have some background in basic geological courses or topics discussed in **Geomorphology I and II.**

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGA010 117Z116	Geography of Soils and General Biogeography	English	BA	Winter Semester	4	30	15	15	Assis. Prof. Petko Bozhkov, PhD; Assis. Prof. Borislav	pbozhkov@gea.uni-sofia.bg b.grigorov@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The course consists of two separate parts. The aim of the first part is to introduce to students the formation, the qualities and the geographical distribution of soils. Their basic quality, the fertility and the resource role, is explained. Accent is put on the soil formation factors, determining the diversity of the existing soil types. Attention is given to the principles of the developed national and international classification systems. In the second part, the students have to acquire knowledge, concerning the geographical distribution of living organisms and their communities. The main regularities are pointed out, together with the reasons for the change of the areas of different taxa and communities, which they form. The most important theoretical grounds and tendencies in the development of the science are analyzed. In the regional part the biomic approach is applied. It depicts the regularities in the horizontal and vertical zonality and relates directly to physical geography.

Requirements for enrollment: YES

If any, please describe the specific requirements: Basic knowledge in physical geography.

MA Programme: Climate change and water management

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGA312 115Z111	Climate change	English	MA	Winter semester	5	45		15	Prof.Nina Nikolova, PhD	nina@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The course "Climate change" analyses the changes in the climatic system with the accent on the period of instrumental observation (from the end of 19 century to present days). The causes and consequences of climate change are clarified. It emphasizes on the following main issues: 1) Is there a global threat like irreversible climate change? 2) What are the causes of climate change - natural or anthropogenic? 3) What are the peculiarities of the variability of main climate elements on a regional scale? 4) Are the observed trends in the changes in air temperature and rainfall in Bulgaria consistent with the global climate change?

Requirements for enrollment: YES

If any, please describe the specific requirements: Knowledge in physical and socio-economic geography; basic computer skills

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGA312 115Z114	Methods of Climatic Research	English	MA	Winter semester	5	45		15	Prof. Nina Nikolova, PhD	nina@gea.uni-sofia.bg

Short description of the course (in the language of instruction):

The course "Methods of climate research" provides knowledge about meteorological time-series and quality control of meteorological information. The general and specific statistical methods for processing meteorological data and analysis of temporal variations of meteorological characteristics of the main climatic parameters are considered. Students get acquainted with methods for calculating the number of climatic parameters (for individual meteorological elements and phenomena, complex indicators and extreme climate events). Spatial attention is given to the methods for studying climate change at regional and local scale

Requirements for enrollment: YES

If any, please describe the specific requirements: Basic knowledge in statistic; computer skills

MA Programme: Mineralogy, petrology and mineral deposits

Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/ summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/ Seminars	Practical work		
GGB280 119I207	Isotope geology	English	MA	Summer	2	30	30		M. Dyulgerov M. Georgieva	momchil@gea.uni-sofia.bg milena@gea.uni-sofia.bg

Short description of the course (in the language of instruction): The course aims to provide the physical principles of isotope geology in K/Ar, Ar/Ar, Rb/Sr, Sm/Nd, U-Th-Pb, Re/Os, S, O, C, N, and H systems. The course examines the data acquisition and interpretation, applied to the geological materials: age determinations, physical-chemical parameters of the setting, source determination. It gives information about the advantages and the limitations of the analytical methods, applied to varied isotope systems.

Requirements for enrollment: NO										
If any, please describe the specific requirements:										
Course code	Course title (in English)	Language of instruction	Course offered to BA/BS, MA/MS, PhD	Semester (winter/summer)	ECTS	Workload (hours)			Lecturer/s's name	Lecturer/s's E-mail
						Lectures	Exercises/Seminars	Practical work		
GGB280 119I210	Metamorphic crystallization and phase equilibrium	English	MA	winter	3	30		15	Philip Machev Milena Georgieva	machev@gea.uni-sofia.bg milena@gea.uni-sofia.bg
<p>Short description of the course (in the language of instruction): The course is an upgrade over the bachelor's course of Metamorphic petrology and is oriented towards students with a lasting interest in the field of the metamorphic petrology. Students are introduced to the mechanism and the kinetics of nucleation and crystal growth by nucleation and recrystallization of metamorphic minerals. Particular attention is paid to the relationship between metamorphic minerals formation and rock deformations over time, resulting in the structural and textural features of the metamorphic rocks. Basic metamorphic reactions and chemical equilibrium during the metamorphism are studied. Equilibrium mineral associations are examined in order to determine the peak metamorphic conditions and the whole P-T-t path of metamorphic rocks. Students are introduced to basic parameters of thermodynamically based software for modeling the phase equilibria in metamorphic rocks.</p>										
Requirements for enrollment: YES										
If any, please describe the specific requirements: The students should have basic knowledge of metamorphic petrology.										