## Welcome, Visitor!

As Faculty of Earth Sciences and Spatial Management, we offer education on our five main faculties:

geography, tourism and recreation, tourism management, geoinformatics and spatial management.

We have plenty of courses offered in English for Erasmus+ students:

AREA:

GEO- Geography

TM – Tourism Management

SP – Spatial Planning

GIN-Geoinformatics

For clarity, winter semester is in blue, spring semester is in green. If semester says "winter or spring" it means that classes are based on INDIVIDUAL arrangement and it require previous mail correspondence with me (those classes are NOT re-opened every year).

'Fieldwork classes' – means a few day trip to some locations, it can be connected with additional fees, like entrance fee, accommodation fee etc.

AREA	Subject	ECTS	Semester	Other information	Hours	Lecturer
GEO, GIN	Geology and geomorphology	9	spring	<u>Outline:</u> The subject includes knowledge of the construction of the Earth and the natural processes occurring deeply inside and on the surface of the Earth. It contains characteristics of the Earth's surface forms of various origin and educates in the ability to recognize essential minerals and rocks and geomorphological forms emerging in different climatic zones. The subject outlines the impact of human activities on the surface relief	40 lectures, 40 conversatories, 40 laboratories	Dr Małgorzata Telecka, Prof. dr hab. Wojciech Zgłobicki

GEO, GIN	Meteorology and hydrology in practice, part I	4	winter	<u>Outline:</u> The subject includes lectures on physics of the atmosphere and water management with the elements of the law. The main objective is: to present the specifics of the processes occurring in the atmosphere and to use the meteorological and climatological knowledge in a practice of human activity as well as to outline the possibility of water resources usage	60 lectures 60 conversatories	Dr. Agnieszka Krzyżewska Sr. Sylwester Wereski Dr. Katarzyna Mięsiak-Wójcik Dr hab. Stanisław Chmiel
GEO TM	Biogeography and environment protection	3	winter	<u>Outline:</u> The subject covers the issues and characteristics of the spatial distribution of biomes on the planet, phyto- and zoogeographic regions. Basic types of zonal and azonal vegetation are characterized as well as changes in the flora and fauna during the Cenozoic. Issues of biodiversity, sustainable development and global environmental problems are discussed. Forms of nature protection – both in national and international scales are presented.	20 lectures 20 conversatories	Prof. dr. hab. Irena Pidek
GEO	Geomorphology - fieldwork	2	spring	<u>Outline:</u> Fieldwork in the geomorphology are intended to familiarize students with the dominant elements of surface relief in the Lublin region. Presented are also the processes shaping the individual elements of the relief including the factors determining their intensity	32 fieldwork classes	Dr Jan Reder
GEO, GIN	Meteorology and hydrology in practice part II	7	spring	Outline: The classes include issues of synoptic meteorology and applied climatology, documentation of groundwater resources, hydrochemistry in environmental studies and natural basis of melioration.	60 lectures 60 classes	Dr. Agnieszka Krzyżewska Dr. Katarzyna Mięsiak-Wójcik Dr Sylwester Wereski Dr hab. Stanisław Chmiel
GEO	Pedology (soil science) – fieldwork	3	spring	Outline: Fieldwork of soil science aims at digging up soil pits and making the description of the soil layers, which leads to its classification and / or grading with particular emphasis on the geological structure, relief,	32 fieldwork classes	Dr Jacek Chodorowski

				water relations, vegetation and forms of land		
				use.		
GEO, TM	Geographical regions of Poland - field excercises - Pomorze	6	spring	Outline: Fieldwork in the Kashubian Lake District, and in the Embankment of Gdansk and Koszalin familiarize the student with the guiding characteristics of the geographical environment of macro-regions and their basic functions in the past and present. They demonstrate how human activities are related to the components of the geographical environment and nature conservation.	48 fieldwork classes	Prof. dr hab. Radosław Dobrowolski, prof. dr hab. Sławomir Terpiłowski
GEO, TM	Geographical regions of Poland - field excercises – Bieszczady or Tatry mountains	4	spring	<u>Outline</u> : Field exercises in Bieszczady or Tatry familiarize student with the leading features of the geographical environment and the basic functions of the region. During fieldwork, students learn about geology, geomorphology, hydrology, climatology, environmental protection, history and cultural heritage as well as the settlement and economy of that part of Poland.	48 fieldwork classes	Dr Sylwester Wereski/ Dr Jan Reder
GEO, TM	Geographical regions of Poland - field excercises – Świętokrzyskie mountains	2	spring	<u>Outline</u> : Field exercises in Świętokrzyskie mountains familiarize student with the leading features of the geographical environment and the basic functions of the region. During fieldwork, students learn about geology, geomorphology, hydrology, climatology, environmental protection, history and cultural heritage as well as the settlement and economy of that part of Poland	24 fieldwork classes	Dr Renata Kołodyńska - Gawrysiak
TM	Introduction to tourism	4	winter	Outline: This subject helps students to understand tourism by providing them the basic definitions and concepts in tourism. Students will have knowledge about history of tourism development and various types of tourism. Also the important part of subject are tourism functions and issues of its positive and negative impacts. Other topics within the subject are	30 lectures	Dr Renata Krukowska, Dr Andrzej Tucki

				related to tourism economy (international		
				tourist arrivals and receipts by UNWTO		
				regions, ICT in tourism – social media).		
ТМ	Information technology in Tourism	3	Winter	<u>Outline:</u> The students will develop their skills with computer graphics (GIMP), group work with google documents, website creation (google sites), create virtual tours (Google Earth), edit documents and mail merge in Microsoft Word, calculate travel costs with basic functions and pivot tables in Microsoft Excel, create tourist offers with booking networks and sites.	5 lectures, 25 laboratories	Dr Agnieszka Krzyżewska, Dr Sylwester Wereski
TM, GEO	Abiotic resources in tourism	6	winter	<u>Outline:</u> This classes focus on climate resources (like spa towns, bioclimatology, extreme events), hydrological resources (oceans, rivers, lakes), geological resources (mountains, geoparks) in tourism. Students can observe those resources during fieldwork.	30 lectures, 30 conversatories	Dr Agnieszka Krzyżewska, Dr Katarzyna Mięsiak-Wójcik, Dr Małgorzata Telecka, Dr Sylwester Wereski
TM, GEO	Biotic resources in tourism	6	winter	<u>Outline</u> : The course introduce students to most popular tourist natural resources, like botanical gardens, forests, national parks.	30 lectures, 30 conversatories	Prof. dr. hab. Irena Pidek Dr Magdalena Suchora,
ТМ	Cultural tourism	6	spring	<u>Outline</u> : This course introduce students the concept of cultural tourism, which is traveler's engagement with a country or region's culture, specifically the lifestyle of the people in those geographical areas, the history of those people, their art, architecture, religion(s), and other elements that helped shape their way of life.	45 lectures, 15 conversatories	Prof. dr hab. Anna Dłużewska Prof. dr hab. Wojciech Ziętara,
ТМ	Client and customers service	5	winter	<u>Outline:</u> The course will develop communication skills in different business activities including business etiquette, intercultural communication, negotiation and persuasion. Students will learn how to prepare business correspondence, presentations in formal meetings. Students can develop their teamwork power and custom service skills	<ul><li>15 lectures,</li><li>45 conversatories</li></ul>	Prof. dr hab. Anna Dłużewska, Dr Joanna Bielecka-Prus, Dr hab. Andrzej Kapusta, Dr Andrzej Tucki

TM	Reservation systems	3	winter	<u>Outline:</u> Through our classes, students learn how to operate computer reservation systems, and they study the various types of travelers, transportation systems and vacations available all over the world. The classes include an element of marketing, which shows students the methods used to direct clients to particular destinations. Students examine available transportation options and study the cost of the different activities, including tours, flights and cruises, which can help clients choose destinations that match their travel goals and their budgets. Students become familiar with the ins and outs of the industry, including high and low travel dates and the best time to travel to various locations, as well as how this affects prices and sales. The classes are offered through reservations systems like MerlinX (one of the most popular, national systems used in the industry), Euroticket,Voyager and etc.	30 laboratories	Mgr Monika Widz
TM	Global and local challenges in tourism	4	winter	Outline: Lectures: international security with a special analysis of threats and challenges in contemporary tourism with a division according to their objective, subjective and temporal character. Students have the opportunity not only to meet main determinants of the countries security in the 21 <sup>st</sup> century, but also understand the correlation between the internal situation of the host countries, and the security of tourists staying there. The main focus is on the analysis of political and social security of contemporary people countries and basic processes shaping them in the 21st century. Classes: students have the opportunity to make a comprehensive security analysis of selected countries - characterizing	30 lectures, 30 conversatories	Dr Bartosz Bojarczyk

				their socio-political systems, and thereby acquiring knowledge of the subject factors shaping them. The whole course aims to show students the complex determinants of security processes that shape the internal situation of states in the 21st century and fundamentally condition international tourism		
TM, GEO	Environmental and social ethics	3	winter	Outline: This course will introduce students to the laws and ethical standards that managers must abide by in tourism management. By the end of this unit students will have a clear understanding of the legal and ethical environment in which tourism management operates.	15 lectures, 15 conversatories	Dr Joanna Sposób Dr Magdalena Suchora
ТМ	Law in tourism	3	winter	Outline: The first goal of the course is to develop students' knowledge of legal norms relating to the field of tourism and occurring in the systems of international law, EU law and selected countries.	30 lectures	Dr Michał Łuszczuk
ТМ	Tourist services and facilities	5	spring	Outline: The general purpose is that the students at the end of the course will have gained knowledge about the tourism and hospitality sector, and of tourism and hospitality development and management. The topics cover introduction to tourism and hospitality, the main concepts and tourism system, the hospitality business from a service management perspective and the accommodation and other tourist facilities. Development and types of tourist services in a different types of tourist space: urban, rural, attractions.	15 lectures, 30 conversatories	Dr Andrzej Tucki
ТМ	Tourist events	3	spring	<u>Outline:</u> Students will be able to know interdisciplinary nature of the tourism and hospitality industry and tourist destinations. The main goal of this workshop is getting to know history, culture, architecture and nature	32 fieldwork classes	Dr Renata Krukowska

				values of selected region of Poland. Participants will learn to recognize opportunities and threats for the development of tourism. An important issue is also getting knowledge about organizing and conducting excursions in relation practical experiences.		
TM, GEO	Extreme events and their influence on tourism	4	winter or spring	<u>Outline:</u> Extreme event definition. Extreme events (hurricanes, tornadoes, heat and cold waves, heavy rains, windstorms, extreme biometeorological events, floods, avalanches, tsunami, storms, droughts, catastrophes of tank ships and drilling platforms, collapses of dams) and their influence on human health and tourism industry. Methods of forecasting extreme events. Selected case studies of extreme events and their aftermath.	15 lectures 15 conversatories	Dr Agnieszka Krzyżewska, Dr Katarzyna Mięsiak-Wójcik, Dr Joanna Sposób, Dr Sylwester Wereski
GEO, TM	Natural heritage of Poland	4	winter or spring	<u>Outline</u> : Outline of the main features of natural environment of Poland important from the point of view of tourism and recreation. An overview of native vegetation preserved in Polish national parks and NATURA 2000 areas. Natural environment of the Lublin region against the background of the whole country. Transboundary protected areas of Eastern Poland as a chance for tourism development based on natural resources	30 lectures	Prof. dr hab. Radosław Dobrowolski, Prof. dr hab. Irena Agnieszka Pidek
GEO, TM	Ethnic problems of European space	4	winter or spring	<u>Outline</u> : Nation, ethnic group, nationality, citizenship. Legal and political aspects of recognizing ethnic groups and nations. Nationalism in the integration era. Multiple nation-states' Europe versus multiple non- nation-regions' Europe. Ethnicity and democratic rule. Right of nations to self- determination versus right of states to territorial integrity. Muslim minorities in Europe. Euroislam – pros and cons. European versus	30 conversatories	Dr hab. Wojciech Janicki

				American model of managing ethnic diversity. Immigration policy in the EU.		
GEO, TM	Political geography	2	winter or spring	<u>Outline:</u> The subject includes knowledge in the field of political geography, including the concept of the state, its territory and borders, the concept of the nation and political changes in the world.	15 lectures 15 conversatories	Dr hab. Wojciech Janicki
GIN, GEO, SP	WEB GIS	1	winter or spring	<u>Outline</u> : Web GIS basics and applications. Web services overview. Web Services Standards. Cloud GIS. Data management with ArcGIS Online. ArcGIS Web AppBuilder. Story maps and more web app templates. Big data, vector tiling, image services and analyses. Building Web GIS with ArcGIS for Server. Elements of Web GIS application. OpenLayers and GeoJSON.	30 laboratories	Mgr Mateusz Zawadzki
GIN, GEO, SP	Opensource GIS	4	winter or spring	<u>Outline:</u> Data processing and various analyses using open source GIS application: GRASS GIS and SAGA-GIS. Basics of linux (Ubuntu). Management of different types of GIS data on linux platform. Data exchange between different GIS programs. Spatial analysis using vector and raster data, DEM processing. Introduction to geoprocessing models in GRASS. Graphical and text modes of work using GRASS and SAGA.	30 laboratories 5 lectures	Dr Leszek Gawrysiak
GIN, GEO, SP	Geoprocessing Models	2	winter or spring	<u>Outline:</u> Geoprocessing tools to perform spatial analyst and manage GIS Data. Automatization of those tools with ModelBuilder in ArcGIS for Desktop and ArcGIS Pro. Practical issues includes: spatial data sources, introduction to geoprocessing, automation of GIS tasks, creating spatial data flow process models, edition and managing of geoprocessing models.	30 laboratories	Mgr Paulina Owczarek
GIN, GEO, SP	Advanced Spatial Analysis	3	winter or spring	Outline: Spatial Analysis focuses on advanced aspects of spatial data analysis, including some of practical aspects of programming for GIS	30 laboratories	Dr Łukasz Chabudziński

				customization. The main issues of course are: Spatial network analysis, scaling and explanatory mechanisms. Computing geomorphometric parameters. Using GIS for hydro-geomorphic analysis. Extraction of landform parameters. DEM manipulations and hydro-geomorphological modelling.		
GIN, GEO	Remote sensing (teledetection)	5	winter or spring	Outline: The basic physical principles of remote sensing, the basic technical principles of satellites, sensors and ground segments in data collection, the properties of the available data from these systems. The principles of digital image processing and manipulation in remote sensing. Analysing digital remote sensing data. Planning and carrying out a field study to support remote sensing. choosing the right data and methodology for remote sensing, with the support of literature, in problem areas concerning soil, vegetation, water and human usage of these resources. Integrating remote sensing data with other data in geographical information systems	30 laboratories 10 lectures	Dr Marcin Siłuch
GIN, GEO	Lowe Altitude Remote Sensing (UAS)	4	winter or spring	<u>Outline:</u> Sensors and platforms overview. Civilian and remote sensing applications. Sensors calibration. UAS operational requirements. UAS concept of Operation. Data processing software. Generation of digital data products such as ortho-rectified imagery and digital terrain surface. Current rules and regulations governing owning and operating a UAS in Poland. UAS safety, security and privacy issues.	30 laboratories 10 lectures	Dr Piotr Bartmiński
SP, GIN, TM, GEO	Mathematics and statistics in spatial management	4	Winter or spring	<u>Outline:</u> Equations, real functions, probability and related concepts, random variable and its parameters, populations, samples, measures of central tendency; measures of dispersion, data grouped into classes; two-dimensional	<ul><li>15 lectures</li><li>30 laboratories</li></ul>	Dr Małgorzata Telecka

				distributions; scatter plot, correlation coefficient, regression line and prediction, ANOVA		
TM, GEO	Culture and religion	5	winter	The concept of identity, types of identity. Bases of identities: role, group, and person. Culture and identity. Gender identity. European identity. Racial and national stereotypes. Identity and place. Identity and religion. Identity and tourism. Food and Identity. Subcultures and identity. Orientalism and Occidentalism. Consumption and identity. Cyber identity. Professional identity.	45 lectures 15 conversatories	Dr Joanna Bielecka-Prus, Dr Kamil Mazurek
TM	Business environment in tourism	5	Spring	Outline: To learn fundamental concepts and principles of communication between people from different social and cultural backgrounds. To reflect critically upon the influence of our own culture on how we view it and how we view other cultures. To compare communication behavior verbal and nonverbal of different groups, and interpreted the behavior through culture. To apply knowledge and skills to demonstrate autonomy, expert judgement, responsibility as an effective and ethical communicator across multiple cultural context.	15 lectures 15 conversatories	Dr Joanna Bielecka-Prus, Dr Łukasz Lewkowicz, Dr hab. Agata Ziętek
TM	Sustainable development in tourism	4	Spring	Sustainable Development – origin of the concept and its elements. The Sustainable Development Report 2021. Sustainable Development Report 2022. From Crisis to Sustainable Development: the SDGs as Broadmap to 2030 and Beyond. Includes the SDG Index and Dashboards. Sustainable Development Goals (SDG) – general outlook. Sustainable Development Goals related to tourism & developmental issues. Tourism & the concept of sustainability. Sustainable tourism and its elements. Socio-economic,	15 lectures 15 conversatories	Prof. dr hab. Viktoriya Pantyley,

TM	Entrepreneurship and small business management	4	Winter	<ul> <li>ecological and cultural determinants of sustainable tourism. Coronavirus pandemic contra sustainable tourism &amp; development.</li> <li>Implementation of SDG related to tourism &amp; development in selected countries.</li> <li>The lecture within the course: Entrepreneurship and small business management is focused on introduction to labour market, entrepreneurship and small business issues. The seminar is</li> </ul>	30 lectures 30 conversatories	Mgr Norbert Kawęcki, Prof. dr hab. Paweł Rydzewski
TM,	Research project	4	Winter	<ul><li>and small business issues. The seminar is focused on practical issues related to small business.</li><li>This course is dedicated to understanding how</li></ul>	45 conversatories	Dr Joanna Bielecka-Prus,
GEO, GIN, SP				to interpret, and make sense of the social world, social process and knowledge production. We will learn about and practice both qualitative and quantitative research methods, including observations, IDI, FGI, survey research. Students will learn how to prepare research tools, analysis data in the area of tourism. They will develop their own empirical research question(s) and ability to find answers, how to use different tools and approaches to gathering and interpreting data.		Dr Grzegorz Iwanicki, Prof. dr hab. Michał Łuszczuk, Dr Anna Orłowska, Dr Magdalena Suchora
ТМ	Destination management	4	spring	Destination management classes cover almost all aspects of a destination that are managed, including marketing efforts, local resources, accommodation, activities, events, environmental concerns, tourist attractions and transportation	<ul><li>15 lectures</li><li>30 conversatories</li></ul>	Prof. dr hab. Anna Dłużewska
TM, SP	Spatial planning in tourism	3	spring	The aim of the course is to present the importance of spatial planning as an element that determines the development of tourism. The subject focuses on understanding the scope and definition of spatial planning. It characterizes the traditions and families of spatial planning and the process of its Europeanisation. The course introduces the	15 lectures 15 conversatories	Mgr Karolina Skibińska

				basics of the spatial planning system in Poland: current legislation, types of spatial plans. Examples of spatial planning worldwide are discussed. Student can correlate different factors that influence the development of the area and gains knowledge of land management and the possibility of protecting areas that are valuable for tourism and recreation.		
TM	Market research in practice	3	spring	Outline: Describe the benefits of market research. Outline the difference between market research and marketing research. Describe the two main types of market research. Describe the steps to collect data in market research, prepare analysis and final report. Identify and formulate the problem; Determine the research design. Types of Data; Primary and secondary Data. Getting Data (conducting secondary and primary Data research). Descriptive statistics (describing and transforming Data). Communicating the results (guidelines for written market research reports)	30 conversatories	Dr Andrzej Tucki
TM	Tourism marketing	2	spring	The course includes a wide scope of topics related to tourism and tourism marketing. The topics discussed are as follow: Basic of marketing (PR, advert etc.). Tourism destination - what do we understand by tourism destination (on geographical, administrative and cultural perspective). Actors involved in tourism marketing (National and Regional Tourism Authorities, Stakeholders, Inhabitants) - their duties, and interests (including potential conflicts). International incentives and obstacles for tourism. What makes a place attractive (tourism attractions + infrastructure + accessibility). Tourism products and its components. Target for tourism - what's attractive for our target	15 lectures 15 conversatories	Prof. dr hab. Anna Dłużewska

				(sources of information about a target). Target focus marketing creation (what, where, how). Concurrence analysis and SWOT. Good and best practices. Final work - selected destination marketing proposal (including tourism product, target group and other topics discussed on previous lectures). The course demands a wi-fi access and a screen (students will work promotional materials, advertisement and National Tourism Authorities web pages).		
TM	Tourism product	5	winter	Description coming soon	15 lectures 45 conversatories	
ТМ	Social media in tourism	3	winter	Description coming soon	30 laboratories	
TM	Public diplomacy and intercultural dialog	4	Spring	Public diplomacy & intercultural dialogue in the context of the establishment and development of contacts in the interpersonal sphere and interinstitutional relations on the international level, mostly with a focus on tourism. Aim of the course: to obtain and develop knowledge, skills and competencies that will help us to identify and overcome difficulties in international (intercultural) communication and in the official (public diplomacy) contacts.		Dr hab. Michał Łuszczuk
ТМ	Financial management and accounting	4	spring	Outline: LECTURES: Basics of macroeconomics and microeconomics. Basics of management and accounting. Financial analysis. Financial management. Accounting sheets, balance sheet. Banking. CLASSES: Accounting sheets, balance sheet, revenue and expense ledger, Management in practice, HR area. Banking in practice, loan applications. Bussiness Plan. Profit and Loss Account.	15 lectures 30 conversatories	Dr Małgorzata Terejko

TM	Start up in tourism	3	spring	Description coming soon	30 conversatories	
ТМ	Destination management workshops	4	spring	Field trip to a tourist destination where you can see practical applications of all aspects of destination management.	48 fieldwork classes	Prof. dr hab. Anna Dłużewska Prof. Dr Jolanta Rodzoś
GP	Development of urban areas	2	winter or spring	Description coming soon	15 lectures 15 conversatories	Dr Dagmara Kociuba
GP	Urban politics	2	winter or spring	Description coming soon	15 lectures 15 conversatories	Dr Dagmara Kociuba
SP GIN	Design graphics	2	winter or spring	Outline: Students learn how to visualise their urban designs using the Autodesk AutoCAD application. First, they learn 2D drawing technics and prepare 2D urban designs for chosen areas. Then they learn 3D technics of modeling and prepare 3D models of chosen urban areas.	30 laboratories	dr inż. arch. Anna Polska
SP	Basics of architecture and urban planning	5	winter or spring	Outline: The course introduces students to basics of the history, theory and practice of the architecture and urban design. The lectures covers problems of the history and theory of the European architecture and urban desing, while classes introduced student to basic techniques of urban design.	30 lectures 15 laboratories	dr inż. arch. Anna Polska
SP	Basics of urban planning	2	winter or spring	Outline: The course covers problems of urban planning: goals, priorities, main actors, the system of urban planning in Poland, lokal policies, types of documents and plans, main legal acts ruls of preparing local urban planning policies. During classes, students prepare concepts of urban planning policies and plans.	15 lectures 15 laboratories	dr inż. arch. Anna Polska
SP	Urban design – part 1	2	winter or spring	Outline: The course covers problems of perception, analysing and creating of the three- dimensional form of built environment. During classes, student learn how to analyse the three- dimensional urban form and prepare their own designs.	15 lectures 15 laboratories	dr inż. arch. Anna Polska
SP	Urban design – part 2	3	winter or spring	Outline: The course introduces students to problems of designing of different types of	<ul><li>15 lectures</li><li>30 laboratories</li></ul>	dr inż. arch. Anna Polska

				urban areas, for instance, residential complexes, central parts of cities and towns and others. Students prepare designs of chosen areas, including analyses of the areas, concepts of the functional-spatial structure and a design of a particular place. Students use QGIS and AutoCAD during the design process.		
SP	Urban and rural areas design (Kształtowanie terenów miejskich i wiejskich)	4	winter or spring	Outline: The course introduces students to modern ideas and concepts on urban design and planning, for example, compact city, smart city, polycentric city, walkable city, problems of re- shaping of the old communistic city structures and so on. Students prepare urban designs based on the ideas presented during the lectures.	30 laboratories	dr inż. arch. Anna Polska

Haven't found the classes that you were looking for?

Looking for classes at master level?

Don't worry!

There are many classes that are in Polish, but it can also be arranged in English. Please do not hesitate to ask for help with construction learning agreement.

Just write to <u>our Erasmus+ Coordinator:</u> dr Agnieszka Krzyżewska Department of Hydrology and Climatology Faculty of Earth Sciences and Spatial Management University of Maria Curie Skłodowska Lublin, Poland mail: <u>agnieszka.krzyzewska@umcs.pl</u> tel: (+48) 81 537-68-18