



UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE  
SUBJECT DESCRIPTION

Form SP2

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<b>Subject code:</b> FG-101-2	<b>Subject name:</b> Meteorology		
<b>Study cycle:</b> I	<b>Year:</b> I	<b>Semester:</b> I	<b>ECTS credits:</b> 5
<b>Status:</b> Mandatory		<b>Contact hours:</b> 60 Lectures: 30 Exercises: 30	
<b>Assigned professors and assistants:</b>	Teachers and associates who are selected for the teaching area to which the subject belongs.		
<b>Prerequisites:</b>	/		
<b>Subject objectives:</b>	<p>The main objectives are:</p> <ul style="list-style-type: none"> <li>– Introducing and acquiring knowledge about the theoretical basis of quantitative-qualitative indicators of spatial-temporal dynamics of major meteorological elements and meteorological phenomena;</li> <li>– Introducing and acquiring knowledge about the basic modifiers of meteorological elements and weather phenomena;</li> <li>– Introducing and acquiring knowledge about weather and meteorological synoptic forecasting models;</li> <li>– Introducing and acquiring knowledge about meteorological instrumental monitoring, type and work mode of meteorological instruments, observation terms and climatological statistical methods of instrument monitoring data processing;</li> <li>– Introducing and acquiring knowledge about the possibilities of the evaluation of meteorological elements for the purpose of regional and spatial planning and valorization of meteorological tourist resources.</li> </ul>		
<b>Teaching units:</b>	<ol style="list-style-type: none"> <li>1. Atmosphere - general concepts and origin. The composition and density of the atmosphere. The vertical structure of the atmosphere.</li> <li>2. Meteorology - definition, objectives, tasks, object of study and classification. Meteorological elements and meteorological phenomena. Meteorological weather - concepts, definitions and types. Meteorological observations and measurements - term, importance and types of meteorological measurements. Types of meteorological instruments. Organization of meteorological services. Surveillance periods. Statistical methods of meteorological data processing.</li> </ol>		



3. Energetic of atmospheric processes. Solar radiation. Forms of Solar radiation. Daily and annual flows of global Solar radiation. Geographical distribution of Solar radiation. Earth's radiation and atmospheric anti-radiation. The balance of radiation. Instruments for measuring and processing data on solar radiation and light. The importance of Solar radiation.
4. Heat in the soil, water and atmosphere. Heating and cooling of the soil. Daily and annual flows of soil temperature.
5. Heating and cooling of the water. Daily and annual flows of water temperature. Instruments for measuring and soil and water temperature data processing. The importance of soil and water temperature.
6. Heating and cooling of the air. Daily and annual flows of air temperature. Geographical distribution of air temperature. Vertical changes of the air temperature. Instruments for measuring and air temperature data processing. The importance of air temperature.
7. Test
8. The water in the atmosphere. Evaporation. Geographical distribution of the evaporation. Instruments for measuring and evaporation data processing. The importance of evaporation.
9. Humidity and humidity measurement sizes. Daily and annual flows of humidity. Geographical distribution of relative humidity. Instruments for measuring and processing of data on humidity. The importance of humidity.
10. Horizontal visibility and fog. Types of fog. Geographical distribution of fogs. Instruments for measuring and processing of horizontal visibility data. The significance of the fog.
11. Cloudiness. The origins and types of clouds. Geographical distribution of cloudiness. Instruments for measuring and cloudiness data processing. Significance of the cloudiness.
12. Precipitation. The origins and types of precipitation. Daily and annual flows of precipitation. The geographical distribution of precipitation. Instruments for measuring and processing of data on the amount of precipitation. The importance of precipitation.
13. The dynamics of atmospheric processes. Atmospheric



	<p>(air) pressure. Daily and annual flows of air pressure. Geographical distribution of air pressure. Instruments for measuring and air pressure data processing. Significance of air pressure.</p> <p>14. Synoptic. Synoptical maps of absolute and relative topography. Modern synoptical methods and models for weather forecasting.</p> <p>15. Wind. The mechanical properties of the wind. Types of air circulation and types of winds. Geographical distribution of winds. Instruments for measuring and wind data processing. The importance of wind.</p>
<p><b>Learning outcomes:</b></p>	<p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>– students' knowledge of meteorological weather and synoptics prognostic models,</li> <li>– students' knowledge of quantitative and qualitative indicators of spatio-temporal dynamics of the main meteorological elements and meteorological phenomena,</li> <li>– students' knowledge of development mechanisms and daily and annual flows of the main meteorological elements,</li> <li>– students' knowledge about the influence of the main geographical factors on dynamics and intensity of the main meteorological elements.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>– understanding the meteorological weather at the local and regional level compared to the basic synoptic indicators,</li> <li>– practical knowledge of the natural laws and regularities of daily and annual flows of the main meteorological elements with the aim of applying them in the teaching process in primary and secondary schools,</li> <li>– knowledge of geoinformatics software for geovirtual modeling of spatio-temporal dynamics of meteorological elements.</li> </ul> <p><b>Competencies:</b></p> <ul style="list-style-type: none"> <li>– knowledge of types of weather conditions and understanding their application potential for various economic and social needs in general,</li> <li>– knowledge of meteorological instruments, methodology measurements and data processing methods within instrumental meteorological monitoring,</li> <li>– work in different agencies and institutes in the fields of environmental protection and tourism planning.</li> </ul>
<p><b>Teaching methods:</b></p>	<p>Multimedia presentation and discussion (lectures); practical</p>



	work with meteorological data in areas of application of meteorological statistics, educational material analysis and discussion (exercises).																																			
<b>Knowledge testing methods with grading structure<sup>1</sup>:</b>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: right;"><i>Points</i></th> </tr> </thead> <tbody> <tr> <td>Attendance</td> <td style="text-align: right;">5</td> </tr> <tr> <td>Participation on lectures</td> <td style="text-align: right;">5</td> </tr> <tr> <td>Tests</td> <td style="text-align: right;">40</td> </tr> <tr> <td>Seminar paper</td> <td style="text-align: right;">10</td> </tr> <tr> <td>Final exam</td> <td style="text-align: right;">40</td> </tr> <tr> <td><b>TOTAL</b></td> <td style="text-align: right; border-top: 1px solid black;"><b>100</b></td> </tr> </tbody> </table> <p><b>Assessment:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><i>Grade</i></th> <th style="text-align: left;"><i>ECTS grade</i></th> <th style="text-align: left;"><i>Points scale</i></th> </tr> </thead> <tbody> <tr> <td>10</td> <td>(A) excellent</td> <td>95 - 100</td> </tr> <tr> <td>9</td> <td>(B) very good</td> <td>85 - 94</td> </tr> <tr> <td>8</td> <td>(C) good</td> <td>75 - 84</td> </tr> <tr> <td>7</td> <td>(D) satisfactory</td> <td>66 - 74</td> </tr> <tr> <td>6</td> <td>(E) sufficient</td> <td>55 - 64</td> </tr> <tr> <td>5</td> <td>(F, FX) insufficient</td> <td>55</td> </tr> </tbody> </table>	<i>Points</i>		Attendance	5	Participation on lectures	5	Tests	40	Seminar paper	10	Final exam	40	<b>TOTAL</b>	<b>100</b>	<i>Grade</i>	<i>ECTS grade</i>	<i>Points scale</i>	10	(A) excellent	95 - 100	9	(B) very good	85 - 94	8	(C) good	75 - 84	7	(D) satisfactory	66 - 74	6	(E) sufficient	55 - 64	5	(F, FX) insufficient	55
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<b>Literature<sup>2</sup>:</b>	<p><b>Mandatory:</b></p> <ul style="list-style-type: none"> <li>– Šegota, T. Filipčić, A. (1996): Klimatologija za geografe, Školska knjiga, Zagreb.</li> <li>– Milosavljević, M. (1988): Praktikum iz klimatologije sa meteorologijom</li> </ul> <p><b>Additonal:</b></p> <ul style="list-style-type: none"> <li>– Milosavljević, M. (1988): Meteorologija, Naučna knjiga, Beograd.</li> <li>– Milosavljević, M. (1988): Klimatologija, Naučna knjiga, Beograd</li> <li>– Penzar, I., Penzar, B. (1985): Agroklimatologija, Školska knjiga, Zagreb.</li> <li>– Dukić, D. (1981): Klimatologija, Naučna knjiga, Beograd</li> <li>– Ducić. V., Anđelković, G. (2004): Klimatologija – Praktikum za geografe, Geografski fakultet Univerziteta u Beogradu, Beograd.</li> </ul>																																			

<sup>1</sup> The structure of points and point criteria for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

<sup>2</sup> The Senate of the higher education institution as an institution or a council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which exams are prepared by a special act which is required to be published on its website before the beginning of the academic year in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton.