

Study program: Master academic studies: Environmental economics and climate change и климатске промене (MASECC)			
Type and level of studies: Master academic studies, II level			
Subject name: Science of Climate Change		Subject code	6M1NKP
Professor : dr Viktor D. Radun, assistant professor			
Subject status: Mandatory			
Number of ECTS: 7			
Condition: none			
Subject goal: Knowing the facts about the historical changes in the earth's climate. Introducing students to the basic physical and chemical laws and interactions of importance to climate and climate change. Acquiring knowledge about the importance and the impact of climate on the biosphere, and in particular on the development and survival of the human population, as well as the possible impact of man on climate and climate change.			
Subject outcome: Students are able to recognize the impact of climatic factors by observing its natural environment. They have the knowledge to identify the causes and assess the possible consequences of climate change on the environment and man. They are able to point out the way of the operation in the direction of reducing the negative impacts of climate change.			
Subject content			
<i>Theoretical classes.</i> The earliest history of the Earth and its atmosphere. Changing the composition of the atmosphere. Atmospheric chemistry and climate. Physical phenomena in the atmosphere. Energy and radiation. Heat sources of the Earth, the Sun and geothermal energy. Heat and thermodynamics, transport of matter and energy, dry and wet deposition, aerosols and the atmospheric ozone. The flow of energy the atmosphere – the Earth - the oceans. The global cycles of water and chemical elements. The oceans and climate change. Chemistry and physics of the greenhouse effect. Energy needs of humanity: fossil fuels - nuclear energy. Renewable energy.			
<i>Practical classes</i> Practical work through the elaboration of selected papers and chapters from scientific literature.			
Literature			
<ol style="list-style-type: none"> 1. John H. Seinfeld, Spyros N. Pandis: Atmospheric Chemistry and Physics John Wiley & Sons, Inc, 1998. 2. Douglas V. Hoyt & Kenneth H. Schatterern: The Role of the Sun in Climate Change, Oxford University Press 1997. 3. Robert Leo Smith & Thomas M. Smith: Elements of Ecology, Pearson Ed. 2003. 4. Richard T. Wright: Environmental Science, Pearson Ed, 2005 5. Mladen Ćurić, Istorija meteorologije, Fizički fakultet u Beogradu 2006. 			
Number of active teaching classes			Other classes
Lectures: 3 (45)	Practices: 1(15)	Other class types: 1(15)	Study research paper:
Teaching methods Interactive lectures through presentations and practical classes in the form of audio-visual practices that will be carried out by monitoring and commenting on the latest knowledge on climate change (internet, documentaries). Colloquium and written exam. About 7.5 hours of active teaching classes are provided for the defense of term paper.			
Knowledge evaluation (maximum number of points is 100)			
Pre-exam obligations	points	Final exam	points
Activity during lectures	10	Written exam	40
Practical classes	20	Oral exam	
Colloquium	10	
Seminar paper	20		