

Course title: Meteorology

| Course Basic Information | |
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| Academic Unit: | Faculty of Civil Engineering |
| Course title: | Meteorology |
| Level: | Bachelor |
| Course Status: | Mandatory |
| Year of Study: | II (third semester) |
| Number of Classes per Week: | 2+1 |
| ECTS Credits: | 3 |
| Time /Location: | |
| Teacher: | Prof. Ass. Milot Muhaxheri |
| Contact Details: | milot.muhaxheri@uni-pr.edu |
| Course Description: | A Brief History of Metrology, Essentials of meteorology, Atmospheric vertical structure, layers and gases. Atmosphere thermodynamics. Sun and earth radiation. The rain. Meteorological observations and forecasts. Air pollution. Climate change and global warming, Meteorological Instrumentation |
| Course Goals: | The aim of this course is to provide the student with basic knowledge in the field of meteorology, as well as to understand the parameters that affect air pollution, climate change and global warming and teaching meteorological instrumentation. |
| Expected Learning Outcomes: | Upon completion of this course the student will be able to: <ul style="list-style-type: none">- describe the structure of the atmosphere and how meteorological parameters change (temperature, air pressure, humidity) in time and space- describe the global circulation of the atmosphere, frontal systems and atmospheric movements- describe the Earth's climate and the factors that affect it- describe how meteorological observations are carried out and how they are used in forecasting work- understand the importance of climate change and the process of global warming- distinguish the instruments used in the field of metrology |

| Student Workload (should be in compliance with student's Learnign Outcomes) | | | |
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| Activity | Hours | Days/week | Total |
| Lectures | 2 | 15 | 30 |
| Exercise theoretical/laboratory | 1 | 15 | 15 |
| Practice work | 2 | 3 | 6 |
| Contact with lecturer/consultations | 1 | 2 | 2 |
| Field exercises | 1 | 2 | 2 |
| Mid-terms, seminars | 1 | 4 | 4 |
| Homework | 1 | 2 | 2 |
| Individual time spent studying (at the library or home) | 1 | 7 | 7 |
| Final preparation for the exam | 3 | 2 | 6 |
| Time spent in evaluation (tests, quiz, final exam) | 2 | 1 | 2 |
| Projects, presentations, etc. | 1 | 4 | 4 |
| Total | | | 80 |
| Teaching Methods: | <ul style="list-style-type: none"> - Lectures with presentations - Semester seminar with concrete tasks. - Discussions during lectures - Exercises in groups | | |
| Assessment Methods: | <ul style="list-style-type: none"> - written exam 50% - oral exam 50% <p>The oral part also includes presentations</p> | | |
| Primary Literature: | <ol style="list-style-type: none"> 1. Meteorology Today, Donald Ahrens, 2009 2. Meteorologjia, Milosavlevic, M 1980 Prishtinë (in albanian language) | | |
| Additional Literature: | <ol style="list-style-type: none"> 1. Practical Meteorology, Roland Stull, 2015 2. State of Global Climate, WMO 3. Instructor's Handbook on Meteorological Instrumentation, Fred Brock, 1984 | | |
| Designed teaching plan: | | | |
| Week | Title of the Lecture | | |
| Week 1: | Introduction and Brief History of Meteorology | | |
| Week 2: | Earth's atmosphere <ul style="list-style-type: none"> - Layers - Gases | | |
| Week 3: | Meteorological thermodynamics <ul style="list-style-type: none"> - Energy and Temperature - Heat transfer in the atmosphere | | |
| Week 4: | Solar and infrared radiation <ul style="list-style-type: none"> - Absorption, Emission and Equilibrium - Selective Absorbents | | |
| Week 5: | Seasonal and daily temperatures <ul style="list-style-type: none"> - Radiant energy - Annual energy balance | | |

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| Week 6: | Water vapor <ul style="list-style-type: none"> - Circulation of water in the atmosphere - Evaporation and condensation - Humidity |
| Week 7: | Atmospheric stability and clouds <ul style="list-style-type: none"> - Classification and identification of clouds - Determining the stability of the atmosphere |
| Week 8: | Precipitation <ul style="list-style-type: none"> - Process and formation of precipitation - Characteristics of precipitation |
| Week 9: | Air Pressure and Winds <ul style="list-style-type: none"> - Atmospheric pressure - Forces that affect the Winds - Determining the direction and speed of the wind |
| Week 10: | Wind masses and fronts <ul style="list-style-type: none"> - Classification - Formation of air masses |
| Week 11: | Weather forecast <ul style="list-style-type: none"> - Weather forecasting tools and methods |
| Week 12: | Air pollution <ul style="list-style-type: none"> - Factors affecting air pollution - Air quality standards |
| Week 13: | Climate change <ul style="list-style-type: none"> - Influencing factors - Mechanism - Discussion of WMO annual reports |
| Week 14: | Global warming <ul style="list-style-type: none"> - Current view - Consequences - Discussion of WMO annual reports |
| Week 15: | Meteorological instruments and their classification |

Academic Policies and Code of Conduct

Regular attendance of lectures and exercises

The lesson starts and ends on time.

The space used during the lessons should be cleaned and maintained at the end of the lesson.

Independent work in laboratory exercises, or in small groups

Behaviour and rules of conduct according to the Code of Ethics