

MODULE INFORMATION SHEET

Name of Module Unit	Forecasting of Meteorological Hazards
Name in polish language	Prognozowanie zjawisk meteorologicznych
Module type	compulsory / elective
Form of studying	full-time day courses
Level of study	graduate course (M.Sc. level)
Type of study (for extra-mural courses)	-
Programme	Environmental Engineering
Speciality	Environment Protection Engineering
Responsible department	Chair of Environmental Protection and Management
Responsible person	dr hab inż. Joanna Strużewska, prof. WUT

Semester	Lectures(E)	Tutorials	Laboratory	Computer Exercises	Projects	ECTS
3	15				30	3

Learning outcomes (knowledge, skills, competencies)

Understanding the processes that cause meteorological hazards in the context of potential impacts on people, infrastructure and wealth concentrations

Knowledge on the wide range of applications for short-term weather forecast and meteorological warnings

Sources of near-real-time meteorological data / data interpretation

Prerequisites

Meteorology
Environmental physics
Applied climatology

Rules for integrated grade setting

60% (examination score) + 40% (lab reports score)

Recommended readings

1. NATURAL HAZARDS. 2005. Edward Bryant.
2. ENVIRONMENTAL HAZARDS: ASSESSING RISK & REDUCING DISASTER (4TH EDITION). 2004. Keith Smith. Routledge.
3. NATURAL DISASTERS. 1998. David Alexander. UCL Press.

Contents of lectures (syllabus)

	Topics	Time (hrs.)	Scope (S / Ex)
1	Numerical weather prediction	3	S
2	Meteorological hazards – synoptic context	2	Ex
3	Marine meteorology	1	Ex
4	Aviation meteorology	1	Ex

5	Road transport meteorology	1	Ex
6	Agrometeorology	1	Ex
7	High-speed wind warning	1	Ex
8	Operational air quality forecast	2	Ex
9	Law and policy (EU and PL)	1	Ex
10	Weather derivatives and weather risk insurance	1	Ex
11	Written assignment	1	
Total		15	hours

S – topics listed in the legal study programme standards from 12.07.2007

Ex – extended topics

Lecturers

Dr hab. inż. Joanna Strużewska, prof WUT
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Assessment method

Written assignment

Contents of guided projects

	Topics	Time (hrs.)	Scope (S / Ex)
1	Meteorological measurement networks and data exchange systems in Poland and worldwide	2	S
2	Weather related extreme events - public information systems	2	Ex
3	Copernicus services – Emergency service, Atmospheric Service, Climate Change service	4	
4	Emergency response – dispersion modelling	2	Ex
5	Meteorological data acquisition and processing	6	
6	Flood case – analysis and interpretation of weather forecast and radar images	2	Ex
7	Synoptic context of heat waves and frost waves in Europe	2	Ex
8	Adverse air quality – interpretation of meteorological situation and vertical stability	2	Ex
9	Individual project on selected topic	8	Ex
Total		30	hours

S – topics listed in the legal study programme standards from 12.07.2007

Ex – extended topics

Persons responsible for guided projects

dr hab. inż. Joanna Strużewska, prof. WUT

Assessment method for guided projects

Report and presentation
