

MODULE INFORMATION SHEET

Name of Module Unit	Hydrology of small drainage basins
Name in polish language	Hydrologia małych zlewni
Module type	compulsory / elective
Form of studying	full-time day courses
Level of study	undergraduate course (B.Sc. level)
Type of study (for extra-mural courses)	-
Programme	Environmental Engineering
Speciality	Environmental Engineering
Responsible department	Hydro-engineering and Hydraulics Department
Responsible person	Paweł Falaciński, D. Sc, PhD Eng.

Semester	Lectures(E)	Tutorials	Laboratory	Computer Exercises	Projects	ECTS
7	15				30	3

Objectives (summary)

The aim of the course is to familiarize students with the basic methods for determining maximum flows in small river basins. In addition, the classes present the basic types of hydraulic structures, with their characteristic elements and selected technical conditions which should be met by these objects and their location.

Prerequisites

1. Fluid Mechanics
2. Hydrology
3. Meteorology

Rules for integrated grade definition

Maximum number of students in a project group is 15.
 Completing of the project.
 Lectures are followed by the written test.

Recommended readings

- 1.M. Gutry-Korycka i in., Rola retencji zlewni w kształtowaniu wezbrań opadowych, Wydział Geografii i Studiów Regionalnych UW, Warszawa 2003
- 2.A. Byczkowski, Hydrologia, t I i II, Wydawnictwo SGGW, Warszawa 1996.
- 3.R. Edel, Odwodnienie dróg, WKiŁ, Warszawa 2000.
- 4.Ciepielowski, Sz. L. Dąbkowski - Metody obliczeń przepływów maksymalnych w małych zlewniach rzecznych, Oficyna Wydawnicza Projprzem-EKO, Bydgoszcz 2006.
- 5.W. Geiger, H.Dreiseitl - Nowe sposoby odprowadzania wód deszczowych. Poradnik, Oficyna Wydawnicza Projprzem-EKO, Bydgoszcz 1999.
6. Shaw E. M.: Hydrology in practice. Chapman and Hall, 1993.
7. Arkuszewski A., Kiciński T., Romańczyk Cz., Żbikowski A.: Budownictwo Wodne tom 1-3, WSiP, Warszawa 1991

Contents of lectures (syllabus)

	Topics	Time (hrs.)	Scope (S / Ex)
1.	Initial issues - water and soil environment, types of catchment, physical features of urbanized catchment, catchment parameters.	2	
2.	Outflow - types, factors, disturbances, variability, runoff coefficient, outflow coefficient, delay coefficient.	2	
3.	Rain surges - characteristics, climax formation, flood wave phenomenon, flood range modeling. The role of catchment retention in shaping freshets.	3	
4.	Methods of calculation of maximum flows in urbanized catchments.	2	
5.	Hydraulic engineering as an element of civilization development in the history of mankind.	2	
6.	Purpose and types of hydraulic structures. Sewer and river melting. Types and characteristics of road culverts.	4	
Total		15	hours

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

Ex – extended topics

Lecturers

D.Sc, PhD Eng. Paweł Falaciński, PhD Eng. Agnieszka Machowska

Assessment method

Lectures are followed by the written test.
--

Contents of guided projects

	Topics	Time (hrs.)	Scope (S / Ex)
1	Designing a road culvert on an existing watercourse. The project is based on contour map.	30	S
Total		30	hours

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

Ex – extended topics

Persons responsible for guided projects

D.Sc., PhD Eng. Paweł Falaciński, PhD Eng. Agnieszka Machowska
--

Assessment method for guided projects

Defence of the project.
