

# СИЛАБУС ДИСЦИПЛІНИ «HYDROLOGY»

Лектор курсу Контактна інформація лектора (e-mail) Сторінка курсу в eLearn

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#### ОПИС ДИСЦИПЛІНИ

(до 1000 друкованих знаків)

Hydrology is a fundamental discipline, obligatory for teaching students received the specialties in the field of Ecology of Higher Educational Agrarian Universities of III-IV accreditation levels. This syllabus was developed on the base of Educational Program of Subject "Hydrology" for specialty (field) "Ecology".

In modern society Hydrology is powerful source of productive powers. In particular, intensification of scientific and technological progress in agricultural and food production requires is a rational use of hydrological science achievement, intensification of ecological monitoring of economic activity.

So, the main goal of presented discipline is the scientific study of the waters of the earth including water in the atmosphere, on the earth's surface and underground. Water has unique properties that make it essential for life on earth in the abiotic environment and within the Earth's ecosystems. In this course it will be explored the components of the hydrologic cycle including processes of precipitation, evaporation, transpiration, infiltration, ground-water flow, surface runoff and streamflow. It will be studied the main components of hydrosphere and the World Ocean; surface and groundwater hydrology and their compounds, acquiring the skills for execution.

The purpose of the discipline is to form a theoretical understanding, knowledge and some practical skills of future professionals-ecologists in the field of use, conservation and restoration of water resources and water bodies, understanding of the place and role of water in nature and society.

#### СТРУКТУРА КУРСУ

Тема	Години (лекції/лабораторні, практичні, семінарські)	Результати навчання	Завдання	Оцінювання
		1 семестр		
		Модуль 1		
Theme 1.		Understand the	Perform in-class	Assessing
Hydrology as a	2/4	theories and	labs and provide	content
science. Water		concepts in surface	data to complete	knowledge can
cycle.		and subsurface	lab reports.	be done by
		hydrology, the	Tests of	written
		physical, chemical	practical and	questions where
		and biological	theoretical	the student has
		interactions	skills.	to respond on.

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Resources and Water Budget.  basic tool that can be used to evaluate lab reports. be done by the occurrence and movement of water bractical and questions where					_
Water Budget.  be used to evaluate lab reports.  the occurrence and movement of water practical and questions where				-	
the occurrence and movement of water practical and questions where				-	
movement of water practical and questions where				*	•
					questions where
1			through the	-	the student has

		environment. Connect water budgets to their	skills. Complete learning through	to respond on. Partly that can be done by
		effects of factors, such as soils, vegetation, land use and so on.	the independent study and wider reading for developing	multiple choice but competencies as constructing
		Recall that buildings, roads, and parking lots in	knowledge (including elearn).	explanations and engaging in argument as
		urban areas tend to increase runoff and decrease infiltration. Explain	Solving exercises.	well as key competencies as communication and
		why installation of drainage and irrigation systems		hydrological competence need open
		alter infiltration, runoff, evaporation, and plant transpiration rates.		questions or other ways of assessing.
Theme 4. Surface Hydrology. General characteristics of streams and river flow. Composition of river water.	2/4	Understand the main hydrological pathways to rivers. Explain the form of river hydrographs and know how these vary under different environmental conditions. Use the hydrograph for the ecological settings and management. Show knowledge of different types of flood event and managing floods. Ability to describe and illustrate the controls on river channel size and shape. Discuss and explain water and sediment transport in rivers. Perform	Perform in-class labs and provide data to complete lab reports.  Tests of practical and theoretical skills.  Complete learning through the independent study and wider reading for developing knowledge (including elearn).  Solving exercises.	Assessing content knowledge can be done by written questions where the student has to respond on. Partly that can be done by multiple choice but competencies as constructing explanations and engaging in argument as well as key competencies as communication and hydrological competence need open questions or
Thoma 5	2/4	hydrograph analysis  Describe what are	Tests of	other ways of assessing.
Theme 5. Wetland Hydrology.	<i>214</i>	the components of a wetland water budget.  Discuss and explain pollutant removal	practical and theoretical skills. Complete learning through	Assessing content knowledge can be done by written questions where
		pathways and	the independent	the student has

Theme 6.	2/2	removal kinetics.  Explain the difference between different types of wetland.  Discuss and being able to predict how the different types of constructed wetland systems affect their applicability and limitations.  Explain how identify classes of wetlands as described by the Wetland Classification  System (bogs, fens, swamps, marshes, shallow water) and determine the wetland forms within these classes.  Define what a lake	study and wider reading for developing knowledge (including elearn). Solving exercises.	to respond on. Partly that can be done by multiple choice but competencies as constructing explanations and engaging in argument as well as key competencies as communication and hydrological competence need open questions or other ways of assessing.
Limnology (Hydrology of Lakes)		is. Explain basic terminology about standing waters. Illustrate the different types of lakes and reservoirs. Use knowledge on the structure and functioning of aquatic ecosystems, with the emphasis on standing water bodies, which are an important source of drinking water and other ecosystem services.	labs and provide data to complete lab reports. Tests of	content knowledge can be done by written
Theme 7. Groundwater	2/6	Explain in detail how groundwater	Perform in-class labs and provide	Assessing content

Hydrology		systems function.	data to complete	knowledge can
Try drology		Describe the	lab reports.	be done by
		interactions	Tests of	written
		between	practical and	questions where
		groundwater	theoretical	the student has
		systems, surface	skills.	to respond on.
		waters and land use.		Partly that can
		Explain feedback	0 0	be done by
		mechanisms	the independent	multiple choice
		between	study and wider	but
		groundwater, land	reading for	competencies as
		use and climate and	developing	constructing
		how these are	knowledge	explanations
		affected by changes	(including	and engaging in
		occurring in one or	elearn).	argument as
		several of the	Solving	well as key
		systems. Determine	exercises.	competencies as
		of groundwater	110101000.	communication
		classes and groups		and
		by their		hydrological
		composition.		•
		_		competence
		Descript of the		need open
		composition by the		questions or
		Kurlovs' formula.		other ways of
				assessing.
Theme 8.	1/2	Explain the bases of	Perform in-class	Assessing
Permafrost.		glacier hydrology.	labs and provide	content
Glaciers		Link types of	data to complete	knowledge can
Hydrology		glaciers with the	lab reports.	be done by
		conditions of their	Tests of	written
		formation.	practical and	questions where
		Understand the	theoretical	the student has
		impact of climate	skills.	to respond on.
		change on natural	Complete	Partly that can
		processes in boreal,	learning through	be done by
		arctic	the independent	multiple choice
		and high mountain	study and wider	but
		environments, with	reading for	competencies as
		focus on glaciology	developing	constructing
		(snow and glaciers),	knowledge	explanations
		geocryology	(including	and engaging in
		(ground ice and	elearn).	argument as
		permafrost).	Solving	well as key
		r 211111111000/	exercises.	competencies as
			110101000.	communication
				and
				hydrological
				•
				competence need open
				1
				questions or
				other ways of
D 1				assessing.
Всього за 1 семест	T <b>p</b>		T	70
Екзамен				30
Всього за курс				100
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### політика оцінювання

Політика щодо	Роботи, які здаються із порушенням термінів без поважних	
дедлайнів та	причин, оцінюються на нижчу оцінку. Перескладання модулів	
перескладання:	відбувається із дозволу лектора за наявності поважних причин	
	(наприклад, лікарняний).	
Політика щодо	Списування під час контрольних робіт та екзаменів заборонені	
академічної	(в т.ч. із використанням мобільних девайсів). Курсові роботи,	
доброчесності:	реферати повинні мати коректні текстові посилання на	
	використану літературу	
Політика щодо	Відвідування занять є обов'язковим. За об'єктивних причин	
відвідування:	(наприклад, хвороба, міжнародне стажування) навчання може	
	відбуватись індивідуально (в он-лайн формі за погодженням із	
	деканом факультету)	

## ШКАЛА ОЦІНЮВАННЯ СТУДЕНТІВ

Рейтинг здобувача	Оцінка національна за результати складання екзаменів заліків		
вищої освіти, бали	екзаменів	заліків	
90-100	відмінно	зараховано	
74-89	добре		
60-73	задовільно		
0-59	незадовільно	не зараховано	