



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Limnologija
Subject Title:	Limnology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biologija in ekologija z naravovarstvom / Biology and ecology with nature conservation	Biologija; Ekologija z naravovarstvom / Biology; Ecology with nature conservation	2	3

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30	15	20		10	135	7

Nosilec predmeta / Lecturer:

Jeziki / Languages: Predavanja / Lecture:
Vaje / Tutorial:

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:
Prerequisites:

Vsebina:	Contents (Syllabus outline):
<ul style="list-style-type: none"> • Voda kot snov <ul style="list-style-type: none"> • Fizikalne in kemijske značilnosti vode • Globalna razporeditev in kroženje (hidrološki cikel) • Sladkovodni ekosistemi in njihove oblike • Svetlobne in toplotne razmere v celinskih vodah <ul style="list-style-type: none"> • Prosojnost in absorpcija svetlobe v vodi • Razporeditev toplote v rekah in jezerih (toplotna stratifikacija, njena stabilnost in modifikacije) • Letna dinamika kroženja vode v jezerih ter gibanje vode v rekah • Produktivnost v jezerih <ul style="list-style-type: none"> • Zonacija jezer • Vpliv prispevnega področja • Glavne prehranjevalne verige v sladkovodnih ekosistemih in povezave med njihovimi členi • Kemijske značilnosti celinskih voda <ul style="list-style-type: none"> • Razporeditev raztopljenega kisika v tekočih in stoječih vodah, v oligotrofnih in evtrofnih jezerih, • Slanost celinskih voda • Karbonatno ravnotežje • Kroženje poglavitnih elementov (dušika, fosforja, železa, žvepla in silicija) v rekah in 	<ul style="list-style-type: none"> • Water as matter <ul style="list-style-type: none"> • Physical and chemical properties of water • Global distribution and circulation (hydrological cycle) • Inland water ecosystems and their shapes • Light and thermic properties of inland waters <ul style="list-style-type: none"> • Transparency and light absorption in water • Heat distribution in rivers and lakes (thermal stratification, its stability and modifications) • Annual dynamics of water circulation in lakes, and water movement in rivers • See productivity <ul style="list-style-type: none"> • Lake water zonation • Impact of riverine system • Main trophic chains in inland water ecosystems and relations within these chains • Chemical properties of inland waters <ul style="list-style-type: none"> • Distribution of dissolved oxygen in flowing and stagnant waters, in oligotrophic and eutrophic lakes • Salinity of inland waters • Carbonate equilibria • Cyrculation of the most important elements (nitrogen, phosphorus, iron, sulphur, silicon) in rivers and lakes

- jezerih
- Vplivi obvodnih habitatov
- Združbe v sladkovodnih ekosistemih in njihove interakcije
- Planktonske združbe (alge, cianobakterije, zooplankton, bakterioplankton)
- Sestava sedimentov, mikroorganizmi in procesi, ki tam potekajo
- Bentoške združbe
- ribje združbe
- Organske ogljikove spojine in kroženje ogljika
- Ontogenija celinskih vodnih ekosistemov (sukcesija v jezerih, rekah, distrofija)
- Paleolimnologija in njen pomen

- Impact of riverine systems
- Inland waters coenoses and their interactions
 - Plancton coenoses (Algi, Cyanobacteria, zooplankton, bakterioplankton)
 - Sediment composition, microorganisms and processes within sediments
 - Benthic coenoses
 - Fish coenoses
- Carbon compounds and carbon cyrculation
- Inland water ecosystems ontogeny (succession in lakes, rivers, dystrophy)
- Palaeolimnology and its importance

Temeljni študijski viri / Textbooks:

- Kalf, J., 2002: Limnology. Prewntice-Hall.
- Löffler, H., 1997: Längsee: A history of meromixis; 40 years later: Homage to Dr. D. G. Frey. Verh. Internat. Verein. Limnol.
- Rejic, M., 1983: Onesnaževanje in varstvo okolja: celinske vode. Ljubljana, VTOZD za biologija BF.
- Reynolds, C. S., 1997: Vegetation Processes in the Pelagic: A Model for Ecosystem Theory. Ecology Institute, Oldendorf/Luhe, Germany.
- Round, F. E., 1981: The Ecology of Algae. Cambridge University Press, Cambridge.
- Schwoerbel, J. 1987: Handbook of Limnology. Ellis Horwood Ltd.
- Wetzel, R. G. 2001: Limnology, Lake and River Ecosystems, Third Edition. Academic Press.
- Študije in poročila o izvedenih delih v knjižnici podjetja LIMNOS d.o.o.

Cilji:

- Poznavanje strukture in funkcije vodnih ekosistemov
- Razumevanje kroženja snovi in pretoka energije v vodnih ekosistemih
- Razumevanje ohranjanja ekološkega ravnovesja
- Ugotavljanje in opredeljevanje antropogenih vplivov na vodne ekosisteme

Objectives:

- Recognizing of the structure and function of water ecosystems
- Understanding of water cyrculation and energy flow in eater ecosystems
- Understanding of ecological sustainable environmental equilibria
- Evidence and analysing of anthropogenic impacts on water ecosystems

Predvideni študijski rezultati:

- Študenti poznajo in razumejo
- Osnovne karakteristike vode kot snovi
 - Življenjske razmere, procese in ekološke povezave v sladkovodnih ekosistemih
 - Posledice prispevnega področja in antropogenih vplivov na celinske vode
 - Letne dinamike v jezerih, kroženje glavnih elementov in organskega ogljika
 - Glavne združbe organizmov v rekah in jezerih
- Prenesljive/ključne spretnosti in drugi atributi:
Študenti
- Se usposobijo za odgovorno ravnanje s sladkovodnimi ekosistemi in njihovimi

Intended learning outcomes:

- Students know and understand:
- Basic properties of water as a substance
 - Environmental circumstances, processes and interactions in water ecosystems
 - Imoacts of rverine systems and anthropogenic impacts upon inland waters
 - Annual lake dynamics, cyrculation of main elements and og organic carbon
 - Main river and lake coenoses
- Transferable/Key Skills and other attributes:
Students:
- Get skills for responsible management with inland water ecosystems and their compartments

<ul style="list-style-type: none"> • sestavinami • So zmožni prepoznavati problematike specifičnih sladkovodnih ekosistemov in njihove vzroke zanje • So sposobni razviti trajnostne in sonaravne rešitve za reševanje specifičnih problemov 	<ul style="list-style-type: none"> • Are able to recognize problems of selected inland water ecosystems, and reasons for the problems • Are able to plan sustainable resolving of these problems
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Metode poučevanja in učenja:

Learning and teaching methods:

<ul style="list-style-type: none"> • Predavanja • Seminar: demonstracije konkretnih primerov • Usmerjene diskusije

<ul style="list-style-type: none"> • Lectures • Seminar: Demonstrations of study cases • Directional discussion
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Načini ocenjevanja:

Delež (v %) /
Weight (in %)

Assessment:

<ul style="list-style-type: none"> • Seminaraska naloga • Ustni izpit 	<p>50</p> <p>50</p>	<ul style="list-style-type: none"> • Seminar essay • Oral exam
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Materialni pogoji za izvedbo predmeta :

<ul style="list-style-type: none"> • <i>Multimedijska predavalnica</i>

Material conditions for subject realization

<ul style="list-style-type: none"> • <i>Lecture hall for multimedia presentations</i>
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Obveznosti študentov:

<p><i>(pisni, ustni izpit, naloge, projekti)</i></p> <ul style="list-style-type: none"> • Seminaraska naloga • Ustni izpit
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Students' commitments:

<p><i>(written, oral examination, coursework, projects):</i></p> <ul style="list-style-type: none"> • Seminar essay • Oral exam
