

	UČNI NAČRT PREDMETA/COURSE SYLLABUS
Predmet	Spremljanje stanja okolja
Course title	Environmental Monitoring

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Upravljanje z okoljem/ 1. stopnja	Ni smeri študija	2. letnik	3.
Environmental Management/ 1 st Cycle	No study field	2 nd year	3 rd

Vrsta predmeta/Course type

obvezni/obligatory

Univerzitetna koda predmeta/University course code

1_UO_2_UN4

Predavanja	Seminar	Sem. vaje	Lab. vaje	Teren. vaje	Samost. delo	ECTS
Lectures	Seminar	Tutorial	Laboratory work	Field work	Individ. work	
45				30	100	7

Nosilec predmeta/Lecturer:

prof. dr. Gorazd Urbanič

Jeziki/ Predavanja/Lectures:

slovenski/Slovenian

Languages:

Vaje/Tutorial:

slovenski/Slovenian

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

Prerequisites:

- Vpis v drugi letnik študijskega programa.
- Študent mora pred izpitom pripraviti portfolio terenskih vaj.

- A prerequisite for inclusion is enrolment in the second year of study.
- Students have to successfully prepare portfolio of the field excursions before the examination.

Vsebina:

Content (Syllabus outline):

- *Uvod* (osnovni koncepti, namembnost, zgodovina, prakse v svetu).
- *Pomen spremljanja stanja okolja* (vloga pri okoljskem in gospodarskem načrtovanju).
- *Sistemi spremljanja stanja okolja* (cilji, praksa v svetu in Sloveniji).
- *Spremljanje stanja naravnih pojavov* (pomen, vrste pojavov, vrste nalog, obseg, standardi).

- *Introduction* (basic concepts, scope, history, worldwide practice).
- *Significance of environmental monitoring* (the role at environmental planning, economic planning).
- *Environmental monitoring systems* (objectives, worldwide practice, Slovenian approach).
- *Monitoring of natural phenomena* (purpose, types of phenomena, scope, standards).

<ul style="list-style-type: none"> • <i>Spremljanje stanja za splošne okoljske informacije</i> (namen, vrste monitoringa, obseg). • <i>Spremljanje stanja zaradi obremenitev okolja</i> (vrste monitoringa, predmet monitoringa, namen, izvajanje). • <i>Spremljanje stanja zraka</i> (izhodišča, namen in cilji, parametri, indikatorji, standardi). • <i>Spremljanje stanja tal</i> (izhodišča, namen in cilji, parametri, indikatorji, standardi). • <i>Spremljanje stanja voda</i> (izhodišča, namen in cilji, parametri, indikatorji, standardi). • <i>Izvajanje spremljanja stanja</i> (programi monitoringa, pooblastila, pogoji, evidenca izvajalcev, zagotavljanje kakovosti). • <i>Orodja za spremljanja stanja okolja</i> - (vrste, namen, uporabnost). • <i>Poročanje in objavljanje podatkov o stanju okolja</i> (format-vsebina, prikazovanje rezultatov, veljavnost in uporabnost, Eionet). 	<ul style="list-style-type: none"> • <i>Monitoring for general environmental information</i> (purpose, monitoring types, scope). • <i>Monitoring due to pressures</i> (pressure types, monitoring subject, purpose, performance). • <i>Air quality monitoring</i> (baseline, purpose and objectives, parameters, indicators, standards). • <i>Soil monitoring</i> (baseline, purpose and objectives, parameters, indicators, standards). • <i>Water quality monitoring</i> (baseline, purpose and objectives, parameters, indicators, standards). • <i>Environmental monitoring application</i> (programmes, licensing, conditions, evidences, quality assurance). • <i>Environmental monitoring tools</i> (types, purpose, usefulness). • <i>Reporting and publishing environmental monitoring data</i> (format-content, presentation of results, validity and usefulness, Eionet).
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Temeljna literatura in viri/Readings:

Temeljna literatura/Basic literature

- Wiersma B. G. (ur.) (2004). *Environmental Monitoring*. Boca Raton: CRC Press. Izbrana poglavja: poglavje 2 (25 str.), poglavje 4 (26 str.), poglavje 6 (15 str.), poglavje 7 (21 str.), poglavje 10 (20 str.), poglavje 17 (15 str.), poglavje 22 (17 str.) in poglavje 27 (25 str.).

Priporočljiva literatura/Recommended literature

- Burden F. R. (ur.) (2002). *Environmental Monitoring Handbook*. New York: McGraw-Hill.
- Brusseau M. L. Pepper I. L., Gerba C. P., (2019). *Environmental and pollution science*, 3. izdaja. Amsterdam: Elsevier Academic Press.
- Artiola, J. F., Pepper, I. L., Brusseau M. L. (2004). *Environmental monitoring and characterisation*. Amsterdam: Elsevier Academic Press.

Cilji in kompetence:

Učna enota prispeva predvsem k razvoju naslednjih splošnih in specifičnih kompetenc:

- evidentiranje in definiranje okoljskih problemov, analizo problemov ter

Objectives and competences:

The learning unit mainly contributes to the development of the following general and specific competences:

- evidencing and defining of environmental issues, analyses of

<p>pripravo strokovno utemeljenih rešitev,</p> <ul style="list-style-type: none"> • uporabo znanstvenih metod pri reševanju strokovnih problemov, • poznavanje ciljev in kazalcev trajnostnega razvoja, • uporabo pridobljenega znanja v praksi, • poznavanje in razumevanje kemijskih, fizikalnih in bioloških procesov in pojmov, • sposobnost izdelave ocene stanja okolja na lokalni, državni in mednarodni ravni in pripraviti strokovne podlage za odločanje. 	<p>issues and preparation of professionally based solutions,</p> <ul style="list-style-type: none"> • use of scientific methods for professional issues, • knowing objectives and indicators of sustainable development, • use of obtained knowledge in practice, • knowing and understanding chemical, physical and biological processes and terms, • ability to assess environmental status for local, country and international level and preparation of professional basis for decision-making.
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Predvideni študijski rezultati:

Študent/študentka:

- opredeli pomen spremljanja stanja okolja,
- našteje in opiše orodja za spremljanje stanja naravnih pojavov v okolju,
- prepozna pomen različnih sistemov spremljanja stanja okolja,
- prepozna pomen spremljanja stanja okolja za trajnostni razvoj in gospodarstvo,
- prepozna pomen zagotavljanja kakovostnega spremljanja stanja okolja,
- razvije sposobnost za samostojno uporabo orodij za spremljanje stanja okolja,
- kritično presoja strokovne podlage s področja stanja okolja,
- se usposobi za poročanje in objavljanje podatkov o stanju okolja.

Intended learning outcomes:

Students:

- determine the importance of environmental monitoring,
- list and describe environmental monitoring tools of natural phenomena in the environment
- recognise the importance of different environmental monitoring systems,
- recognise the importance of environmental monitoring for sustainable development and economy,
- recognise the importance of quality assurance in environmental monitoring,
- develop skills for independently use environmental monitoring tools,
- critically assess professional basis from the environmental monitoring field,
- trained to report and publish environmental monitoring data.

Metode poučevanja in učenja:

- *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov),
- *terenske vaje*.

Learning and teaching methods:

- *lectures* with active student participation (explanation, discussion, questions, examples, problem solving),
- *field excursion*.

Načini ocenjevanja:

Delež (v %)

Weight (in %)

Assessment:

<p>Načini:</p> <ul style="list-style-type: none"> • izpit 	<p>60 %</p>	<p>Types:</p> <ul style="list-style-type: none"> • exam
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<ul style="list-style-type: none"> • izdelava portfolia terenskih vaj <p>Ocenjevalna lestvica: ECTS.</p>	<p>40 %</p>	<ul style="list-style-type: none"> • preparation portfolio of the field excursions <p>Grading scheme: ECTS.</p>
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