

	<b>UČNI NAČRT PREDMETA/COURSE SYLLABUS</b>
<b>Predmet</b>	<b>Celostno upravljanje voda</b>
<b>Course title</b>	<b>Integrated Water Management</b>

<b>Študijski program in stopnja</b> <b>Study programme and level</b>	<b>Študijska smer</b> <b>Study field</b>	<b>Letnik</b> <b>Academic year</b>	<b>Semester</b> <b>Semester</b>
Upravljanje z okoljem/ 1. stopnja	Ni smeri študija	3. letnik	5.
Environmental Management/ 1 <sup>st</sup> Cycle	No study field	3 <sup>rd</sup> year	5 <sup>th</sup>

**Vrsta predmeta/Course type**

obvezni/obligatory

**Univerzitetna koda predmeta/University course code**

1\_UO\_3\_UN2

<b>Predavanja</b> <b>Lectures</b>	<b>Seminar</b> <b>Seminar</b>	<b>Sem. vaje</b> <b>Tutorial</b>	<b>Lab. vaje</b> <b>Laboratory work</b>	<b>Teren. vaje</b> <b>Field work</b>	<b>Samost. delo</b> <b>Individ. work</b>	<b>ECTS</b>
30				30	90	6

**Nosilec predmeta/Lecturer:**

doc. dr. Aleš Bizjak

**Jeziki/ Predavanja/Lectures:**  
**Languages:**

slovenski/Slovenian

**Vaje/Tutorial:**

slovenski/Slovenian

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

**Prerequisites:**

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

- Enrolment in the third year of study.
- Student has to successfully prepare portfolio of the field excursions before the examination.

**Vsebina:**

**Content (Syllabus outline):**

<ul style="list-style-type: none"> <li>• <i>Uvod v predmet.</i></li> <li>• <i>Osnove slovenske hidrografske mreže.</i></li> <li>• <i>Zakonodajni okvir CUV.</i></li> <li>• <i>Sistemska organiziranost CUV v Sloveniji.</i></li> <li>• <i>Varstvo, urejanje in raba voda.</i></li> <li>• <i>Vodno načrtovanje.</i></li> <li>• <i>Nacionalni program upravljanja voda.</i></li> <li>• <i>Vodna direktiva in NUV.</i></li> <li>• <i>Poplavna direktiva in NZPO.</i></li> <li>• <i>Morska direktiva in NUMO.</i></li> <li>• <i>Administrativne podlage za upravljanje voda.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Introduction to the course.</i></li> <li>• <i>Basis of the Slovene hydrographic network.</i></li> <li>• <i>IWRM legislative framework.</i></li> <li>• <i>Organisation of IWRM in Slovenia.</i></li> <li>• <i>Protection of water resources, river engineering and water use.</i></li> <li>• <i>Water planning.</i></li> <li>• <i>National program of water management.</i></li> <li>• <i>Water Framework Directive and RBMP.</i></li> <li>• <i>Floods Directive and FRMP.</i></li> </ul>
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<ul style="list-style-type: none"> <li>• <i>Kakovost in količina površinskih in podzemnih voda.</i></li> <li>• <i>Spremljanje stanja površinskih in podzemnih voda.</i></li> <li>• <i>Ekonomika voda.</i></li> <li>• <i>Mednarodne obveznosti Republike Slovenije.</i></li> <li>• <i>CUV v čezmejnih porečjih.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Marine Strategy Framework Directive and MEMP.</i></li> <li>• <i>Administrative standing for water management.</i></li> <li>• <i>Quality and quantity of surface waters and groundwater.</i></li> <li>• <i>Monitoring of surface waters and groundwater.</i></li> <li>• <i>Water management economics.</i></li> <li>• <i>International obligations of the Republic of Slovenia.</i></li> <li>• <i>IWRM in transboundary river basins</i></li> </ul>
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### **Temeljna literatura in viri/Readings:**

#### **Temeljna literatura/Basic literature:**

- UN Water (2020). Water and Climate Change. The United Nations World Water Development Report 2020. UN Water, New York.  
<https://www.unwater.org/publications/world-water-development-report-2020/> (od strani 10 do strani 37)
- OECD (2015a). Stakeholder Engagement for Inclusive Water Governance. OECD Studies on Water, OECD Publishing, Paris.  
<http://www.medspring.eu/sites/default/files/Stakeholder-engagement-for-inclusive-water-governance.pdf> (od strani 29 do strani 52, od strani 69 do strani 106)
- OECD (2015c). OECD Principles on Water Governance. OECD Directorate for Public Governance and Territorial Development, Paris.  
<https://www.oecd.org/gov/regional-policy/OECD-Principles-on-Water-Governance-brochure.pdf> (od strani 1 do strani 24)
- UNECE (2015a). Reconciling resource uses in transboundary basins: assessment of the water-food-energy-ecosystem nexus. United Nations Economic Commission for Europe, New York and Geneva.  
<http://www.unece.org/index.php?id=41427> (od strani 1 do strani 44)
- Rahaman, M. M. et al. (2004). EU Water Framework Directive vs. Integrated Water Resources Management: The Seven Mismatches. Water Resources Development, Vol. 20, No. 4, Carfax Publishing, Taylor and Francis Group  
<http://www.ingentaconnect.com/content/routledg/cijw/2004/00000020/00000004/art00007> (od strani 565 do strani 575)

#### **Priporočljiva literatura/Recommended literature:**

- OECD (2015b). Water Resources Allocation. Sharing risks and opportunities. OECD Studies on Water, OECD Publishing, Paris.  
[http://www.oecd-ilibrary.org/environment/water-resources-allocation\\_9789264229631-en](http://www.oecd-ilibrary.org/environment/water-resources-allocation_9789264229631-en)
- Shimelis Gebriye Setegn, S. G., Donoso, M. C. (2015). Sustainability of Integrated Water Resources Management. Water Governance, Climate and Ecohydrology. Springer Link.
- <http://www.sdgindex.org/assets/files/2018/01%20SDGS%20GLOBAL%20EDITION%20WEB%20V8%20060718.pdf>
- SFG (2017). Water Cooperation Quotient 2017. Strategic Foresight Group, Mumbai, India.

[https://www.strategicforesight.com/publication\\_pdf/Water%20Cooperation%20Quotient%202017.pdf](https://www.strategicforesight.com/publication_pdf/Water%20Cooperation%20Quotient%202017.pdf)

- UNECE (2009b). Guidance on Water and Adaptation to Climate Change. United Nations, Economic and Social Council, Economic Commission for Europe, Convention on the Protection and Use of Transboundary Watercourses and International Lakes, New York and Geneva.

[https://www.unece.org/fileadmin/DAM/env/water/publications/documents/Guidance\\_water\\_climate.pdf](https://www.unece.org/fileadmin/DAM/env/water/publications/documents/Guidance_water_climate.pdf)

- WMO, GWP (2016). Handbook of Drought Indicators and Indices. Integrated Drought Management Tools and Guidelines Series 2. World Meteorological Organization and Global Water Partnership, Geneva.

[http://www.droughtmanagement.info/literature/GWP\\_Handbook\\_of\\_Drought\\_Indicators\\_and\\_Indices\\_2016.pdf](http://www.droughtmanagement.info/literature/GWP_Handbook_of_Drought_Indicators_and_Indices_2016.pdf)

- WMO (2006). Environmental Aspects of Integrated Flood Management. World Meteorological Organization, Geneva.

[http://www.apfm.info/publications/policy/ifm\\_env\\_aspects/Environmental\\_Aspects\\_of\\_IFM\\_En.pdf](http://www.apfm.info/publications/policy/ifm_env_aspects/Environmental_Aspects_of_IFM_En.pdf)

#### **Cilji in kompetence:**

*Učna enota prispeva k razvoju predmetno specifičnih kompetenc:*

- poznavanje in razumevanje temeljnih hidrografskih pojmov in specifik slovenske hidrografske mreže,
- razumevanje pojma celostno upravljanje voda, ureditve področja v Republiki Sloveniji ter v Evropski uniji in njegove medsektorske relevance za trajnostni razvoj,
- poznavanje in razumevanje nacionalne zakonodaje na področju CUV, evropskih pravnih določil, bilateralnih, subregionalnih in regionalnih ter mednarodnih sporazumov ter iz njih izhajajočih obveznosti Republike Slovenije,
- sposobnost povzemanja ocene stanja voda na lokalni, državni in mednarodni ravni in priprave strokovne podlage za odločanje,
- razumevanje pomena in oblik sodelovanja javnosti pri odločanju zadevah CUV,
- uporaba digitalne informacijsko-komunikacijske tehnologije in informacijskih virov s poudarkom na nacionalnih spletnih javnih podatkovnih bazah in servisih EU ter mednarodnih platformah,

#### **Objectives and competences:**

*The learning unit contributes to the development of the specific competences:*

- knowledge and understanding of basic hydrographic terms and specifics of the Slovene hydrographic network,
- understanding of the term integrated water resources management and its arrangements at the national and at the EU level, as well as its cross-sectoral relevance for sustainable development,
- knowledge and understanding of the IWRM related legislation at the national and the EU level, bilateral, sub-regional and regional as well as international agreements and arrangements and consequent obligations of the Republic of Slovenia,
- capability of summarising the water status assessment on local, state and international levels as well as articulation of the IWRM decision support documents,
- understanding of relevance and forms of public participation in decisions related to IWRM,
- utilisation of the digital information and communication technology and sources of information with emphasis on national web based public data

<ul style="list-style-type: none"> <li>• obvladovanje strokovne terminologije in komunikacije na področju CUV.</li> </ul>	<p>bases, EU services and international platforms,</p> <ul style="list-style-type: none"> <li>• command of technical terminology and communication in the field of IWRM.</li> </ul>
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**Predvideni študijski rezultati:**

**Intended learning outcomes:**

<p><b>Študent/študentka:</b></p> <ul style="list-style-type: none"> <li>• opiše naravne danosti slovenske hidrografske mreže in značilne antropogene vplive na površinske in podzemne vode ter morje,</li> <li>• pojasni področje CUV, pravno ozadje ter njegov pomen za zagotavljanje trajnostne rabe in urejanje voda, tudi v čezmejnem kontekstu,</li> <li>• razvije sposobnosti za splošno rekognisciranje in diagnosticiranje problemov vodnega okolja,</li> <li>• se usposobi za samostojno delovanje v povezavi s CUV v gospodarskem ali javnem sektorju, v domačem in tujem okolju.</li> </ul>	<p><b>Študent:</b></p> <ul style="list-style-type: none"> <li>• describe natural characteristics of Slovene hydrographic network and distinctive anthropogenic impacts on surface waters, groundwater and sea,</li> <li>• explain the term and field of IWRM, legal background and its relevance for ensuring sustainable water use and engineering, including in the transboundary context,</li> <li>• develops skills for general recognition and diagnosis of the problems in water environment,</li> <li>• qualifies for self-sustaining activities in relation to IWRM in economic or public sector, in domestic or foreign environment.</li> </ul>
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**Metode poučevanja in učenja:**

**Learning and teaching methods:**

<ul style="list-style-type: none"> <li>• <i>predavanja:</i> aktivno sodelovanje študentov (razlaga, diskusija, vprašanja in odgovori, primeri, reševanje problemov),</li> <li>• <i>terenske vaje:</i> vodeno terensko delo v rečnem koridorju s širokim razponom ocene hidromorfološke spremenjenosti (terenske analize, prepoznavanje hidromorfološkega procesa v rečnem koridorju, presoja ohranjenosti / spremenjenosti procesa, razlaga obstoječih in potrebnih inženirskih ureditev).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>lectures:</i> include also active student participation (explanation, discussion, questions and answers, examples, problem solving),</li> <li>• <i>field work:</i> guided field work in selected river corridor with a wide span of hydromorphological alteration assessment grade (field analysis, recognition of actual river corridor hydromorphological process, assessment of process preservation / alteration level, clarification of existing and needed engineering works).</li> </ul>
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**Načini ocenjevanja:**

Delež (v %)

Weight (in%)

**Assessment:**

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