



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

<b>Predmet:</b>	Urejanje in raba kmetijskega prostora
<b>Course title:</b>	Agricultural Use and Land Planning

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Ekologija z naravovarstvom, 1. stopnje		2	Zimski ali poletni
Ecology with nature protection, 1st. degree			

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
30				15	135	180/6

Nosilec predmeta / Lecturer:

Jeziki / Languages: Predavanja / Lectures:   
Vaje / Tutorial:

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

Vsebina:

Content (Syllabus outline):

Spoznavanje povezanosti naravnih procesov, zlasti tistih, ki povezujejo geologijo in pedologijo, rabo tal in varstvo okolja.

- Ponovitev najpomembnejših talnih lastnosti (fizikalne lastnosti, zrak v tleh, voda v tleh, kemijske lastnosti tal, organski del tal)
- Odnos rastlina – tla (kroženje hranil)
- Rodovitnost in vrednotenje tal (vrste pedoloških raziskav, vzorčenje, talne analize in interpretiranje rezultatov analiz, kartiranje)
- Obdelava tal (izbira primernih tehnik lgede na učinke)
- Erozijska tla (problematika, vrste, učinki, kontrola, ukrepi in tehnike preprečevanja)
- Hidromelioracijski ukrepi (talna vlaga, merjenje vlage, načini in oblike dreniranja, izbira drenažnega sistema, viri namakanja, kvaliteta vode, načini namakanja, metoda uporabe, časovna in količinska uporaba)
- Komasacije (definicija, namen, zakonitost postopka, osebe v postopku, izpeljava komasacije)
- Onesnaževanje tal (viri in vrste onesnaževanja, organska in anorganska onesnažila, ukrepi za preprečevanje ter tehnike sanacij onesnaženih tal)
- Človekov vpliv na kakovost in zdravje tal (vrste kmetovanja in njihov vpliv)
- Vrednotenje in raba tal (kategorizacija, pedosekvenca, talni informacijski sistem)
- Tehnike in načini trajnostnega urejanja kmetijskega prostora

To get aware of natural processes, especially between geology, pedology, land use and environmental protection.

- The main characteristics of soils (physical and chemical properties, air and water in the soil, soil organic matter)
- Relations between soils and plants (nutrient cycle)
- Soil fertility and evaluation of soils (types of pedological research, sampling, soil analysis, results interpretation, mapping)
- Land cultivation (cultivation techniques in use)
- Soil erosion (sources, problems, control, prevention techniques and measures)
- Drainage systems and irrigation of soils (soil moisture, moisture measuring, variables in drainage design, forms of drainage systems, choice of drainage system, irrigation water sources, water quality, principles of irrigation, the method of application, timing and rates of application)
- Land consolidation (definition, goals, purposes legislation, subjects involved, implementation phases)
- Soil pollution (pollution sources - organic and anorganic, prevention measures, improvement techniques)
- Human impact on soil quality and soil health (agricultural techniques)
- Evaluation and land use (categories, soil informatics system)
- Sustainable agricultural land planning

#### Temeljni literatura in viri / Readings:

- Bernhardsen, T.: 1999: Geographic Information Systems. An Introduction. John Wiley & Sons Inc., New York.
- Brady, N. C., R. R. Weil, 2002: The nature and properties of soils. 13<sup>th</sup> ed. Prentice Hall, USA.
- Briggs, D., P. Smithson, K. Addison, K. Atkinson, 1998. Fundamentals of the Physical Environment. Routledge, New York.
- Coleman, D. C., D.A. Crossley Jr., 1996: Fundamentals of soil ecology. Academic press, USA.
- Foth, H. F., 1990: Fundamentals of soil science. 8<sup>th</sup> ed. John Wiley & Sons, USA.
- Miller, R. W., D. T. Gardiner, 2001: Soils in our Environment. 9<sup>th</sup> ed. Prentice Hall, USA.
- Moser, E., 1984: Verfahrenstechnik Intensivkulturen. Paul Parey, Berlin, Hamburg.

- Rieul, L., P. Ruelle, 2003: Irrigation. Guide pratique. Cemagref Editions.
  - Stritar, A., 1991: Landscapes, landscape types; Soil use and conservation in Slovenia. Stritar, I., F. Oset (Eds.), Ljubljana.
  - Tiercelin, J. R., 1997: Traite d'irrigation. Londeres. Paris, New York.
- Zakonski dokumenti/ Legislation documents

**Cilji in kompetence:**

- Zaradi vse večjega onesnaževanja iz različnih virov študenti pridobijo znanja in izkušnje identificirati območja in zemljišča, primerna za določeno rabo, na zaraščenih in degradiranih območjih pa alternativne rešitve za nadaljnjo rabo
- Pridobijo znanje o najpomembnejših ukrepih urejanja kmetijskega prostora
- Usposobijo se izbirati najustreznejše ukrepe in metode za naustreznejšo rabo predela ali tal

**Objectives and competences:**

- Starting on intensifying soils pollution from different sources, students gain knowledge how to recognize soils and areas for selected land use and to find alternatives for overgrown and degraded land.
- Students acquire the most important knowledge about agricultural land planning.
- They get the knowledge of measures and methods selection to provide the most suitable land use in specific area or soil.

**Predvideni študijski rezultati:**

- Študent bo sposoben spoznati različne vrste tal, njihove fizikalne, kemijske in biotske lastnosti ter proizvodno sposobnost
- Poznal bo vpliv različnih rab na tla in posledice možnih neustreznih rab tal (biotska, kemijska in fizikalna degradacija)
- Usposobil se bo za različne ukrepe varovanja tal in za izbiro metod in ukrepov pri urejanju kmetijskega prostora

**Prenesljive/ključne spretnosti in drugi atributi:**

- Uporaba GIS-a, Avto-Cad-a in drugih programskih orodij
- Uporaba kartografskega materiala
- Sposobnost kritičnega razmišljanja
- Spretnost komuniciranja

**Intended learning outcomes:**

- Students will be qualified to recognize different soils, soil properties (physical, chemical, biotic) and its production capacity.
- Students will be qualified to use different soil protection measures and to select the adequate methods and measures for agricultural land planning.
- Student will get qualified for providing selected measures and methods of soil protection in agricultural land planning.

**Transferable/Key Skills and other attributes:**

- Use of GIS, Avto-Cad, and other programme tools
- Use and deal with Cartographic material
- Critical thinking
- Demonstrate skills in communications

**Metode poučevanja in učenja:**

**Learning and teaching methods:**

- Predavanja
- Seminarske vaje
- Terenski ogledi

- Lectures
- Tutorial
- Field trips

Načini ocenjevanja:		Delež (v %) / Weight (in %)	Assessment:
• Izdelava projekta - pisno	40	• Project work - written	
• Pisni izpit	60	• Written exam	

#### Reference nosilca / Lecturer's references:

1. PRIŠENK, Jernej, PAŽEK, Karmen, ROZMAN, Črtomir, TURK, Jernej, BOREC, Andreja. Mathematical method for formulating animal feed rations. *Lucr. științ. - Univ. Agron. Med. Vet. "Ion Ionescu de la Brad" Iași, Ser. zooteh. (Print)*, 2013, vol. 59, 18, str. 72-76. [COBISS.SI-ID [3515180](#)]
2. PRIŠENK, Jernej, ROZMAN, Črtomir, PAŽEK, Karmen, TURK, Jernej, BOHAK, Zarja, BOREC, Andreja. A multi-criteria assessment of the production and marketing systems of local mountain food. *Renewable agriculture and food systems*, v tisku, doi: [10.101/S170513000197](https://doi.org/10.101/S170513000197). [COBISS.SI-ID [3522348](#)]
3. BOREC, Andreja, BOHAK, Zarja, TURK, Jernej, PRIŠENK, Jernej. The Succession status of family farms in the Mediterranean region of Slovenia. *Sociológia*, 2013, letn. 45, št. 3, str. 316-337. [COBISS.SI-ID [3510572](#)]
4. PRIŠENK, Jernej, BOREC, Andreja. A Combination of the Multi-criteria approach and SWOT analysis for the identification of shortcomings in the production and marketing of local food. *Agricultura*. [Print ed.], 2012, letn. 9, št. 1-2 (Special issue), str. 31-37. [COBISS.SI-ID [3488556](#)]
5. BOHAK, Zarja, BOREC, Andreja, TURK, Jernej. Succession status of organic and conventional family farms in Southwestern Slovenia. *Druš. istraž. (Zagreb)*, 2011, letn. 20, št. 4 (114), str. 1183-1199, doi: [10.5559/di.20.4.13](https://doi.org/10.5559/di.20.4.13). [COBISS.SI-ID [3262508](#)]
6. BOHAK, Zarja, BOREC, Andreja, TURK, Jernej. An appraisal of family farm succession studies. *Agricultura*. [Print ed.], 2010, letn. 7, št. 1, str. 9-13. [COBISS.SI-ID [2933036](#)]
7. PAŽEK, Karmen, ROZMAN, Črtomir, BAVEC, Franc, BOREC, Andreja, BAVEC, Martina. A Multi-criteria decision analysis framework tool for the selection of farm business models on organic mountain farms. *J. sustain. agric.*, 2010, letn. 37, št. 7, str. 778-799. <http://dx.doi.org/10.1080/10440046.2010.507531>. [COBISS.SI-ID [2998828](#)]
8. BOHAK, Zarja, BOREC, Andreja. Primerjava kmetij z naslednikom in brez njega glede na nekatere strukturne in socioekonomske značilnosti. *Geogr. vestn. (Tisk. izd.)*. [Tiskana izd.], 2009, letn. 81, št. 2, str. 61-69. <http://zgds.zrc-sazu.si/GV2009/gv81-2/gv81-2-bohakborec.pdf>. [COBISS.SI-ID [2889516](#)]
9. ROZMAN, Črtomir, POTOČNIK, Majda, PAŽEK, Karmen, BOREC, Andreja, MAJKOVIČ, Darja, BOHANEC, Marko. A Multi-criteria assesment of tourist farm service quality. *Tour. manage. (1982)*. [Print ed.], 2009, letn. 30, str. 629-637. doi:10.1016/j.tourman.2008.11.008, doi:

[10.1016/j.tourman.2008.11.008](#). [COBISS.SI-ID [2713900](#)]

**10.** BOREC, Andreja, KRAMBERGER, Branko. C application of natural resources indicators to agricultural land management in Slovenia. *ACS, Agric. conspec. sci. (Tisak)*. [Tiskana izd.], 2006, letn. 71, št. 1, str. 11-19. [COBISS.SI-ID [2409516](#)]