

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet: Course title:	Čebelarstvo Apiculture
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Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Upravljanje podeželja, 1. stopnja	-	3.	1. ali 2.
Landscape management, 1st level	-	3.	1. or 2.

Vrsta predmeta / Course type izbirni / optional

Univerzitetna koda predmeta / University course code: UP_VS_35

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
30	-	30	-	-	90	5

Nosilec predmeta / Lecturer: dr. Aleš Gregorc

Jeziki / Languages: **Predavanja / Lectures:** slovenski / Slovenian
Vaje / Tutorial: slovenski / slovenian

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

Pridobljena znanja s področja bioloških osnov, osnove živinoreje, biotehnologije in genetike; poznavanje osnov s področja okolja, podjetništva in trženja. Študent, ki opravi vse študijske obveznosti, predavanja, vaje, seminarsko nalogo lahko pristopi k opravljanju izpita.

Prerequisites:

Basic knowledge from biology, farming, biotechnology and genetic. Students should absolved basic knowledge of the environment, management and marketing. Students who attended lectures and practicals and finished written report or exam from practical themes.

Vsebina:

Obravnavana bo uvrstitev medonosne čebele v biološkem sistemu, predstavitev čebeljih ras, zgradba in delovanje telesa čebele, razmnoževanje, razvoj čebele, življenje posamezne čebele in socialno življenje čebel. Čebelarstva opravila, prehrana čebel.

Slušatelji se bodo seznanili z nepravilnostmi v razvoju družine, ter infektivni in neinfektivni dejavniki. Higiena v čebelarstvu. Razvoj čebelarjenja, razvoj panja, sodobne tehnologije, prevozni čebelnjaki, pribor in oprema. Vzreja matic in selekcija v čebelarstvu.

Pridobivanje čebeljih pridelkov (med, cvetni prah, matični mleček, propolis, vosek), zagotavljanje kvalitete na nivoju pridelave, predelave, shranjevanja, embaliranje. Dobra čebelarstva praksa. Razmere na trgu (ponudba, povpraševanje). Trženje v čebelarstvu: čebelji pridelki, plemenski material.

Content (Syllabus outline):

Honey bee in biological system, introduction into bee strains, anatomy and function of the honey bee body will be studied. Development, reproduction, of individual bee and a colony as a social organization will be presented. Management in apicultural and honey bee nutrition. Abnormalities in colony development, infective and ineffective influences; preventive measures and hygiene in beekeeping.

Review of beekeeping, hive development, contemporary beekeeping, transhumance of bees, beekeeping equipment. Queen rearing and selection. Production of honey bee colony products (honey, pollen, royal jelly, propolis, wax), to ensure the quality of production, remodeling, storing, marketing; conditions of quality. Good beekeeping practice, marketing of bee products and breeding material.

Temeljni literatura in viri / Readings:

- ZDEŠAR, Pavel, GREGORI, Janez, GRAD, Janez, GREGORC, Aleš, KRALJ, Jasna, BOŽIČ, Janko, AUGUŠTIN, Vladimir, ŠIVIC, Franc, MIHELIČ, Janez., 2008. *Slovensko čebelarstvo v tretje tisočletje 1*. Lukovica: Čebelarstva zveza Slovenije.

- SAMMATARO, Diana (ur.), YODER, Jay (ur.). *Honey bee colony health: challenges and sustainable solutions*, (Contemporary topics in entomology series). Boca Raton, FL: CRC Press, 2012.

- Gregorc A. Medonosna čebela in osnove čebelarjenja, Univerza v Ljubljani 2002.

- ZDEŠAR, Pavel. 2011. Slovensko čebelarstvo v tretje tisočletje 2. Lukovica: Čebelarstva zveza Slovenije, 2011. 512 str.

- Gregorc A. Medonosna čebela in osnove čebelarjenja, Univerza v Ljubljani 2002.

- Krell R. Value-added products from beekeeping. FAO Agricultural services bulletin No. 124; Rome, 1996.

Tekoča periodika:
Slovenski čebelar
American Bee Journal

Cilji in kompetence:

Slušatelji pridobijo znanja s področja osnov sistematike in biologije medonosne čebele in organizacije in delovanje čebelje družine. Cilj programa je slušateljem predstaviti čebelarjenje kot kmetijsko dejavnost in jim prikazati tehnološke probleme, ter vzpodbujati možnosti razvoja novih pristopov na področju tehnologije čebelarjenja v povezavi s kmetijstvom.

Osvojiti tehnologije pridelave čebeljih pridelkov, predstaviti karakteristike kakovosti, ter možnosti predelave in zviševanje tržne vrednosti produktov. Cilj programa je tudi spodbujati nove pobude pri trženju čebeljih pridelkov in uvajati različne oblike prodaje

Objectives and competences:

To get knowledge of the theoretical foundations of the professional fields and to demonstrate practical questions in beekeeping. Theoretical aims are: basic information of bee systematic and biology of honey bee. The aim is to show beekeeping as the part of agriculture and to demonstrate technological problems, and simulate independent practical and research problem solving in beekeeping.

To achieve knowledge about conditions and methods of production and harvest. The emphases is given to questions of the hygiene in beekeeping production, and to promote new initiatives in marketing of bee products and different approach to marketing.

Predvideni študijski rezultati:

Znanje in razumevanje:
pridobljena znanja o čebelji družini, čebelarstvu, čebeljih pridelkih, in o pomenu čebelarstva za kmetijstvo, trženje in pridobivanje dohodka iz čebelarstva.

Intended learning outcomes:

Knowledge and understanding:
gain the knowledge of the honey bee colony, apiculture, about honey bee products the importance in agriculture. Knowledge of management in beekeeping and marketing.

Metode poučevanja in učenja:

Poučevanje poteka v obliki predavanj, demonstracij, seminarjev, praktičnih vaj, terenske vaje, vključevanje v čebelarstvo prakso (udeležba na posvetovanjih), mentorstvo in vključevanje v projektno delo.

Learning and teaching methods:

Students are supervised and included in project work. Lectures, seminar, practical's, field work are organized. They attend to conferences and professional meetings.

Načini ocenjevanja:

Preverjanje znanja in ocenjevanje na osnovi izdelave
- seminarske naloge in projekti
- pisni (in/ali ustni) izpit

Delež (v %) /
Weight (in %)

40 %
60 %

Assessment:

written report in practical course, and written and/or oral examination
- seminar and practical course
- oral examination

Reference nosilca / Lecturer's references:

GREGORC, Aleš, EVANS, Jay D., SCHARF, Mike, ELLIS, James D. Gene expression in honey bee (*Apis mellifera*) larvae exposed to pesticides and *Varroa* mites (*Varroa destructor*). *J. insect physiol.* [Print ed.], 2012, vol. 58, str. 1042-1049, doi: [10.1016/j.jinsphys.2012.03.015](https://doi.org/10.1016/j.jinsphys.2012.03.015). [COBISS.SI-ID [3839592](https://www.cobiss.si/id/3839592)].

GREGORC, Aleš, BAKONYI, Tamás. Viral infections in queen bees (*Apis mellifera carnica*) from rearing apiaries. *Acta vet. Brno*, 2012, vol. 81, str. 15-19. [COBISS.SI-ID [3869800](https://www.cobiss.si/id/3869800)].

SMODIŠ ŠKERL, Maja Ivana, KMECL, Veronika, GREGORC, Aleš. Exposure to pesticides at sublethal level and

their distribution within a honey bee (*Apis mellifera*) colony. *Bull. environ. contam. toxicol.*, 2010, no. 2, str. 125-128, doi: [10.1007/s00128-010-0069-y](https://doi.org/10.1007/s00128-010-0069-y). [COBISS.SI-ID [3360616](#)], [JCR, WoS, št. citatov do 9. 9. 2010: 0, brez avtocitatov: 0, normirano št. citatov: 0]

GREGORC, Aleš, LOKAR, Vesna. Selection criteria in an apiary of carniolan honey bee (*Apis mellifera carnica*) colonies for queen rearing = Seleksijski kriteriji v čebelnjaku z družinami kranjske čebele (*Apis mellifera carnica*) za vzrejo matic. *Journal of central european agriculture*. [Online ed.], 2010, vol. 11, no. 4, str. 401-408. [COBISS.SI-ID [3602280](#)]

SMODIŠ ŠKERL, Maja Ivana, NAKRST, Mitja, POLJANŠEK, Lucija, GREGORC, Aleš. The acaricidal effect of flumethrin, oxalic acid and amitraz against varroa destructor in honey bee (*Apis mellifera carnica*) colonies. *Acta vet. Brno*, 2011, vol. 80, str. 51-56. [COBISS.SI-ID [3588456](#)], [JCR, WoS, št. citatov do 24. 5. 2011: 0, brez avtocitatov: 0, normirano št. citatov: 0]

GREGORC, Aleš, ELLIS, James. Cell death localization in situ in laboratory reared honey bee (*Apis mellifera* L.) larvae treated with pesticides. *Pestic. biochem. physiol.*, 2011, vol. 99, str. 200-207. [COBISS.SI-ID [3506280](#)], [JCR, WoS, št. citatov do 12. 1. 2012: 2, brez avtocitatov: 2, normirano št. citatov: 2]

GREGORC, Aleš, SILVA-ZACARIN, Elaine C. M., NOCELLI, Roberta C. F. Cellular response in honey bees to non-pathogenic effects of pesticides. V: SAMMATARO, Diana (ur.), YODER, Jay (ur.). *Honey bee colony health : challenges and sustainable solutions*. (Contemporary topics in entomology series). Boca Raton, FL: CRC Press, 2012, str. 161-180. <http://www.crcpress.com/product/isbn9781439879405>, doi: [10.1201/b11318-16](https://doi.org/10.1201/b11318-16). [COBISS.SI-ID [3726184](#)]