ZNANOST O ŽIVALIH – TEORETIČNI PREDMETI

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Antrozoologija
Course title:	Anthrozoology

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Bioznanosti, tretja stopnja, doktorski	Znanost o živalih		Celoletni

Univerzitetna koda predmeta/University course code: 3850

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
10	30	0	0	0	85	5

Nosilec predmeta/Lecturer:	Manja Zupan Šemrov
Izvajalci predavanj:	Manja Zupan Šemrov
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	
Vrsta predmeta/Course type:	teoretični/theoretical

Jeziki/Languages:	Predavanja/Lectures:	Slovenščina, Angleščina
	Vaje/Tutorial:	Slovenščina, Angleščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Splošni pogoji za vpis na doktorski študij	General conditions for enrolment in doctoral studies.

Vsebina:	Content (Syllabus outline):
Predmet vsebuje štiri vsebinske sklope: - Specialna in splošna etologija domačih in družnih živali: poznavanje splošne etološke terminologije; ugotavljanje pomena izražanja oblik obnašanja; razumevanje procesa od sprejemanja dražljajev do obdelave v centralnem živčnem sistemu in reakcije živali; izražanje čustev; načini učenja in nabiranja izkušenj; fiziološke osnove-obnašanja, igra kot kazalec dobrega počutja živali in drugo	Lectures contain four sections: - The basic science of ethology of farm and companion animals: knowledge of general ethological terminology; searching explanations for behavioural expressions; understanding the process of adopting stimuli to processing in the central nervous system and the reactions of animals; expressing feelings; ways of learning and the accumulation of experience; physiological bases of

- Živalska etika: teorije v etiki, ki se nanašajo na dolžnosti človeka do živali bodo predstavljene; razpravljanje o razmerju med znanostjo in etiko ter o gensko spremenjenih organizmih, ekološki reji, dobrem počutju živali, mučenju živali itn. - Odnos človeka do živali: pregled in razprava o odnosu človeka do živali s poudarkom na zgodovinskem vidiku - Znanstveni pristopi k razumevanja počutja živali: seznanitev s pristopi k raziskovanju dobrega počutja živali; razprava o pomembnosti dojemanja živali kot čutnih individuumov	behavior; playing as an indicator of animal welfare and other - Animal Ethics: the theories of ethics, which relate to the duties of man towards animals will be presented, discussing the relationship between science and ethics of genetically modified organisms, organic farming, animal welfare, animal cruelty, etc.. - Human-animal interaction: a review and discussion of the relation of man to animals with an emphasis on the historical aspect of - A scientific approach to animal welfare: familiarization with the approaches in animal welfare research; debate about the importance of animals as sentient individuals

Temeljna literatura in viri/Readings:

Bekoff M. 2004. Encyclopedia of Animal Behavior. Westport, Greenwood Press: 1274 str., ISBN: 0-313-32746-7 (vol. 1), 0-313-32747-5 (vol. 2) in 0-313-33294-0 (vol 3)

Bolhuis J.J., Giraldeau L. 2005. The Behaviour of Animals. Mechanisms, Function and Evolution. Malden, Blackwell Publishing: 515 str., ISBN: 0-631-23125-0

Fraser A. F., Broom D. M. 2007. Domestic Animal Behaviour and Welfare, CABI; Fourth edition: 540 str., ISBN-10: 1845932870

Jensen P. 2009. The Ethology of Domestic Animals. CABI; Second edition: 246 str., ISBN-10: 1845935365

Scott G. 2005. Essential Animal Behaviour. Malden, Blackwell Publishing: 202 str., ISBN: 0-632-05799-8

Yates, J., Röcklinsberg, H., Gjerris, M. 2011. "Is welfare all that matters? A discussion of what should be included in policymaking regarding animals". Animal Welfare, 20:3, 423-432.

Gjerris, M., Gamborg, C., Röcklinsberg, H., Anthony, R. 2011. "The price of responsibility: Ethics of Animal Husbandry in a Time of Climate Change", Journal of Agricultural and Environmental Ethics, Vol 24:4, pp 331-350.

Duncan, I.J.H. Science-based assessment of animal welfare: farm animals. Rev. sci. tech. Off. int. Epiz., 2005, 24 (2), 483-492

Michael Mendl, Elizabeth S.Paul. 2020. Animal affect and decision-making. Neuroscience & Biobehavioral Reviews. 112: 144-163.

Cilji in kompetence:	**Objectives and competences:**
Poznavanje splošne etološke terminologije. Razumevanje počutja živali, čustev, fizioloških osnov obnašanja (npr. hormonov, nevrotransmiterjev in srčnega utripa), načinov učenja živali in nabiranja izkušenj ter njihov vpliv na obnašanje. Razumevanje vrsti značilnega obnašanja. Seznanitev z etiko na področju dobrega počutja živali. Poznavanje vplivov (npr. osebnost) na kvaliteto razmerja med človekom in živaljo.	Knowledge of general ethological terminology. Understanding of animal welfare, emotions, physiological bases of behavior (eg, hormones, neurotransmitters, and heart rate), learning and experiences in animals and their impact on behavior. Understanding species specific behavior. Acquaintance with ethics in the field of animal welfare. Knowledge of the effects (eg, personality) on the quality of the animal's relationship to humans.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje:	Knowledge and understanding:

Razumevanje etologije in dobrega počutja živali kot interdisciplinarne znanosti.	View ethology and animal welfare as interdisciplinary field of study.

Metode poučevanja in učenja:	**Learning and teaching methods:**
Predavanja, konzultacije, seminarsko delo.	Lectures, consultations, seminar workshops.

Načini ocenjevanja:	**Delež/Weight**	**Assessment:**
- izdelana seminarska naloga	80,00 %	Seminar work
- ustni izpit	20,00 %	Oral Exam

Glavne reference nosilca/Main lecturer's references (zadnjih 5 let/last 5 years):

Manja Zupan Šemrov

1. ZUPAN, Manja, REHN, Therese, OLIVEIRA, Daiana de, MALOVRH, Špela, KEELING, Linda J. Individual play patterns stimulated by a familiar object are group-driven. *Scientific reports,* 2019, vol. 9, str. 1-8, [e]6092, doi: 10.1038/s41598-019-42382-9. [COBISS.SI-ID 4205192], IF (2019): RO (17/71), multidisciplinary sciences, x=3.998
2. ZULIANI, Anna, MAIR, Matthias, KRAŠEVEC, Maruša, LORA, Isabella, BRSCIC, Marta, COZZI, Giulio, LEEB, Christine, ZUPAN, Manja, WINCKLER, Christoph, BOVOLENTA, Stefano. A survey of selected animal-based measures of dairy cattle welfare in the Eastern Alps : toward context-based thresholds. *Journal of dairy science,* 2018, vol. 101, no. 2, str. 1428-1436, doi: 10.3168/jds.2017-13257. [COBISS.SI-ID 4030856], IF (2018): AD (4/61), agriculture, dairy & animal science, x=3.0822
3. PRUNIER, A., AVEROS, X., DIMITROV, Ivan, EDWARDS, Sandra A., HILLMANN, E., HOLINGER, E., ILIESKI, Vlatko, LEMING, R., TALLET, C., TURNER, S. P., ZUPAN, Manja, CAMERLINK, I. Early life predisposing factors for biting in pigs : review. *Animal* : the international journal of animal biosciences, 2020, vol. 14, no. 3, str. 570-587, doi: 10.1017/S1751731119001940. [COBISS.SI-ID 4281992], IF (2019): AD (9/63), agriculture, dairy & animal science, x=2.400
4. ZUPAN, Manja, BUSKAS, Julia, ALTIMIRAS, Jordi, KEELING, Linda J. Assessing positive emotional states in dogs using heart rate and heart rate variability. *Physiology & behavior,* 2016, vol. 155, str. 102-111, doi: 10.1016/j.physbeh.2015.11.027. [COBISS.SI-ID 3672712], IF (2016): CN (30/51), behavioural sciences, x=2.341
5. GOBBO, Elena, ZUPAN, Manja. Dogs' sociability, owners' neuroticism and attachment style to pets as predictors of dog aggression. *Animals,* 2020, vol. 10, no. 2, str. 1-15, e 315, doi: 10.3390/ani10020315. [COBISS.SI-ID 4355208], IF (2019): AD (10/64), agriculture, dairy & animal science, x=2.323
6. TERČIČ, Dušan, PANČUR, Mojca, JORDAN, Dušanka, ZUPAN, Manja. Effects of dimethyl anthranilate-based repellents on behavior, plumage condition, egg quality, and performance in laying hens. *Frontiers in veterinary science,* 2020, vol. 7, art. no. 533, str. 1-13, doi: 10.3389/fvets.2020.00533. [COBISS.SI-ID 25780483], IF (2019): ZC (19/142), veterinary sciences, x=2.245
7. ROKAVEC, Neža, ZUPAN, Manja. Psychological and physiological stress in hens with bone damage. *Frontiers in veterinary science,* ISSN 2297-1769, 2020, vol. 7, art. no. 589274, str. 1-10, doi: 10.3389/fvets.2020.589274. [COBISS.SI-ID 42687747], IF (2019): ZC (19/142), veterinary sciences, x=2.245
8. ZUPAN, Manja, REHN, Therese, OLIVEIRA, Daiana de, KEELING, Linda J. Promoting positive states : the effect of early human handling on play and exploratory behaviour in pigs. *Animal* : the international journal of animal biosciences, 2016, vol. 10, no. 1, str. 135-141. doi: 10.1017/S1751731115001743. [COBISS.SI-ID 3601032], IF (2016): AD (5/58), agriculture, dairy & animal science, x=1.921

9. MIKUS, Tomislav, RADESKI, Miroslav, CZISZTER, Ludovic Toma, DIMITROV, Ivan, JURKOVICH, Viktor, NENADOVIC, Katarina, OSTOVIC, Mario, ZUPAN, Manja, KIRCHNER, Marlene Katharina. The Danube region--on stream with animal welfare assessment in the last 35 years : a review of research on animal welfare assessment in a multi-lingual area in Europe. Journal of agricultural & environmental ethics, 2018, vol. 31, no. 4, str. 511-526, doi: 10.1007/s10806-018-9737-4. [COBISS.SI-ID 4080776], IF (2018): AH (16/57), agriculture, multidisciplinary, x=1.398
10. ZUPAN, Manja, ŠTUHEC, Ivan, JORDAN, Dušanka. The effect of an irregular feeding schedule on equine behavior. *Journal of applied animal welfare science*, 2020, vol. 23, no. 2, str. 156-163, doi: 10.1080/10888705.2019.1663734. [COBISS.SI-ID 4285832], IF (2019): ZC (72/142), veterinary sciences, x=1.122

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Izbrana poglavja iz reje živali
Course title:	Advanced animal husbandy

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Bioznanosti, tretja stopnja, doktorski	Znanost o živalih		Celoletni

Univerzitetna koda predmeta/University course code: 3851

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
10	15	0	0	5	95	5

Nosilec predmeta/Lecturer: Dušan Terčič

Izvajalci predavanj:	Dušan Terčič
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course type: teoretični/theoretical

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Splošni pogoji za vpis na doktorski študij.	General conditions for enrolment in doctoral studies.

Vsebina:	Content (Syllabus outline):
Predmet obsega večino vsebin s področij reje živali in njihovih proizvodov. Študenti bodo pridobili poglobljena znanja na področjih, ki so zanje še posebej zanimiva in lahko med drugim vključujejo tudi: - različne vrste in proizvodne tipe domačih živali ter znanstvena spoznanja, na katerih temelji reja le teh; - intenzivne in ekstenzivne sisteme rej, primerne za različne vrste domačih živali; - načine vrednotenja proizvodnih lastnosti in lastnosti zunanjosti pri govedu, perutnini in prašičih; - uporabo izsledkov raziskav za izboljšanje počutja živali;	The course will cover most aspects of animal production and animal products. It will provide students with depth of knowledge in their focused area of study, which may include: - the different species and production types of domestic animals and the science that underpins managing animals as farm animals; - intensive and extensive systems of production appropriate to a range of livestock species; - techniques associated with exterier and performance evaluation of beef, dairy, poultry, and swine;

- varno in humano prirejo različnih proizvodov živalskega porekla; - poznavanje dejavnikov, ki vplivajo na kakovost proizvodov živalskega porekla in odnos porabnikov do parametrov, ki opredeljujejo to kakovost; - sheme kakovosti, ki omogočajo zaščito proizvodov živalskega porekla; - genetske/genomske principe in metode izboljševanja domačih živali ter uvajanje genomske selekcije v nacionalne črede/jate/trope.	- application of research findings for the improvement of animal welfare; - the safe and humane production of products derived from different livestock species; - factors affecting quality of animal products and consumer attitudes to parameters defining quality of these products; - quality schemes enabling the protection of products of animal origin; - genetic/genomic principles and methods to the improvement of livestock and poultry and application of the genomic selection in the national herd.

Temeljna literatura in viri/Readings:

Aland A., Banhazi T. 2013. Livestock housing: Modern management to ensure optimal health and welfare of farm animals. 496 str. ISBN: 978-90-8686-217-7

Bell, D.D. (ur.), Weaver W. D. (ur.) 2002. Commercial Chicken Meat and Egg Production. Kluwer Academic Publishers, 1365 str. ISBN: 978-1-4613-5251-8

Fasso D. 2017. Animal Husbandry and Biotechnology. 256 str. ISBN: 1632398451

Fisher M. 2018. Animal Welfare Science, Husbandry and Ethics: The Evolving Story of Our Relationship with Farm Animals. 5m Publishing, 320 str. ISBN 1789180082

Fuller M. F., editor. 2004. The encyclopedia of farm animal nutrition. Wallingford : CABI Oublishing is a division of CAB International, 606 str. ISBN : 9780851999500

Mahesh K., Patil R., Bhujbal M. 2017. Animal Husbandry and Dairy Management. A Basic Approach to Livestock Production and Management. Lambert, 88 str. ISBN 3330056118

Mathialagan P. 2020. Textbook of Animal Husbandry Extension Education. CBS Publishers & Distributors, 236 str. ISBN 938890298X

Kellems R. O., Church D. C. 2002. Livestock feeds and feeding. Upper Saddle River, N.J. : Prentice Hall. 5 izdaja, 654 str. ISBN : 0130105821

Niman, N. H. 2014. Defending beef : the case for sustainable meat production. White River Junction, Vermont. Chelsea Green Publishing, 274 str. ISBN : 9781603585361

Patience J.F. (ur.). 2012. Feed efficiency in swine. Wageningen Academic Pub, 280 str. ISBN 978-90-8686-202-3.

Pond W. G., Pond K. R. 2000. Introduction to animal science. New York : Wiley 687 str. ISBN: 0471170941

Snider C. 2016. Dairy Farming. Animal Husbandry and Welfare. Syrawood Publishing, 206 str. ISBN: 1682860418 Webster, J. 2013. Animal husbandry regained : the place of farm animals in sustainable agriculture. New York, NY : Routledge 1. izdaja, 243 str. ISBN: 9781849714204

Cilji in kompetence:	**Objectives and competences:**
Izobraževalni cilj predmeta je, da študenti pridobijo dodatna, poglobljena znanja na področjih temeljnih živinorejskih ved in sicer reje, reprodukcije, prehrane, rasti in razvoja, zdravstvenega varstva, uhlevitve, rokovanja ter varnosti in kakovosti proizvodov živalskega porekla. V času izvajanja predmeta bodo imeli možnost, da se intenzivneje posvetijo področju, ki jih še posebej zanima.	The objective of the course is to provide students with more advanced, deep knowledge in areas of basic animal science disciplines, namely animal breeding, reproduction, feeding, growth and development, health management, housing, handling, and end - product safety and quality. Throughout the course students will have increasing opportunity to explore specific areas of their own interest.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Na koncu izvajanja predmeta bodo študenti usposobljeni za: - Povezovanje znanj in veščin, ki so potrebne za učinkovito gospodarjenje z domačimi živalmi na način, ki kar najbolje spaja dobro počutje živali z zahtevami sodobnih proizvodnih sistemov. - Razumevanje pomena načina uhlevitve, genetike, fiziologije, prehrane, zdravstvenega varstva in ostalih dejavnikov na učinkovitost in kakovost živalske prireje. - Jasno in kritično presojanje ter učinkovito ukrepanje ob pojavu težav v reji, ne glede na okoliščine v katerih so se znašli. - Samostojno izvedbo inovativne raziskave, ki bo prispevala k znanju, pridobljenem v času izvajanja predmeta.	Knowledge and understanding: At the end of the module students will be able to: - Integrate the knowledge and skills required to efficiently manage farm animals in a way that integrates animal welfare with modern and demanding production requirements. - Recognize the importance of housing system, genetics, physiology, nutrition, health, and other factors that contribute to the efficiency and quality of animal production. - Think clearly and critically about farm management issues and problems, and make appropriate decisions in a variety of situations. - Conduct innovative research that advances scientific knowledge gained in due course.

Metode poučevanja in učenja:	**Learning and teaching methods:**
- predavanja; - konzultacije; - samostojno seminarsko delo.	- lectures; - consultations; - seminar work.

Načini ocenjevanja:	**Delež/Weight**	**Assessment:**
Pozitivna ocena seminarja je predpogoj za pristop k pisnemu izpitu. Zaključna ocena je tehtana aritmetična sredina: 1. pozitivno opravljenega seminarja in	30,00 %	A passing grade of the seminar is a prerequisite for taking the written exam. Final grade is weighted arithmetic mean of: 1. positive evaluated seminar and
2. pozitivno opravljenega izpita.	70,00 %	2. positive evaluated written exam.

Reference nosilca/Lecturer's references:

1. TERČIČ, Dušan, PANČUR, Mojca, JORDAN, Dušanka, ZUPAN, Manja. Effects of dimethyl anthranilate-based repellents on behavior, plumage condition, egg quality, and performance in laying hens. *Frontiers in veterinary science*. 2020, vol. 7, art. no. 533, str. 1-13, DOI: 10.3389/fvets.2020.00533.

2. CIVIDINI, Angela, **TERČIČ, Dušan**, SIMČIČ, Mojca. The effect of feeding system on the carcass quality of crossbred lambs with Texel. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*. 2020, vol. 68, no. 1, str. 17-24, DOI: 10.11118/actaun202068010017.

3. TERČIČ, Dušan, OMEJEC, Sandra, POGOREVC, Neža, DOVČ, Peter, KUNEJ, Tanja. Protocol for development of the chicken miRegulome - an integrative map of microRNA regulatory networks = Protokoll für die Entwicklung des Hühner-miReguloms - eine integrative Karte des MicroRNA regulatorischen Netzwerkes. *Archiv für Geflügelkunde = : European poultry science (Internet)*. 2019, vol. 83, str. 1-21, DOI: 10.1399/eps.2019.258.

4. TERČIČ, Dušan, PANČUR, Mojca. Effects of flock age, prestorage heating of eggs, egg position during storage and storage duration on hatchability parameters in layer parent stock. V: DOVČ, Peter (ur.). *Technology driven animal production*. 24th International Symposium Animal Science Days, Ptuj, September 21st-23rd, 2016. Ljubljana: Biotechnical Faculty, 2016. Suppl. 5, str. 138-142. Acta agriculturae slovenica, Supplement, 2016, 5. ISBN 978-961-6379-36-6. ISSN 1854-4800.

5. ZORC, Minja, OMEJEC, Sandra, **TERČIČ, Dušan**, HOLCMAN, Antonija, DOVČ, Peter, KUNEJ, Tanja. Catalog of genetic variants within mature microRNA seed regions in chicken. *Poultry science*. 2015, vol. 94, no. 9, str. 2037-2040, DOI: 10.3382/ps/pev170.

6. FLISAR, Tina, MALOVRH, Špela, **TERČIČ, Dušan**, HOLCMAN, Antonija, KOVAČ, Milena. Thirty-four generations of divergent selection for 8-week body weight in chickens. *Poultry science*. 2014, vol. 93, no. 1, str. 16-23. ISSN 0032-5791. DOI: 10.3382/ps.2013-03464.**TERČIČ, Dušan**, PANČUR, Mojca, JORDAN, Dušanka, ZUPAN, Manja. Effects of dimethyl anthranilate-based repellents on behavior, plumage condition, egg quality, and performance in laying hens. *Frontiers in veterinary science*. 2020, vol. 7, art. no. 533, str. 1-13, DOI: 10.3389/fvets.2020.00533.

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Kvantitativna in statistična genetika
Course title:	Quantitative and statistical genetics

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Bioznanosti, tretja stopnja, doktorski	Znanost o živalih		Celoletni

Univerzitetna koda predmeta/University course code: 3853

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
20	45	0	0	0	185	10

Nosilec predmeta/Lecturer: Milena Kovač

Izvajalci predavanj:	Milena Kovač
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course type: teoretični/theoretical

Jeziki/Languages:	Predavanja/Lectures:	Angleščina, Slovenščina
	Vaje/Tutorial:	Angleščina, Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Splošni pogoji za vpis na doktorski študij. Priporočljivo znanje kvantitativne in molekularne genetike, selekcije in biometrije, pridobljeno na predhodno končanih stopnjah študija.	General conditions for enrolment in doctoral studies. Knowledge of quantitative and molecular genetics, selection and biometrics obtained in previously completed study levels, is recommended.

Vsebina:	Content (Syllabus outline):
Predstavljene bodo metode genetskega spreminjanja populacij, napovedovanje in spremljanje učinkov le-teh tako na genetski nivo populacije kot spreminjanju strukture varianc in kovarianc. Predstavljeni bodo parametri, ki opisujejo starostno strukturo in obnovo populacije, in njihov učinek na genetske spremembe. Aditivni in neaditivni genetski vplivi bodo pojasnjeni s podobnostjo med osebki. Proučeni bodo vplivi, ki spreminjajo podobnost med osebki, in podane molekularno genetske metode, ki omogočajo	Methods of changing genetic structure of populations will be presented focusing on the analyses of their efficiency with respect to genetic level as well as to the covariance structure. Parameters describing age structure, replacement rate and their effect on genetic changes will be studied. Relationship between individuals will be used to explain additive and non-additive genetic effects. Methods which modify relationship between individuals will be presented together with molecular genetic methods for verification of

preveritev sorodstva. Predstavljen bo koncept in metode genetskega vrednotenja. Posebej bodo izpostavljene metode selekcijskega indeksa in mešanega modela in metode največje zanesljivosti. Predstavili bomo metode in tehnike preizkusov in zbiranja informacij (viri, načini, pomen). Pri uporabljenih metodah selekcije bomo poudarili tudi pomen strukture podatkov na točnost napovedi genetskih vrednosti. Obravnavane bodo tako fenotipske kot genetske informacije o metričnih lastnostih ter njihova uporaba pri selekciji. Pozornost bo usmerjena v naključne tokove genov v majhnih populacijah, vzdrževanje genetske raznovrstnosti in rekonstrukcijo ogroženih populacij. Obravnavane bodo tudi aktualne teme, kot so npr. naključna regresija, interakcija genotip-okolje, genomski pristopi. Podani bodo selekcijski programi za izboljšanje proizvodnih in predvsem novih lastnosti (robustnost, preživitvena sposobnost, dolgoživost, življenjska prireja, proizvodne funkcije).	relationship. The concept and methods of genetic evaluation will be presented like selection index, mixed model methodology, genomic procedures, and maximum likelihood methods . Novelties in performance testing as well as data recording systems (sources, methods, impact). Importance of the data structure for accuracy of genetic values will be stressed. Both phenotypic and genetic information on metric traits will be dealt with, and their use in selection. Attention will be devoted to random drifts of genes in small populations, maintenance of genetic diversity and reconstruction of endangered populations. Actual topics will also be discussed, such as random regression, genotype-environment interaction, genomic principles. Selection programmes for production traits and especially novel traits will be discussed (robustness, survival analyses, longevity, lifetime production, production functions).

Temeljna literatura in viri/Readings:

- Študijsko gradivo, aktualni znanstveni članki v povezavi s projektno nalogo. / Study material, topical scientific articles in connection with the project task.
- Gianola, d., Hammond K. 1990. Statistical Methods for Genetic Improvements of Livestock. Springer-Verlag, 534 str.

Cilji in kompetence:	**Objectives and competences:**
Študent bo poglobil teoretična izhodišča genetskega vrednotenja živali, napovedovanja in spremljanja učinkov selekcije in drugih metod izboljšanja populacij. Spoznal se bo z metodami za proučevanje genetske strukture populacij. Pri tem bomo izpostavili genetske in statistične vidike.	The student will deepen theoretical starting points of genetic evaluation of animals, forecasting and monitoring the effects of selection and other methods of improving populations. He or she will be familiarised with methods for studying the genetic structure of populations. Genetic and statistical aspects will be highlighted.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Predvidevamo, da bo študent poglobil znanja iz kvantitativne in statistične genetike in bo usposobljen za načrtovanje raziskave in analiziranje podatkov predvsem za potrebe selekcije in uravnavanje reje.	We envisage that a student will deepen knowledge of quantitative and statistical genetics amd will be trained for planning research and analysing data mainly for the needs of selection and balanced breeding.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja, • računalniške vaje, • projektna naloga, • seminarske vaje.	• lectures, • computer exercises, • project task, • seminar exercises.

Načini ocenjevanja:	**Delež/Weight**	**Assessment:**
- ustni izpit	60,00 %	- oral examination
- projektna naloga	40,00 %	- project task

Reference nosilca/Lecturer's references:

Kovač Milena

FLISAR, Tina, MALOVRH, Špela, TERČIČ, Dušan, HOLCMAN, Antonija, KOVAČ, Milena. Thirty-four generations of divergent selection for 8-week body weight in chickens. *Poultry science*, ISSN 0032-5791, 2014, vol. 93, no. 1, str. 16-23, doi: 10.3382/ps.2013-03464. [COBISS.SI-ID 3333256], [JCR, SNIP]
kategorija: 1A1 (Z1, A', A1/2); uvrstitev: SCI, Scopus, MBP; tipologija ni verificirana
točke: 20.94, št. avtorjev: 5

JENKO, Janez, DUCROCQ, Vincent, KOVAČ, Milena. Comparison of piecewise Weibull baseline survival models for estimation of true and functional longevity in Brown cattle raised in small herds. *Animal*, ISSN 1751-7311, 2013, vol. 7, iss. 10, str. 1583-1591, doi: 10.1017/S1751731113001055. [COBISS.SI-ID 4220520], [JCR, SNIP, WoS do 30. 9. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0, Scopus do 16. 9. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0]
kategorija: 1A1 (Z1, A', A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 36.36, št. avtorjev: 3

JEVŠINEK SKOK, Daša, GODNIČ, Irena, ZORC, Minja, HORVAT, Simon, DOVČ, Peter, KOVAČ, Milena, KUNEJ, Tanja. Genome-wide in silico screening for microRNA genetic variability in livestock species. *Animal genetics*, ISSN 0268-9146, 2013, vol. 44, no. 6, str. 669-677. http://onlinelibrary.wiley.com/doi/10.1111/age.12072/pdf, doi: 10.1111/age.12072. [COBISS.SI-ID 3249544], [JCR, SNIP, WoS do 18. 11. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0, Scopus do 16. 11. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.14, normirano št. čistih citatov (NC): 1]
kategorija: 1A1 (Z1, A'', A', A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 20, št. avtorjev: 7

KOMPREJ, Andreja, MALOVRH, Špela, GORJANC, Gregor, KOMPAN, Drago, KOVAČ, Milena. Genetic and environmental parameters estimation for milk traits in Slovenian dairy sheep using random regression model. *Czech Journal of Animal Science*, ISSN 1212-1819, 2013, vol. 58, no. 3, str. 125-135. [COBISS.SI-ID 3211656], [JCR, SNIP, Scopus do 9. 7. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0]
kategorija: 1A2 (Z1, A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 17.14, št. avtorjev: 5

JENKO, Janez, GORJANC, Gregor, KOVAČ, Milena, DUCROCQ, Vincent. Comparision between sire-maternal grandsire and animal models for genetic evaluation of longevity in a dairy cattle population with small herds. *Journal of dairy science*, ISSN 0022-0302, 2013, vol. 96, str. 8002-8013, doi: 10.3168/jds.2013-6830. [COBISS.SI-ID 4337000], [JCR, SNIP, WoS do 16. 12. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0, Scopus do 28. 10. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0]
kategorija: 1A1 (Z1, A', A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 34.84, št. avtorjev: 4

GODNIČ, Irena, ZORC, Minja, JEVŠINEK SKOK, Daša, CALIN, George Adrian, HORVAT, Simon, DOVČ, Peter, KOVAČ, Milena, KUNEJ, Tanja. Genome-wide and species-wide in silico screening for intragenic microRNAs in human, mouse and chicken. *PloS one*, ISSN 1932-6203, 2013, vol. 8, no. 6, str. 1-14, e-65165. http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0065165, doi: 10.1371/journal.pone.0065165. [COBISS.SI-ID 3234696], [JCR, SNIP, WoS do 16. 9. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0, Scopus do 20. 11. 2013: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.25, normirano št. čistih citatov (NC): 1]
kategorija: 1A1 (Z1, A', A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 21.2, št. avtorjev: 8

KOMPREJ, Andreja, GORJANC, Gregor, KOMPAN, Drago, KOVAČ, Milena. Lactation curves for milk yield, fat, and protein content in Slovenian dairy sheep. *Czech Journal of Animal Science*, ISSN 1212-1819, 2012, vol. 57, no. 5, str. 231-239. [COBISS.SI-ID 3053448], [JCR, SNIP, WoS do 7. 8. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.50, normirano št. čistih citatov (NC): 2, Scopus do 3. 7. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.50, normirano št. čistih citatov (NC):

2]
kategorija: 1A2 (Z1, A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 21.43, št. avtorjev: 4
ŽEMVA, Marjeta, MALOVRH, Špela, LEVART, Alenka, KOVAČ, Milena. Fatty acid composition of meat and adipose tissue from Krškopolje pigs and commercial fatteners in Slovenia. *Archiv für Tierzucht*, ISSN 0003-9438, 2010, vol. 53, št. 1, str. 73-84. [COBISS.SI-ID 2577544], [JCR, SNIP, WoS do 11. 2. 2014: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.50, normirano št. čistih citatov (NC): 2, Scopus do 21. 1. 2014: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.50, normirano št. čistih citatov (NC): 2]
kategorija: 1A3 (Z1); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 18.14, št. avtorjev: 4
GORJANC, Gregor, KOVAČ, Milena, KOMPAN, Drago. Inference of genotype probabilities and derived statistics for PrP locus in the Jezersko-Solcava sheep. *Livestock science*, ISSN 1871-1413. [Print ed.], 2010, vol. 129, no. 2/3, str. 232-236. http://dx.doi.org/10.1016/j.livsci.2010.01.002, doi: 10.1016/j.livsci.2010.01.002. [COBISS.SI-ID 2571400], [JCR, SNIP, WoS do 5. 5. 2010: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, normirano št. čistih citatov (NC): 0, Scopus do 16. 5. 2012: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33, normirano št. čistih citatov (NC): 1]
kategorija: 1A2 (Z1, A1/2); uvrstitev: SCI, Scopus; tipologijo je verificiral OSICB
točke: 31.85, št. avtorjev: 3
KOMPREJ, Andreja, GORJANC, Gregor, KOMPAN, Drago, KOVAČ, Milena. Covariance components by a repeatability model in Slovenian dairy sheep using test-day records. *Czech Journal of Animal Science*, ISSN 1212-1819, 2009, vol. 54, no. 9, str. 426-434. [COBISS.SI-ID 2496904], [JCR, SNIP, WoS do 2. 7. 2013: št. citatov (TC): 5, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 1.00, normirano št. čistih citatov (NC): 4, Scopus do 10. 7. 2013: št. citatov (TC): 6, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 0.75, normirano št. čistih citatov (NC): 3]
kategorija: 1A2 (Z1, A1/2); uvrstitev: SCI, Scopus, MBP; tipologijo je verificiral OSICB
točke: 22.27, št. avtorjev: 4

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Ocenjevanje dobrobiti živali
Course title:	Assessment of animal welfare
Članica nosilka/UL Member:	UL BF

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Bioznanosti, tretja stopnja, doktorski (v postopku)	Ni členitve (študijski program)		Celoletni

Univerzitetna koda predmeta/University course code:	0037351
Koda učne enote na članici/UL Member course code:	3854

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
10	20	0	0	0	95	5

Nosilec predmeta/Lecturer:	Dušanka Jordan

Izvajalci predavanj:	Dušanka Jordan
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course type:	teoretični/theoretical

Jeziki/Languages:	Predavanja/Lectures:	Angleščina, Slovenščina
	Vaje/Tutorial:	Angleščina, Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Splošni pogoji za vpis na doktorski študij.	General conditions for enrolment in doctoral studies.

Vsebina:	Content (Syllabus outline):
Glavne teme, ki bodo obdelane v okviru predmeta: - obnašanje živali (sprejemanje, prenos in analiza dražljajev iz okolja, fiziološki parametri obnašanja, etogram - za vrsto značilno obnašanje…) - potrebe živali in najpogostejši dejavniki, ki onemogočajo zadovoljevanje potreb živali - posledice nezmožnosti zadovoljevanja potreb in prilagoditve živali na dražljaje iz okolja (spremembe v za vrsto značilnem obnašanju, pojav anomalij v	Major themes discussed within the course: - animal behaviour (detecting, transferring and analysing stimuli from the external environment, physiological parameters of behaviour, ethogram – species-specific behaviour…) - animal needs and the most frequent factors disabling animals to satisfy their needs - consequences for animals not being able to satisfy their needs and to cope with external environment stimuli (changes in species-specific behaviour,

obnašanju, fiziologija stresa, akutni in kronični stres…) - pomen in definicije dobrobiti živali - parametri in metode za ocenjevanje dobrobiti živali (preferenčni testi, motivacijski testi, protokoli za ocenjevanje dobrobiti, spremljanje pojava anomalij v obnašanju, čustvenih stanj, fizioloških parametrov, obolevnosti, smrtnosti, proizvodnih parametrov…), njihove značilnosti, prednosti in slabosti - najbolj pogosti problemi vezani na dobrobit živali in možne rešitve	appearance of abnormal behaviours, stress physiology, chronic and acute stress…) - importance and definitions of animal welfare - parameters and methods to assess animal welfare (preference tests, motivational tests, animal welfare assessment protocols, recording of abnormal behaviours, affective states, physiological parameters, mortality, morbidity, production parameters…), their characteristics, advantages and disadvantages - the most common problems related to animal welfare and possible solutions.

Temeljna literatura in viri/Readings:

- Fraser D. 2008. Understanding animal welfare: the science in its cultural context. Oxford,
- Wiley-Blackwell: 336 str., ISBN 978-1-4051-3695-2
- Ekesbo I. (ur) 2011. Farm animal behaviour: characteristics for assessment of health and welfare. Wallingford, CAB International: 237 str., ISBN 978-1-84593-770-6
- Blokhuis H.J., Miele M., Veissier I., Jones B (ur.) 2013. Improving farm animal welfare: science and society working together: the Welfare Quality approach. Wageningen, Wageningen Academic Publishers: 232 str, ISBN 978-90-8686-216-0
- Grandin T. (ur.) 2010. Improving animal welfare: a practical approach. Wallingford, CAB International: 328 str., ISBN 978-1-84593-541-2
- Aland A., Banhazi T. (ur.) 2013. Livestock housing: modern management to ensure optimal health and welfare of farm animals. Wageningen, Wageningen Academic Publishers: 491 str., ISBN 978-90-8686-217-7
- Broom D. M., Fraser A. F. (ur.) 2015. Domestic animal behaviour and welfare. Wallingford, Boston, CABI: 462 str.
- revijalni članki s področja, tekoča periodika, druga učna gradiva…

Cilji in kompetence:	**Objectives and competences:**
Študent bo pridobil znanje potrebno za razumevanje: - vzrokov in posledic v kolikor okolje živali ne omogoča zadovoljevanje njihovih potreb - primernosti posameznih parametrov in metod ocenjevanja dobrobiti živali - najpogostejše probleme vezane na dobrobit živali, ki so v oskrbi človeka (rejne, družne, laboratorijske živali, živali v različnih zavodih…) in možne rešitve	The student will gain knowledge necessary for understanding of: - causes and consequences if animals are not able to satisfy their needs - suitability of individual parameters and methods for assessing animal welfare the most common problems related to animal welfare in animals under the care of people (farm, companion, laboratory animals, animals in institutions…) and possible solutions

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Na podlagi pridobljenega znanja bo študent usposobljen za: - prepoznavanje možnih problemov z vidika doborbiti živali v oskrbi človeka - kritično ovrednotenje dobrega počutja živali iskanje in podajanje možnih znanstveno utemeljenih praktičnih rešitev za izboljšanje dobrobiti živali	Knowledge and understanding: On the basis of gained knowledge the student will be qualified to: - identify possible animal welfare issues in animals under the care of people - critically assess animal welfare search for and identify possible scientifically-based practical solutions for improvement of animal welfare

Metode poučevanja in učenja:	Learning and teaching methods:
Predavanja	Lectures
konzultacije	Consultations
Seminarska ali projektna naloga	Seminar or project work

Načini ocenjevanja:	Delež/Weight	Assessment:
Seminarska ali projektna naloga	80,00 %	Seminar or project work
Pisni ali ustni izpit	20,00 %	Written or oral exam

Reference nosilca/Lecturer's references:

Dušanka Jordan

1. LIERE, Diederik van, DWYER, Cathy M**., JORDAN, Dušanka**, PREMIK BANIČ, Andrea, VALENČIČ, Aleš, KOMPAN, Drago, SIARD, Nataša. Farm characteristics in Slovene wolf habitat related to attacks on sheep. Applied animal behaviour science. 2013, vol. 144, no. 1/2, str. 46-56. ISSN 0168-1591.
2. **JORDAN, Dušanka**, GORJANC, Gregor, ŠTUHEC, Ivan, ŽGUR, Silvester. Improvement of pork characteristics under commercial conditions with small amount of straw or hay. Journal of applied animal research. 2018, vol. 46, no. 1, str. 1317-1322. ISSN 0971-2119.
3. LESKOVEC, Jakob, LEVART, Alenka, ŽGUR, Silvester, **JORDAN, Dušanka**, PIRMAN, Tatjana, SALOBIR, Janez, REZAR, Vida. 2018. Effects of olive leaf and marigold extracts on the utilization of nutrients and on bone mineralization using two different oil sources in broilers. Journal of poultry science. 2018, vol. 55, no. 1, str. 17-27. ISSN 1346-7395.
4. SIARD, Nataša, **JORDAN, Dušanka**. Slovenian students' knowledge and opinions about wild boar (Sus scrofa L.). Anthrozoös : a multidisciplinary journal of the interactions of people and animals. 2018, vol. 31, no. 6, str. 741-760, ISSN 0892-7936.
5. ZUPAN, Manja, ŠTUHEC, Ivan, **JORDAN, Dušanka**. The effect of an irregular feeding schedule on equine behavior. Journal of applied animal welfare science. 2020, vol. 23, no. 2, str. 156-163, ISSN 1088-8705.
6. TERČIČ, Dušan, PANČUR, Mojca, **JORDAN, Dušanka**, ZUPAN, Manja. Effects of dimethyl anthranilate-based repellents on behavior, plumage condition, egg quality, and performance in laying hens. Frontiers in veterinary science. 2020, vol 7, art. no. 533, str. 1-13, ISSN 2297-1769

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Proizvodni sistemi v reji živali
Course title:	Animal production systems
Članica nosilka/UL Member:	

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Bioznanosti, tretja stopnja, doktorski	Ni členitve (študijski program)		Celoletni

Univerzitetna koda predmeta/University course code:	0037352
Koda učne enote na članici/UL Member course code:	3855

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
20	70	0	0	0	160	10

Nosilec predmeta/Lecturer:	Mojca Simčič

Izvajalci predavanj:	Mojca Simčič
Izvajalci seminarjev:	
Izvajalci vaj:	
Izvajalci kliničnih vaj:	
Izvajalci drugih oblik:	
Izvajalci praktičnega usposabljanja:	

Vrsta predmeta/Course type:	teoretični/theoretical

Jeziki/Languages:	Predavanja/Lectures:	Angleščina, Slovenščina
	Vaje/Tutorial:	Angleščina, Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Splošni pogoji za vpis na doktorski študij.	General conditions for enrolment in doctoral studies.

Vsebina:	**Content (Syllabus outline):**
Pri predmetu bomo spoznali proizvodne sisteme v živinoreji na nacionalnem, evropskem in svetovnem nivoju. Obravnavane bodo vse pomembne vrste rejnih živali (govedo, prašiči, ovce, koze, perutnina, konji, akvakultura) in vse pomembne proizvodne usmeritve (prireja mleka, prireja mesa, prireja jajc, prireja volne,…). Spoznali bomo katere celine in katere države priredijo največ živalskih proizvodov s katerimi zalagajo svetovne trge in kateri proizvodni sistemi so najbolj uveljavljeni in razširjeni. Poseben poudarek bo na visoko selekcioniranih	In the course, we will cover the production systems in animal husbandry at the national, European and global level. All important species of farm animals (cattle, pigs, sheep, goats, poultry, horses, aquaculture) and all important productions (milk production, meat production, egg production, wool production,…) will be considered. We will discuss which continents and which countries produce the largest amounts of animal products and how they supply the world markets as well as which production systems are the most established and

specializiranih globalnih pasmah na eni strani in na lokalnih pasmah z majhnimi populacijami na drugi strani, ki znatno prispevajo k lokalnemu trgu. Predstavili bomo primernost genotipov živali za posamezen proizvodni sistem. Predstavljene bodo dobre prakse v primarni prireji živil živalskega izvora. Pri ekoloških vidikih bomo izpostavili primerno uporabo živalskih iztrebkov in ukrepe za zaščito okolja v različnih tehnologijah reje. Obravnavana bodo najnovejša spoznanja in dileme o vplivih živinoreje na okolje (toplogredni plini, smrad,…). Spoznali bomo načrtovanje, izvedbo in analizo podatkov iz raziskav s področja različnih vrst, pasem, tehnologije reje in kakovosti živalskih proizvodov. Predstavljene bodo ustrezne metode statistične analize podatkov iz takšnih raziskav.	widespread. Particular emphasis will be placed on highly selected specialized global breeds on the one hand and on local breeds with small populations on the other hand, which make a significant contribution to the local market. We will study the suitability of different genotypes for each production system. Good practices in the primary production of food of animal origin will be presented. In the ecological aspects, we will highlight the appropriate use of animal excrement and measures to protect the environment in various rearing technologies. The latest findings and dilemmas about the effects of livestock farming on the environment (greenhouse gases, odours, …) will be discussed. We will learn about the design, implementation and data analysis considered various species, breeds, rearing technology and quality of animal products. Appropriate methods of statistical analysis of data from such studies will be presented.

Temeljna literatura in viri/Readings:

FAO. 2012. Global Livestock Production Systems. Rome, Food & Agriculture Organization, 168 str.
Squires V.R., Bryden W.L. 2019. Livestock: Production, Management Strategies and Challenges, NY, Nova Science Publishers, Inc., 532 str.
Revijalni članki s področja, tekoča periodika, druga učna gradiva…

Cilji in kompetence:	**Objectives and competences:**
Cilj predmeta je pridobitev vpogleda v raznolikost proizvodnih sistemov v živinoreji in kompetentno poznavanje teh sistemov. Študent z analitskim pristopom kompleksno prouči določeno vrsto rejnih živali v določenem proizvodnem sistemu za prirejo kakovostnih živalskih proizvodov, z upoštevanjem tehnoloških, etoloških in okoljskih zahtev.	The aim of the course is to gain an insight into the diversity of production systems in animal husbandry and a competent knowledge of these systems. With an analytical approach, each student will comprehensively recognize the most suitable farm animal species for a certain production system to produce animal products with a high quality, taking into account technological, ethological and environmental requirements.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Predvideni študijski rezultat je pridobitev poglobljenih znanj o proizvodnih sistemih v živinoreji in usposobitev kandidata za načrtovanje, izvajanje in analiziranje rezultatov raziskav s področja reje živali.	The expected study result is acquisition of deep knowledge of production systems in livestock farming and training of the student for planning, implementation and data analysis from animal husbandry researches.

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja, • Individualne konzultacije, • Samostojna priprava seminarja	• Lectures, • Individual consultations, • Independent preparation of the seminar

Načini ocenjevanja:	**Delež/Weight**	**Assessment:**
- seminar,	50,00 %	- seminar,

-	pisni izpit	50,00 %	-	written examination	

Reference nosilca/Lecturer's references:

Mojca Simčič

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