



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Program studiów

Kierunek: Animal Husbandry

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Charakterystyka kierunku

Informacje podstawowe

Nazwa kierunku:	Animal Husbandry
Poziom studiów:	studia drugiego stopnia (magister inżynier)
Profil studiów:	Ogólnoakademicki
Forma studiów:	Stacjonarne
Tytuł zawodowy nadawany absolwentom:	magister inżynier
Czas trwania studiów (liczba semestrów):	4
Liczba punktów ECTS konieczna do ukończenia studiów:	120
Liczba godzin (w tym realizowanych z wykorzystaniem metod i technik kształcenia na odległość):	1621 (18)
Liczba godzin z wychowania fizycznego*:	

*) - dotyczy studiów pierwszego stopnia i jednolitych studiów magisterskich realizowanych w formie stacjonarnej

Przyporządkowanie kierunku do dyscyplin:

Dyscyplina	Udział procentowy	ECTS
Zootechnika i rybactwo	100%	120

Sylwetka absolwenta

Absolwent potrafi metodycznie przeprowadzać eksperymenty przyrodnicze, zwłaszcza na zwierzętach, oraz opracowywać i przetwarzać ich wyniki za pomocą nowoczesnych technik informacyjnych. Jest przygotowany do pracy badawczej oraz kształcenia w szkołach doktorskich. Posiada dogłębną znajomość wartości pokarmowej i technologicznej materiałów paszowych, technologii produkcji pasz, nowoczesnych systemów żywienia zwierząt oraz rozwoju i struktury ośrodków produkcji pasz w Polsce i Chinach. Ma głęboką wiedzę w dziedzinie chowu i hodowli zwierząt oraz rozwoju infrastruktury rolniczej, ze szczególnym uwzględnieniem jednostek hodowli zwierząt (ferm) i ośrodków hodowli zwierząt w Polsce i Chinach. Absolwent o ww. kwalifikacjach jest przygotowany do pracy: na kierowniczych stanowiskach w administracji państwowej i samorządowej, w gospodarstwach rolnych i hodowlanych, w nadzorze hodowlanym i służbach inseminacyjnych, w doradztwie rolniczym, w przedsiębiorstwach zajmujących się obrotem zwierząt i produktami pochodzenia zwierzęcego. Absolwent jest przygotowany do pracy badawczej i kontynuacji edukacji na studiach w szkole doktorskiej i pracy naukowo-badawczej.

Wymiar (liczba godz. i punktów ECTS), zasady i forma odbywania praktyk

Studenci w ramach umów podpisanych z przedsiębiorcami, instytucjami, placówkami badawczymi oraz instytucjami samorządowymi studenci odbywają w ramach drugiego stopnia studiów 2 kursy zajęć praktycznych, których celem jest zapoznanie z obsługą specjalistycznego sprzętu laboratoryjnego, zwłaszcza w aspekcie realizacji pracy dyplomowej studenta. Podczas realizacji praktyk studenci nabywają umiejętności praktycznego wykorzystania wiedzy, umiejętności i kompetencji zdobytych w trakcie studiów, kluczowych dla sylwetki absolwenta. Weryfikacja efektów uczenia się uzyskanych podczas realizacji praktycznej nauki metod laboratoryjnych w naukach przyrodniczych odbywa się dwuetapowo: umiejętności praktyczne oceniane są przez osoby opiekujące się studentem w miejscu praktyki i zawarte są w dzienniku praktyk. Potwierdzeniem uzyskanych efektów jest ocena jaką otrzymuje student od opiekuna praktyk w miejscu pracy. Ocena zostaje wpisana do protokołu zaliczenia praktyk. Po zakończeniu praktyki student składa dziennik praktyk i odbywa egzamin ustny przeprowadzany przez Pełnomocnika, w czasie którego możliwe jest zweryfikowanie efektów głównie z zakresu wiedzy. Ocena końcowa z praktyk jest średnią ocen uzyskanych podczas rozmowy z Pełnomocnikiem i wystawionej przez opiekuna praktyk. Studenci z Polski praktykę zawodową odbywają w Chinach, a studenci z Chin w Polsce.

Zasady/organizacja procesu dyplomowania

Warunkiem dopuszczenia do egzaminu dyplomowego jest zaliczenie wszystkich przedmiotów i praktyk objętych planem studiów, uzyskanie 120 punktów ECTS, a także złożenie w wymaganym terminie pracy dyplomowej do 31 marca. Praca dyplomowa jest wprowadzana oraz recenzowana w systemie USOSweb - ADP (Archiwum Prac Dyplomowych). Dyplomant i opiekun pracy pisemnie poświadczają, że praca dyplomowa nie zawiera nieuprawnionych zapożyczeń i jest wykonana samodzielnie. Wszystkie prace inżynierskie na kierunku Zootechnika podlegają obowiązkowemu sprawdzeniu w systemie antyplagiatowym. W przypadkach stwierdzenia przekroczenia wskaźników podobieństwa ostateczną decyzję o dopuszczeniu pracy (po złożeniu stosownego wyjaśnienia) lub o skierowaniu sprawy do komisji dyscyplinarnej, podejmuje opiekun pracy. Praca dyplomowa oceniana jest przez trzech recenzentów, a z treścią recenzji student zapoznaje się przed egzaminem dyplomowym. Egzaminy dyplomowe przeprowadzane są w taki sposób, aby student wykazał się właściwą dla danych efektów uczenia się wiedzą i kompetencjami społecznymi. Oceny podczas egzaminu dokonują członkowie komisji egzaminacyjnej powołanej przez dziekana, w skład której wchodzi: dziekan jako przewodniczący, opiekun pracy (promotor) oraz trzech członków komisji. Ostatecznej oceny dokonuje przewodniczący komisji, zgodnie z obowiązującym regulaminem studiów, na podstawie średniej ważonej ocen z pracy dyplomowej (1/4), egzaminu dyplomowego (1/4) i średniej oceny ze studiów I stopnia (2/4). Absolwent otrzymuje wspólny dyplom (Hunan

Agriculture University i Uniwersytetu Przyrodniczego we Wrocławiu) ukończenia studiów wyższych II stopnia potwierdzający uzyskanie tytułu zawodowego magistra inżyniera.

ECTS

Liczba punktów ECTS, którą student uzyska na zajęciach wymagających bezpośredniego udziału nauczycieli akademickich lub innych osób prowadzących zajęcia i studentów	65
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Liczba punktów ECTS, którą student uzyska w ramach zajęć z dziedziny nauk humanistycznych lub nauk społecznych**	5
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Liczba punktów ECTS, którą student uzyska za zajęcia wybieralne	38
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Liczba punktów ECTS przyporządkowana zajęciom związanym z prowadzoną w uczelni działalnością naukową w dyscyplinie lub dyscyplinach, do których przyporządkowany jest kierunek studiów	103
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Liczba punktów ECTS przyporządkowana zajęciom kształtującym umiejętności praktyczne	
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**) - dotyczy kierunków innych niż przypisane do dyscyplin nauk humanistycznych lub nauk społecznych

Dopuszczalny deficyt punktów ECTS po poszczególnych semestrach

Semestr	Deficyt	Komentarz
1	12	
2	12	
3	12	
4	0	

Sekwencje przedmiotów

Semestr	Nazwa przedmiotu realizowanego	Nazwa przedmiotu poprzedzającego
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Efekty uczenia się

Wiedza

Kod	Treść
AH_P7S_WG03	Absolwent zna i rozumie w stopniu pogłębionym zagadnienia dotyczące obsługi specjalistycznego oprogramowania wykorzystywanego w produkcji zwierzęcej w Polsce i Chinach
AH_P7S_WG05	Absolwent zna i rozumie procesy zachodzące w środowisku hodowlanym i potencjalne zagrożenia dla środowiska naturalnego będące efektem produkcji zwierzęcej
AH_P7S_WG06	Absolwent zna i rozumie w stopniu pogłębionym zagadnienia z zakresu produkcji zwierzęcej; wykazuje szczegółową znajomość metod hodowlanych stosowanych w produkcji zwierzęcej w Polsce i Chinach
AH_P7S_WG07	Absolwent zna i rozumie w stopniu pogłębionym zagadnienia z zakresu towaroznawstwa surowców oraz produktów pochodzenia roślinnego i zwierzęcego powszechnie wykorzystywanych w Polsce i Chinach, a także możliwości ich modyfikacji poprzez zastosowanie zaawansowanych technik agrotechnicznych i zabiegów zootechnicznych
AH_P7S_WG08	Absolwent zna i rozumie w stopniu pogłębionym nowoczesne, innowacyjne specjalistyczne technologie, metody, systemy i wyposażenie techniczne wykorzystywane w utrzymaniu zwierząt będących przedmiotem hodowli, chowu i użytkowania oraz w procesach produkcji pasz stosowanych w Polsce i Chinach
AH_P7S_WG09	Absolwent zna i rozumie w stopniu pogłębionym zasady funkcjonowania środowiska rolniczego w Polsce i Chinach, ochrony bioróżnorodności zwierząt hodowlanych oraz uwarunkowania ekologicznej produkcji zwierzęcej i rolnictwa zintegrowanego w tych krajach
AH_P7S_WG10	Absolwent zna i rozumie szczegółowe zasady bezpieczeństwa i higieny pracy w rolnictwie i pracy ze zwierzętami
AH_P7S_WK04	Absolwent zna i rozumie prawne, ekonomiczne i społeczne uwarunkowania utrzymania zwierząt będących przedmiotem chowu, hodowli i użytkowania zwierząt, produkcji pasz oraz przetwórstwem surowców pochodzenia zwierzęcego w warunkach polskich i chińskich
AH_P7S_WK11	Absolwent zna i rozumie zasady ochrony wartości industrialnej i prawa autorskiego i rozumie konieczność zarządzania zasobami własności intelektualnej; wie jak korzystać z zasobów informacji patentowej
AH_P7S_WK12	Absolwent zna i rozumie oraz definiuje, wykorzystując zdobytą wiedzę zawodową, ogólne zasady tworzenia i rozwoju form indywidualnej przedsiębiorczości w obszarze utrzymania zwierząt będących przedmiotem hodowli, chowu lub użytkowania oraz w obszarze produkcji pasz
AH_P7S_WK13	Absolwent zna i rozumie aktualne zasady funkcjonowania polityki rolnej Polski, UE oraz Chin jak również innowacyjne procesy w rolnictwie
AH_P7S_WG01	Absolwent zna i rozumie w stopniu pogłębionym zagadnienia z zakresu fizjologii i użytkowania zwierząt
AH_P7S_WG02	Absolwent zna i rozumie w stopniu pogłębionym zagadnienia z zakresu statystyki i metod badań na zwierzętach wykorzystywanych w badaniu populacji zwierząt będących przedmiotem hodowli, chowu i użytkowania; a także zagadnienia dotyczące projektowania i prowadzenia badań w naukach przyrodniczych

Umiejętności

Kod	Treść
AH_P7S_UK02	Absolwent potrafi konstruować rozbudowane ustne i pisemne opinie, poglądy, uzasadnienia na tematy związane z utrzymaniem zwierząt będących przedmiotem hodowli, chowu lub użytkowania, lub produkcji pasz; precyzyjnie porozumiewać się z różnymi podmiotami w formie werbalnej, pisemnej i graficznej przy użyciu różnych kanałów i technik komunikacyjnych

Kod	Treść
AH_P7S_UK03	Absolwent potrafi stosować zaawansowane technologie informatyczne w pozyskiwaniu i przetwarzaniu informacji z zakresu szeroko pojętej zootechniki, w tym utrzymania zwierząt będących przedmiotem hodowli, chowu lub użytkowania, lub produkcji pasz
AH_P7S_UK10	Absolwent potrafi posługiwać się językiem obcym w zakresie zootechniki i nauk pokrewnych, zgodnie z wymaganiami określonymi dla poziomu B2+ Europejskiego Systemu Opisu Kształcenia Językowego
AH_P7S_UO09	Absolwent potrafi kierować zespołem/gospodarstwem biorąc odpowiedzialność za osiągnięte wyniki; ma świadomość szans i zagrożeń wynikających z prowadzenia działalności gospodarczej w sektorze produkcji zwierzęcej
AH_P7S_UUW08	Absolwent potrafi samodzielnie zaplanować i realizować plan ustawicznego podnoszenia kwalifikacji oraz inspirować i organizować proces uczenia się innych osób
AH_P7S_UW01	Absolwent potrafi samodzielnie wyszukiwać, analizować i wykorzystywać informacje pochodzące z różnych źródeł - dokumentacji utrzymania zwierząt będących przedmiotem hodowli, chowu lub użytkowania, lub dokumentacji związanej z procesem produkcji pasz
AH_P7S_UW04	Absolwent potrafi samodzielnie formułować problemy badawcze, dobierać odpowiednie metody i techniki badawcze w zakresie szeroko pojętej produkcji zwierzęcej i produkcji pasz; prawidłowo interpretować rezultaty, wyciągać wnioski i wskazywać kierunki dalszych badań; oraz samodzielnie opracować projekty z zakresu produkcji zwierzęcej
AH_P7S_UW05	Absolwent potrafi samodzielnie projektować i weryfikować innowacyjne systemy utrzymania zwierząt będących przedmiotem hodowli, chowu lub utrzymania oraz systemy produkcji pasz; dokonać szczegółowej analizy ekonomicznej i modyfikacji każdego etapu produkcji zwierzęcej lub produkcji pasz z identyfikacją i uwzględnieniem elementów krytycznych i zrealizować je w konkretnych warunkach produkcyjnych zarówno w Polsce jak i w Chinach
AH_P7S_UW06	Absolwent potrafi samodzielnie dokonać oceny warunków utrzymania zwierząt będących przedmiotem hodowli, chowu lub utrzymania jak również stanu zdrowia zwierząt oraz dobrać odpowiednie metody ich optymalizacji
AH_P7S_UW07	Absolwent potrafi przygotować typowe prace pisemne/wystąpienia ustne w języku polskim i języku obcym, dotyczące zagadnień szczegółowych dla dyscypliny zootechnika i dyscyplin pokrewnych

Kompetencje społeczne

Kod	Treść
AH_P7S_KK01	Absolwent jest gotów do krytycznej oceny posiadanej wiedzy oraz wykorzystywania odpowiednich źródeł informacji krytycznie oceniając ich wartość
AH_P7S_KO02	Absolwent jest gotów do myślenia i działania w sposób przedsiębiorczy ze świadomością realizacji zamierzonego przez siebie lub innych celu i odpowiedniego określania priorytetów służących jego realizacji
AH_P7S_KO03	Absolwent jest gotów do podejmowania działań mających na celu ograniczenie negatywnego wpływu produkcji zwierzęcej na środowisko
AH_P7S_KR04	Absolwent jest gotów do utożsamiania się z wartościami, celami i zadaniami realizowanymi w praktyce zootechnicznej; podejmowania odpowiedzialności związanej z wykonywaniem zawodu zootechnika i dostrzegania istoty etyki zawodowej w podejmowanych działaniach

Sylabusy



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Mathematical Statistics Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc6943bd
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty kierunkowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination exam	Number of ECTS points 4
	Activities and hours lecture: 15, laboratory classes: 30	

Goals

C1	The student gains basic knowledge of the mathematical statistics and acquires skills in its practical application. In particular, the student acquires the ability to perform a statistical description of the data, hypothesis testing, statistical inference, modeling the relationship between features and variability of features. These messages allow independent analysis of data and interpretation of the results of such analysis.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	properly choose the appropriate statistical analysis methods.	AH_P7S_WG02	written exam, oral exam, written credit, oral credit, observation of student's work, active participation, test
Skills - Student can:			
U1	is able to formulate correct conclusions based on the collected data and on the results of its statistical analysis.	AH_P7S_UK03	written exam, oral exam, written credit, oral credit, observation of student's work, active participation, test

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	30	
lesson preparation	8	
exam participation	2	
exam / credit preparation	20	
consultations	22	
class preparation	21	
Student workload	Hours 118	ECTS 4
Workload involving teacher	Hours 69	ECTS 2
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	1.Introductory lecture 2.R package - basic work tool 3.Introduction to Statistics; Populations and samples 4.Hypotheses testing and parameter estimation 5.Most widely used statistical tests I 6.Most widely used statistical tests II 7.Correlation and regression 8.Analysis of variance 9.Summary and discussion	lecture

2.	1.R package - basic work tool 2. Hypothesis testing and parameter estimation 3.-6. Most commonly used statistical tests 7. Correlation and regression 8. Analysis of variance. Test 9. Summary and discussion	laboratory classes
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Course advanced

Teaching methods:

computer lab/laboratory, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam, oral exam	50.00%
laboratory classes	written credit, oral credit, observation of student's work, active participation, test	50.00%

Entry requirements

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UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

New developments in animal genetics and breeding Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc6b4608
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty kierunkowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination exam	Number of ECTS points 4
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	During the course students learn about new technologies and new solutions in genetics and possibility to use them in animal breeding.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	new developments in genetics and breeding.	AH_P7S_WG01, AH_P7S_WG02	written exam, project, presentation
W2	using new technologies in animal breeding.	AH_P7S_WG01, AH_P7S_WG02	written exam, project, presentation

Skills - Student can:			
U1	to make a project of the breeding used new developments in genetics and breeding.	AH_P7S_UK03, AH_P7S_UW04, AH_P7S_UW05	project, observation of student's work, presentation
U2	applied a proper newest genetic methods to developed animal breeding.	AH_P7S_UK03, AH_P7S_UW04, AH_P7S_UW05	project, observation of student's work, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	30	
presentation/report preparation	15	
project preparation	20	
exam / credit preparation	20	
Student workload	Hours 100	ECTS 4
Workload involving teacher	Hours 45	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	Genetic polymorphism and genetic markers Marker assisted selection Sequencing methods Genome analysis Genomic selection GBV vs. EBV Transgenic animals and crioconservation	lecture
2.	Molecular analysis of polymorphisms Sequencing and miccroarrays analysis Computer programms used to molecular data analysis Methods of EBV and GBV estimations Project - design of breeding assumptions using new genetics achievements Presentation of the projects	practical classes

Course advanced

Teaching methods:

project-based learning (PBL), lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam	50.00%
practical classes	project, observation of student's work, presentation	50.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Modern systems and techniques of livestock feeding Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc6ce1fc
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty kierunkowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 1	Examination exam	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	to make students familiar with the criteria for the classification of feed materials, digestion, absorption and use of nutrients depending on the structure of the digestive system;
C2	to provide students with knowledge of the fundamentals of daily diet and complete mixtures formulation depending on the species and direction of use of farm animals;
C3	to provide students with knowledge of farm animal feeding systems and techniques;

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the rules for the classification of feed materials and is able to characterize basic feeds in terms of their nutritional value, nutritional usefulness or the presence of anti-nutritional substances. The student knows the technologies of production, storage and processing of feed materials;	AH_P7S_WG07, AH_P7S_WG08	written exam
W2	processes of digestion, absorption and transformation of basic nutrients, vitamins and minerals in monogastric and ruminant animals. The student knows and understands metabolic disorders being the result of nutritional errors;	AH_P7S_WG06, AH_P7S_WG07, AH_P7S_WG08	written exam
W3	fundamentals of various systems for assessing the nutritional value of feed and to define and express the maintenance and production requirement of various species / groups of livestock animals in units characteristic for specific nutritional recommendations;	AH_P7S_WG06, AH_P7S_WG07	written exam
Skills - Student can:			
U1	choose appropriate feeds for various animal species, knowing their characteristics and taking into account their impact on the physiology and economics of nutrition. Is able to choose the right feed additives;	AH_P7S_UW05	project, observation of student's work, active participation, report, test, participation in discussion
U2	formulate daily diet and concentrate mixtures recipes for various species of farm animals (ruminants and monogastric animals) taking into account the directions of the assumed animal production;	AH_P7S_UW05	project, observation of student's work, active participation, report, test, participation in discussion
U3	interpret and describe the results of the obtained calculations related to the assessment of the nutritional value of feed.	AH_P7S_UW04, AH_P7S_UW05	project, observation of student's work, active participation, report, test, participation in discussion
Social competences - Student is ready to:			
K1	accept responsibility for decisions made in the field of proper animal nutrition and the effects of nutritional mistakes;	AH_P7S_KK01	active participation
K2	continuous updating knowledge in the field of physiology of animal nutrition and feed science;	AH_P7S_KR04	active participation
K3	accept the responsibility for the effects of the burden on the environment related to animal nutrition - the production of greenhouse gases, the emission of unused metabolites - and strives, through appropriate nutritional measures, to minimize them.	AH_P7S_KR04	active participation

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	30

consultations	5	
presentation/report preparation	20	
report preparation	10	
project preparation	10	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 50	ECTS 2
Practical workload	Hours 40	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Lectures: 15 x 1h</p> <ol style="list-style-type: none"> 1. Digestion, absorption and metabolism of carbohydrates in monogastric animals and ruminants. 2. Digestion, absorption and metabolism of monogastric animals and ruminants. Other nitrogen compounds found in feed materials. Evaluation of the biological value of proteins, the concept of an ideal white standard and protected protein / amino acids. 3. Digestion, absorption and transformation of fat in monogastric animals and ruminants. 4. Classification and importance of minerals. Role, symptoms of deficiency and / or toxicity of individual macro- and microelements. 5. Classification and importance of vitamins. Role, symptoms of deficiency and / or toxicity of individual vitamins. 6. Energy systems for assessing the nutritional value of feeds. 7. Classification and nomenclature of feed materials. Nutritional value and nutritional importance of roughage. 8. Nutritional value and nutritional importance of concentrated feeds. 9. Feed additives - distribution, purpose, applicable legal regulations. 10. Anti-nutritional substances in feed materials - occurrence, impact on animal health and productivity, methods of deactivating the activity of anti-nutritional substances. 11. Feed preparation methods and their effect on digestibility of nutrients. The method of preparation of feed depending on the animal species for which they are intended. Feed preservation methods. 12. Physiological foundations of cattle nutrition - nutritional value of feed in cattle nutrition, feeding systems - feeding technique. Metabolic disorders resulting from improper feeding of cattle. 13. Physiological basis of pig nutrition: sows, piglets and piglets, pigs for fattening. Demand of particular groups for nutrients. Pig feeding systems, food-related diseases in pigs - causes, symptoms and prevention. 14. Physiological basics of poultry feeding: specification of keeping and feeding laying hens, feeding chickens for fattening - the demand for energy and nutrients, methods to improve the use of feed, the use of feed additives. Feeding-related chicken and chicken diseases. 15. Nutritional methods of reducing the burden on the environment of metabolites from animal production. 	lecture
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2.	<p>Exercices: 15 x 2h</p> <ol style="list-style-type: none"> 1. Feed digestibility coefficients (apparent and true digestibility). Technique of conducting digestibility trials with biological methods - in vivo (classic balance method, differential balance method, in sacco and in situ methods) and chemical methods. Calculation of apparent digestibility coefficients based on numerical data. Interpretation of obtained results. 2. Metabolic balance - calculation of feed production effect on the basis of C and N balance. Methods for assessing the biological value of feed proteins. 3. Calculation of the biological value of feed protein by chemical methods - the Oser'a and Block-Mitchel's methods. 4. Rules for the use of non-protein (synthetic) nitrogen compounds in the feeding of ruminants. Calculation of the amount of addition of various nitrogen sources from non-protein nitrogenous compounds to feed depending on the degree of coverage of total protein needs required. Interpretation of obtained results. 5. Feed energy value units. Energy metabolism in the body: from gross energy to net energy. Food / energy units used in various feeding systems of monogastric animals (European for poultry, pigs, horses) and energy value according to the NEL system - for ruminants. Calculation based on figures, in accordance with the relevant mathematical formulas: net energy values units for lactation - for a dairy cow; metabolic energy for pigs and digestible energy for horses. 6. Formulation of feed rations for ruminants in the INRA system. Basic concepts: energy system - UFL and UFV, protein system (RDP, RUP, PDI (PDIN, PDIE), system of fill units, fill value of roughage, forage capacity. 7. Formulation of feed doses for breeding heifers (selected breeds) in accordance with the INRA system recommendations - working with standards, determining animal demand, selection of feed materials, optimization of the feed dose. 8. Formulation of feed rations for ruminants in the DLG system. Basic concepts related to the system: dairy cow feeding standards, estimation of the feed value of feed, rules for determining the demand for total protein available in the small intestine and rules for calculating the nBO value in feed, energy demand (MJ-NEL). Formulation of feed rations for a dairy cow. <p>9. Exercices: 10 x 2h</p> <ol style="list-style-type: none"> 10. Feed digestibility coefficients (apparent and true digestibility). Technique of conducting digestibility trials with biological methods - in vivo (classic balance method, differential balance method, in sacco and in situ methods) and chemical methods. Calculation of apparent digestibility coefficients based on numerical data. Interpretation of obtained results. 11. Metabolic balance - calculation of feed production effect on the basis of C and N balance. Methods for assessing the biological value of feed proteins. 12. Calculation of the biological value of feed protein by chemical methods - the Oser'a and Block-Mitchel's methods. 13. Rules for the use of non-protein (synthetic) nitrogen compounds in the feeding of ruminants. Calculation of the amount of addition of various nitrogen sources from non-protein nitrogenous compounds to feed depending on the degree of coverage of total protein needs required. Interpretation of obtained results. 14. Feed energy value units. Energy metabolism in the body: from gross energy to net energy. Food / energy units used in various feeding systems of monogastric animals (European for poultry, pigs, horses) and energy value according to the NEL system - for ruminants. Calculation based on figures, in accordance with the relevant mathematical formulas: net energy values units for lactation - for a dairy cow; metabolic energy for pigs and digestible energy for horses. 15. Formulation of feed rations for ruminants in the INRA system. Basic concepts: energy system - UFL and UFV, protein system (RDP, RUP, PDI (PDIN, PDIE), system of fill units, fill value of roughage, forage capacity. 	practical classes
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Course advanced

Teaching methods:

teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam, active participation, participation in discussion	50.00%
practical classes	project, observation of student's work, active participation, report, test	50.00%



UNIwersytet Przyrodniczy we Wrocławiu

Ergonomy in animal production Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc74432f
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills Yes

Period Semester 1	Examination graded credit	Number of ECTS points 2
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	Directions of contemporary research of ergonomics, corrective and conceptual ergonomic, types of ergonomic diagnoses, source of biological cost of work, factors of physical environment of work, anthropometric data - the basis for the design workplaces, ergonomic of mental work. Directions of contemporary research of ergonomics, corrective and conceptual ergonomic, types of ergonomic diagnoses, source of biological cost of work, factors of physical environment of work, anthropometric data - the basis for the design workplaces, ergonomic of mental work.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	knows the research objectives and methodology of occupational health and safety and ergonomics; knows functional determinants of system: man-machine and human - environment	AH_ P7S_WG10	observation of student's work, presentation, participation in discussion
W2	defines the factors material environment of work and their impact on productivity, health workers and the risk of accidents at work	AH_ P7S_WG10	observation of student's work, presentation, participation in discussion
Skills - Student can:			
U1	perform measurements parameters of the working environment in order to evaluate the ergonomic adaptation of workplaces	AH_ P7S_UUW08	report, participation in discussion, practical training report
U2	use the diagnostic techniques to assess the level of occupational risk and biological work load in animal farms	AH_ P7S_UUW08	report, participation in discussion, practical training report
Social competences - Student is ready to:			
K1	is aware of the risks in incorrectly designed environment of work	AH_ P7S_KK01	report, participation in discussion, practical training report
K2	correctly formed his place of work	AH_ P7S_KO02	report, participation in discussion, practical training report

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	30	
presentation/report preparation	10	
consultations	3	
Student workload	Hours 58	ECTS 2
Workload involving teacher	Hours 48	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>1. Ergonomics as an interdisciplinary science; research directions of modern ergonomics; the role of corrective and conceptual ergonomics in the process of humanization of work; social and economic aspects of ergonomics - 2 hours.</p> <p>2. Physiology of work; forms of work and their qualification; biorhythms and their impact on changes in the level of work productivity; cost source of biological process work; fatigue as a homeostasis signal; ways of counteracting fatigue; training and its role in shaping the physical capacity - 2 hours.</p> <p>3. Physiology of work - conditioning systems functional receptors; anatomy of eye and ear; characteristics of seeing process; the structure of the field of seeing; parameters listening experience; the impact of acoustic stimuli; the impact of vibration on the human body - 2 hours.</p> <p>4. Anthropometry task in the process of optimization of work; anthropometric data - the basis for verification of design standards; ergonomic design methodology; anthropometry in designing workspace for children, the elderly and the disabled people - 2 hours.</p> <p>5. Ergonomics mental work; excitatory and inhibitory processes in the central nervous system work; the role of memory and attention; Phase mental work - hazards caused by errors in individual.</p> <p>6. Physical factors for zootechnics working environment: temperature, humidity, air movement, radiation, work in difficult weather conditions - 2 hours.</p> <p>7. Chemical and biological environment of work - 2 hours.</p> <p>8. Night work and shift work - 1 hour.</p>	lecture
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2.	<p>1. Working as a unique feature of the species Homo sapiens (morphological conditions);</p> <p>measurements of physical activity; indicator of restitution; methods for determining physical fitness (Harvard test, Ruffier test);</p> <p>measurements of dynamic and static muscle work - 2 hours.</p> <p>2. Functional changes parameters of the cardiovascular system (pulse rate, blood pressure) and respiratory system (respiratory rate, minute ventilation of the lungs); study of selected process parameters of seeing (blind spot, strobe effects, optical illusions) - 2 hours.</p> <p>3. Anthropometric principles formation of the work areas; work zone; the shapes and dimensions of the seats (diagnosis ergonomic equipment in the exercise room); comfort zone and visual identification - 4 hours.</p> <p>4. Biological standards as ergonomic frame of reference - the criteria for the creation of standards; percentile scale, interpretation of percentile morphological characteristics; Biological factors conditioning the diversity of design standards and the need to update the standards: secular trends and their biological conditions - 4 hours.</p> <p>5. Body positions at workplaces and their effect on the functioning of the human body; methods for assessing the risk of bone and muscle injuries in the workplace - OWAS, REBA - 3 hours.</p> <p>6. Methods and diagnostic techniques in ergonomics: ergonomic checklist, CET II (The Control Ergonomic Test II); procedures for designating occupational risks (RISK SCORE method) - 3 hours.</p> <p>7. The principles of ergonomic design of workplaces at the computer; ergonomic diagnosis of workplaces at computer; computer programs in ergonomic (Micro-BHP, STER 7.0 ErgoAsystem, ErgoPauzer) - 2 hours.</p> <p>8. Measurements the physical factors of work environment - field course (thermometry, actinometry, psychometrics, anemometry) - 4 hours.</p> <p>9. Measurements of gas concentrations in the workplace in livestock buildings on the example of ammonia (lab exercises.) - 2 hours.</p> <p>10. Measurements of odor nuisance at the workplace in livestock buildings (fieldwork) - 2 hours.</p> <p>11. Measurement of dust air with dust separation fractions (lab classes.) - 2 hours.</p>	practical classes
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Course advanced

Teaching methods:

case analysis, educational game, presentation / demonstration, teamwork, discussion, lecture, practical simulation training, classes

Activities	Examination methods	Percentage in subject assessment
lecture	observation of student's work, presentation	40.00%
practical classes	report, participation in discussion, practical training report	60.00%



UNIwersytet Przyrodniczy we Wrocławiu

Diploma seminar I Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc7551ce
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills Yes

Period Semester 1	Examination graded credit	Number of ECTS points 2
	Activities and hours seminar: 30	

Goals

C1	To familiarize students with the structure and aim of a master thesis.
C2	To familiarize students with the principles of preparing a presentation on a master thesis.
C3	Transfer of knowledge regarding the presentation of the results of oral work and multimedia presentation, and improving the skills to discuss the research problem.
C4	Improving the ability to search and verify various sources of information and their use to formulate and discuss a research problem.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
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Knowledge - Student knows and understands:			
W1	The student is ready to demonstrate advanced knowledge of statistics and research methods on animals and has advanced knowledge on the design and conduct of a research.	AH_P7S_WK11, AH_P7S_WG01, AH_P7S_WG02	observation of student's work, active participation, presentation, participation in discussion, case study
Skills - Student can:			
U1	The student can document the results of his/her research tasks, skillfully compare them with other sources and formulate the appropriate conclusions.	AH_P7S_UK02, AH_P7S_UK03	observation of student's work, presentation, case study
U2	The student can prepare the presentation of his/her research results, compare it with research results of other authors and lead the discussion as well find and apply innovative solutions.	AH_P7S_UK02, AH_P7S_UK03	observation of student's work, active participation, presentation, participation in discussion
U3	The student is able to clearly formulate the research goal and adapt the methods to obtain it.	AH_P7S_UW04	observation of student's work, active participation, presentation, participation in discussion
Social competences - Student is ready to:			
K1	The student is ready for critical assessment of obtained knowledge, can use appropriate sources of information subjecting them to substantive analysis.	AH_P7S_KK01	observation of student's work, active participation, presentation, participation in discussion, case study

Balance of ECTS points

Activity form	Activity hours*	
seminar	30	
presentation/report preparation	10	
literature study	20	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>1-2. Elaboration of Diploma Thesis concept, discussion of the requirements for such studies.</p> <p>3-6. Selection of the subject of the thesis - seminar discussion.</p> <p>7-8. Choosing a Catchy Title for Your thesis - seminar discussion.</p> <p>9-10. How to perform an excellent literature review - seminar discussion.</p> <p>11-12. How to make a good presentation - seminar discussion.</p> <p>13-30. Oral presentations of students.</p>	seminar
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Course advanced

Teaching methods:

case analysis, text analysis, brainstorming, educational film, foreign language (conversation classes), problem-solving method, presentation / demonstration, teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
seminar	observation of student's work, active participation, presentation, participation in discussion, case study	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Innovations Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc786ac5
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty ogólne prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination graded credit	Number of ECTS points 1
	Activities and hours lecture: 15	

Goals

C1	Classes should prepare students to generate innovative ideas by various methods of searching of solutions in the field of science, technology and organization in the field of study area . The implemented own project should concern innovative solutions that can be implemented.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	basic concepts of innovation	AH_P7S_WK12, AH_P7S_WK13	written credit
W2	ways to stimulate individual and group creativity	AH_P7S_WK12	written credit

W3	heuristic methods and systematic searching of the solution field.	AH_P7S_WK12	written credit
Skills - Student can:			
U1	Search innovative solutions by different methods adequate to the needs and opportunities	AH_P7S_UW01	written credit, project
U2	evaluate of solutions by various methods in order to select the solutions to be implemented	AH_P7S_UW06	written credit, project
U3	defense of own innovative solutions in the area of science, technology, organization	AH_P7S_UK02	presentation
Social competences - Student is ready to:			
K1	thinking and acting in an entrepreneurial and innovative way	AH_P7S_KO02	written credit, project
K2	looking for unconventional solutions	AH_P7S_KO02	written credit, project
K3	recognizing the benefits of using one's own knowledge and sharing knowledge in a group	AH_P7S_KK01	written credit, project

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
project preparation	10	
presentation/report preparation	5	
Student workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	During design classes students will look for innovative solutions for issues related to their field of study. Further, it is envisaged to specify the search area, apply heuristic methods and methods of systematic searching of the solution field, determine the set of solutions, select assessment criteria and final selection of the solution to be implemented, prepare the project implementation schedule and the demand for capital over time. A presentation and defense of the project before the commission are also planned.	lecture

Course advanced

Teaching methods:

project-based learning (PBL), discussion

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, project, presentation	100.00%

Entry requirements

Completing the 'Academic Entrepreneurship' course.



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Animal welfare in zoological gardens Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc6df4d5
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 15, field training: 5	

Goals

C1	Aims and tasks of zoos and their connections with animal husbandry and agriculture. Outline of the history of zoos. A review of selected zoos. Handling, breeding, welfare and behaviour of wild animals (EAZA). The organization and arrangement of rooms, cages and enclosures for wild animals. Legal protection of animals in zoos. Washington Convention (CITES). Red Book. Extinct, endangered and threatened species. A review of selected species of animals kept in zoos. The main zoonotic threats. The course is supplemented by numerous practical trips organized in thematic zoological gardens (Wrocław / Opole / Dvur Kralove).
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	advanced knowledge in the field of welfare, trade and transport of wild animals as well as the Polish and international legal instruments in this area	AH_P7S_WG01	written credit
W2	what is the importance of ensuring appropriate conditions for animals in zoos, understand the principles of the protection of animals in zoos and their links with animal husbandry and agriculture	AH_P7S_WK04	written credit
W3	the possibility of practical use of knowledge in the field of animal handling and management cages for animals	AH_P7S_WK12	written credit
Skills - Student can:			
U1	carry out biological observations, interprets and discusses the results and formulate appropriate conclusions using scientific terminology	AH_P7S_UW01	project, observation of student's work, presentation
U2	observes the impact of the environmental factors on animals kept in zoos, explains the interactions between the ecosystem and identify potential risks for the animals	AH_P7S_UW05	project, observation of student's work, presentation
U3	to prepare reports, projects, papers and other presentations in the field using relevant legislation and legal acts	AH_P7S_UW06	project, observation of student's work, presentation
Social competences - Student is ready to:			
K1	to show interest in updating the knowledge of animal biology and appropriate living conditions in zoos	AH_P7S_KK01	project, observation of student's work, presentation
K2	to be sensitive to nature as a set of cognitive, aesthetic, educational and tourism purposes; takes aware of the importance of biodiversity and promotes the animal protection and quality of the environment	AH_P7S_KO02	project, observation of student's work, presentation
K3	to taking into account the civilization progress is aware of environmental risks for humans and animals; has the ethical attitude to animals	AH_P7S_KO03	project, observation of student's work, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	15	
field training	5	
lesson preparation	10	
presentation/report preparation	20	
exam / credit preparation	20	
Student workload	Hours 85	ECTS 3

Workload involving teacher	Hours 35	ECTS 1
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* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>1. Zoo as part of applied ecology. Aims and tasks of zoos and their relationship with animal husbandry and agriculture. An outline of the history of zoos. Duration of the lecture: 2 h</p> <p>2. Review of selected Polish and foreign zoos. Duration of the lecture: 2 h</p> <p>3. European Association of Zoos and Aquaria (EAZA). Welfare of wild animals. Duration of the lecture: 2 h</p> <p>4. Zoological Gardens in international legal acts. The Convention on International Trade in Endangered Species (Washington Convention - CITES). Overview of EU and national legislation. Duration of the lecture: 2 h</p> <p>5. Protection of wildlife in Poland and in the world. International Union for Conservation of Nature. The Red Book of Animals. Extinct, endangered and threatened species. Duration of the lecture: 2 h</p> <p>6. Basics of zoogeography. Regional zoogeography. The educational role of zoos. Duration of the lecture: 2 h</p> <p>7. Safari and tourism as a form of organized recreation. Duration of the lecture: 2 h</p> <p>8. Evaluation of animal welfare in Polish and foreign zoos. Written test. Duration: 1 hour</p>	lecture
2.	<p>1. The animals protected species. Environmental protection of living animals. The organization and management of the environment for wild animals in zoo. Duration of course: 2 h</p> <p>2. Breeding and protection of wild animals. Genetic material as a source of information. The role of a closed breeding centres. Safety rules during contacts with wild animals. Basic zoonoses. Duration of course: 2 h</p> <p>5. Opportunities to increase welfare on the basis of existing facilities. Final test - written job control (exercise material). Duration of classes: 2 h</p>	practical classes
3.	<p>3. Overview of selected fish kept in zoos. Overview of selected amphibians kept in zoos. Overview of selected reptiles kept in zoos. Overview of selected birds kept in zoos. Overview of selected mammals kept in zoos. Duration of course: 2 h. Outdoor activities (Zoo - Wroclaw or Zoo Opole). Duration of course: 7 h</p> <p>4. Overview of selected fish kept in zoos. Overview of selected amphibians kept in zoos. Overview of selected reptiles kept in zoos. Overview of selected birds kept in zoos. Overview of selected mammals kept in zoos. Duration of course: 2 h. Outdoor activities (Zoo Opole or Zoo Dvur Kralove). Duration of course: 7 h</p>	field training

Course advanced

Teaching methods:

case analysis, text analysis, brainstorming, educational film, problem-solving method, situation-based learning, presentation / demonstration, teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	80.00%
practical classes	project, presentation	15.00%
field training	observation of student's work	5.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Physiological foundations of dog and cat nutrition Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc70055f
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 12, project classes: 8	

Goals

C1	to make students familiar with the structure of the digestive system and physiology of dogs and cats digestion and the nutritional behavior of these animals with their food preferences;
C2	to provide the knowledge on the characteristics of the basic components of feeds for these animals, with particular emphasis on their composition and usefulness in feeding specific groups of animals, as well as the most common eating errors and disorders that may result from them;
C3	to provide the knowledge on principles of designing food rations followed by dog and cat food, taking into account their physiological condition, age, type of work and other factors that have a key impact on the need for individual nutrients, amino acids, vitamins and minerals.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	differences in the structure of the digestive system of dogs and cats and associate these differences with different physiology of digestion and absorption of nutrients;	AH_P7S_WG01	written credit, active participation
W2	individual components used in feeding dogs and cats taking into account their usefulness in feeding these two species of animals;	AH_P7S_WK04	written credit, active participation
W3	the most common mistakes made in feeding dogs and cats and link them to metabolic disorders that are caused by them.	AH_P7S_WG01	written credit, active participation
Skills - Student can:			
U1	compose a recipe / composition of food for various groups of dogs and cats, taking into account their physiological condition;	AH_P7S_UK03, AH_P7S_UW01	project, active participation, report, participation in discussion, performing tasks
U2	select appropriate components and balance the daily food ration for dogs and cats taking into account the physiological condition of the animal;	AH_P7S_UW01, AH_P7S_UW07	project, active participation, report, participation in discussion, performing tasks
U3	prevent the occurrence of nutritional errors, correct inadequate food doses, taking into account animal health.	AH_P7S_UW01, AH_P7S_UW04	project, active participation, report, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	take responsibility for the effects of improper nutrition of dogs and cats - feels responsibility for animal health as one of the most important aspects of eating mistakes;	AH_P7S_KK01, AH_P7S_KO02	active participation
K2	work in a group and actively search for key information necessary for proper nutrition of dogs and cats, being aware of the changes and progress of nutritional science - which forces him to constantly update his knowledge and skills.	AH_P7S_KO02, AH_P7S_KR04	active participation

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	12
project classes	8
consultations	5

presentation/report preparation	20	
project preparation	20	
report preparation	10	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 40	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Lectures: 15 x 1h</p> <ol style="list-style-type: none"> 1. Anatomy of the digestive system and physiology of digestion of dogs and cats. Part I Dogs. 2. Anatomy of the digestive system and physiology of digestion of dogs and cats. Part II Cats. 3. Feeding behavior of dogs and cats - food preferences. 4. Sources of nutrients in the nutrition of dogs and cats. 5. The digestibility of individual nutrients from the diet components of dogs and cats. 6. Comparison of sources and use of energy from the diet of dogs and cats. Energy balance. Resting metabolism, voluntary physical activity, postprandial thermogenesis, adaptive thermogenesis. The problem of obesity in dogs and cats. 7. Factors affecting the size of the food dose. 8. Carbohydrates of health importance in the nutrition of dogs and cats (e.g. lactose, lactulose, sucrose). Demand of dogs and cats for digestible carbohydrates. The role of dietary fiber. 9. Protein and amino acids in the nutrition of dogs and cats. The biological value of protein for dogs and cats. Essential amino acids essential for health (arginine, taurine). Demand for dogs and cats for protein. Metabolic disorders and diseases resulting from inadequate supply of protein and amino acids in the diet of dogs and cats. 10. Fats and their role in feeding dogs and cats. Essential fatty acids. Feeding recommendations in doses for dogs and cats. 11. Minerals, role, demand of dogs and cats, disorders resulting from inadequate dose balancing for dogs and cats. 12. The role and demand for vitamins in the nutrition of dogs and cats. Metabolic disorders resulting from inadequate vitamin balance. 13. Feeding methods for dogs and cats - commercial feeds vs. home food. Feed additives. 14. Raw materials for dog and cat food (raw materials of animal and vegetable origin). Technological processes in the production of commercial feeds and their impact on the availability of nutrients. Raw materials used in home diets. Vegetarian diets for cats and dogs. 15. Prevention of nutrition for dogs and cats - prevention of obesity, urolithiasis, FLUTD, prevention of bone diseases, prevention of osteoarthritis, heart disease. Allergies and poisonings. 	lecture
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2.	<p>Excercises: 6 x 2h</p> <ol style="list-style-type: none"> 1. Calculation of the digestibility of nutrients in the diet components of dogs and cats. Assessment of the possibility of using individual components in the diets of dogs and cats. 2. Calorific evaluation of food used in dog and cat nutrition based on modified Atwater coefficients. 3. Evaluation of the biological value of protein in animal and plant components of food doses of dogs and cats. 4. Calculation of the daily energy requirements of dogs and cats. Determining nutrient requirements in dogs and cats. 5. Formulation of a food dose based on selected components for adult dogs of selected breeds. 6. Formulation of food doses based on selected components for bitches in various stages of pregnancy. Arranging feed rations based on selected components for lactating bitches. 	practical classes
3.	<p>Excercises: 4 x 2h</p> <ol style="list-style-type: none"> 1. Formulation of food doses based on selected components for puppies after weaning. Arranging food doses based on selected components for adult cats. 2. Formulation of food doses based on selected components for females in various stages of pregnancy. Laying food rations based on selected components for nursing cats. 3. Formulation of food doses based on selected components for kittens growing after weaning. 4. Formulation of food doses for obese cats and dogs (low calorie diets). Arranging food doses for dogs and cats with food allergies. 	project classes

Course advanced

Teaching methods:

project-based learning (PBL), teamwork, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, active participation, participation in discussion	60.00%
practical classes	active participation, report, performing tasks	20.00%
project classes	project	20.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Technological characteristics of feed raw materials Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc71a99a
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 12, field training: 8	

Goals

C1	includes issues in field of detailed characteristics raw materials and components with consideration of physical technological properties. On activities students learn about factors affecting on quality of raw materials.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the chemical composition of raw materials, their both energetic and protein value and knows the principles of using of particular raw materials in feed mixtures.	AH_ P7S_WK04	active participation, presentation, participation in discussion, performing tasks
W2	the factors affecting the nutritive and technological value of raw materials.	AH_ P7S_WG07	active participation, presentation, participation in discussion, performing tasks
W3	the limitations related to the application of feed raw material followed from their natural and acquired features.	AH_ P7S_WG05	active participation, presentation, participation in discussion, performing tasks
Skills - Student can:			
U1	interpret the differences in chemical composition between particular tranches (batches) of raw feed material and on the basis of defined properties the student can choose the raw materials needed to the calculation of feed mixtures for different animal species and technological groups.	AH_ P7S_UW04	observation of student's work, active participation, presentation, participation in discussion, performing tasks
U2	to recognize the technological and physical properties of the raw materials and quality of the raw materials which are useful in feed industry.	AH_ P7S_UW05	observation of student's work, active participation, presentation, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	on the dependency between the quality of the used raw material, and the quality of the animal origin products and animal and human health.	AH_ P7S_KK01	observation of student's work, active participation, participation in discussion, performing tasks
K2	of the possibilities to reduce the risk of a negative impact of poor quality feed mixtures carried by the honest evaluation and selection of raw materials used for their manufacture.	AH_ P7S_KO03	observation of student's work, active participation, participation in discussion, performing tasks
K3	of continuous improvement of knowledge on the new methods for the evaluation of feed raw materials quality and has consciousness on the responsibility for the tasks realized in the team.	AH_ P7S_KR04	observation of student's work, active participation, participation in discussion, performing tasks

Balance of ECTS points

Activity form	Activity hours*
lecture	15

practical classes	12	
field training	8	
lesson preparation	10	
consultations	10	
presentation/report preparation	10	
project preparation	10	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 45	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<ol style="list-style-type: none"> 1. Detailed characteristics of raw materials and components of commercial mixtures (sources of energy, protein, minerals, etc.). 2. Factors affecting quality of raw plant materials. 3. Cereal grains, nutritive value, technological parameters significant for feed industry. 4. Nutritive and technological value grain processing by -products. 5. Nutritive and technological value meals from oilseeds. 6. Nutritive and technological value by -products from other branches of agricultural and food industry. 7. Plant protein (pea, horse beans). 8. Plant protein (lupin and dried green fodder). 9. Animal meals and other protein components, technologic parameters and nutritive value. 10. Antinutritive substances. 11. Microbial contamination of feed (mycotoxins). 12. Quality defects of raw material. 13. Physical properties of raw material. 14. Technological properties of raw material 15. Principles of use individual raw materials in feed mixtures. 	lecture

2.	<p>Forage quality and methods its evaluation.</p> <p>Organoleptic evaluation quality and nutritive value of silages.</p> <p>Organoleptic evaluation quality and nutritive value of hay.</p> <p>Determination of pasture yield – analytical and zootechnical method.</p> <p>Determination of moisture and hygroscopic of raw material.</p> <p>Evaluation of fineness raw material, size distribution – sieve analysis.</p> <p>Determination of 1000 seed weight and quality defects of feed materials</p> <p>Density calculation of bulk material.</p>	practical classes
3.	<p>Field exercises (I) Trip to feed manufacturing plant Agrifirm Polska Sp. z o.o. in Szamotuły.</p> <p>Field exercises (II) Trip to brewery in Namysłów.</p> <p>Field exercises (III) Trip to feed manufacturing plant Tasomix sp. zo.o.</p>	field training

Course advanced

Teaching methods:

discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	active participation, participation in discussion	50.00%
practical classes	observation of student's work, active participation, presentation, participation in discussion, performing tasks	25.00%
field training	active participation, participation in discussion	25.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Water organisms farming Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI1CO.5e8b0c0e66bd6.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills Yes

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, laboratory classes: 16, field training: 4	

Goals

C1	Breeding and husbandry of salmonidae, breeding and husbandry of rheophilic fish and other valuable species, moreover of thermophilic ones – Silver carp, Black carp, African sheatfish, and also chosen water invertebrates husbandry.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the graduate knows and understands in depth the issues in the field of physiology and animal production.	AH_P7S_WG01	oral credit, report

W2	the graduate knows and understands the processes occurring in the breeding environment and potential threats to the natural environment resulting from animal production	AH_P7S_WG05	oral credit, report
W3	the graduate knows and understands the detailed principles of health and safety at work in agriculture and working with animals	AH_P7S_WG10	oral credit, report
Skills - Student can:			
U1	the graduate is able to construct extensive oral and written opinions, views, justifications on topics related to animal breeding, and husbandry or the production of feed; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques	AH_P7S_UK02	oral credit
U2	the graduate is able to independently design and verify innovative animal keeping systems for breeding, rearing or keeping, as well as feed production systems; make a detailed economic analysis and modification of each stage of animal production or feed production with identification and consideration of critical elements and implement them in specific production conditions	AH_P7S_UW05	oral credit
Social competences - Student is ready to:			
K1	the graduate is ready to identify with the values, goals and tasks carried out in animal production practice; taking responsibility related to performing the profession of animal science and perceiving the essence of professional ethics in undertaken activities	AH_P7S_KR04	report

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	16	
field training	4	
presentation/report preparation	35	
report preparation	5	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 35	ECTS 1
Practical workload	Hours 25	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>The history of fish farming salmonids Characteristics of salmonids. brown trout (<i>Salmo trutta fario</i> L. morpha), brook trout (<i>Salvelinus fontinalis</i> M.), rainbow trout (<i>Oncorhynchus mykiss</i>). Characteristics of salmonids. Salmon (<i>Salmo salar</i> L.), brown trout (<i>Salmo trutta morpha trutta</i> L.), lake trout (<i>Salmo trutta morpha lacustris</i> L.), Danube (<i>Hucho hucho</i> L.) - threats which are a special threat to these species of fish Biology of fish: whitefish (<i>Coregonus albula</i> L.), whitefish (<i>Coregonus lavaretus</i> L.), Peluga (<i>Coregonus Peled</i> Gmel.) - The risks which are specific risks for these species of fish Hybrids salmonids. Status and development of the production of whitefish. The welfare of aquatic organisms. The production conditions. Water quality. Relations light. Water flow. Sources of water supply production of salmonids. The demand for water. Natural ponds, concrete pools Rotary, rectangular, spiral, soot and other equipment for the production of trout. Hatcheries. Cameras hatching and their types. The demand for water in the hatchery. The selection of fish before spawning, hybridization, polyploidy induction, androgen and gynogenesis.</p>	lecture
2.	<p>Salmon - King of salmonids - to familiarize with the environment in which they occur salmonids. Morphological features facilitate rapid recognition of salmonids. The search for suitable land for investment, suitable for a farm engaged in farming of aquatic organisms. Assumptions for the production of selected aquatic organisms. Determination of the flow rate and flow dispositional. Water quality. Formed detailed production. Determine the capacity of water relative to fry. Calculating the optimal holders. The assumption of losses and determine the size of the herd spawners. The concept of building facilities for breeding salmonids -eg. trout, salmon, Danube salmon. Recognition of the water supply. Trip to the Centre for stocking in PZW generous - hatchery - technical equipment. Trip to the Centre for stocking in PZW generous - rainbow trout - spawning, incubation eggs, hygienic procedures. A device for oxygenating the water. Treatment of water in the hatchery. Determining the types and quantities of devices hatching necessary in the planned farm. The demand for water. Removal of impurities during the production.</p>	laboratory classes
3.	Getting acquainted with fish farming in the Stocking Centre. Hatchery, nursery, pond categories. And different methods used.	field training

Course advanced

Teaching methods:

presentation / demonstration

Activities	Examination methods	Percentage in subject assessment
lecture	oral credit	40.00%
laboratory classes	oral credit	40.00%
field training	report	20.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Environment formation in livestock buildings Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc73292d
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills Yes

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 18, field training: 2	

Goals

C1	SPIWET, TGI 2000 IPPC, formation of the conditions inside livestock buildings, design of particular elements livestock building, calculate the levels of emissions from installations for animal husbandry using "Bank Industry Pollution of the Environment", assessment of conditions of farms on the environment.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	Student has advanced economic, legal and social knowledge related to animal breeding.	AH_ P7S_WG03	observation of student's work, active participation, presentation
W2	Student has advanced knowledge concerning agricultural environment formation by animal breeding.	AH_ P7S_WG05	observation of student's work, active participation, presentation
W3	Student has widened knowledge of agricultural environment functioning.	AH_ P7S_WG05	observation of student's work, active participation, presentation
Skills - Student can:			
U1	Student has an ability of precise communication with various entities in verbal, written and graphic form.	AH_ P7S_UK02	project, active participation
U2	Student understands and uses suitable information technologies in the range of obtaining and processing of information in the range of zootechnics.	AH_ P7S_UK03	project, active participation
U3	Student has an ability of project preparation in the range of course scope.	AH_ P7S_UO09	project, active participation
Social competences - Student is ready to:			
K1	Student understands the need of constant qualifications improving, is able to work in a team.	AH_ P7S_KK01	project, active participation
K2	Student demonstrated the knowledge of activities aimed at risk limitation and prediction of the results of activity in the range of widely understood agriculture and environment.	AH_ P7S_KO03	project, active participation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	18	
field training	2	
presentation/report preparation	10	
project preparation	15	
consultations	10	
class preparation	15	
Student workload	Hours 85	ECTS 3
Workload involving teacher	Hours 45	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>1. Factors determining the quality of the environment in livestock - 1h.</p> <p>2. Location objects - 1h.</p> <p>3. The impact of livestock buildings on the environment - 2h.</p> <p>4. climate and protection zones - 2h.</p> <p>5. Technical and organizational conditions (the size of the cast, system maintenance, usage of animals, service) - 2h.</p> <p>6. Terms of technological and functional (lighting, ventilation, heating, sanitation, waste removal, flooring, position) - 2h.</p> <p>7. The impact of geopathic zones, ultraviolet light and ionizing electromagnetic fields of noise and vibration on the environment in livestock - 1h.</p> <p>8. Methods of assessing the impact of livestock buildings on the environment - 4h.</p>	lecture

2.	<p>1. Methods of assessment of environmental conditions in livestock (measuring instruments) - 1h</p> <p>2. Methods of assessment of environmental conditions in livestock - 1h.</p> <p>3. Optimization methods microclimate, quality bedding and floors - 1h.</p> <p>4. Thermal protection, acoustic and epizootic livestock buildings. - 1h</p> <p>5. Disinfection, deodorization slurry and manure, dekonizacja and air ionization. - 1h</p> <p>6. Problems of heat recovery "ventilation" and energy from animal manure. - 1h</p> <p>7. Calculating the cost of shaping the environment in facilities for swine, poultry and cattle</p> <p>schematic design - computer lab, working on software "Bank Industry Environmental Pollution" - 2h</p> <p>8. Calculating the cost of shaping the environment in facilities for swine, poultry and cattle</p> <p>scheme of the project - establishment students working on their own project; computer lab,</p> <p>working on software "Bank Industry Pollution of the Environment." - 2h</p> <p>9. Calculating the cost of shaping the environment in facilities for swine, poultry and cattle</p> <p>scheme of the project - establishment students working on their own project; computer lab,</p> <p>working on software "Bank Industry Pollution of the Environment." - 2h</p> <p>10. Method SPIWET - 2h.</p> <p>11. Method TGI 200 - 2h.</p> <p>12. Best Available Techniques - 2h</p> <p>13. Integrated permit for poultry farms and pigs - 1h.</p> <p>14. Health and safety in livestock buildings - 1h.</p>	practical classes
3.	Microclimate measurements of a selected livestock building.	field training

Course advanced

Teaching methods:

foreign language (conversation classes), project-based learning (PBL), teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	observation of student's work, presentation	30.00%
practical classes	project	60.00%
field training	active participation	10.00%



UNIwersytet Przyrodniczy we Wrocławiu

Bioethics

Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc764a63
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty humanistyczno-społeczne
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 20, practical classes: 15	

Goals

C1	Ethics - morality of the thesis of ethics. Theses of ethics. The birth of bioethics. Sources of ethical norms for animals. Animal euthanasia. Ethical problems related to: in vitro cell and tissue culture - including stem cells - transplantation, genetic engineering, transgenic animals, research on the human genome, geotechnology, in vitro fertilization, sperm banks, embryo storage. Ethics of animal research. Ethics of species protection, nature, environment and intellectual property.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	knows the basic legal and ethical aspects regarding research on living organisms	AH_P7S_WG03	written credit

W2	understands and knows the rules of bioethics commissions	AH_P7S_WG08	written credit
W3	understands threats and ethical-moral problems related to the development of biology	AH_P7S_WG10	written credit
Skills - Student can:			
U1	is fluent in using professional scientific literature in the field biology and related disciplines in Polish and English	AH_P7S_UK02	project, presentation
U2	is fluent in using professional scientific literature in the field biology and related disciplines in Polish and English	AH_P7S_UK03	project, presentation
U3	discusses the possibilities of solving some problems, critically evaluates biology information served in mass-media	AH_P7S_UW05	project, presentation
Social competences - Student is ready to:			
K1	is willing to systematically update knowledge in the field of biology and related disciplines and is aware of the need for lifelong learning, active in raising their qualifications through specialized courses and training, as well as studying specialized literature	AH_P7S_KK01	project, presentation
K2	can inspire and organize the learning process of others people	AH_P7S_KO02	project, presentation
K3	is a conscious civilizational threat to human health and resulting from the progress of civilization, he sees the need for constant self-education in this area and supports ideas and pro-ecological activities	AH_P7S_KR04	project, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	20	
practical classes	15	
lesson preparation	10	
presentation/report preparation	20	
exam / credit preparation	20	
Student workload	Hours 85	ECTS 3
Workload involving teacher	Hours 35	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Semianr 1 (2h). The criterion of humanity, the beginning of human life, assisted fertilization, the value of a woman's life, the value of fetal life.</p> <p>Semianr 2 (2h). Moral problems of the end of human life, defining death, euthanasia.</p> <p>Semianr 3 (2h). Ethics of transplantation - models of organ procurement, donation model.</p> <p>Semianr 4 (2h). Ethics of scientific research in medicine.</p> <p>Semianr 5 (2h). Ethics of experiments with the use of animals - the position of human domination, the position of animal rights.</p> <p>Semianr 6 (2h). Ethics of experiments with the use of animals - the position of weighing the interests of man and animals, equal respect for the interests of animals and man.</p> <p>Semianr 7 (3h). Environmental bioethics.</p>	practical classes
2.	<p>Lecture 1 (2h). Philosophy, philosophy departments, ethics as a branch of philosophy.</p> <p>Lecture 2 (2h). Ethics in historical perspective, morality, ethical principles and moral principles.</p> <p>Lecture 3 (2h). Contemporary ethical theories, the thesis of ethics.</p> <p>Lecture 4 (2h). The law of nature, legal positivism.</p> <p>Lecture 5 (2h). The birth of bioethics, the bioethical revolution.</p> <p>Lecture 6 (2h). Sources of ethical standards for animals.</p> <p>Lecture 7 (2h). Animals subject or subject of moral behavior?</p> <p>Lecture 8 (1h). The value of life - rational and self-aware, only conscious consciousness.</p>	lecture

Course advanced

Teaching methods:

case analysis, brainstorming, foreign language (conversation classes), situation-based learning, presentation / demonstration, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	80.00%
practical classes	project, presentation	20.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Bioterrorism

Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc7767e9
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty humanistyczno-społeczne
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills Yes

Period Semester 1	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 14, field training: 1	

Goals

C1	The aim of the course is to present the basic threats of the natural and anthropogenic origin that occur in the XXI century. The subject matter includes the latest type of hazards associated with the human factor, including terrorism and bioterrorism. A measurable effect of this course will be a student's knowledge and practical skills in analysis and assessment of the risks and its impact on human health and life. The subject includes not only theoretical basis of the risk occurrence, analysis and counteract threats, but it will be also complemented by other activities in selected civilian and military centers and state institutions.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	knowledge in the field of national security, including bioterrorist threats and epidemiological studies, and knowledge associated with the risk of their occurrence, analysis and criteria for impact assessment and prevention of their recurrence	AH_P7S_WG01	written credit
W2	the opportunities and consequences of terroristic acts, including the role of biotechnology in bioterrorism and its impact on food security and national security	AH_P7S_WK04	written credit
W3	the possibility of practical use of knowledge in future life, especially the analysis of the useage of weapons of mass destruction as well as epidemiological threats	AH_P7S_WK12	written credit
Skills - Student can:			
U1	to carry out environmental observations, interprets, analyzes and discusses the results and formulate appropriate conclusions, using scientific terminology	AH_P7S_UW01	project, observation of student's work, presentation
U2	to observe the history and consequences of terrorism and bioterrorism, recognizing their anthropogenic origin	AH_P7S_UW05	project, observation of student's work, presentation
U3	on the basis of professional literature and collected data, the student is able to use the arguments and discusses how to solve current problems; has ability to prepare reports, projects, papers and other written work as well as oral presentations in a field of terrorism, bioterrorism and weapons of mass destruction	AH_P7S_UW06	project, observation of student's work, presentation
Social competences - Student is ready to:			
K1	to show interest in updating the knowledge of national security and related disciplines; understands the need for analysis and preventive measures in the field of epidemiology, food safety and national security	AH_P7S_KK01	project, observation of student's work, presentation
K2	to be aware of the importance of protecting people, animals and plants from terroristic acts, bioterrorism and the use of weapons of mass destruction	AH_P7S_KO02	project, observation of student's work, presentation
K3	to be aware of threats to national security and takes care about the research, education and monitoring in this field	AH_P7S_KO03	project, observation of student's work, presentation

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	14
field training	1
lesson preparation	10
presentation/report preparation	20
exam / credit preparation	20

Student workload	Hours 80	ECTS 3
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Lecture 1 (2h): System of national security Lecture contents: 1) Systems of national security in Poland and in the world; 2) Strategy and structure of national security system in Poland; 3) International security cooperation.</p> <p>Lecture 2 (2h): Terrorism Lecture contents: 1) Genesis of terrorism; 2) Definitions of terrorism; 3) Terrorism vs. national liberation; 4) Methods and techniques of terroristic combat; 5) Maritime, land and air terrorism; 6) Terrorist activities in Poland; 7) Overview and structure of selected international terrorist organizations (by US Department of State).</p> <p>Lecture 3 (2h): Antiterrorism Lecture contents: 1) Effects of terrorist activity; 2) Anti-terrorist activities in Poland and in the world; 3) Strategy of european security; 4) The role of the UN and the EU in antiterrorism activities.</p> <p>Lecture 4 (2h): Weapons of Mass Destruction (WMD, "ABC" weapon): nuclear and radiological weapons ("A" weapon) Lecture contents: 1) Types of weapons of mass destruction (WMD) and their basic cognitive criteria; 2) Catalogue and identifications of dangerous substances; 3) The use of nuclear energy and nuclear weapons; 4) Radiological threats in Poland and Europe; 5) Dosimetry and basical findings in radiological protection.</p> <p>Lecture 5 (2h): Weapons of Mass Destruction (WMD, "ABC" weapon): biological weapons ("B" weapon) and bioterrorism Lecture contents: 1) Biological weapon ("B" weapon) and its relationship with bioterrorism; 2) Possibilities and examples of the use of biological weapons; 3) The advantages and disadvantages of biological weapons; 4) Forms of biological weapons, detection ways and counteracting of "B" weapons attacks; 5) categories of biological and bioterroristic factors (Center for Disease Control and Prevention, USA).</p> <p>Lecture 6 (2h): Weapons of Mass Destruction (WMD, "ABC" weapon): chemical Weapons ("C" weapon) Lecture contents: 1) Genesis and history of chemical weapons and its contemporary application; 2) Chemical Weapons Convention); 3) Proliferation and storage of chemical weapons in Poland and in the world; 4) Categorization and distribution of chemical weapons: a) Combatant poisonous substances (CPS) and toxic industrial chemicals (TIEs); 5) methods of protection against chemical weapons.</p> <p>Lecture 7 and 8 (2h + 1h): Country in danger - legal regulations in the field of national security Lecture contents: 1) Review of selected legal acts, including: Constitution of Poland, Act of martial law, Act of emergency, Act of natural disaster; 2) Civil rights and freedoms in the emergency situations.</p>	lecture

2.	<p>Seminar 1 (2h): Organization of medical activities and protection of threats Lecture contents: 1) Structure of medical services in Poland and in the world; 2) Review of medical segregation systems; 3) Triage procedure and System START (Simple Triage and Rapid Treatment); 4) Classification of events: a) singular events, b) multiple events, c) catastrophes; 5) Operational procedures and safeguarding of the crash site; 6) Citizens' rights and obligations in first aid procedures.</p> <p>Seminar contents: practical and instructional classes, preparing students to make their own project during Seminar 5.</p> <p>Seminar 2 (5h). Presentation of the projects and group discussion.</p>	practical classes
3.	<p>Seminar 3 (8h): Tasks and role of uniformed formation in the fight against terrorism</p> <p>Seminar content: practical classes at the Specialist Training Center of the Border Guard in Lubań</p> <p>Comments</p> <p>Organization of field activities depends on current situation in the country and availability of the host institutions.</p>	field training

Course advanced

Teaching methods:

case analysis, brainstorming, educational film, problem-solving method, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	70.00%
practical classes	project, presentation	20.00%
field training	observation of student's work	10.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

English

Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI7JO.5e8b0c0eafc55.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Języki obce
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Periods Semester 1, Semester 2, Semester 3	Examination graded credit	Number of ECTS points 2
	Activities and hours foreign language (course): 26, e-learning: 4	

Goals

C1	The student is made acquainted with educational contents of the English specialist language required at the B2+ level for the purpose of achieving the relevant language competence enabling him/her to properly function both in the professional and academic environment.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Skills - Student can:			

U1	The student: can understand statements and lectures related to his/her academic environment, field of study, films and recordings concerning the academia, specialist as well as general knowledge and information related to a given field of study and specialty science; can comprehensively read the texts on general and popular science topics related to his/her field of study, publications in a given scope of specialty science (master thesis). can communicate, participate in discussions, present views and topics related to his/her fields of study and interests; can prepare and deliver oral presentation related to the field of study; can fully command his/her own oral utterances, come into communication interactions as well as identify the most common mistakes committed by himself/herself and correct them; can write a cover letter & CV, respond to a job offer, formulate an abstract, etc. and prepare a scientific text for oral presentation.	AH_ P7S_UK10	observation of student's work, active participation, presentation, test, performing tasks
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Balance of ECTS points

Activity form	Activity hours*	
foreign language (course)	26	
consultations	4	
lesson preparation	26	
e-learning	4	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 34	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>During the course based on scientific materials, films and books, students have the opportunity to master the language skills necessary for activities in the field of their study in English-speaking countries; study scientific contents in English - learn how to talk and write on topics related to their studies.</p> <p>At the end of the course, students ought to be able to: read the professional literature easily; communicate with professionals from other countries; prepare oral presentation in English.</p> <p>During the course, students also have the opportunity to expand their professional vocabulary and acquire linguistic fluency, which in turn can facilitate the undertaking of scientific work in foreign centres.</p> <p>The materials realized during the course include specialist, lexical and grammatical topics adapted to the B2+ level (CEFR) - regardless of the level of the students' foreign language knowledge.</p> <p>Specialist language - topics realized during 2 semesters:</p> <p>Vocabulary and structures used in academic and scientific language;</p> <p>Mathematical language, charts, tables, statistics;</p> <p>Acquiring competences necessary for description of studies, universities and academic life;</p> <p>Methods of delivering effective presentations in a foreign language;</p> <p>Delivery presentations on topics related to the field of study;</p> <p>Formulation of a CV and cover letter;</p> <p>Methods of effective interaction in job interviews;</p> <p>Formulation of the master thesis;</p> <p>Specialist texts.</p>	foreign language (course)
2.	The curriculum contents are partly realized on the basis of appropriate e-learning materials.	e-learning

Course advanced

Teaching methods:

foreign language (conversation classes), lecture

Activities	Examination methods	Percentage in subject assessment
foreign language (course)	observation of student's work, active participation, presentation, test	90.00%
e-learning	performing tasks	10.00%

Entry requirements

Adequate level of language is required

Group level Min. level
 B2+ --> B1, B2



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Chinese (for Polish students)

Karta opisu przedmiotu

Informacje podstawowe

Kierunek studiów Animal Husbandry	Cykl kształcenia 2020/21
Specjalność -	Kod przedmiotu BD00000AH00S.MI7JO.5e8f0bb272c5f.20
Jednostka organizacyjna Wydział Biologii i Hodowli Zwierząt	Języki wykładowe Polski
Poziom studiów studia drugiego stopnia (magister inżynier)	Obligatoryjność Fakultatywny
Forma studiów Stacjonarne	Blok zajęciowy Języki obce
Profil studiów Ogólnoakademicki	Przedmiot powiązany z badaniami naukowymi Nie
	Przedmiot kształtujący umiejętności praktyczne Nie

Okresy Semestr 1, Semestr 2, Semestr 3	Forma zaliczenia Zaliczenie na ocenę	Liczba punktów ECTS 2
	Forma prowadzenia i godziny zajęć Język obcy (lektorat): 26, Ćwiczenia e-learning: 4	

Cele kształcenia dla przedmiotu

C1	Zapoznanie studentów z treściami nauczania języka chińskiego specjalistycznego wymaganymi na poziomie B2+ w celu osiągnięcia przez studenta odpowiednich kompetencji językowych, które umożliwią mu sprawne funkcjonowanie w środowisku pracy i w środowisku akademickim.
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Efekty uczenia się dla przedmiotu

Kod	Efekty uczenia się w zakresie	Kierunkowe efekty uczenia się	Metody weryfikacji
Umiejętności - Student potrafi:			

U1	Zrozumieć wypowiedzi i wykłady związane ze swoim środowiskiem i kierunkiem studiów, filmy i nagrania dotyczące środowiska akademickiego i danej dziedziny nauki w zakresie wiedzy ogólnej oraz informacje ogólne związane z danym kierunkiem studiów i specjalnością. umieć przeczytać ze zrozumieniem teksty o tematyce ogólnej i popularnonaukowej związane z własnymi zainteresowaniami i kierunkiem studiów oraz publikacje dotyczące studiowanej dziedziny (pracy dyplomowej). Umieć porozumiewać się, brać udział w dyskusji, przedstawić swoje poglądy i zaprezentować tematy związane ze swoimi zainteresowaniami i kierunkiem studiów, przygotować i przedstawić ustną prezentację na temat związany ze swoim kierunkiem studiów, rozpoznawać najczęściej popełniane przez siebie błędy i kontrolować swoją wypowiedź. Umieć napisać list motywacyjny, CV, odpowiedź na ofertę pracy, abstrakt, etc. Oraz przygotować opracowanie tekstowe do prezentacji ustnej.	AH_ P7S_UK10	Obserwacja pracy studenta, Aktywność na zajęciach, Prezentacja, Kolokwium, Wykonanie ćwiczeń
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Bilans punktów ECTS

Forma aktywności studenta	Średnia liczba godzin* przeznaczonych na zrealizowane aktywności	
Język obcy (lektorat)	26	
Konsultacje	4	
Przygotowanie do zajęć	26	
Ćwiczenia e-learning	4	
Łączny nakład pracy studenta	Liczba godzin 60	ECTS 2
Zajęcia z bezpośrednim udziałem nauczyciela	Liczba godzin 34	ECTS 1
Nakład pracy związany z zajęciami o charakterze praktycznym	Liczba godzin 30	ECTS 1

* godzina (lekcyjna) oznacza 45 minut

Treści programowe

Lp.	Treści programowe	Formy prowadzenia zajęć
1.	Treści programowe są częściowo realizowane w oparciu o odpowiednie treści e-learningowe.	Ćwiczenia e-learning

2.	<p>Podczas kursu opartego o materiały naukowe, filmy i książki, studenci mają okazję do opanowania umiejętności językowych niezbędnych do działania w dziedzinie swoich studiów, w krajach anglojęzycznych. W czasie kursu studenci poznają treści naukowe w języku angielskim oraz uczą się, jak rozmawiać i pisać w tym języku na tematy związane z dziedziną swoich studiów. Po zakończeniu kursu studenci powinni umieć czytać literaturę fachową z większą łatwością. Powinni umieć komunikować się z fachowcami z innych krajów, a także przygotować prezentację w języku angielskim. W czasie kursu studenci mają także możliwość rozbudowania słownictwa fachowego i nabycia większej płynności językowej, co z kolei ułatwia podjęcie pracy naukowej w ośrodkach zagranicznych.</p> <p>Materiały realizowane w trakcie zajęć obejmują zagadnienia tematyczne, leksykalne oraz gramatyczne dostosowane do poziomu B2+ (CEFR) - bez względu na poziom znajomości języka obcego przez studentów.</p> <p>Język specjalistyczny - zagadnienia realizowane podczas 2 semestrów:</p> <p>Słownictwo i struktury używane w języku akademickim i naukowym</p> <p>Język matematyczny, wykresy, tabele, statystyka</p> <p>Kształcenie umiejętności opisywania swoich studiów, uczelni oraz życia akademickiego</p> <p>Kurs prowadzenia prezentacji w języku obcym</p> <p>Prezentacje studenckie na tematy związane z kierunkiem studiów</p> <p>Pisanie CV i listu motywacyjnego</p> <p>Prowadzenie rozmów o pracę</p> <p>Opis pracy magisterskiej</p> <p>Teksty branżowe</p>	Język obcy (lektorat)
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Informacje rozszerzone

Metody nauczania:

Konwersatorium językowe, Ćwiczenia

Aktywności	Metody zaliczenia	Udział procentowy w ocenie łącznej przedmiotu
Język obcy (lektorat)	Obserwacja pracy studenta, Aktywność na zajęciach, Prezentacja, Kolokwium	90.00%
Ćwiczenia e-learning	Wykonanie ćwiczeń	10.00%

Dodatkowy opis

Każdy z dwóch semestrów kończy się uzyskaniem oceny zaliczeniowej, z wyjątkiem kierunku bioinformatyka oraz architektura krajobrazu polsko-chińska gdzie w drugim semestrze studenci zdają egzamin ustny z całości materiału.

Wymagania wstępne

Wymagana jest znajomość języka na odpowiednim poziomie.

Poziom grupy
B2+

Poziom wyjściowy
--> B1, B2



UNIwersytet Przyrodniczy we Wrocławiu

Polish

Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI7JO.5e8b0c0ebe724.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Języki obce
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Periods Semester 1, Semester 2, Semester 3	Examination graded credit	Number of ECTS points 2
	Activities and hours foreign language (course): 26, e-learning: 4	

Period Semester 2	Examination graded credit	Number of ECTS points 2
	Activities and hours foreign language (course): 30	

Goals

C1	The student is made acquainted with educational contents of the English specialist language required at the B2+ level for the purpose of achieving the relevant language competence enabling him/her to properly function both in the professional and academic environment.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Skills - Student can:			
U1	The student: Can understand statements and lectures related to his/her academic environment, field of study, films and recordings concerning the academia, specialist as well as general knowledge and information related to a given field of study and specialty science; can comprehensively read the texts on general and popular science topics related to his/her field of study, publications in a given scope of specialty science (master thesis). can communicate, participate in discussions, present views and topics related to his/her fields of study and interests; can prepare and deliver oral presentation related to the field of study; can fully command his/her own oral utterances, come into communication interactions as well as identify the most common mistakes committed by himself/herself and correct them; can write a cover letter & CV, respond to a job offer, formulate an abstract, etc. and prepare a scientific text for oral presentation.	AH_ P7S_UK10	observation of student's work, active participation, test, performing tasks

Balance of ECTS points

Semester 1, Semester 2, Semester 3

Activity form	Activity hours*	
foreign language (course)	26	
consultations	4	
class preparation	26	
e-learning	4	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 34	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Semester 2

Activity form	Activity hours*
foreign language (course)	30
consultations	4

class preparation	26	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 34	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>During the course based on scientific materials, films and books, students have the opportunity to master the language skills necessary for activities in the field of their study in English-speaking countries; study scientific contents in English - learn how to talk and write on topics related to their studies.</p> <p>At the end of the course, students ought to be able to: read the professional literature easily; communicate with professionals from other countries; prepare oral presentation in English.</p> <p>During the course, students also have the opportunity to expand their professional vocabulary and acquire linguistic fluency, which in turn can facilitate the undertaking of scientific work in foreign centres.</p> <p>The materials realized during the course include specialist, lexical and grammatical topics adapted to the B2+ level (CEFR) - regardless of the level of the students' foreign language knowledge.</p> <p>Specialist language - topics realized during 2 semesters:</p> <p>Vocabulary and structures used in academic and scientific language;</p> <p>Mathematical language, charts, tables, statistics;</p> <p>Acquiring competences necessary for description of studies, universities and academic life;</p> <p>Methods of delivering effective presentations in a foreign language;</p> <p>Delivery presentations on topics related to the field of study;</p> <p>Formulation of a CV and cover letter;</p> <p>Methods of effective interaction in job interviews;</p> <p>Formulation of the master thesis;</p> <p>Specialist texts.</p>	foreign language (course)
2.	The curriculum contents are partly realized on the basis of appropriate e-learning materials.	e-learning

Course advanced

Semester 1, Semester 2, Semester 3

Teaching methods:

foreign language (conversation classes), classes

Activities	Examination methods	Percentage in subject assessment
foreign language (course)	observation of student's work, active participation, test	90.00%
e-learning	performing tasks	10.00%

Semester 2

Teaching methods:

foreign language (conversation classes), discussion

Activities	Examination methods	Percentage in subject assessment
foreign language (course)	observation of student's work, active participation, test	100.00%

Entry requirements

Adequate level of language is required

Group level Min. level
B2+ --> B1, B2



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

OHS and fire protection training Educational subject description sheet

Basic information

Field of study all	Education cycle 2020/21
Speciality -	Subject code 5e26ec6e4fc6eW00S.llo1A.1593608624.20
Department Uniwersytet Przyrodniczy we Wrocławiu	Lecture languages English
Study level studia drugiego stopnia	Mandatory mandatory
Study form Full-time	Block Przedmioty ogólne
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 1	Examination credit	Number of ECTS points 0
	Activities and hours e-learning lecture: 4	

Goals

C1	To familiarize students with the principles of health and safety and fire protection during their stay at the university, preventing and protecting students against accidents
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Skills - Student can:			
U1	be cautious at the university, identify and counteract hazards effectively, and identify harmful and nuisance factors in laboratories and rooms		written credit

U2	provide first aid to victims in certain accidents, behave properly in situations of danger to health and life		written credit
U3	behave properly in the event of a fire and evacuate yourself and other persons at risk from the building		written credit
Social competences - Student is ready to:			
K1	recognise the importance of the impact of their behaviour on their own safety and that of other students/employees of the university		written credit
K2	understanding the importance of health and safety and fire protection for the health and life of students / university employees		written credit
K3	understand the consequences of non-compliance with health and safety rules		written credit

Balance of ECTS points

Activity form	Activity hours*	
e-learning lecture	4	
Student workload	Hours 4	ECTS 0

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>The subject matter of the course is health and safety at work in terms of legal basis and prevention activities, first aid, as well as organization of fire protection at the University.</p> <p>The subject is conducted in the form of a blended learning course on the Moodle platform. The course includes four modules:</p> <ul style="list-style-type: none"> - Module 1: Selected legal issues - Module 2 Health and Life Threats - Module 3 First Aid - Module 4 Fire protection 	e-learning lecture

Course advanced

Teaching methods:

educational film, lecture

Activities	Examination methods	Percentage in subject assessment
e-learning lecture	written credit	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Diploma seminar II Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc8b8c12
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 2
	Activities and hours seminar: 30	

Goals

C1	To make students familiar with the principles of writing master's theses, the use of source materials and their use in the work, the principles of correct inference. Errors made when preparing the thesis. Individual work of the student with master thesis supervisor.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	in depth, individual theories, data collection techniques and methods of their development related to animal husbandry and breeding, in particular those related to the subject of the thesis being implemented;	AH_P7S_WG02	observation of student's work, participation in discussion, performing tasks
W2	principles of ethical use of results in compliance with copyright law.	AH_P7S_WK11	observation of student's work
Skills - Student can:			
U1	plan and implement simple experiments, design works to verify the assumed research hypothesis of the master's thesis and develop statistically obtained results, discuss and discuss the results of own research and draw conclusions;	AH_P7S_UK02, AH_P7S_UW04, AH_P7S_UW07	active participation, performing tasks
U2	construct extensive oral and written opinions, views, justifications on topics related to the maintenance of animals that are subject to breeding, rearing or use, or the production of feed; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques.	AH_P7S_UK02	active participation, performing tasks
Social competences - Student is ready to:			
K1	substantive discussion with other specialists in animal breeding and related sciences;	AH_P7S_KK01, AH_P7S_KR04	active participation, participation in discussion
K2	critically assess knowledge and using appropriate sources of information, critically assessing their value.	AH_P7S_KK01	active participation, participation in discussion

Balance of ECTS points

Activity form	Activity hours*	
seminar	30	
collecting and studying literature	30	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	The program is tailored to each student and his research interests.	seminar

Course advanced

Teaching methods:

discussion, Consultation with master's thesis supervisor.

Activities	Examination methods	Percentage in subject assessment
seminar	observation of student's work, active participation, participation in discussion, performing tasks	100.00%



UNIwersytet Przyrodniczy we Wrocławiu

Master thesis laboratory I Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc8cc6d9
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 6
	Activities and hours practical training: 160	

Goals

C1	To make students familiar with using research equipment and laboratory work with special attention to master thesis development.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	in depth the issues in the field of statistics and research methods on animals used in the study of the population of animals being the subject of breeding, husbandry and use; as well as issues related to the design and carry out of research in natural sciences	AH_P7S_WG02	observation of student's work, practical training report
Skills - Student can:			
U1	plan and conduct animal or related research experiments and analyse the obtained results	AH_P7S_UW04	active participation, performing tasks, practical training report
U2	apply modern analytical techniques used in her/his master thesis	AH_P7S_UW04	active participation, performing tasks, practical training report
Social competences - Student is ready to:			
K1	critically assess knowledge and using appropriate sources of information, critically assessing their value.	AH_P7S_KK01	observation of student's work

Balance of ECTS points

Activity form	Activity hours*	
practical training	160	
report preparation	20	
Student workload	Hours 180	ECTS 6
Workload involving teacher	Hours 160	ECTS 6
Practical workload	Hours 180	ECTS 7

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	The course includes research related to the implementation of the master thesis, is tailored to each student.	practical training

Course advanced

Teaching methods:

computer lab/laboratory, participation in research, Consultation with master's thesis supervisor.

Activities	Examination methods	Percentage in subject assessment

Activities	Examination methods	Percentage in subject assessment
practical training	observation of student's work, active participation, performing tasks, practical training report	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Animal research methods (for Chinese students) Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI2CO.5e8b0c0f21f25.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination exam	Number of ECTS points 5
	Activities and hours lecture: 30, laboratory classes: 30	

Goals

C1	To make students familiar with knowledge of animal research methods; methods for statistical treatment of experimental results; application of statistical packages to the results and to teach students how to correctly interpret the results.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	the types of animal experiments and the principles of their conduct and mathematical statistics methods used in animal science research;	AH_P7S_WG02	written exam, performing tasks

W2	general methodological assumptions of experimental research, with particular emphasis on zootechnical trials, including rules for research planning and selection of animals as well as planning, organization and supervision of the course of the experiment. The students know and understand experience errors;	AH_P7S_WG02	written exam, performing tasks
W3	IT tools and statistical packages that allow to develop the results of the experiment.	AH_P7S_WG02	written exam, performing tasks
Skills - Student can:			
U1	plan and perform experiments	AH_P7S_UK03	written credit, observation of student's work, report, test, performing tasks
U2	use appropriate techniques for collecting, organizing and collecting data, and interpret test results;	AH_P7S_UK03, AH_P7S_UW04	written credit, observation of student's work, report, test, performing tasks
U3	use IT tools necessary in research and interpretation of results; use databases and literature.	AH_P7S_UW04	written credit, observation of student's work, report, test, performing tasks
Social competences - Student is ready to:			
K1	to critically assess the importance of the appropriate use of animal testing methods	AH_P7S_KK01	active participation, performing tasks

Balance of ECTS points

Activity form	Activity hours*	
lecture	30	
laboratory classes	30	
exam / credit preparation	30	
presentation/report preparation	20	
lesson preparation	20	
Student workload	Hours 130	ECTS 5
Workload involving teacher	Hours 60	ECTS 2
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Lectures:15 x 2h</p> <ol style="list-style-type: none"> 1. Principles of research procedure in empirical sciences. 2. Research instruments in biological sciences. 3. Research work plan and general principles of conducting experiments, types of experiments. 4. Errors and precision of experience. Precision of experiences and ways to increase it. 5. Selection and types of tests. Data sources and their criticism, protection of personal data. 6. Arrangements of experiments used in animal experiments I. 7. Arrangements of experiments used in animal experiments II. 8. Specificity of experiments conducted with the use of animals. 9. Surveys. Dynamic studies (trend analysis). Correlation studies. 10. Case study plan. Monographic methods. 11. Methods for statistical treatment of results. 12. Techniques for collecting, organizing and collecting data, documentation of experiments. 13. Development and presentation of research results (IT tools). 14. Elaboration of research results, formulation of conclusions and hypotheses, interpretation of results. 15. Preparation of scientific papers for print and copyright. 	lecture

2.	<p>Exercises:15 x 2h</p> <ol style="list-style-type: none"> 1. Experiments in simple systems; analysis of numerical material and interpretation of results. 2. Qualitative data analysis. 3. Analysis and development of research results from various experiments. 4. Analysis and development of research results conducted in two groups. 5. Introduction to research in simple systems (first test). 6. Comparisons and interpretations of the results of tests conducted in independent systems. 7. Development and analysis of independent group plans. 8. Analysis of test plans with repeated measurements. 9. Multifactorial experience plans. Interaction Analysis. 10. Complex experimental plans. 11. Alternating systems. 12. Rotation systems. (II test). 13. Analysis of correlations between animal traits. 14. Application of the covariate in data analysis. 15. Elaboration of students' own research results. Passing exercises. 	laboratory classes
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Course advanced

Teaching methods:

computer lab/laboratory, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam	50.00%
laboratory classes	written credit, observation of student's work, active participation, report, test, performing tasks	50.00%

Entry requirements

Fundamental of statistics



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Animal research methods (for Polish students) Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI2CO.5e8b0c0f30fa1.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 2	Examination exam	Number of ECTS points 5
	Activities and hours lecture: 30, laboratory classes: 30	

Goals

C1	Students should have knowledge about of methods to animal testing; statistical methods of processing the results of experiments; use in analysis of data statistical programs. Achieving the ability to correctly interpretation the results.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	The student knows the kinds and types of experiments on animals and the rules governing them. Presents advanced knowledge on the methods of mathematical statistics used in research zootechnical.	AH_P7S_WG02	written exam, oral exam
W2	Student knows the general methodological assumptions of experimental research, with particular emphasis on experimentation zootechnical, including rules on research planning and selection for their animals and the planning, organization and supervision over the course of the experiment. Distinguishes and characterizes errors experience.	AH_P7S_WG02	written exam, oral exam
W3	Student knows the general methodological assumptions of experimental research, with particular emphasis on experimentation zootechnical, including rules on research planning and selection for their animals and the planning, organization and supervision over the course of the experiment. Distinguishes and characterizes errors experience.	AH_P7S_WG03, AH_P7S_WG02	written exam, oral exam
Skills - Student can:			
U1	Student has the ability to plan and carry out experiments.	AH_P7S_UK03	case study, practical training report
U2	Student apply appropriate techniques to collect, organize and collect data and interpret the results of studies.	AH_P7S_UK03, AH_P7S_UW04	case study, practical training report
U3	Student shall take the necessary research and interpretation tools; uses databases and literature.	AH_P7S_UW04	case study, practical training report
Social competences - Student is ready to:			
K1	Student is aware of the importance of appropriate use of test methods on animals.	AH_P7S_KO02	report
K2	Two tests in the form of a written and exam in writing or oral.	AH_P7S_KO02	report

Balance of ECTS points

Activity form	Activity hours*	
lecture	30	
laboratory classes	30	
exam participation	25	
lesson preparation	30	
class preparation	15	
Student workload	Hours 130	ECTS 5
Workload involving teacher	Hours 85	ECTS 3

Practical workload	Hours 30	ECTS 1
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* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<ol style="list-style-type: none"> 1. Principles of research in the empirical sciences. 2. Instrumentarium research in the life sciences. 3. The plan of research work and general principles of experiments, types of experiments. 4. Errors and precision of experiments. Ways of increase the precision of experiment 5. Selection and types of trials. Data sources and their criticism, protection of personal data. 6. Designs of experiments (DOE) used in animal experiments I. 7. Designs of experiments (DOE)used in animal experiments II. 8. The specificity of experiments carried out with animals. 9. Questionnaire study. Dynamic testing (trend analysis). Correlational studies. 10. Plan study of individual cases. Methods monographic. 11. Methods of statistical analysis of results. 12. Techniques for collecting, organizing and storing data, documentation of experiments. 13. Preparation and presentation of research results (informatic tools). 14. Data analysis, formulation of hypotheses and conclusions , interpretation of results. 15. Preparation of scientific papers for printing and copyrights. 	lecture

2.	<ol style="list-style-type: none"> 1. Experiments in simple systems; material analysis and interpretation of numerical results. 2. Analysis of qualitative data. 3. Analysis of data from different experiments. 4. Analysis of data in experiments with two groups. 5. Introduction to the experiments in simple systems (I test). 6. Comparison and interpretation of data from independent systems. 7. Analysis of data from independent groups. 8. Analysis of data from experiments with repeated measurements. 9. Multifactorial experiments. Analysis of the interaction. 10. Complex experimental plans. 11. Alternating system. 12. Rotational system. (II test). 13. Analysis of the relationship between traits of animals. 14. The use of a covariate in the analysis of the data. 15. Analysis of data from own research of students. Passing classes. 	laboratory classes
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Course advanced

Teaching methods:

computer lab/laboratory, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam, oral exam	60.00%
laboratory classes	report, case study, practical training report	40.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Modern livestock production systems (for Chinese students) Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc7e50fd
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 2	Examination exam	Number of ECTS points 4
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	Information about the traditional and modern cattle, swine, poultry, small ruminants and horse housing systems considering welfare principles.
C2	Organization of cattle, swine, poultry, small ruminants and horse reproduction and rearing in Poland, depending on the production system.
C3	Performance of particular species, breeds and lines of modern livestock.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	The student knows and understands the classification of different livestock species, their utilisation and importance in food production.	AH_P7S_WG06, AH_P7S_WG09	written exam, written credit
W2	The student knows and understands the technologies used in cattle, swine, poultry, small ruminants and horse housing systems and production considering the animal welfare principles.	AH_P7S_WG10, AH_P7S_WK04	written exam, written credit
Skills - Student can:			
U1	The student is able to take care on proper different livestock environment condition and their welfare, operates the equipment serving for animal rearing and breeding.	AH_P7S_UK03, AH_P7S_UW01	active participation, presentation
Social competences - Student is ready to:			
K1	Student is responsible for correct animal management, breeding and keeping; understands the necessity of providing the necessary environmental condition for animal welfare and good quality animal originate products.	AH_P7S_KO03, AH_P7S_KR04	active participation
K2	The student is ready to use appropriate sources of information related to animal production, feed additives and assess critically their value,	AH_P7S_KK01	active participation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	30	
exam / credit preparation	30	
presentation/report preparation	15	
lesson preparation	20	
Student workload	Hours 110	ECTS 4
Workload involving teacher	Hours 45	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Cattle</p> <ol style="list-style-type: none"> 1. Dairy and beef cattle breeds considering utility types and constitution evaluation. 2. Reproductive performance in dairy and beef cattle herds. 3. Technology of beef cattle production and dairy milking systems. <p>Swine</p> <ol style="list-style-type: none"> 4. Swine breeds considering utility types. Levels of breeding and husbandry with differentiation to pedigree and fattening crossbreeds. 5. Modern swine housing systems considering cross compliance. <p>Poultry</p> <ol style="list-style-type: none"> 6. Directions of poultry production in Poland, species and breeds in each of them. 7. Systems of poultry production and management in Poland. 8. Modern hatchery and egg incubation systems. 9. Biotechnological methods in poultry production. <p>Small ruminants and fur animals</p> <ol style="list-style-type: none"> 10. Sheep and goat breeds of the highest significance in Poland, main directions of use. 11. Alternative use of sheep and goats (cultural grazing, agri-tourism, sheep in landscape formation). 12. Significance of fur animals production in Poland. <p>Equine</p> <ol style="list-style-type: none"> 13. Introduction to equine science and breeding programs in Poland. 14. Equine Careers - horse performance in sport and racing. 15. Horse health and soundness. 	lecture
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2.	<p>Cattle:</p> <ol style="list-style-type: none"> 1. Cross-compliance in cattle production. Identification and registration system for cattle. Composition and structure of cattle herd. Selection methods in cattle. 2. Dairy cattle feeding, watering systems and treatments. Requirements for production of high quality raw milk. 3. Beef cattle performance evaluation. European Union beef carcass classification system. Veal production. <p>Swine</p> <ol style="list-style-type: none"> 4. Requirements for phases of swine production (breeding-gestation, farrowing, nursery, grow-finish). 5. Organization of breeding at a pedigree swine farm. Industrial swine production. Swine carcass evaluation using EUROP method. <p>Poultry</p> <ol style="list-style-type: none"> 6. The specificity of the external appearance and anatomy of selected domestic bird species. 7. Performance of different laying and meat type chicken lines. 8. Performance of Japanese quail, ducks, geese and ostriches. 9. Egg incubation and post-hatching analysis. <p>Small ruminants and fur animals</p> <ol style="list-style-type: none"> 10. Technologies applied in sheep and goat breeding in Poland and Europe. 11. Practical aspects of sheep production - visit to the farm. 12. Production technologies on fur animal farms. <p>Equine</p> <ol style="list-style-type: none"> 13. Racing performance: management and training of racing horse - visit of racing center Partynice in Wroclaw. 14. Importance of horse physiotherapy - importance of horse rehabilitation after injury. 15. Sport performance: visit of equestrian center to introduce different training and management of horses in jumping, dressage and cross country performance. Use of horses for pleasure riding. 	practical classes
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Course advanced

Teaching methods:

brainstorming, educational film, presentation / demonstration, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam	40.00%
practical classes	written credit, active participation, presentation	60.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Modern livestock production systems (for Polish students) Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI2CO.5e8b0c0f5e28b.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination exam	Number of ECTS points 4
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	To make students familiar with genetics, breeding and reproduction; nutritional modulation, feed resource development and utilization technology;
C2	To provide students knowledge on artificial intelligence and remote monitor used in modern livestock system, Pork quality trace system. The students will be trained in practice part for daily operation of modern dairy farm, broiler farm and swine farm, and have internship to animal food procession enterprises and feed mill.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the new developments in genetics, breeding and reproduction;	AH_P7S_WG03, AH_P7S_WG06, AH_P7S_WG07, AH_P7S_WG08	written exam, active participation
W2	nutritional modulation, feed resource development and utilization technology;	AH_P7S_WG03, AH_P7S_WG06, AH_P7S_WG07, AH_P7S_WG08	written exam, active participation
W3	artificial intelligence and remote monitor used in modern livestock system, pork quality trace system.	AH_P7S_WG03, AH_P7S_WG06, AH_P7S_WG07, AH_P7S_WG08	written exam, active participation
Skills - Student can:			
U1	operate modern dairy farm, broiler farm and swine farm;	AH_P7S_UK03, AH_P7S_UW05, AH_P7S_UW06	observation of student's work, active participation, test, performing tasks
U2	design and verify animal food processing enterprises and feed mill technology.	AH_P7S_UW05	observation of student's work, active participation, test, performing tasks
Social competences - Student is ready to:			
K1	critically assess his knowledge and to use reliable sources of information.	AH_P7S_KK01	active participation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	30	
consultations	10	
exam / credit preparation	20	
class preparation	15	
report preparation	15	
Student workload	Hours 105	ECTS 4
Workload involving teacher	Hours 55	ECTS 2
Practical workload	Hours 45	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	1. Formulation of sow diet (3h) 2. Heat detection of sow, dairy cow (3h) 3. Artificial insemination of cow and sow (3h) 4. Basic broiler management and their problem in the field (2h) 5. The production and management of egg hens (2h) 6. Quality Assessment of Eggs and chicken meat (2h)	lecture
2.	Classes: 6 x 5h 1. Formulation of sow diet 2. Heat detection of sow, dairy cow 3. Artificial insemination of cow and sow 4. Basic broiler management and their problem in the field 5. The production and management of egg hens 6. Quality Assessment of Eggs and chicken meat	practical classes

Course advanced

Teaching methods:

discussion, lecture, practical simulation training, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam, active participation	50.00%
practical classes	observation of student's work, active participation, test, performing tasks	50.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Application of molecular biology techniques in animal husbandry Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc81308d
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills Yes

Period Semester 2	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, laboratory classes: 20	

Goals

C1	Familiarize students with the use of molecular biology techniques in animal husbandry (PCR, DNA sequencing, real-time PCR, microarrays).
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	Student defines the concept of livestock genomics and describes the genes with major impact on animals production traits.	AH_P7S_WG06, AH_P7S_WG01	written credit

W2	Student indicates bioinformatics tools used in animal husbandry.	AH_P7S_WG03, AH_P7S_WG08	written credit
W3	Student knows safety rules in laboratory work.	AH_P7S_WG10	written credit
Skills - Student can:			
U1	Student is able to independently perform experiments using basic techniques of molecular biology.	AH_P7S_UW04	observation of student's work
U2	Student interprets obtained results from research carried by himself.	AH_P7S_UW04	project, presentation
U3	Student presents obtained research results in a form of presentation and short scientific report.	AH_P7S_UK02, AH_P7S_UW07	project, presentation
Social competences - Student is ready to:			
K1	Student demonstrates responsibility for entrusted laboratory equipment.	AH_P7S_KR04	observation of student's work

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	20	
consultations	5	
presentation/report preparation	10	
lesson preparation	10	
exam / credit preparation	19	
report preparation	10	
Student workload	Hours 89	ECTS 3
Workload involving teacher	Hours 40	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<ol style="list-style-type: none"> 1. Genom and its organization. Livestock genomics (2h). 2. Maps and genome sequences used in husbandry (2h). 3. Polymorphic genetic markers and MAS. QTL regions (2h). 4. The use of bioinformatics tools in animal husbandry. Elements of gene expression (2h). 5. Genes with high impact on production traits in cattle and pigs (2h). 6. Genes with high impact on production traits in sheep, polutry and other species(2h). 7. Genes with high impact on resistance / susceptibility to infectious diseases and parasites. Genetic disease in livestock (2h). 8. Molecular diagnosis of inherited disorders in livestock (1h). 	lecture
2.	<ol style="list-style-type: none"> 1. Methods of obtaining high quality and purity of biological material for research (2h). 2. DNA isolation from different tissue types of livestock (2h). 3. Quantitative and qualitative analysis of DNA - using agarose gel electrophoresis (2h). 4. Quantitative and qualitative analysis of DNA - using spectrophotometer NanoDrop (2h). 5. Primers design for Polymerase Chain Reaction (PCR) (2h). 6. Amplification of DNA selected fragments that had been previously identified in livestock's genome (2h). 7. Restriction enzyme digestion of the PCR product (2h). 8. Separation of DNA using electrophoresis with 3% agarose gel and visualization of the gel to see results (2h). 9. Analysis and interpretation of the results (2h). 10. Presentation of the experimental results and return a prepared scientific report (2h). 	laboratory classes

Course advanced

Teaching methods:

project-based learning (PBL), teamwork, participation in research, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	50.00%
laboratory classes	project, observation of student's work, presentation	50.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Biologically active substances Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc824dc3
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, laboratory classes: 20	

Goals

C1	The scope of the course includes classification and properties of selected biologically active substances present in feed and feed materials, as well as their impact on animal health and the quality of animal products. The course content includes, among others, vitamins and substances with antioxidant activity, pro-, pre- and synbiotic additives, as well as polyunsaturated fatty acids as an important ingredient determining the quality and healthiness of animal products (meat, milk, eggs). The lecture content will be extended with an overview of research results on selected biologically active substances on the example of poultry and horses. As part of the practical section, students will be familiarized with the modern research equipment for measuring of antioxidant capacity in selected products / feed materials, and will perform selected procedures evaluating the antioxidant capacity of silage and assessing the oxidative stability of fats used in complete feed mixtures.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	The student knows and understands the general classification of feed additives authorized for use in animal nutrition.	AH_P7S_WG06, AH_P7S_WG07	written credit, oral credit, active participation, participation in discussion
W2	The student has the knowledge about their impact on animal health and / or the quality and healthiness of animal products.	AH_P7S_WK04, AH_P7S_WG01	written credit, oral credit, active participation, participation in discussion
Skills - Student can:			
U1	The student is able to explain the impact of various types of feed additives on the quality of obtained animal products, as well as assess the effectiveness of selected antioxidant additives based on self-made laboratory analyzes.	AH_P7S_UW04	observation of student's work, participation in discussion, performing tasks
U2	The student is able to choose the type and form of the feed supplement for various groups of animals.	AH_P7S_UW01	observation of student's work, participation in discussion, performing tasks
U3	The student independently searches, assesses and uses information from various sources, using advanced IT technologies.	AH_P7S_UK03, AH_P7S_UW01	observation of student's work, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	The course participant complies with the rules regarding the use of various types of feed additives resulting from legal regulations.	AH_P7S_KR04	oral credit, observation of student's work, performing tasks
K2	The student is aware of the responsibility for tasks jointly carried out in the team and small laboratory equipment and apparatus entrusted to him.	AH_P7S_KO02	oral credit, observation of student's work, performing tasks

Balance of ECTS points

Activity form	Activity hours*
lecture	15
laboratory classes	20
presentation/report preparation	15
consultations	2
exam / credit preparation	8
class preparation	5
consultations on diploma paper	10

Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 47	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Introduction to the subject of exercises: discussion of health and safety rules, presentation and training on the use of selected laboratory equipment, reagents required for the implementation of the next part of the exercise. Training in pipetting techniques using manual pipettes, semi-automatic pipettor and automated pipettes and electronic pipettes. The rules of safe use of the above equipment.</p> <p>Determination of the antioxidant activity of selected silage feeds using the DPPH free radical assay / or ABTS cation radical assay in a classic procedure and the variant of the protocol adapted for microplate readers. 4 h</p> <p>Evaluation the oxidative stability of selected fats sources used as a functional and energy supplement in complete mixtures for poultry or pigs. 4 h</p> <p>Assessment of the antioxidant properties of feed additives containing synthetic (e.g. BHT) and natural (ascorbic acid, plant extracts) sources of antioxidants. 4h</p> <p>Presentation of papers and passing exercises. 4 h</p>	lecture
2.	<p>Classification of selected feed additives. Mineral and vitamin supplements, microbial production stimulators, coccidiostats, organic acids and feed enzymes. 2 h</p> <p>Vitamins and vitamins with antioxidant effects - content in feed materials, stability and durability. Demand of selected animal groups for these compounds.</p> <p>Essential polyunsaturated fatty acids (PUFA) and the possibility of improving their profile in products of animal origin. The lipid oxidation process and its importance from the point of view of feed safety and healthiness of animal products.</p> <p>Antioxidants: systematics, structure and mechanisms of their action; The role of antioxidants in the effective protection of feed fats against oxidation processes.</p> <p>Herbs, plant extracts and essential oils: mechanism of action and examples of the use these additives in of feeding horses and poultry. 2 h</p> <p>Probiotics, prebiotics, synbiotics: the mechanisms of action and their impact on the microbiological status of the gastrointestinal tract of selected groups of animals. 2 h</p> <p>Summary of lecture topics and the final test. 1 h (2 h total)</p>	laboratory classes

Course advanced

Teaching methods:

case analysis, presentation / demonstration, lecture

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, active participation, participation in discussion	50.00%
laboratory classes	oral credit, observation of student's work, performing tasks	50.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Proecological management of free ranged and farm animals Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc8372de
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 10, project classes: 8, field training: 2	

Goals

C1	The course is aimed to introduce a student into a complex trophic chain relations (soil, plants, animals, consumers) from the perspective of organic, sustainable and biodynamic agriculture.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	Student knows and understands basic law regulations and EU common agricultural policy aimed towards pro-ecological systems of animal production.	AH_ P7S_ WK04	written credit, project, presentation

W2	Student knows and understands the role of animals in sustainable and ecological agriculture.	AH_P7S_WG05	written credit, project, presentation
W3	Student knows and understands effects of pro-ecological systems of animal production on environment and on the quality of animal product.	AH_P7S_WG09	written credit, project, presentation
Skills - Student can:			
U1	Student is able to interpret animal production data from regional, national and global perspective taking into account environmental issues.	AH_P7S_UW06	written credit, project, observation of student's work, active participation, presentation
U2	Student is able to design new systems of animal management aimed towards specific environments (mountains, lowlands, river valleys, etc) to achieve economic expectations, while keeping balance with biodiversity and heritage of local communities.	AH_P7S_UW05	written credit, project, observation of student's work, active participation, presentation
Social competences - Student is ready to:			
K1	Student is able to care about the diversity existing within nature manifested in multitude of species and breeds of farm animals and forms of agricultural activities, recommends and organize animal production in a sustainable way.	AH_P7S_KR04	observation of student's work, active participation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	10	
project classes	8	
field training	2	
presentation/report preparation	15	
consultations	10	
exam / credit preparation	15	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 45	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<ol style="list-style-type: none"> 1. Regulations concerning organic agriculture. 2. Definitions of organic, sustainable, biodynamic and conventional agriculture systems backed with examples of animal production 3. Animal production technology on grasslands in USA according to Joel Salatin. 4. Code of practice in agriculture and animal production systems affecting positively landscape and environment 5. Evolutionary fitness between species based on Richard Dawkins "Extended phenotype" and unbalanced between environment and animal production based on Jared Diamond "Collapse" 6. Economy of biology and bussiness aproach based on Harisson (sheep production systems) and M.Kleiber (Fire of life) 7. Biologic rythms and management of animal production systems based on herbage in situ. 8. Environmental, economic, ethical, legal and health considerations of animal produce - organic perspective. 9. Local breeds of livestock and their position in animal production. 10. Permanent grasslands as herbage source for herbivores - examples from Sudety Mountains and Wartha River Valley. 11. Mixed grazing systems 12. Management of ecosystems based on animal behaviour according to F.D. Provenza 13. Deer farming 14. Zoo- and bio-parks in agro-tourism and environmental activity. 15. Organic apiculture. 	lecture
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2.	<p>1. Water in animal production - global and local considerations - estimations of water use to produce beef and chicken meat vs grains.</p> <p>2. Concentration of production, processing and distribution of food of animal origin in conventional and organic agriculture in USA. Discussion based on "Food Inc." film.</p> <p>3. Poultry production systems, from industrial farms to organic farms. Discussion based on "Jamie's fowl dinners" film.</p> <p>4. Animal origin protein production in different parts of the World. Discussion based on "Global Steak" film.</p> <p>5. Nutrition value of local/traditional vs global feedstuffs (based on Don Huber lecture). Use of N-alkane technique to estimate intake of grazing animals.</p> <p>6. Common Agriculture Policy of EU - effect of subsidies on herbivores (calculations of profitability of animal production).</p> <p>7. Grassland space use by cattle - functional elements of pasture. Deworming and biodegradation of dung-paths.</p> <p>8. Technological issues of deer farming. Type and cost of fencing.</p> <p>9. Methodological considerations when planning simplified systems of animal keeping within agro-environmental schemes.</p> <p>10. Evaluation of quality and yielding of permanent grassland - Oder River valley.</p>	practical classes
3.	<p>1. Energy in animal production and trophic and economic piramides. Comparison of energy vs money spending in animal production (group project)</p> <p>2. Mixed production of 3 species within 1 ha plot. (Group project work)</p> <p>3. Students' Presentations of the results of group projects - discussion.</p> <p>4. Students' Presentations of the results of group projects - discussion.</p>	project classes
4.	1. Lower Silesia organic animal production systems	field training

Course advanced

Teaching methods:

text analysis, educational film, problem-solving method, presentation / demonstration, teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, active participation	40.00%
practical classes	written credit, observation of student's work, active participation	30.00%
project classes	project, observation of student's work, presentation	20.00%
field training	observation of student's work, active participation	10.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Forages

Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc84b5de
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 12, field training: 8	

Goals

C1	to provide students knowledge of the natural and economic conditions of field feed production and criteria for the selection of species and varieties of fodder plants in crop rotations in the aspect of animal nutritional needs;
C2	to make students familiar with the nutritional value and importance of perennial papilionaceous plants, grasses and papilionaceous mixtures in animal nutrition in field cultivation, their chemical properties and the way they are used in feeding ruminants;
C3	to provide students knowledge of permanent grassland and pasture in the feed balance;
C4	to make students familiar with the methods of green forage conservation and rules for storing feed on the farm and their nutritional value, as well as the use of preserved feed and by-products of the agri-food industry in feeding ruminants.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	nutritional value of forages produced on the farm in a natural and preserved state (hay, silage);	AH_P7S_WG07, AH_P7S_WK04	written credit, active participation
W2	rules for the selection of species and varieties of fodder plants useful for cultivation in different links of rotation;	AH_P7S_WG07, AH_P7S_WG09, AH_P7S_WK04	written credit, active participation
W3	factors that modify the nutritional value of these feeds and know the technology of silage and hay production.	AH_P7S_WG07, AH_P7S_WK04	written credit, active participation
Skills - Student can:			
U1	organize the production of roughage taking into account the nutritional needs of ruminants;	AH_P7S_UK02, AH_P7S_UW01, AH_P7S_UW07	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks
U2	use the production potential of meadows and pastures through their proper use;	AH_P7S_UW04, AH_P7S_UW05	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks
U3	organoleptically assess the quality of farmed roughage and arrange the feed rations depending on this quality.	AH_P7S_UW04, AH_P7S_UW05	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	to recognize of the role of ruminants in the agricultural production cycle and in shaping the rural environment;	AH_P7S_KO02	active participation, participation in discussion
K2	to recognize of the role of pasture as the most natural form of nutrition for herbivores, ensuring the conditions best suited to their behavior (well-being);	AH_P7S_KO02, AH_P7S_KO03	active participation, participation in discussion
K3	to recognize of the role of roughage in the field-animal-table chain.	AH_P7S_KO02, AH_P7S_KO03, AH_P7S_KR04	active participation, participation in discussion

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	12

field training	8
consultations	5
exam / credit preparation	20
project preparation	15
report preparation	10
Student workload	
	Hours 85
	ECTS 3
Workload involving teacher	
	Hours 40
	ECTS 1
Practical workload	
	Hours 30
	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Lectures:15 x 1h</p> <ol style="list-style-type: none"> 1. Natural and economic conditions of field feed production. 2. Criteria for selecting species and varieties of fodder plants in crop rotations in the aspect of animal nutritional needs. 3. Characteristics and importance of perennial legumes and grasses in animal nutrition. 4. Chemical properties, nutritional value, conservation methods and use in animal nutrition. 5. Grasses in the field, chemical properties, nutritional value, methods of conservation and use. 6. Butterfly-grass mixtures from field cultivation, chemical properties, methods and use in animal nutrition. 7. One-year fodder plants - importance in the feed balance, conservation methods and use in nutrition. 8. Silage preservation methods. Advantages of drying and ensiling. 9. Other methods of processing green fodder. 10. Dried and hay production methods and nutritional value. 11. New silage production technologies and rules for the use of silage additives. 12. Physiological foundations and practical principles of maximizing the use of roughage in feed rations for cattle 13. By-products from the food industry. - rules of use 14. Farm methods of feed processing. 15. Methods and conditions of feed storage and storage. 	lecture
2.	<p>Excercises: 6 x 2h</p> <ol style="list-style-type: none"> 1. Botanical composition analysis of green fodder. 2. Morphological analysis of green fodder. 3. Assessment of maturity of pasture sward on the basis of the phenological phase of the dandelion. 4. Organoleptic quality assessment of silage and hay. 5. Chemical quality assessment of silage according to the DLG key. 6. Planning cattle grazing depending on the quality of the pasture. 	practical classes

3.	<p>Excercises: 4 x 2h</p> <ol style="list-style-type: none"> 1. Designing an annual feeding plan for various types of farms (dairy cattle farms - fattening cattle, intensive feeding - extensive, large - small share of HERE, etc.). 2. Designing of forage plant cultivation area for the selected farm type. 3. Designing crop rotation for a selected farm type (in a four-year perspective). 4. Estimated feed for the selected farm. 	field training
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Course advanced

Teaching methods:

project-based learning (PBL), teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, active participation, participation in discussion	50.00%
practical classes	project, observation of student's work, report, presentation, performing tasks	20.00%
field training	project, active participation	30.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Nutrition and immunology Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI2CO.5e8b0c0faff47.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 3
	Activities and hours Suma godzin kontaktowych: 35	

Goals

C1	To provide students knowledge on the term immunonutrition;
C2	To make students familiar with the types of immunonutrients and their schemes of action;
C3	To make students familiar with the path of anti-oxidant defences and their importance in immune function.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the term of immunonutrition;	AH_P7S_WG06, AH_P7S_WG09	written credit
W2	the types of immunonutrients and their schemes of action;	AH_P7S_WG06, AH_P7S_WG09	written credit
W3	the path of anti-oxidant defences, their importance in immune function.	AH_P7S_WG06, AH_P7S_WG09	written credit
Skills - Student can:			
U1	explain the mechanisms of action of the most common immunomodulators,	AH_P7S_UW05	observation of student's work, active participation, report, presentation, performing tasks
U2	uses specific technologies and techniques in animal nutrition with special attention to immunonutrition;	AH_P7S_UK03	observation of student's work, active participation, report, presentation, performing tasks
U3	design special purposes diet.	AH_P7S_UW05, AH_P7S_UW06	observation of student's work, active participation, report, presentation, performing tasks
Social competences - Student is ready to:			
K1	take actions against the negative impact of animal production on the environment and measures to reduce risk;	AH_P7S_KO03	active participation
K2	for continuous training in animal production.	AH_P7S_KR04	active participation

Balance of ECTS points

Activity form	Activity hours*	
Suma godzin kontaktowych	35	
consultations	15	
exam / credit preparation	20	
presentation/report preparation	20	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 50	ECTS 2

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Part 1</p> <p>THE COMPONENTS OF FOODS</p> <p>1. The animal and its food (2h)</p> <p>Part 2</p> <p>THE DIGESTION AND METABOLISM OF NUTRIENTS</p> <p>1. Enzymes (1h)</p> <p>2. Digestion (1h)</p> <p>3. Metabolism (1h)</p> <p>Part 3</p> <p>1. Immune potential of GIT (5h)</p> <p>2. Immune response (5h)</p> <p>3. Immunonutrients (5h)</p> <p>4. Antioxidants (5h)</p> <p>5. Fatty acids (5h)</p> <p>6. Glutathione (5h)</p>	Suma godzin kontaktowych
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Course advanced

Teaching methods:

discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
Suma godzin kontaktowych	written credit, observation of student's work, active participation, report, presentation, performing tasks	100.00%



UNIwersytet Przyrodniczy we Wrocławiu

Organic animal nutrition Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI2CO.5e8b0c0fbf987.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 2	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 10, project classes: 10	

Goals

C1	To make students familiar with the characteristics of feed used in organic feeding systems.
C2	To provide students knowledge of the use of pastures in ecological animal feeding systems.
C3	To make students familiar with methods of feed preservation used in ecological animal feeding systems, methods for reducing nitrogen and phosphorus excretion in the case of pigs, poultry and cattle by proper balancing the composition of food doses / recipes of concentrated mixtures.
C4	To provide students knowledge of the legal conditions of organic / organic nutrition systems.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
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Knowledge - Student knows and understands:			
W1	nutritional value of feed obtained from organic farming, methods of ecological pasturing and preservation of feed	AH_P7S_WG08, AH_P7S_WG09, AH_P7S_WK04	written credit, observation of student's work
W2	principles of balancing food doses in terms of limiting the excretion of nitrogen and other components and intestinal gases into the environment	AH_P7S_WG05, AH_P7S_WG07	written credit, observation of student's work
W3	how to use various additives in animal nutrition and knows the legal conditions of ecological feeding systems on farms dealing with this type of production	AH_P7S_WK12, AH_P7S_WK13	written credit, observation of student's work
Skills - Student can:			
U1	choose the right species of plant for cultivation using organic methods and can use them to balance animal doses and properly document them	AH_P7S_UK02, AH_P7S_UK03, AH_P7S_UW01, AH_P7S_UW04, AH_P7S_UW05	project, observation of student's work, active participation, test, performing tasks
U2	make an assessment of preserved feed and is able to interpret the results of such assessment in terms of the usefulness of such feed in animal nutrition regarding the use of ecological systems	AH_P7S_UW01, AH_P7S_UW04, AH_P7S_UW05, AH_P7S_UW06	project, observation of student's work, active participation, test, performing tasks
U3	design and present a feeding system using organic feed	AH_P7S_UW01, AH_P7S_UW04, AH_P7S_UW05, AH_P7S_UW06	project, observation of student's work, active participation, test, performing tasks
Social competences - Student is ready to:			
K1	recognize social consequences resulting from the use of incorrect food production technology in ecological systems	AH_P7S_KK01, AH_P7S_KO02, AH_P7S_KO03, AH_P7S_KR04	observation of student's work, participation in discussion
K2	identify with threats resulting from improper animal nutrition and the use of inadequately preserved organically produced feeds	AH_P7S_KK01, AH_P7S_KO03, AH_P7S_KR04	observation of student's work, participation in discussion

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	10
project classes	10
consultations	5
project preparation	20
report preparation	10
exam / credit preparation	20

Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 40	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Lectures: 10 x 1.5 h</p> <ol style="list-style-type: none"> 1. Fodder plants preferred in organic feeding systems; 2. Systems for using organic pasture, chemical composition and specific feed characteristics; nutritional value of feed, anti-nutritional substances; 3. Requirements for concentrated feeds authorized for use in ecological feeding of animals; 4. Feed preservation methods without the use of chemical additives; 5. Balancing and quality of protein, ways of reducing the nitrogen excretion of pigs, poultry and cattle, the possibility of using pure amino acids, other methods of enriching diets with exogenous amino acids; Reduction of methane and other intestinal gas production in cattle; 6. Balancing of minerals, macro- and micronutrients from natural feed; Excretion of minerals into the environment in all farm animal species, acceptable mineral additives; 7. Minimizing the use of vitamin preparations, natural feed rich in vitamins; Possibilities of using microbiological feed additives in pro-ecological feeding systems; 8. "Organic" feeding of ruminants; Pig nutrition in alternative housing systems. Poultry nutrition using natural feed; 9. By-products of the agri-food industry that can be used in ecological feeding systems; 10. Legal conditions of ecological animal feeding systems. 	lecture
2.	<p>Classes: 5 x 2h</p> <ol style="list-style-type: none"> 1. Composing feed rations for dairy cattle using feed from organic farming 2. Feeding pigs using organically produced feed materials - pigs for fattening 3. Feeding pigs using organically produced feed materials - sows 4. Feeding poultry with the use of organically produced feed materials; 5. Feeding aquatic poultry using organically produced feed materials; 	practical classes

3.	<p>Classes: 5 x 2h</p> <ol style="list-style-type: none"> 1. Planning of crop rotation in organic farming; 2. Practical implementation of the principles of ecological production of organic feed (selection and doses of natural fertilizers, ecological methods of plant protection, principles of natural preservation of feed); 3. Composing feed rations for fattening cattle with the use of organic feed; 4. Designing a feeding system based on organic feed for the selected species and direction of animal production; 5. Presentation and discussion of the designed ecological feeding system. 	project classes
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Course advanced

Teaching methods:

project-based learning (PBL), teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, observation of student's work, participation in discussion	50.00%
practical classes	observation of student's work, active participation, test, performing tasks	25.00%
project classes	project, active participation	25.00%

Entry requirements

animal nutrition and feed science, physiology of plants and animals



UNIwersytet Przyrodniczy we Wrocławiu

Komunikacja w biznesie Karta opisu przedmiotu

Informacje podstawowe

Kierunek studiów wszystkie	Cykl kształcenia 2020/21
Specjalność -	Kod przedmiotu 5e26ec6e4fc6ePHS00S.IloFHS.5e26dc1c1a332.19
Jednostka organizacyjna Uniwersytet Przyrodniczy we Wrocławiu	Języki wykładowe Polski
Poziom studiów studia drugiego stopnia	Obligatoryjność Fakultatywny
Forma studiów Stacjonarne	Blok zajęciowy Przedmioty humanistyczno-społeczne
Profil studiów Ogólnoakademicki	Przedmiot powiązany z badaniami naukowymi Nie
	Przedmiot kształtujący umiejętności praktyczne Nie

Okresy Semestr 1, Semestr 2, Semestr 3, Semestr 4	Forma zaliczenia Zaliczenie na ocenę	Liczba punktów ECTS 2
	Forma prowadzenia i godziny zajęć Wykład: 30	

Cele kształcenia dla przedmiotu

C1	Przedmiot ma na celu wyposażenie studentów w podstawową wiedzę i umiejętności z zakresu komunikowania w działalności biznesowej - interpersonalnego, grupowego i medialnego.
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Efekty uczenia się dla przedmiotu

Kod	Efekty uczenia się w zakresie	Kierunkowe efekty uczenia się	Metody weryfikacji
Wiedzy - Student zna i rozumie:			
W1	zagadnienia społeczne i humanistyczne oraz potrafi wskazać związki między naukami humanistycznymi i społecznymi oraz rolniczymi, leśnymi, weterynaryjnymi i przyrodniczymi.		Kolokwium

Umiejętności - Student potrafi:			
U1	analizować i interpretować zjawiska społeczne.		Kolokwium
Kompetencji społecznych - Student jest gotów do:			
K1	utrwalania potrzeby uczenia się przez całe życie.		Kolokwium

Bilans punktów ECTS

Forma aktywności studenta	Średnia liczba godzin* przeznaczonych na zrealizowane aktywności	
Wykład	30	
Przygotowanie do egzaminu/zaliczenia	10	
Gromadzenie i studiowanie literatury	10	
Łączny nakład pracy studenta	Liczba godzin 50	ECTS 2
Zajęcia z bezpośrednim udziałem nauczyciela	Liczba godzin 30	ECTS 1

* godzina (lekcyjna) oznacza 45 minut

Treści programowe

Lp.	Treści programowe	Formy prowadzenia zajęć
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1.	<ol style="list-style-type: none"> 1. Podstawowe pojęcia z zakresu komunikacji w biznesie, modele i zasady skutecznej komunikacji, kompetencja komunikacyjna (2h). 2. Budowanie marki osobistej za pośrednictwem komunikacji werbalnej i niewerbalnej (2h). 3. Dokumenty aplikacyjne jako narzędzie komunikowania się z potencjalnym pracodawcą (2h). 4. Skuteczna autoprezentacja podczas rozmowy kwalifikacyjnej (2h). 5. Rola savoir vivre'u w budowaniu marki osobistej – zwroty grzecznościowe, precedencja, kultura osobista (2h). 6. Komunikacja w zespole zadaniowym (2h) 7. Audyt komunikacyjny jako narzędzie diagnozowania procesów komunikowania w organizacji (2h) 8. Rozwiązywanie sytuacji trudnych w bezpośrednich interakcjach, techniki asertywnej komunikacji (2h). 9. Prowadzenie negocjacji biznesowych, typy negocjacji, strategię i techniki negocjacji (2h). 10. Komunikacja w procesie kierowania zespołem pracowniczym (2h). 11. Zasady wystąpień publicznych (2h). 12. Komunikowanie się z mediami (2h). 13. Planowanie i realizacja kampanii komunikacyjnych (2h). 14. Zarządzanie komunikacją w sytuacjach kryzysowych (2h). 15. Repetytorium (2h). 	Wykład
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Informacje rozszerzone

Metody nauczania:

Analiza przypadków, Burza mózgów, Film dydaktyczny, Gra dydaktyczna, Praca w grupie, Dyskusja, Wykład

Aktywności	Metody zaliczenia	Udział procentowy w ocenie łącznej przedmiotu
Wykład	Kolokwium	100.00%

Dodatkowy opis

Zgodnie ze specyfiką pracy z bardzo licznymi grupami wykładowymi w ramach ogólnouczelnianych kursów humanistyczno-społecznych: końcowa ocena z kursu stanowi składową punktację w zakresie wiedzy, umiejętności i kompetencji społecznych, weryfikowanych podczas sprawdzianu pisemnego. Sprawdzian pisemny zawiera pytania: A) odtwórcze – sprawdzające przyswojenie przez studenta podstawowych informacji, B) problemowe – oceniające umiejętności i kompetencje społeczne. Wymagany poziom niezbędny do zaliczenia przedmiotu: 51%.

Wymagania wstępne

Pozytywna ocena z zaliczenia z co najmniej jednego przedmiotu humanistycznego w ramach toku studiów.



UNIwersytet Przyrodniczy we Wrocławiu

Coaching

Karta opisu przedmiotu

Informacje podstawowe

Kierunek studiów wszystkie	Cykl kształcenia 2020/21
Specjalność -	Kod przedmiotu 5e26ec6e4fc6eW00S.IloFHS.1580284806.20
Jednostka organizacyjna Uniwersytet Przyrodniczy we Wrocławiu	Języki wykładowe Polski
Poziom studiów studia drugiego stopnia	Obligatoryjność Fakultatywny
Forma studiów Stacjonarne	Blok zajęciowy Przedmioty humanistyczno-społeczne
Profil studiów Ogólnoakademicki	Przedmiot powiązany z badaniami naukowymi Nie
	Przedmiot kształtujący umiejętności praktyczne Nie

Okresy Semestr 1, Semestr 2, Semestr 3, Semestr 4	Forma zaliczenia Zaliczenie na ocenę	Liczba punktów ECTS 2
	Forma prowadzenia i godziny zajęć Wykład: 30	

Cele kształcenia dla przedmiotu

C1	Zapoznanie studentów z terminologią.
C2	Wykłady przybliżają coaching jako zjawisko i prezentują specyfikę pracy coacha.
C3	Wykład wprowadza techniki, narzędzia i modele coachingowe.
C4	Studenci ćwiczą strategie coachingowe oraz dokonują - wg instrukcji wykładowcy - samooceny, przybliżając się do osiągnięcia ważnych celów życiowych i zawodowych.

Efekty uczenia się dla przedmiotu

Kod	Efekty uczenia się w zakresie	Kierunkowe efekty uczenia się	Metody weryfikacji
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Wiedzy - Student zna i rozumie:			
W1	Zna podstawową terminologię, stosowaną w naukach humanistycznych i społecznych;		Zaliczenie ustne, Projekt, Aktywność na zajęciach, Prezentacja, Udział w dyskusji
W2	mechanizmy pozyskiwania informacji z zakresu tematyki kursu;		Zaliczenie ustne, Projekt
Umiejętności - Student potrafi:			
U1	współpracować w grupie, przyjmując w niej różne role;		Projekt, Obserwacja pracy studenta
U2	dokształcać się przez całe życie;		Projekt, Obserwacja pracy studenta, Aktywność na zajęciach, Udział w dyskusji
Kompetencji społecznych - Student jest gotów do:			
K1	myśleć i działać kreatywnie;		Zaliczenie ustne, Obserwacja pracy studenta, Aktywność na zajęciach, Prezentacja, Udział w dyskusji

Bilans punktów ECTS

Forma aktywności studenta	Średnia liczba godzin* przeznaczonych na zrealizowane aktywności	
Wykład	30	
Przygotowanie do zajęć	10	
Przygotowanie prezentacji/referatu	10	
Przygotowanie do egzaminu/zaliczenia	10	
Łączny nakład pracy studenta	Liczba godzin 60	ECTS 2
Zajęcia z bezpośrednim udziałem nauczyciela	Liczba godzin 30	ECTS 1

* godzina (lekcyjna) oznacza 45 minut

Treści programowe

Lp.	Treści programowe	Formy prowadzenia zajęć
1.	Coaching - znaczenie. Charakterystyka pracy coacha. Różnice pomiędzy life coachingiem i business coachingiem. Proces coachingu. Jak pracuje coach: budowanie relacji z Klientem (zaufanie i komunikacja). Narzędzia w coachingu - zastosowanie w praktyce. Ewaluacja i etyka pracy coacha. Studia przypadków - praca indywidualna z klientem/studentem. Repetytorium.	Wykład

Informacje rozszerzone

Metody nauczania:

Analiza przypadków, Film dydaktyczny, Gra dydaktyczna, Metoda problemowa, Metoda projektów, Metoda sytuacyjna, Praca w grupie, Dyskusja, Wykład

Aktywności	Metody zaliczenia	Udział procentowy w ocenie łącznej przedmiotu
Wykład	Zaliczenie ustne, Projekt, Obserwacja pracy studenta, Aktywność na zajęciach, Prezentacja, Udział w dyskusji	100.00%

Wymagania wstępne

Ogólna wiedza ze szkoły średniej;



UNIwersytet Przyrodniczy we Wrocławiu

Socio-human optional course Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc89fb0e
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty humanistyczno-społeczne
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills Yes

Period Semester 2	Examination graded credit	Number of ECTS points 2
	Activities and hours lecture: 30	

Goals

C1	The course deals with the history, culture and customs of Poland to help the student become a good ambassador of Poland and its heritage.
C2	It aims at discussing phenomena occurring in the modern world like postmodern culture, fluid reality, globalization, fast culture, artificial intelligence in respect to the mentality and everyday life of the Polish society.
C3	The course also helps the participants to become understanding, tolerant as well as broad-minded and creative members of the society.
C4	Open-mindedness and creativity enable societies to cope with a variety of problems, not only social and political ones, on the win-win basis.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	The student understands and can talk about Poland, has knowledge on the history of Lower Silesia and Wrocław. He has broader knowledge on modern society and the changes it is undergoing.	AH_P7S_WK04	written credit, report
W2	The student is able to understand and participate in discussions and lectures related to his academic environment, can comprehensively read complex texts on general and popular science topics related to his field of study and interests.	AH_P7S_WK04	written credit, report
Skills - Student can:			
U1	The student can talk about Poland using historical and cultural issues thus creating the picture of Poland, can prepare presentations.	AH_P7S_UW07	written credit, report
U2	The student can discuss problem issues in a civilised way without being hostile.	AH_P7S_UW07	written credit, report
Social competences - Student is ready to:			
K1	The student is ready to actively participate in social life of his area, is concerned about the environment and society, is reliable and self-confident in performing his duties. He is also eager to learn and is open to experience and new requirements.	AH_P7S_KK01	written credit, report

Balance of ECTS points

Activity form	Activity hours*	
lecture	30	
collecting and studying literature	20	
lesson preparation	10	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Lecture 1. The beginnings of Poland.</p> <p>Lecture 2. The history of Poland.</p> <p>Lecture 3. The history of Wrocław and Lower Silesia. Part 1</p> <p>4. Trip to Muzeum Etnograficzne, 111, Traugutta St.</p> <p>5. Lecture 4. The history of Wrocław and Lower Silesia. Part 2</p> <p>6. Trip to Ostrów Tumski and Sisters Notre Dame, 12, Św. Marcina St., part 1. Romanesque beginnings.</p> <p>7. Trip to Market Square</p> <p>8. Lecture 5. Baroque and Romantic Wrocław.</p> <p>9. Trip to Aula Leopoldina, Oratorium Marianum, University Church</p> <p>10. Lecture 6. Identity. Traditions and customs of the Polish nation.</p> <p>11. Christmas Eve Supper - 2 classes</p> <p>12. Christmas Eve Supper</p> <p>13. Lecture 7. the influence of post-modern culture on the third-wave societies.</p> <p>14. Lecture 8. New technologies and everyday life of the Polish society.</p> <p>15. The floor is yours! Students talk about their own countries and impressions of Poland</p>	lecture
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Course advanced

Teaching methods:

presentation / demonstration, teamwork, discussion, lecture

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, report	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Extension of agricultural technology Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e8b0c1019502.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 3	Examination exam	Number of ECTS points 4
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	To make students familiar with the conception of extension of agricultural technology that has been emerged as an important service sector. and the new developments in technology information as important input in agricultural production. To provide student knowledge on methods of information processing to make them customized to target group's needs.
C2	To provide student knowledge on methods of information processing to make them customized to target group's needs.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the concepts of technology extension in agriculture;	AH_P7S_WG08, AH_P7S_WG09, AH_P7S_WK04	written exam
W2	the necessity of information customizing depending on the needs of target groups;	AH_P7S_WG08, AH_P7S_WG09, AH_P7S_WK04	written exam
W3	the rules and activities of agricultural extension technology and their importance to sustainable agriculture and development.	AH_P7S_WG08, AH_P7S_WG09, AH_P7S_WK04	written exam
Skills - Student can:			
U1	identify and explain basic concepts in agricultural development, various extension and communication methods and approaches;	AH_P7S_UK02, AH_P7S_UK03, AH_P7S_UO09, AH_P7S_UUW08	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks
U2	communicate with various target groups in agricultural sector providing customized information;	AH_P7S_UK02, AH_P7S_UUW08	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks
U3	choose use and implement selected extension methods during classroom or field practicals.	AH_P7S_UK02, AH_P7S_UK03, AH_P7S_UO09, AH_P7S_UUW08, AH_P7S_UW05, AH_P7S_UW06, AH_P7S_UW07	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	appreciate the distinctions in communicating with various target groups;	AH_P7S_KK01, AH_P7S_KR04	observation of student's work, active participation, participation in discussion
K2	demonstrate apprehension to issues related to sustainable agriculture development .	AH_P7S_KO02, AH_P7S_KO03, AH_P7S_KR04	observation of student's work, active participation, participation in discussion

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	30
consultations	15

presentation/report preparation	15	
exam participation	10	
project preparation	20	
Student workload	Hours 105	ECTS 4
Workload involving teacher	Hours 70	ECTS 2
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Lectures:</p> <ol style="list-style-type: none"> 1. The concept of extension - historical outline 2. Methods for technology development and transfer 3. Rural sociology, development and extension 4. Visual and oral communication. Information customization. 5. Educational psychology. Distance or blended education 6. Innovations in technology extension 7. Transfer and implementation of innovation in agriculture 8. Market-led extension 	lecture
2.	<p>Classes: 6 x 5 h</p> <ol style="list-style-type: none"> 1. The roles and functions of the extension worker - project 2. The principles and approaches of extension - project 3. The various extension teaching methods, techniques and approaches - project/presentation. 4. communication in extension - field classes 5. The process of diffusion and adoption, teaching adults - practicals 6. Illustration the cycle of a development program - project 	practical classes

Course advanced

Teaching methods:

case analysis, brainstorming, problem-solving method, project-based learning (PBL), presentation / demonstration, teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written exam	40.00%
practical classes	project, observation of student's work, active participation, report, presentation, participation in discussion, performing tasks	60.00%

Entry requirements

None.



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Case study of animal husbandry Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e8b0c1028676.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills Yes

Period Semester 3	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 30	

Goals

C1	to make students familiar with practical issues of advanced animal production in China;
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	advanced terminology in the field of animal husbandry and the utility types breeds of farm animal species in China;	AH_P7S_WG06, AH_P7S_WG08	written credit

W2	techniques of animal reproduction and phenomenon;	AH_P7S_WG06, AH_P7S_WG08	written credit
W3	methods of selection, mating and crossing and animal identification.	AH_P7S_WG06, AH_P7S_WG08	written credit
Skills - Student can:			
U1	assign a given breed to a specific utility type;	AH_P7S_UW04, AH_P7S_UW05	observation of student's work, active participation, test, performing tasks, case study
U2	analyze the animal's pedigree; knows how to analyze animal growth and knows how to calculate kinship and inbreeding coefficients;	AH_P7S_UW05, AH_P7S_UW06	observation of student's work, active participation, test, performing tasks, case study
U3	determine the age of the animals based on the teeth characteristics; can use zoomimetric devices.	AH_P7S_UW04, AH_P7S_UW05	observation of student's work, active participation, test, performing tasks, case study
Social competences - Student is ready to:			
K1	assess the importance of animals for people and has a correct attitude towards animals;	AH_P7S_KR04	observation of student's work, active participation, performing tasks
K2	assess the consequences of using specific breeding methods.	AH_P7S_KR04	observation of student's work, active participation, performing tasks

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	30	
consultations	2	
exam / credit preparation	14	
class preparation	14	
report preparation	15	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 47	ECTS 1

Practical workload	Hours 45	ECTS 1
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* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>By Peihua Zhang</p> <ol style="list-style-type: none"> 1. Dry matter Intake of Dairy Cows, 1,5 hr 2. Feed and Diet Composition Varies, 1,5 hr 3. How to design formulation of total mixture ration for dairy cattle, 1,5 hr 4. Introduction of varieties of cattle goats, and sheep, 1,5 hr <p>By Juan Jiang</p> <ol style="list-style-type: none"> 1. Marker assisted selection in Cows and beef cattle, 1,5 hr 2. Marker assisted selection in swine, 1,5 hr 3. Marker assisted selection in poultry, 1,0 hr <p>By Manhu Cao</p> <ol style="list-style-type: none"> 1. Conversations on Swine Production in China, 1,0 hr 2. Animal Production and Food Science, 1,0 hr <p>By Zhiyong Fan</p> <ol style="list-style-type: none"> 1. Prevention of diseases and treatment for Piglets (nutrition, feeding, environment), 1,0 hr 2. Manipulation strategy of swine nutrition and metabolic disease, 1,0 hr 3. Efficient use of feed resources [eg. Corn, dregs, plant extracts] in swine production, 1,0 hr 	lecture

2.	<p>By Peihua Zhang</p> <ol style="list-style-type: none"> 1. Dry matter Intake of Dairy Cows, 2 hr 2. Feed and Diet Composition Varies, 2 hr 3. How to design formulation of total mixture ration for dairy cattle, 2 hr 4. Introduction of varieties of cattle goats, and sheep, 2 hr <p>By Juan Jiang</p> <ol style="list-style-type: none"> 1. Marker assisted selection in Cows and beef cattle, 2 hr 2. Marker assisted selection in swine, 2 hr 3. Marker assisted selection in poultry, 2 hr <p>4. By Manhu Cao</p> <ol style="list-style-type: none"> 5. Conversations on Swine Production in China, 2 hr 6. Animal Production and Food Science, 1 hr <p>By Zhiyong Fan</p> <ol style="list-style-type: none"> 1. Prevention of diseases and treatment for Piglets (nutrition, feeding, environment), 1 hr 2. Manipulation strategy of swine nutrition and metabolic disease, 1 hr 3. Efficient use of feed resources [eg. Corn, dregs, plant extracts] in swine production, 1 hr 	practical classes
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Course advanced

Teaching methods:

discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, active participation	50.00%
practical classes	observation of student's work, active participation, test, performing tasks, case study	50.00%

Entry requirements

None.



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Animal husbandry law Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e8b0c10383d9.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 2
	Activities and hours lecture: 30	

Goals

C1	The aim of the course is to introduce the basics of legislative activity, which is valid in the animal breeding, especially in farm and amateur animals. The program includes an overview of national and international legal acts and their practical significance for the breeder, including animal protection, animal welfare and livestock conditions, animal breeding and labeling, prevention and diseases restrictions as well as animal slaughtering.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	advanced legal knowledge in the field of welfare, trade, transport and animal slaughtering	AH_P7S_WG01	written credit

W2	what is the importance of ensuring appropriate conditions for animals, understand the principles of the protection of animals and their links with animal husbandry and agriculture	AH_ P7S_WK04	written credit
W3	the possibility of practical use of knowledge in the field of animal handling and management cages for animals	AH_ P7S_WK12	written credit
Skills - Student can:			
U1	carry out biological observations, interprets and discusses the results and formulate appropriate conclusions using scientific terminology	AH_ P7S_UW01	written credit
U2	observes the impact of the environmental factors on animals, explains the interactions between the ecosystem and identify potential risks for the animals	AH_ P7S_UW05	written credit
U3	prepare reports, projects, papers and other presentations in the field using relevant legislation and legal acts	AH_ P7S_UW06	written credit
Social competences - Student is ready to:			
K1	to shows interest in updating the knowledge of animal biology and appropriate living conditions	AH_ P7S_KK01	written credit
K2	to be sensitive to nature as a set of cognitive, aesthetic, educational and tourism purposes; takes aware of the importance of biodiversity and promotes the animal protection and quality of the environment	AH_ P7S_KO02	written credit
K3	to taking into account the civilization progress is aware of environmental risks for humans and animals; has the ethical attitude to animals	AH_ P7S_KO03	written credit

Balance of ECTS points

Activity form	Activity hours*	
lecture	30	
lesson preparation	10	
exam / credit preparation	15	
Student workload	Hours 55	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>Wykład 1 (3h): Wprowadzenie do prawnej ochrony zwierząt. Źródła prawa polskiego i międzynarodowego. Typy oraz hierarchia aktów prawnych.</p> <p>Wykład 2 (3h): Ochrona zwierząt w Polsce – jako podstawa prawnej ochrony zwierząt gospodarskich, towarzyszących i dzikich (Ustawa z dnia 21 sierpnia 1997r. o ochronie zwierząt [Dz. U. 1997, Nr 111, poz. 724, z późn. zm.] oraz wybrane akty wykonawcze).</p> <p>Wykład 3 (3h): Prawne aspekty hodowli i rozrodu zwierząt w Polsce i Unii Europejskiej (Ustawa z dnia 29 czerwca 2007 r. o organizacji hodowli i rozrodzie zwierząt gospodarskich [Dz. U. 2007, Nr 133, poz. 921, z późn. zm.] oraz wybrane akty wykonawcze).</p> <p>Wykład 4 (3h): Warunki utrzymania wybranych gatunków zwierząt w Polsce (Rozporządzenie Ministra Rolnictwa i Rozwoju Wsi z dnia 15 lutego 2010r. w sprawie wymagań i sposobu postępowania przy utrzymywaniu gatunków zwierząt gospodarskich, dla których normy ochrony zostały określone w przepisach Unii Europejskiej [Dz. U. 2010, Nr 56, poz. 344, z późn. zm.]; Rozporządzenie Ministra Rolnictwa i Rozwoju Wsi z dnia 28 czerwca 2010 r. w sprawie minimalnych warunków utrzymywania gatunków zwierząt gospodarskich innych niż te, dla których normy ochrony zostały określone w przepisach Unii Europejskiej [Dz. U. 2010, Nr 116, poz. 778, z późn. zm.]; Rozporządzenie Ministra Środowiska z dnia 20 stycznia 2004r. w sprawie minimalnych warunków utrzymywania poszczególnych gatunków zwierząt wykorzystywanych do celów rozrywkowych, widowiskowych, filmowych, sportowych i specjalnych [Dz. U. 2004, Nr 16, poz. 166]).</p> <p>Wykład 5 (3h): Zwalczanie chorób zakaźnych zwierząt oraz bioasekuracja – jako warunek zapewnienia ochrony zdrowia zwierząt oraz bezpieczeństwa żywnościowego konsumentów</p> <p>(Ustawa z dnia 11 marca 2004r. o ochronie zdrowia zwierząt oraz zwalczaniu chorób zakaźnych zwierząt [Dz. U. 2004, Nr 69, poz. 625, z późn. zm.] oraz wybrane akty wykonawcze).</p> <p>Wykład 6 (3h): Transport zwierząt oraz szczegółowe warunki jego realizacji w Polsce i Unii Europejskiej (Rozporządzenie Rady (WE) nr 1/2005 z dnia 22 grudnia 2004r. w sprawie ochrony zwierząt podczas transportu i związanych z tym działań oraz zmieniające dyrektywy 64/432/EWG i 93/119/WE oraz rozporządzenie (WE) nr 1255/97 [OJ L 3, 5.1.2005, p. 1 – 44]).</p> <p>Wykład 7 (3h): Ubój zwierząt w świetle prawa polskiego i międzynarodowego (Rozporządzenie Rady (WE) nr 1099/2009 z dnia 24 września 2009r. w sprawie ochrony zwierząt podczas ich uśmiercania [OJ L 303, 18.11.2009, p. 1 – 30.]; Rozporządzenie Ministra Rolnictwa i Rozwoju Wsi z dnia 9 września 2004r. w sprawie kwalifikacji osób uprawnionych do zawodowego uboju oraz warunków i metod uboju i uśmiercania zwierząt [Dz. U. 2004, Nr 205, poz. 2102, z późn. zm.]).</p> <p>Wykład 8 (3h): Praktyczne aspekty wykorzystania aktów prawnych - studium przypadków (dyskusja plenarna z wykorzystaniem materiałów audiowizualnych).</p> <p>Wykład 9 (3h): Propozycje praktycznego wykorzystania zdobytej wiedzy w pracy zawodowej, w tym hodowli zwierząt, przemyśle oraz instytucjach rządowych i pozarządowych.</p> <p>Wykład 10 (3h): Egzamin pisemny.</p>	lecture
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Course advanced

Teaching methods:

case analysis, text analysis, brainstorming, educational film, problem-solving method, situation-based learning, presentation / demonstration, teamwork, discussion, lecture

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	100.00%



UNIwersytet Przyrodniczy we Wrocławiu

Technical English Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e5e1df7c5a10.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 2
	Activities and hours practical classes: 30	

Goals

C1	To provide students knowledge on specialized knowledge expression in English, and thesis and scientific paper writing.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Skills - Student can:			

U1	use a foreign language in the field of animal science and related sciences, in accordance with the requirements specified for level B2 + of the European Language Training Description System	AH_ P7S_UK10	oral credit, observation of student's work, active participation, presentation, participation in discussion
U2	construct extensive oral and written opinions, views, justifications on topics related to animal breeding, and husbandry or the production of feed; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques	AH_ P7S_UK02	oral credit, observation of student's work, active participation, presentation, participation in discussion
Social competences - Student is ready to:			
K1	critically assess his knowledge and to use appropriate sources of information, critically assessing their value	AH_ P7S_KK01	participation in discussion

Balance of ECTS points

Activity form	Activity hours*	
practical classes	30	
presentation/report preparation	30	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1
Practical workload	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	Practicals: 15 x 2h On each class, one of Polish student will give his/her presentation on broadly understood animal science.	practical classes

Course advanced

Teaching methods:

discussion, classes

Activities	Examination methods	Percentage in subject assessment

Activities	Examination methods	Percentage in subject assessment
practical classes	oral credit, observation of student's work, active participation, presentation, participation in discussion	100.00%



UNIwersytet Przyrodniczy we Wrocławiu

Diploma seminar III Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc93825a
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 2
	Activities and hours seminar: 30	

Goals

C1	To make students familiar with the principles of writing master's theses, the use of source materials and their use in the work, the principles of correct inference. Errors made when preparing the thesis. Individual work of the student with master thesis supervisor.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	in depth, individual theories, data collection techniques and methods of their development related to animal husbandry and breeding, in particular those related to the subject of the thesis being implemented;	AH_P7S_WG02	observation of student's work, participation in discussion, performing tasks
W2	principles of ethical use of results in compliance with copyright law.	AH_P7S_WK11	observation of student's work
Skills - Student can:			
U1	plan and implement simple experiments, design works to verify the assumed research hypothesis of the master's thesis and develop statistically obtained results, discuss and discuss the results of own research and draw conclusions;	AH_P7S_UK02, AH_P7S_UW04, AH_P7S_UW07	active participation, performing tasks
U2	construct extensive oral and written opinions, views, justifications on topics related to the maintenance of animals that are subject to breeding, rearing or use, or the production of feed; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques.	AH_P7S_UK02	active participation, performing tasks
Social competences - Student is ready to:			
K1	substantive discussion with other specialists in animal breeding and related sciences;	AH_P7S_KK01, AH_P7S_KR04	active participation, participation in discussion
K2	critically assess knowledge and using appropriate sources of information, critically assessing their value.	AH_P7S_KK01, AH_P7S_KR04	active participation, participation in discussion

Balance of ECTS points

Activity form	Activity hours*	
seminar	30	
collecting and studying literature	30	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	The program is tailored to each student and his research interests.	seminar

Course advanced

Teaching methods:

computer lab/laboratory, discussion, participation in research, Consultation with master's thesis supervisor

Activities	Examination methods	Percentage in subject assessment
seminar	observation of student's work, active participation, participation in discussion, performing tasks	100.00%



UNIwersytet Przyrodniczy we Wrocławiu

Master thesis laboratory II Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc962238
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 6
	Activities and hours practical training: 160	

Goals

C1	To make students familiar with using research equipment and laboratory work with special attention to master thesis development.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	in depth the issues in the field of statistics and research methods on animals used in the study of the population of animals being the subject of breeding, husbandry and use; as well as issues related to the design and carry out of research in natural sciences	AH_P7S_WG02	observation of student's work, practical training report
Skills - Student can:			
U1	plan and conduct animal or related research experiments and analyse the obtained results	AH_P7S_UW04	active participation, performing tasks, practical training report
U2	apply modern analytical techniques used in her/his master thesis	AH_P7S_UW04	active participation, performing tasks, practical training report
Social competences - Student is ready to:			
K1	critically assess knowledge and using appropriate sources of information, critically assessing their value.	AH_P7S_KK01	observation of student's work

Balance of ECTS points

Activity form	Activity hours*	
practical training	160	
report preparation	20	
Student workload	Hours 180	ECTS 6
Workload involving teacher	Hours 160	ECTS 6
Practical workload	Hours 180	ECTS 7

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	The course includes research related to the implementation of the master thesis, is tailored to each student.	practical training

Course advanced

Teaching methods:

computer lab/laboratory, participation in research, Consultation with master's thesis supervisor.

Activities	Examination methods	Percentage in subject assessment

Activities	Examination methods	Percentage in subject assessment
practical training	observation of student's work, active participation, performing tasks, practical training report	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Ruminant production Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e8b0c104e475.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 20	

Goals

C1	To make students with advanced knowledge on the management and husbandry of cattle (dairy and beef), sheep and goats.
C2	To provide students knowledge of economic and environmental sustainability as relevant to the target species.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the characteristics, capabilities and limitations of the ruminant animals;	AH_P7S_WG05, AH_P7S_WG06, AH_P7S_WG08, AH_P7S_WG09	written credit
W2	the production principles and establish suitable production goals and targets;	AH_P7S_WG05, AH_P7S_WG06, AH_P7S_WG08, AH_P7S_WG09	written credit
W3	the organisation, structure and distribution of the major ruminant animals species.	AH_P7S_WG05, AH_P7S_WG06, AH_P7S_WG08, AH_P7S_WG09	written credit
Skills - Student can:			
U1	construct management plans including general husbandry, nutrition, reproduction and health of ruminant animals;	AH_P7S_UW05, AH_P7S_UW06	project, observation of student's work, active participation, report, presentation, performing tasks
U2	communicate effectively through the preparation, delivery and evaluation of reports, technical newsletters and oral presentations using appropriate IT tools, data analysis and presentation software.	AH_P7S_UW05, AH_P7S_UW06	project, observation of student's work, active participation, report, presentation, performing tasks
Social competences - Student is ready to:			
K1	apply critical reasoning to issues through independent thought and informed judgement;	AH_P7S_KK01, AH_P7S_KR04	observation of student's work, active participation
K2	to take actions related to ruminant production aimed at limiting the negative impact of this production on the environment.	AH_P7S_KO03	observation of student's work, active participation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	20	
consultations	15	
exam / credit preparation	15	
presentation/report preparation	10	
project preparation	15	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 50	ECTS 2

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	1. Production systems and herd/flock management (2h) 2. Reproduction techniques and systems (2h) 3. Production efficiency and product quality (2h) 4. Cattle production (2h) 5. Small ruminants production (2h) 6. The feed industry – applied nutrition (2h) 7. Factors affecting animal and feed production (2h) 8. Common disease prevention (1h)	lecture
2.	1. Formulation grazing strategies and rations for grazing animals (3h) 2. Formulate breeding programs for different ruminants (3h) 3. Project of management herds/flocks to maximise production efficiency (3h) 4. Elimination of the various constraints to optimal production for different ruminant species and/or breeds (3h) 5. Design the management of nutrition and reproduction of grazing animals by expert computer software –classes at the farm (8h)	practical classes

Course advanced

Teaching methods:

case analysis, presentation / demonstration, computer lab/laboratory, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	40.00%
practical classes	project, observation of student's work, active participation, report, presentation, performing tasks	60.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Animal nutrition and feed science Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e8b0c105f283.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 20	

Goals

C1	To provide students updated knowledge about nutritional issues of single stomach animals, poultry, ruminants and aquatic animals and advanced science and technology for obtaining high yield, high efficiency and high quality of animal origin products.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	in depth the issues of animal nutrition systems, advanced feed science and safety in Poland and China	AH_ P7S_WG06	written credit

W2	modern, innovative, specialized technologies, methods, systems and technical equipment used in the maintenance of animals that are subject to breeding, rearing and use as well as in feed production processes used in Poland and China	AH_ P7S_WG08	written credit
W3	the issues of commodity science of raw materials and products of plant and animal origin commonly used in Poland and China, as well as the possibilities of their modification through the use of advanced agrotechnical techniques and zootechnical treatments.	AH_ P7S_WG07	written credit
Skills - Student can:			
U1	construct comprehensive oral and written opinions and views on issues related to widely understood animal and feed production ; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques;	AH_ P7S_UK02	oral credit, observation of student's work, active participation, test, participation in discussion, performing tasks
U2	use advanced IT tools and software commonly used in animal production sector;	AH_ P7S_UK03	oral credit, observation of student's work, active participation, test, participation in discussion, performing tasks
U3	can design feeding systems for various species animals using advance software.	AH_ P7S_UK03, AH_ P7S_UW05, AH_ P7S_UW06	oral credit, observation of student's work, active participation, test, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	critically assess his knowledge and to use appropriate sources of information, critically assessing their value	AH_ P7S_KK01	oral credit, participation in discussion

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	20	
consultations	15	
exam / credit preparation	20	
presentation/report preparation	20	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 50	ECTS 2

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	1. Chemistry and quality control of feed. (2h) 2. Methods for feed evaluation (2h) 3. Technology of feed production (2h) 4. Feed safety (1 h) 5. Rabbit nutrition 6. Horse and companion animals nutrition (2h) 7. Aquaculture nutrition (2h) 8. Health aspects of animal nutrition (2h)	lecture
2.	1. Chemistry and quality control of feed (4h) 2. Feed evaluation project (2h) 3. Technology of feed production – finding critical points (2h) 4. Feed safety control plan (1 h) 5. Rabbit nutrition – diet design (2h) 6. Horse nutrition – diet design (2h) 7. Companion animals nutrition (2h) 8. Aquaculture nutrition - - diet design (2h) 9. Health aspects of animal nutrition -analysis of animal diet and make corrections (2h)	practical classes

Course advanced

Teaching methods:

case analysis, presentation / demonstration, computer lab/laboratory, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	40.00%
practical classes	oral credit, observation of student's work, active participation, test, participation in discussion, performing tasks	60.00%



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Advanced animal nutrition Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4CO.5e8b0c106de44.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills Yes

Period Semester 3	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 20	

Goals

C1	to provide students advanced knowledge on pigs, poultry and ruminant nutrition;
C2	to provide students advanced knowledge of livestock nutrition, comparative anatomy of farm animals' digestive tract, their functions and adaptation to intake of a specific type of feed, nutritional value, quality, recommendations and restrictions in feeds used in feeding livestock, on-farm and industrial methods of their processing, nutritional methods of prevention of metabolic diseases and gastrointestinal disorders and the impact of nutrition on the quality of animal origin products and health and reproduction of animals. The content of the course includes also the principles of modern feeding systems for farm animals, including organic ones, in the economic aspect and mitigation the negative impact of animal production on the natural environment as a result of nutrition optimization.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	the comparative anatomy of the digestive tract of various livestock species, their functions and adaptation to intake of a specific type of feed; defines the types of feeds, their nutritional and economic value and knows which methods of processing to use to improve their nutritional value for a specific species of farm animals;	AH_P7S_WG06, AH_P7S_WG07, AH_P7S_WG08	written credit, active participation
W2	the etiology of metabolic diseases and digestive tract disorders as well nutritional methods of their prevention and knows the importance of nutrition in the reproduction of animals; knows nutritional methods of animal products enrichment with desirable ingredients and reducing undesirable ones;	AH_P7S_WG06, AH_P7S_WG07, AH_P7S_WG08	written credit, active participation
W3	the principles of modern feeding systems for livestock; economic factors determining the costs of animal feeding; the threats from animal production to the environment and knows nutritional methods of mitigation the negative impact of this production on the environment.	AH_P7S_WG05, AH_P7S_WG09	written credit, active participation
Skills - Student can:			
U1	select the appropriate feeds for various species of farm animals, taking into account the anatomy of the digestive tract, physiology of digestion and feed composition; classify common feeds in China due to their chemical composition and is able to select appropriate feed processing methods depending on the species for which they are intended;	AH_P7S_UW05, AH_P7S_UW06	written credit, observation of student's work, active participation, test
U2	indicates the causes of metabolic diseases and disorders of the animals' gastrointestinal tract and nutritional methods of their prevention; indicates nutrition solutions aimed at improving the quality of products of animal origin;	AH_P7S_UW04, AH_P7S_UW05, AH_P7S_UW06	written credit, observation of student's work, active participation, test
U3	formulates and verifies diets for livestock according to modern feeding standards; estimates the costs of nutrition in animal production and analyzes the economic balance indicating method of their optimization; analyzes the effects of animal production on the environment and proposes alternative solutions in the feeding of farm animals aimed at mitigation its negative impact	AH_P7S_UW05, AH_P7S_UW06	written credit, observation of student's work, active participation, test
Social competences - Student is ready to:			
K1	assess the negative impact of livestock production on the environment and activities aimed at mitigation the risk;	AH_P7S_KO03	active participation, performing tasks
K2	continuing education in the field of animal production.	AH_P7S_KR04	active participation, performing tasks

Balance of ECTS points

Activity form	Activity hours*
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lecture	15	
practical classes	20	
consultations	15	
exam / credit preparation	20	
report preparation	20	
Student workload	Hours 90	ECTS 3
Workload involving teacher	Hours 50	ECTS 2
Practical workload	Hours 40	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Lectures: 10 x 1,5 h</p> <p>Swine production</p> <ol style="list-style-type: none"> 1. Swine nutrition and feeding management . 2. Feed formulation and production . 3. Diagnosis and control of swine disease . 4. Pig farm environment and health <p>Poultry production</p> <ol style="list-style-type: none"> 1. Layer production. 2. Broiler production. 3. Poultry nutrition and feed formulation . 4. Chicken quality and production . <p>Ruminant production</p> <ol style="list-style-type: none"> 1. Common feeds and their processing for ruminants . 2. Quality evaluation of common feeds for ruminants . 	lecture

2.	<p>Classes: 10 x 2 h</p> <p>Swine production</p> <ol style="list-style-type: none"> 1. Swine nutrition and feeding management . 2. Feed formulation and production . 3. Diagnosis and control of swine disease . 4. Pig farm environment and health <p>Poultry production</p> <ol style="list-style-type: none"> 6. Layer production. <p>Broiler production.</p> <ol style="list-style-type: none"> 1. Poultry nutrition and feed formulation . 2. Chicken quality and production . <p>Ruminant production</p> <ol style="list-style-type: none"> 1. Common feeds and their processing for ruminants . 2. Quality evaluation of common feeds for ruminants . 	practical classes
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Course advanced

Teaching methods:

teamwork, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit, observation of student's work	50.00%
practical classes	observation of student's work, active participation, test, performing tasks	50.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Tai chi

Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4AO.5e5e1df756da4.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty ogólne prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, laboratory classes: 20	

Goals

C1	To provide students fundamental knowledge on tai chi philosophy.
C2	To teach students breathing exercises, calmness and meditation.
C3	To promote among students a healthy lifestyle with holistic approach to the topic of health.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	the fundamentals of tai chi philosophy;	AH_P7S_WK12	observation of student's work, active participation, performing tasks
W2	the effects of tai cho exercise on human body and mind;		observation of student's work, active participation, performing tasks
Skills - Student can:			
U1	perform the first 15 tai chi postures;	AH_P7S_UK02	observation of student's work, active participation, performing tasks
U2	take deep, relaxing breaths so this way of physical activity does not cause fast fatigue or a feeling of exhaustion.		observation of student's work, active participation, performing tasks
Social competences - Student is ready to:			
K1	critically assess his knowledge and to use appropriate exercises to obtain the best results for the body and mind critically assessing their usefulness for different types of people.	AH_P7S_KK01	observation of student's work, active participation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	20	
consultations	15	
lesson preparation	30	
Student workload	Hours 80	ECTS 3
Workload involving teacher	Hours 50	ECTS 2

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	1. Introduction to tai chi (1h) 2. History and styles of tai chi (2h) 3. Philosophy of tai chi (2h) 4. Training and techniques - Solo (taolu, neigong and qigong); Qigong versus tai chi Partnered (tuishou and sanshou) (2h) 5. Weapons of tai chi (2h) 6. Tai chi and health (2h) 7. Seated tai chi (2h) 8. Tai chi in culture, legends and anecdotes (2h)	lecture
2.	Practical classes of tai chi performance: 20 x 1h.	laboratory classes

Course advanced

Teaching methods:

educational film, presentation / demonstration, lecture, PE (physical education)

Activities	Examination methods	Percentage in subject assessment
lecture	active participation	40.00%
laboratory classes	observation of student's work, active participation, performing tasks	60.00%

Entry requirements

None.



UNIwersytet Przyrodniczy we Wrocławiu

The art of making tea Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI4AO.5e8b0c107d7fc.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty ogólne prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 3	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, laboratory classes: 20	

Goals

C1	To make students familiar and aware of the importance of tea brewing in Chinese culture and tradition;
C2	To teach student brewing tea in Chinese style.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	the importance of tea brewing in Chinese culture and tradition		written credit
W2	the methods of the brewing		written credit

Skills - Student can:			
U1	brew tea with various method of water handling;		observation of student's work, performing tasks
Social competences - Student is ready to:			
K1	critically assess his knowledge and to use appropriate sources of information, critically assessing their value		observation of student's work, performing tasks

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	20	
consultations	15	
exam / credit preparation	20	
class preparation	15	
Student workload	Hours 85	ECTS 3
Workload involving teacher	Hours 50	ECTS 2

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	1. Introduction - the importance of tea making in Chinese culture (2h) 2. Water importance in tea making (2h) 3. Various methods of handling water - Long flowing water, Torrential water , Slow flowing water, Swirling Water, Water From the Sky (4h) 4. The Five Elements in Tea - Metal element, Wood Element, Water Element, Fire Element, Earth Element (4h) 5. Western vs. Chinese style of tea making (3h)	lecture
2.	Practicals classes (20 h) on tea brewing.	laboratory classes

Course advanced

Teaching methods:

presentation / demonstration, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	40.00%
laboratory classes	observation of student's work, performing tasks	60.00%

Entry requirements

None.



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Diploma seminar IV Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc97b096
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 4	Examination graded credit	Number of ECTS points 2
	Activities and hours seminar: 30	

Goals

C1	To make students familiar with the principles of writing master's theses, the use of source materials and their use in the work, the principles of correct inference. Errors made when preparing the thesis. Individual work of the student with master thesis supervisor.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	in depth, individual theories, data collection techniques and methods of their development related to animal husbandry and breeding, in particular those related to the subject of the thesis being implemented;	AH_P7S_WG02	observation of student's work, participation in discussion, performing tasks
W2	principles of ethical use of results in compliance with copyright law.	AH_P7S_WK11	observation of student's work
Skills - Student can:			
U1	plan and implement simple experiments, design works to verify the assumed research hypothesis of the master's thesis and develop statistically obtained results, discuss and discuss the results of own research and draw conclusions;	AH_P7S_UK02, AH_P7S_UW04, AH_P7S_UW07	active participation, performing tasks
U2	construct extensive oral and written opinions, views, justifications on topics related to the maintenance of animals that are subject to breeding, rearing or use, or the production of feed; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques.	AH_P7S_UK02	active participation, performing tasks
Social competences - Student is ready to:			
K1	substantive discussion with other specialists in animal breeding and related sciences;	AH_P7S_KK01, AH_P7S_KR04	active participation, participation in discussion
K2	critically assess knowledge and using appropriate sources of information, critically assessing their value.	AH_P7S_KK01	active participation, participation in discussion

Balance of ECTS points

Activity form	Activity hours*	
seminar	30	
collecting and studying literature	30	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	The program is tailored to each student and his research interests.	seminar

Course advanced

Teaching methods:

computer lab/laboratory, discussion, participation in research, Consultation with master's thesis supervisor

Activities	Examination methods	Percentage in subject assessment
seminar	observation of student's work, active participation, participation in discussion, performing tasks	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Bioinformatics Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI8CO.5db97ced2a2a0.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 4	Examination exam	Number of ECTS points 2
	Activities and hours lecture: 15, laboratory classes: 15	

Goals

C1	The course aims to present selected issues in the field of bioinformatics in a detailed way.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	selected bioinformatic methods and tools.	AH_P7S_WG02	written exam, oral exam, written credit

W2	selected latest scientific publications in the field of bioinformatics and understands the importance of knowing the current literature.	AH_P7S_WG02	active participation, presentation
Skills - Student can:			
U1	apply selected bioinformatic tools.	AH_P7S_UK03	written exam, oral exam, written credit, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
laboratory classes	15	
presentation/report preparation	10	
exam / credit preparation	10	
class preparation	10	
Student workload	Hours 60	ECTS 2
Workload involving teacher	Hours 30	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<ol style="list-style-type: none"> 1. Introduction. Biological data bases 2. Data bases: design and structure 3. Next generation sequencing I 4. Next generation sequencing II 5. Functional annotation of polymorphisms I 6. Functional annotation of polymorphisms II 7. Bash 8. Association analysis I 9. Association analysis II 10. Selected algorithms. Current literature. 	lecture

2.	<ol style="list-style-type: none"> 1. Organisation of labsm, intorductory information 2. Biological databases I 3. Biological databases II 4. Next generation sequencing - data quality control 5. Next-generation sequencing - alignment to the reference genome 6. Next generation sequencing - polymorphism detection 7. Functional annotation of polymorphisms I 8. Functional annotation of polymorphisms II 9. Recent literature - student presentations 10. Recent literature - student presentations 11. Elements of programming I 12. Elements of programming II 13. Elements of Proteomics 14. Test 15. Summary, discussion, and grading. 	laboratory classes
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Course advanced

Teaching methods:

problem-solving method, computer lab/laboratory, lecture

Activities	Examination methods	Percentage in subject assessment
lecture	written exam, oral exam	50.00%
laboratory classes	written credit, active participation, presentation	50.00%

Entry requirements

Introduction into bioinformatics



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Development of master thesis and preparation to diploma exam Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bca2dcd4
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory mandatory
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills No

Period Semester 4	Examination graded credit	Number of ECTS points 20
	Activities and hours test assignments and project assignments: 120	

Goals

C1	Preparation of the master's thesis, including development of the research hypothesis, collection of research material, development of the results obtained, their analysis and discussion based on available scientific literature in consultation with the promoter. Expanding specialist knowledge in animal husbandry and breeding. Developing the skills of using specialized computer programs and editors in the field of collecting source materials, calculations, and text editing. The course ends with a Master's exam.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	current research dilemmas in the scientific literature in the field of broadly understood animal breeding and husbandry	AH_P7S_WG06, AH_P7S_WG08, AH_P7S_WG09, AH_P7S_WG02	diploma paper, master exam
W2	in depth, individual theories, data collection techniques and methods of their development related to animal husbandry and breeding, in particular those related to the subject of the diploma thesis	AH_P7S_WG02	diploma paper, master exam
W3	in depth, individual theories, data collection techniques and methods of their development related to animal husbandry and breeding, in particular those related to the subject of the diploma thesis.	AH_P7S_WG02	diploma paper, master exam
Skills - Student can:			
U1	plan and implement simple experiments, design works to verify the assumed research hypothesis of the master's thesis and develop statistically obtained results, discuss and discuss the results of own research and draw conclusions;	AH_P7S_UW04, AH_P7S_UW07	diploma paper
U2	construct extensive oral and written opinions, views, justifications on topics related to the maintenance of animals that are subject to breeding, rearing or use, or the production of feed; communicate accurately with various entities in verbal, written and graphic form using various communication channels and techniques;	AH_P7S_UK02	diploma paper
Social competences - Student is ready to:			
K1	contact and discussion with specialists in animal breeding and related disciplines with a view to respecting the opinions, attitudes and views of others	AH_P7S_KK01, AH_P7S_KR04	master exam
K2	critically assess the results and credibility of your research and hypotheses;	AH_P7S_KK01	master exam

Balance of ECTS points

Activity form	Activity hours*	
test assignments and project assignments	120	
consultations on diploma paper	50	
exam / credit preparation	150	
conducting research	150	
preparation of diploma paper	100	
Student workload	Hours 570	ECTS 20
Workload involving teacher	Hours 170	ECTS 6
Practical workload	Hours 150	ECTS 6

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	The program is tailored to each student and his research interests.	test assignments and project assignments

Course advanced

Teaching methods:

computer lab/laboratory, participation in research, Consultation with master's thesis supervisor

Activities	Examination methods	Percentage in subject assessment
test assignments and project assignments	diploma paper, master exam	100.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Farm animal behaviour Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code BD00000AH00S.MI8CO.5e8b0c10d2817.20
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 4	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 4, field training: 16	

Goals

C1	The course contains the issues involving an analysis of the types of behavior and mechanisms for their control in selected animal species (mammals and birds)
C2	Possibilities of using knowledge about animal behavior and their modifications in various animal keeping systems in breeding.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	Student knows mechanisms of animal behavior and their determinants.	AH_ P7S_WG03	written credit, project, observation of student's work, presentation
W2	Student knows mechanisms modifying animal behavior in various housing systems.	AH_ P7S_WG03	written credit, project, observation of student's work, presentation
Skills - Student can:			
U1	Student is able to recognize the reasons of negative phenomena in animals behavior and minimize them .	AH_ P7S_UW01, AH_ P7S_UW06	written credit, project, observation of student's work, presentation
Social competences - Student is ready to:			
K1	The student is ready to be responsible for the animals and to observe the ethics in handling them.	AH_ P7S_KK01, AH_ P7S_KO03	written credit, observation of student's work

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	4	
field training	16	
presentation/report preparation	20	
lesson preparation	15	
exam / credit preparation	15	
Student workload	Hours 85	ECTS 3
Workload involving teacher	Hours 35	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>1.Basic concepts of animals behavior, categories and forms of behavior.</p> <p>2.Daily patterns of behavior and their characteristics.</p> <p>3.Genetic and physiological determinants of breeding animals behavior</p> <p>4.Methods and effectiveness of selection for behavioral characteristics.</p> <p>5.Characteristics of different categories and forms of behavior in farm animals - sexual behavior of males during the natural mating and semen collection.</p> <p>6. Characteristics of different categories and forms of behavior in female livestock.</p> <p>7. Characteristics of the different categories and forms of behavior in farm animals - maternal behavior.</p> <p>8.Characteristics of different categories and forms of behavior in farm animals - feeding habits</p> <p>9. Categories and forms of social behavior in animals.</p> <p>10.Agonistic behavior.</p> <p>11.Unusual behavior and behavior of sick animals.</p> <p>12.The phenomenon of stress.</p> <p>13.The welfare and behavior of farm animals.</p> <p>14.Selected aspects of the legal protection of farm animals.</p> <p>15. Methods of modifying animals behavior.</p>	lecture
2.	Present the presentation and discussion of the reports of field activities (2 hrs).	practical classes
3.	Behavior of cattle kept in free-stall maintenance system (8 hrs). Behavior of sheep and goats under extensive farming) (8 hrs).	field training

Course advanced

Teaching methods:

case analysis, presentation / demonstration, teamwork, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	50.00%
practical classes	written credit, presentation	10.00%
field training	project, observation of student's work	40.00%

Entry requirements

genetics, animal anatomy and physiology, animal breeding



UNIwersytet Przyrodniczy we Wrocławiu

Cynology and felineology Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc9c0fb3
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 4	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, field training: 14, project classes: 6	

Goals

C1	During the course they discuss issues related to the broad aspect of the breeding of dogs and cats.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	the base of the organization of dog and cats breeding	AH_P7S_WG01	project, active participation, report, presentation, participation in discussion

W2	the anatomy, physiology, genetics and behaviour of dogs and cats	AH_P7S_WG01	project, active participation, report, presentation, participation in discussion
W3	specific condition of dog and cat breeding	AH_P7S_WG06, AH_P7S_WG01	project, active participation, report, presentation, participation in discussion
Skills - Student can:			
U1	Identified breeds and variety of species	AH_P7S_UW05, AH_P7S_UW06	project, report, presentation
U2	Plane special breeding system for the species and breed	AH_P7S_UW05, AH_P7S_UW06	project, report, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
field training	14	
project classes	6	
presentation/report preparation	15	
project preparation	15	
lesson preparation	10	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 35	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>The origin of dogs and cats. Topography, physiology systems of both species. The specificity of the sense organs of dogs and cats. Genetics umaszczeń defects and hereditary diseases, methods of breeding dogs and cats. Reproduction of the dogs and cats, nursing females and litter. Principles of feeding dogs and cats (depending on the physiological condition and age). Disease, prevention, vaccination appointments. Kynological organizations. Cynological group. Dog training. Felinological organizations. Organization of exhibitions and principles for the assessment of dogs and cats.</p>	lecture
2.	<p>Workshops with dogotherapy. Participation in dog show with the implementation of the project. A visit to a shelter for homeless animals combined with the analysis of the conditions of living.</p>	field training
3.	<p>Projcet of the value of the dog during the dogshow. Development of a selected issue in felinology or cynology based on analysis of scientific literature.</p>	project classes

Course advanced

Teaching methods:

project-based learning (PBL), teamwork, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	active participation, participation in discussion	10.00%
field training	project, report	45.00%
project classes	project, presentation	45.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Production technique for industrial feed and mineral-vitamin mixtures Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc9d8f73
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 4	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 13, field training: 7	

Goals

C1	include issues of characteristics raw materials need to further processing in respect of physical state, bulk weight, moisture and removal of defects. On activities students learn about processes of cleaning, screening, separation of solids, mixing and agglomeration of raw materials (granulation, micronization, extrusion and expansion). Gain knowledge about enrichment mixtures with energy and protein. Learn also about main principles of processing seeds and grains (grinding, flaking, rolling and peeling), method production of premixtures, loading and transporting of feeds and their storage.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	on the rules of application of mixtures and premixes produced according to the different technologies, for particular production groups considering the principles of their nutrition.	AH_ P7S_WK04	active participation, presentation, participation in discussion, performing tasks
W2	the technological processes used in production of commercial mixtures and premixes for all species of farmed livestock and for pets.	AH_ P7S_WG06	active participation, presentation, participation in discussion, performing tasks
W3	of production of commercial mixtures and premixes. It knows the principles of agglomeration, manufacturing and expedition of feeds.	AH_ P7S_WG06	active participation, presentation, participation in discussion, performing tasks
Skills - Student can:			
U1	to select the technological processes according to the production processes of commercial mixtures and premixes offered to particular productive groups of farmed livestock and pets. Knows how to calculate and balance the commercial mixtures and premixes for all groups of farmed livestock and pets.	AH_ P7S_UW05	observation of student's work, active participation, presentation, participation in discussion, performing tasks
U2	to evaluate the vegetable and animal origin raw materials and minerals necessary for the production of complete and mineral feeds.	AH_ P7S_UW06	observation of student's work, active participation, presentation, participation in discussion, performing tasks
Social competences - Student is ready to:			
K1	of the responsibility of consequences of improper use of commercial feeds and premixes in animal nutrition.	AH_ P7S_KO02	observation of student's work, active participation, participation in discussion, performing tasks

Balance of ECTS points

Activity form	Activity hours*
lecture	15
practical classes	13
field training	7
presentation/report preparation	10
lesson preparation	10
consultations	10

project preparation	10	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 45	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>Characteristics of raw materials to further processing (physical state, bulk weight and removal of defect)</p> <p>Preparation raw materials to further processing (cleaning, screening, separation of solids).</p> <p>Crushing of raw material (grinding, flaking, rolling and peeling).</p> <p>Metering system and weighting - description and characteristics.</p> <p>Mixing processes and methods evaluating their accuracy.</p> <p>Kinds and purpose agglomeration of raw materials (methods)</p> <p>Methods of granulation.</p> <p>Micronization, extrusion, reduction amount of antinutritive substances.</p> <p>Expansion, irradiation - characteristics of processes and their effect on nutritive value of feed.</p> <p>Feed additives increase nutritive value (binders, lubrication of feed).</p> <p>Feed additives increase nutritive value (liquid additives, molasses).</p> <p>Methods of loading and transportation of feed.</p> <p>Methods production of minerals.</p> <p>Production of additives containing active substances.</p> <p>Problems with stability of active substances during production and storage process.</p>	lecture

2.	<p>General principles of gathering raw materials in feed company for each groups of livestock animals and pets.</p> <p>Evaluation of raw material and minerals quality (quality control, kinds of defects, removal of defects).</p> <p>Methods decrease contamination of raw material with antinutritive substances.</p> <p>Methods decrease contamination of raw material with mycotoxins.</p> <p>List of agglomerated raw materials to production pelleted and loose mixtures.</p> <p>Enrichment feeds in energy, lubrication of feeds, addition of molasses.</p> <p>Premixtures for each group of animals based on mineral and organic carrier.</p> <p>Specific premixture order by customer (0,5% feed industry, 1% big feed companies, 1% small feed companies, 2-4% individual farms).</p>	practical classes
3.	<p>Field exercises (I). Trip to feed company Lira in Kwidzyń.</p> <p>Field exercises (II). Trip to feed company Josera in Nowy Tomyśl.</p>	field training

Course advanced

Teaching methods:

discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	active participation, participation in discussion	50.00%
practical classes	observation of student's work, active participation, presentation, participation in discussion, performing tasks	25.00%
field training	active participation, participation in discussion	25.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Prevention of cattle metabolic disorders Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bc9f1036
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research Yes
	Subject shaping practical skills Yes

Period Semester 4	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 8, laboratory classes: 6, field training: 6	

Goals

C1	To acquaint students with the types of metabolic disorders in cattle (pathogenesis, symptoms, diagnosis, prevention). Diagnostic and preventive programs. Biochemical blood tests in monitoring of cattle health. Application of quick diagnostic tests. Use of metabolic profile to assess nutrition. Methods for early diagnosis and prevention of metabolic disorders. Monitoring of health problems in the herd.
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Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	The student knows the methods of diagnosis and prevention of cattle metabolic disorders.	AH_P7S_WG06, AH_P7S_WG01	written credit, active participation, report

W2	Student characterizes types of diagnostic tests.	AH_P7S_WG08, AH_P7S_WG01	written credit, active participation, report
W3	Student characterizes the tasks of zootechnician and veterinarian in managing herd health.	AH_P7S_WG01	written credit, active participation, report
Skills - Student can:			
U1	The student uses diagnostic and prevention programs.	AH_P7S_UW04	written credit, active participation
U2	Student assesses the risk of metabolic disorders based on testing of biological fluids. Shows ability to assess a food dose based on blood laboratory tests.	AH_P7S_UW01, AH_P7S_UW04	written credit, active participation
Social competences - Student is ready to:			
K1	The student is aware of introducing new ones herd management tools.	AH_P7S_KK01	written credit, active participation, report
K2	The student is open to new in the field of physiology feeding ruminants.	AH_P7S_KR04	written credit, active participation, report

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	8	
laboratory classes	6	
field training	6	
exam / credit preparation	20	
project preparation	10	
presentation/report preparation	10	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 35	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
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1.	<p>1. Causes and types of metabolic disorders in cow herds. Monitoring herd health and metabolic disorders - zootechnics tasks, veterinarian. Economic and health consequences of occurrence metabolic disorders in herds. Dependence of diseases - primary disorders a secondary diseases.</p> <p>2. Analysis of the causes of diseases at the herd level (milk composition, feed intake, urine test, excrement assessment).</p> <p>3. Metabolic disorders: pathogenesis, symptoms, recognition, prevention - ketosis, fatty liver syndrome,</p> <p>4. Pathogenesis, symptoms, recognition, prevention - acidosis, alkalosis.</p> <p>5. Pathogenesis, symptoms, recognition, prevention - postpartum paralysis, abomasum dislocation.</p> <p>6. Pathogenesis, symptoms, recognition, prevention - displacement abomasum (film).</p> <p>7. Monitoring of mineral changes: macroelements, microelements, ultraelementy. vitamins. Physiological characteristics, importance in reproduction and cow resistance.</p> <p>8. Acute phase proteins in health monitoring. Changes in the course of diseases and welfare assessment.</p>	lecture
2.	<p>1. Herd health monitoring - types of screening and preventive examinations, conducted assessment, documentation.</p> <p>2. Rumen content examination. Acid-base disturbance in calves and cows.</p> <p>3. Interpretation of blood gas test results (laboratory classes).</p> <p>4. Laboratory exercises (biochemical blood tests).</p> <p>5. Rapid diagnostic tests (urine, milk tests, e.g. nitrogen test, level) ketone compounds - test strips, gyometer) - laboratory classes.</p> <p>6. Herd health protection project, profit and cost analysis.</p> <p>7. Interpretation of results from field tasks. Passing classes - test.</p>	practical classes
3.	<p>1. Laboratory exercises (biochemical blood tests).</p> <p>2. Rapid diagnostic tests (urine, milk tests, e.g. nitrogen test, level)</p>	laboratory classes
4.	<p>1. Assessment of the structure of food doses. Feces testing (fieldwork).</p> <p>2. Diagnosis of acidosis and ketosis - fieldwork.</p> <p>3. Field trip at a cattle farm - herd health management.</p>	field training

Course advanced

Teaching methods:

case analysis, educational film, problem-solving method, discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	50.00%
practical classes	written credit	20.00%
laboratory classes	report	20.00%
field training	active participation	10.00%



UNIWERSYTET PRZYRODNICZY WE WROCŁAWIU

Wild ancestors and relatives of companion animals Educational subject description sheet

Basic information

Field of study Animal Husbandry	Education cycle 2020/21
Speciality -	Subject code 5e8f0bca1547b
Department The Faculty of Biology and Animal Science	Lecture languages English
Study level Second-cycle (engineer) programme	Mandatory optional
Study form Full-time	Block Przedmioty specjalnościowe prowadzone w językach obcych
Education profile General academic	Subject related to scientific research No
	Subject shaping practical skills No

Period Semester 4	Examination graded credit	Number of ECTS points 3
	Activities and hours lecture: 15, practical classes: 20	

Goals

C1	During the course, students become familiar with the species that are closely related to companion animals.
C2	They learn a wide range of species from all over the world from different taxonomic groups, ie. Canines, felines, rodents, etc.
C3	These are issues related to their biology, evolution and effects of domestication of companion animals.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			

W1	recognize different species, which are ancestors or relatives of pets	AH_P7S_WG01	written credit, presentation
W2	biology, occurrence and characteristic.	AH_P7S_WG01	written credit, presentation
W3	the differences in structure of the body, behaviour, genetics etc., which are as effects of evolution and domestication.	AH_P7S_WG05	written credit, presentation
Skills - Student can:			
U1	compares wilde and domestic species and can define changes which are results of domestication process.	AH_P7S_UW04, AH_P7S_UW06	active participation, presentation
U2	analyze condition of population and human influence.	AH_P7S_UW04, AH_P7S_UW06	active participation, presentation

Balance of ECTS points

Activity form	Activity hours*	
lecture	15	
practical classes	20	
presentation/report preparation	15	
exam / credit preparation	15	
class preparation	10	
Student workload	Hours 75	ECTS 3
Workload involving teacher	Hours 35	ECTS 1

* hour means 45 minutes

Study content

No.	Course content	Activities
1.	<p>The concept of companion animals. Systematics of the pets. Ancestors and evolution of companion animals species (dog, cat). Ancestors and evolution of companion animals species (hamster, guinea pig, rat, mouse, etc.). Wild related species of family Canidae - characteristics and biology. Wild related species of family Felidae - characteristics and biology. Wild related species of family Rodentia - characteristics and biology. Wild related species of family Leporidae - characteristics and biology. Wild related species of other companion animals.. The effects of domestication in the field of biology, behavior. Genetic changes within the karyotype and genome.</p>	lecture

2.	Species of the family Canidae - comparison with the dog Species of the family Felidae - a comparison of the domestic cat Species of the Rodentia family, Leporidae, and other than the corresponding species in companion animals	practical classes
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Course advanced

Teaching methods:

discussion, lecture, classes

Activities	Examination methods	Percentage in subject assessment
lecture	written credit	60.00%
practical classes	active participation, presentation	40.00%