**"ION IONESCU DE LA BRAD"**

**IASI UNIVERSITY OF LIFE SCIENCES**

**PROMOTION BY EXAMINATION IN THE TEACHING CAREER – SECOND SEMESTER**

**ACADEMIC YEAR 2022/2023**

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| **DESCRIPTION OF THE POSITION TO BE FILLED:** |
| **Post** | **Associate Professor** |
| **Position in the Staff Regulations** | IX/10 |
| **Faculty** | Veterinary Medicine |
| **Department** | Preclinics |
| **Curriculum subjects** | - Genetică Medicală și Eredopatologie- Medical Genetics and Eredopathology |
| **Scientific field** | Veterinary Medicine |
| **Job Description** | The post of Associate Professor, indefinite, vacant, **No IX/10,** provided for in the state of functions approved for the academic year 2022-2023, has a norm of **11** conventional hours, provided with hours of lectures and practical work, with the following semester distribution by discipline:*- Genetică Medicală și Eredopatologie* lecture and practical works, carried out with second year students of the Faculty of Veterinary Medicine, during the second semesters, as follows (weekly average): lecture - 2 physical hours = 4 conventional hours/semester II = **2 conventional hours/year**; practical works - 4 groups x 2 hours = 8 conventional hours/semester II = **4 conventional hours/year**;*- Medical Genetics and Eredopathology*, lecture and practical works, carried out with 2rd year students of the Faculty of Veterinary Medicine (English group) during second semester, as follows: lecture - 2 physical hours = 5 conventional hours/semester II = **2.5 conventional hours/year**; practical works - 2 groups x 2 hours = 4.0 physical hours = 5 conventional hours/semester II = **2.5 conventional hours/year**. |
| **Specific activities of the post** | - Conducting lectures and practical laboratory works for the following subjects:- *Genetică Medicală și Eredopatologie* (Romanian language), lecture and practical works, in the second semester with second year students, Faculty of Veterinary Medicine;- *Medical Genetics and Eredopathology*  (English language), lecture and practical works, in the second semester with second year students, Faculty of Veterinary Medicine;-Preparation of teaching materials for the Romanian and English subjects;-Grading of tests;-Students counselling;-License project guidance;-Development of teaching materials;-Scientific research activity;-Guidance of student scientific groups;-Practical guidance during the academic year;-Attendance in scientific events;-Professional activities and collaboration with the economic environment;-Participation in civic, cultural activities in support of education;-Other activities for the practical and theoretical training of students. |
| **Topics of the competition** | **Curriculum****Genetica Medicală și Eredopatologie**1. Celula și componentele celulare cu rol genetic: *ribozomii, reticulul endoplasmatic, aparatul Golgi, mitocondria, centrozomul, fusul de diviziune, nucleul*
2. Morfologia cromozomului metafazic. Bandarea cromozomilor. Alcătuirea cariotipului și valoarea acestuia în diagnosticul citogenetic.
3. Segregarea cromozomilor în cursul diviziunilor celulare. Erori de segregare și efecte asupra modificărilor numerice cromozomiale.
4. Experimentele lui *Gregor Mendel* cu *Pisum sativum* și primele *Legi ale Eredității. Probabilități în Genetica Mendeliană.*
5. Abateri de la Legile Mendeliene ale eredității datorate interacțiunilor dintre genele alele și dintre cele nealele.
6. Fenomenele de linkage și de sex-linkage. Diferențe dintre caractere sex-linkate și caracterele controlate de sex.
7. Frecvența genelor și a genotipurilor în diferite tipuri de interacțiuni genice: dominanța incompletă, dominanța completă, polialelismul cu gene codominante, gene sex-linkate.

**Medical Genetics and Eredopathology:**1. The cell cycle. Genetic phenomena of interest in cell division
2. Chromosomes - molecular structure and chemical composition. Chromosome bands. Special types of chromosomes
3. Mendelian Genetics elements: Mendelian laws of heredity. Probabilities in mono-, di-, tri- and polihybrid crosses. The back-cross.
4. Deviations from Mendelian laws of heredity due to interactions between alleles and between genes at different loci, respectively.
5. Genetic determinism of sexes, the heredity of sex-linked characters, and of those controlled by sex. Abnormalities in sex heredity
6. Elements of population genetics: gene and genotype frequency in incomplete dominance, in complete dominance, multiple allelism, and sex-linked inheritance. The law of Hardy – Weinberg equilibrium.

**Bibliography*** 1. Creangă Şt. 1999 – *Elemente fundamentale ale eredităţii animale*, Editura *Ion Ionescu de la Brad,* Iaşi;
	2. Gupta P.K., 2007 – *Cytogenetics*, Rajsons Printers, New Delhi, India;
	3. Hassan H., 2005 – *Mendel and the laws of Genetics*, The Rosen Publishing Group, New York;
	4. Khanna P., 2009 – *Essentials of Genetics*, I.K. International Publishing House, New Delhi, India;
	5. Russel P.J., 2006 – *Genetics: A Mendelian approach*, Pearson/Benjamin Cummings, San Francisco;
	6. Templeton A.R., 2006 – *Population Genetics and microevolutionary theory*, Wiley-Liss, John Wiley& Sons, Inc., New Jersey;
	7. Vlaic A., Oroian T.E., 2002 – *Elemente de genetică pentru zootehniști*, Editura Academic Pres, Cluj-Napoca.
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| **Payroll** | The position of Assoc. Professor will be paid according to Law 153/2018, with the amount of 6047 lei. |