



Faculty	Bioengineering of Animal Resources
Department	Biotechnology
The position in the state of functions	7/II
Function	Professor
The subjects in the education plan	Biotechniques for controlling digestive function, Laboratory methods in advanced biotechnologies, Digestive and metabolic adaptation in ruminants and monogastrics, Biochemistry 1
Scientific field	Engineering Sciences; Engineering of plant and animal resources; Biotechnology
The theme of the competition tests	Nucleic acids: definition, classification, chemical structure, biochemical role in organism. Monoclonal antibodies. Biotechniques for influencing protein, carbohydrate, and lipid metabolism in ruminants and monogastrics. Biotechnologies concerning the environment –modern advanced methods of evaluation. Digestibility of nutrients in feed and feeding plans. Electrophoresis as a separation method used in biotechnologies. Factors influencing the digestibility of nutrients in feed and feeding plans. Carbohydrates: classification, nomenclature, chemical structure, notable examples, biochemical role in organisms. Peptide hormones: notable examples, chemical structure, and biochemical role in organisms. Genetic engineering and genetic manipulation in biotechnologies. Lipids: classification, nomenclature, chemical structure, notable examples, biochemical role in organisms. Advanced immunological diagnostic methods applied in biotechnology (immunoprecipitation, immunoblotting, immunofluorescence, ELISA). Modern methods of biofluorescence and bioluminescence. Advanced molecular methods in biotechnologies: protein therapies (pharmaceuticals, enzymes, lactic acid bacteria, monoclonal antibodies, recombinant antibodies). Advanced molecular methods in DNA, RNA, and protein synthesis study. The role of enzymes in digestive function. Fat-soluble vitamins: notable examples, chemical structure, biochemical role in organisms. Bibliographic references: Alvarez M.L., Nourbakhsh M. (Editors) – RNA Mapping – Methods and Protocols, Humana Press, Springer, 2014. Blanco A., Blanco G., Medical Biochemistry, Elsevier, 2017. Corcionivoschi N., Drinceanu D., Callaway T., R., Nisbet D. J., Ricke C., Zigoneanu Imola – Tehnici de manipulare ale microbiomului uman și animal, Ed. Academiei Române, București, 2015. Garban Zeno – Biochimie: Tratat comprehensiv Vol. I. Bazele biochimiei, ed. 5-a, Ed. Academiei Romane, Bucuresti, 2015. Garban Zeno – Biochimie: Tratat comprehensiv Vol.II. Efectori biochimici, ed. 5-a, Ed. Academiei Romane, Bucuresti, 2018. Garban Zeno – Biochimie: Tratat comprehensiv Vol.III. Metabolizarea nutrienților, Ed. 5-a, Ed. Academiei Române, București, 2020. Glick B.R., Pasternak J.J., Patten C.L. – Molecular biotechnology – principles

	and applications of recombinant DNA, 4th edition, ASM Press, Washington DC., 2010. Lieberman M.A., Ricer R. – Biochemistry, Molecular Biology and Genetics, 6th edition, Walters Kluwer Health, Lippincott Williams & Wilkins, 2014 Mihășan M., Ștefan M., Olteanu Z. – Biologie moleculară – metode experimentale, Ed. Universității Alexandru Ioan Cuza Iași, 2012 Masoodi K.Z., Lone S.M., Rasool R.S. – Advanced Methods in Molecular Biology and Biotechnology – A Practical Lab Manual, Academic Press, Elsevier, 2021 Smith J.E. – Biotechnology, 5th edition, Cambridge University Press, 2009 Stef – Bazele nutritie și alimentatiei animalelor de fermă, Editura Solness, 2008. Stef Lavinia – Nutrețurile combinate în alimentația suinelor și păsărilor, Editura Mirton, 2008.
The address where the tender file is sent	The Secretariat of the Faculty of Bioengineering of Animal Resources, Calea Aradului 119, Timisoara, Timis county, PC 300645.