

HIGHER EDUCATIONAL INSTITUTION OF UKOOPSPILKA  
«POLTAVA UNIVERSITY OF ECONOMY AND TRADE»

Educational and Scientific Institute of International Education  
Department of commodity science, biotechnology, expertise and customs

**SYLABUS**  
of educational discipline  
**Project studies of discipline "Expert researches in a biotechnology"**  
on 2022-2023 school year

Course and semester of study	4 courses, 1 semester
The educational program/is specialization	"Biotechnology"
Speciality of	162 Biotechnologies and bioengineering
Area of knowledge	16 Chemical and bioengineering
A degree of higher education is a	bachelor

Name of the NPP that leads this discipline,  
scientific degree and academic title,  
position

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Schedule educational classes	<a href="http://schedule.puet.edu.ua/">http://schedule.puet.edu.ua/</a>
Consultations	ocular <a href="http://www.http://www.tpt.puet.edu.ua/">http://www.</a> <a href="http://www.tpt.puet.edu.ua/">http://www.tpt.puet.edu.ua/</a> online: by email, mon-fri with 10.00-15.00
Page remote course	<a href="https://el.puet.edu.ua/">https://el.puet.edu.ua/</a>

Description of educational discipline	Forming for the students of the integral system of компетенностей, that touch theoretical and practical aspects of expert researches
Duration	0,5 credits ЄKTC/15 hours (practical employments 6 hours, independent work 9 hours)
Forms and methods studies	Practical employments are in an audience, independent work nonscheduled
Current and final checking system	Current control: attendance of employments; discussion of material of employments; implementation of educational tasks Final control: test
Base knowledge	General biotechnology, Processes and vehicles of biotechnological productions, Technology of bioproductions, Biotechnology and health of man
Teaching language	English

**Description of educational discipline**

**List of competences, that is provided by this educational discipline, programmatic results of studies**

Programmatic results of studies	To the competence, that a bread-winner must seize
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<ul style="list-style-type: none"> <li>• Able to apply knowledge of composition and structure of cages of different biological agents for determination of optimal terms of cultivation and potential of the use of the investigated cages in a biotechnology (PR07);</li> <li>• Able to distinguish from natural substrate and identify microorganisms of different systematic groups. To determine morphological-cultural and physiological-biochemical properties of different biological agents. (PR08);</li> <li>• Able to conduct experimental researches with the aim of determination of influence of physical and chemical and biological factors of environment on the vital functions of cages of living organisms (PR10);</li> <li>• Using microbiological, chemical, physical, physical and chemical and biochemical methods, able to carry out chemical control (determination of the concentration of disinfectant facilities, titration agents, concentration of components of nourishing environment and others like that), technological control (concentrations of sources of carbon and nitrogen are in a cultural liquid during a process; concentrations of having a special purpose product); microbiological control (determination of microbiological cleanness of nourishing environments after sterilization, microbiological cleanness of biological agent and others like that), microbiological cleanness and sterility of biotechnological foods of the different setting (PR12).</li> </ul>	<ul style="list-style-type: none"> <li>• The ability to apply knowledge in practical situations (GC01);</li> <li>• The ability to use thorough knowledge from chemistry and biology in a volume, to the necessity for the achievement of other results of the educational program (SC02);</li> <li>• The ability to work with the biological agents used in biotechnological processes (microorganisms, mushrooms, plants, animals; viruses; their separate components) (SC04);</li> <li>• The ability to carry out experimental researches from perfection of biological agents. The ability to cause changes in the structure of the inherited vehicle and functional activity biological agents (SC05);</li> <li>• The ability to conduct the analysis of raw material, materials, semi-finished products, having a special purpose foods of biotechnological production (SC06)</li> </ul>
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#### Thematic plan of educational discipline

Name of theme	Types of works	A task of independent work is in the cut of themes
A study of features of sampling of standards of commodity is for realization of expert researches and processing of documents for examinations results	Attendance of employments; discussion of material of employments; implementation of educational tasks; task of independent work	Study of features of sampling of standards different groups of commodities for realization of expert researches. There is registration of package of documents on results undertaken expert studies

### 1. Informational sources

2. Aina A.J.; Falade, K.O.; Akingbala, J.O.; Titus, P. Physicochemical Properties of Caribbean Sweet Potato (*Ipomoea batatas* (L.) Lam) Starches. *Food Bioprocess Technol.* 2012, 5, 576–583
3. FAO. Statistical Databases FAOSTAT. 2014. Available online: <http://faostat.fao.org/es/#data/QC> (accessed on 26 June 2016).
4. Lim T.K. *Cucurbita Moschata*. Available online: [http://link.springer.com/chapter/10.1007/978-94-007-1764-0\\_41#page-2](http://link.springer.com/chapter/10.1007/978-94-007-1764-0_41#page-2) (accessed on 20 March 2016).
5. On the protection of consumer rights: Law of Ukraine No. 1023-XII edition of 01.01.2016 [Electronic resource]: official website portal Verkhovna Council of Ukraine. Regulatory and legal framework of Ukraine. – Regime access : <http://zakon.rada.gov.ua>
6. Sharma Avantina, *Textbook of Food Science and Technology*, CBS Publishers and Distributors Pvt. Ltd. New Delhi, 2017.
7. Shekhar S.; Mishra, D.; Buraohain, A.K.; Charkraborty, S.; Charkraborty, N. Comparative analysis of phytochemicals and nutrient availability in two contrasting cultivars of sweet potato (*Ipomoea batatas* L.). *Food Chem.* 2015, 173, 957–965.
8. Srilakshmi B., *Nutrition Science*, Fourth Revised Edition: 2012, New Age International Limited, New Delhi, 2012
9. Theodoros Varzakas. *Qualitative Analysis of Food Products*. - Published: September.2021. – 90 p. <https://doi.org/10.3390/books978-3-0365-1845-9>.
10. Zaccari F.; Cabrera, M.C.; Ramos, A.; Saadoun, A. In vitro bioaccessibility of  $\beta$ -carotene. Ca, Mg and Zn in landrace carrots (*Daucus carota*. L.). *Food Chem.* 2015, 166, 365–371.

11. <https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100354.pdf>
12. [https://europa.eu/youreurope/business/product-requirements/chemicals/classification-labelling-packaging/index\\_en.htm](https://europa.eu/youreurope/business/product-requirements/chemicals/classification-labelling-packaging/index_en.htm)
13. [https://www.ieee.org/content/dam/ieee-org/ieee/web/org/educ/eab\\_ops\\_manual\\_current.pdf](https://www.ieee.org/content/dam/ieee-org/ieee/web/org/educ/eab_ops_manual_current.pdf)
14. <https://unevoc.unesco.org/home/ISO+standard&context=>
15. <https://www.greynet.org/images/GL12-PSS, Ramasesh and Chowdappa.pdf>
16. <https://www.iso.org/foresight/biotechnology.html>
17. [https://bio.libretexts.org/Bookshelves/Biotechnology/Quality\\_Assurance\\_and\\_Regulatory\\_Affairs\\_for\\_the\\_Biosciences/03%3A\\_Quality\\_Management\\_Systems/3.03%3A\\_Section\\_3-](https://bio.libretexts.org/Bookshelves/Biotechnology/Quality_Assurance_and_Regulatory_Affairs_for_the_Biosciences/03%3A_Quality_Management_Systems/3.03%3A_Section_3-)
18. <https://www.classcentral.com/course/patenting-bio-ipr-8559>
19. <https://www.careers360.com/university/indian-institute-of-technology-kharagpur/legal-and-regulatory-issues-in-biotechnology>
20. <https://www.coursera.org/learn/patenting-bio-ipr>

#### **Educational discipline software**

Microsoft Office software products.

#### **Politics of study of educational discipline and evaluation**

1. Politics in relation to the terms of implementation and retaking: tasks that seem out-of-time without good reasons are estimated on more subzero estimation (75% of possible maximal amount of points for the type of activity). Retaking of the modules takes place from permission of leading teacher at presence of good reasons (for example, hospital).
2. Politics in relation to academic respectability: writing during implementation of current module works and testing is forbidden (including with the using of mobile devices). Mobile devices it is allowed to use only under time on-line testing and preparations of practical tasks in the process of employment.
3. Politics in relation to a visit: attendance of employments is an obligatory component. At objective reasons (for example, illness, employment, internship) studies can take place in an on-line form (Moodle) on a concordance with a leading teacher.
4. Politics of put of results of informal education : <http://puet.edu.ua/uk/publiczna-informaciya>

#### **Evaluation**

A final estimation for the study of educational discipline settles accounts through a current evaluation

Types of works	Maximal amount of points
Attendance of employments (6 points); discussion of material of employments (6 points); implementation of educational tasks (12 points); independent work (76 points)	100
Together	100

#### **The scale of evaluation of students of higher education according to the results of the study of the academic discipline**

The sum of points for all types of educational activities	Evaluation according to the ECTS scale	Evaluation by a national scale
90-100	A	Perfectly
82-89	B	Very well
74-81	C	Well
64-73	D	Satisfactorily
60-63	E	Satisfactorily sufficiently
35-59	FX	Unsatisfactorily with possibility of the repeated stowage
0-34	F	Unsatisfactorily with the obligatory repeated study of educational discipline