

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
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“UZHHOROD NATIONAL UNIVERSITY”
Educational and Research Institute of European Integration Studies**

**WORK PROGRAM AND RECOMMENDATIONS
FOR ACADEMIC DISCIPLINE**

**“INNOVATIONS
IN HIGHER EDUCATION:
ACTUAL ASPECTS”**

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Developers:

- Artjomov Iv.V.** Ph.D., Associate Professor, Director of Educational and Research Institute of European Integration Studies at SHEI “Uzhhorod National University”, professor of international law department.
- Piasetska-Ustych S.V.** PhD, associate professor of SHEI “Uzhhorod National University”
- Fenynets G.U.** Master of Political Science, Fellow of Educational and Research Institute of European Integration Studies at SHEI “Uzhhorod National University”

Scientific advisers:

- Ustych S.I.** Expert of the project «Innovative University - tool of integration to European educational and research area», Professor of Uzhgorod National University, Ukraine)
- Kokenesi O .** Expert of the project «Innovative University - tool of integration to European educational and research area», Professor of the University of Debrecen, Hungary
- Lisi V.** Expert of the project «Innovative University - tool of integration to European educational and research area», Professor of the Technical University in Kosice, Slovak Republic)
- Sheregiy Yev.** Expert of the project «Innovative University - tool of integration to European educational and research area», Professor of University of Rzeszow, Poland)

CONTENTS

EXPLANATORY NOTE.....	4
1. <i>Description of the discipline</i>	6
2. <i>The purpose and objectives of discipline</i>	7
3. <i>The program of academic discipline</i>	10
4. <i>The structure of the discipline</i>	13
5. <i>The lectures' topics</i>	14
6. <i>Topics for practical classes (seminars)</i>	15
7. <i>Individual work</i>	15
8. <i>Theoretical questions for modular testing</i>	16
9. <i>The tasks for individual work and verification of knowledge</i>	18
10. <i>The theoretical question for testing</i>	21
LIST OF SOURCES AND LITERATURE RECOMMENDED TO THE DISCIPLINE "INNOVATIONS IN HIGHER EDUCATION: ACTUAL ASPECTS"	24
MAIN PRINCIPLES FOR TEACHING AND LEARNING OF DISCIPLINE.....	33
1. <i>Principles of Learning</i>	33
2. <i>Teaching Methods</i>	38
3. <i>Evaluation methods and knowledge control</i>	42
4. <i>The distribution of points the students get</i>	42
METHODICAL RECOMMENDATIONS FOR TEACHERS ON KNOWLEDGE ASSESSMENT OF STUDENTS ENROLLED IN CREDIT-MODULAR SYSTEM	45
1. <i>General Provisions</i>	45
2. <i>The organization of a modular control</i>	46
3. <i>Organization of the final (semester) control</i>	49
4. <i>Performing documentary registration of the results of modular and final control</i>	51
Annexes	53

EXPLANATORY NOTE

Work program for the discipline “Innovations in higher education: actual aspects” was developed as part of the research project «Innovative University - tool of integration to European educational and research area» funded by International Visegrad Fund. The project partners are: Rzeszow University (Rzeszow, Poland), University of Debrecen (Debrecen, Hungary), Technical University in Kosice (Slovakia), and NGO “Institute for transborder cooperation” (Uzhhorod, Ukraine).

Development of scientific-methodological and organizational support for the inclusion of a new discipline **“Innovations in higher education: actual aspects”** to the curriculum of students’ training in higher education and its pilot implementation in Ukraine will solve the complex issues of training specialists who can professionally solve existing problems in the field of modern innovative educational processes.

Academic discipline **“Innovations in higher education: actual aspects”** reflects the important area of higher education in Ukraine improvement after signing Bologna Declaration in May 2005. This is particularly important in the implementation of the Law of Ukraine “On Higher Education”, “On scientific and technical activity” and the European integration course of the country after the signing of Ukraine Association Agreement with the EU. Very important also are the provisions of European educational and scientific programs like “Europe 2020”, “Horizon 2020” and the flagship initiatives.

It should be noted that at the new Law of Ukraine “On Higher Education” the key one *is* an innovative **component of** higher education. In particular, Articles 65,66,67,68 defined legal forms for application of innovation, have been made changes on the fi-

nancial autonomy of higher education. Implementation of the law will facilitate the integration of Ukraine into a united educational space, which is essential to raise the issue about recognition of Ukrainian diplomas around the world, ongoing students' and graduate students' education in foreign universities.

The main objective in research *and* innovative activity of the University is gaining knowledge through research and developments, their focus on the creation and implementation of new competitive technologies, providing innovative society development and training by innovative type.

The peculiarity of the work program of the academic discipline **“Innovations in higher education: actual aspects”** is that it belongs to a new generation of regulations by which the transition to interactive methods of teaching and interactive learning. It is designed to meet the requirements of existing state standards, the Law of Ukraine “On Higher Education” and the requirements of European legislation in the field of education and research activities. It is an impartial requirement of time towards integration into European and world educational space.

The developers tried to make program absorbed to the most relevant topics, with the most important achievement of educational, scientific and technological progress and science teaching, a variety of methodological approaches to its presentation, seeing it as truly de-ideologue, scientific structure of this important document. It includes and introduces experience of leading higher education institutions in Slovakia, Poland, Hungary and the Czech Republic as well as top universities of the American and Asian continents.

Structure of the work program is built according to the requirements of the MES of Ukraine Order №384 from March 29, 2012 (as amended by Decree №683 on June 5, 2013) and includes such components as:

1. Description of the discipline.
2. The purpose and objectives of the discipline.
3. The program of discipline.

4. The structure of the discipline.
5. The contents of the lecture topics.
6. Topics of seminars.
7. Individual work schedule.
8. Theoretical questions for module testing.
9. Tasks for self-study and validation of learning.
10. Theoretical questions for the final test.

1. Description of the discipline

Title of indicator	Sector of knowledge, direction of training, education level	Characteristics of the course	
		daily form of education	external form of education
3 Number of credits-		Variable	
Modules - 1		Year of training	
Content module - 1		5-th	6-th
Individual tasks of the research - no		Semesters	
Total number of hours 90		9 - 10	11 - 12
Weekly hours for daily form of studies: auditorium - 3 independent work of students - 3	Educational qualification: Master	Lectures	
		18 hours.	10 hours.
		Practical workshops	
		10 hours	-
		Module test	
		2	-
		Laboratory	
		-	-
		Individual work	
		60	
Types of control:			
Master - credit	Master - credit		

2. The purpose and objectives of discipline

The academic discipline **“Innovations in higher education: actual aspects”** examines the current state and development of innovative processes in higher education. Recognition of European integration of Ukraine’s strategic foreign policy priority, signing the Ukraine-EU Association Agreement, adoption of the new Law of Ukraine “On higher education”, the development of the Concept on Development of Higher Education 2015-2025 set new challenges for high school on the way to European and world educational space, for high-tech *innovation* and *development*, needs of society, the labor market for skilled professionals. On the agenda the key issue is training of the specialist of a new quality, able to think creatively, quickly navigate the modern information space, make unconventional decisions, learn and develop throughout life, and most important to be a patriot of native land.

The basis of discipline **“Innovations in higher education: actual aspects”** is the factual analyzes of these issues derived from the preparation and implementation of research project «Innovative University - tool of integration to European educational and research area», which is implemented in cooperation with partners: Rzeszow University (Rzeszow, Poland), University of Debrecen (Debrecen, Hungary), Technical University in Kosice (Slovakia), NGO “Institute for transborder cooperation” (Uzhhorod, Ukraine).

The purpose of discipline is to form students’ knowledge on innovation and research activities of the universities around the world and in Ukraine.

Obtaining knowledge about the main issues of the discipline will enable students to form practical skills and personal position concerning impartial assess on the priorities of educational, scientific and technological development of Ukraine and other countries, the role and place of the research university as a connecting link between the university and industry.

Main tasks:

- explore the conceptual framework of the discipline (text-book: “Glossary of Terms and Concepts”);
- to acquaint students with the conceptual aspects concerning the formation of a common European educational space;
- justify the features of the innovation policy among the Visegrad 4 countries in higher education, science and technology transfer;
- describe the main aspects of higher education and innovation activity of universities in some countries of Europe, America and Asia;
- to acquaint students with the peculiarities of organizational and legal support of the Bologna process in Ukraine in the context of the requirements of the Law of Ukraine “On Higher Education” and European education programs “Europe 2020”, “Horizon 2020” and the flagship initiatives;
- analyze the scientific, technical and innovation conditions in higher education of Ukraine and Visegrad countries;
- explore innovative infrastructure of educational institutions in Ukraine, members of the international rankings;
- identify opportunities and obstacles of Ukrainian Education’ entry to the European space, ways to minimize them via implementation of the Concept on innovative development of UzhNU.

As a result the student should know:

- key documents developed under Bologna process;
- the specific of educational innovation implementation in higher education institutions of the world and in Ukraine;
- legal regulations in the field of innovation activity in Ukraine;
- methodology on enforcement “knowledge triangle” and technology transfer into production.

As a result the student should be able to:

- ***analyze*** key documents developed under Bologna process;
- ***provide impartial assessment of*** the current state and prospects for implementation of educational innovation in higher education institutions around the world and in Ukraine concerning the implementation of the laws of Ukraine “On Higher Education” and “On Scientific and Scientific-Technical Activities”;
- ***extend*** the ability and logical thinking skills, professional justification and protection their own point of view on issues of innovation in higher education;
- ***use*** basic methods of analysis and synthesis, modern methods of research based on experience of leading universities in Ukraine and Visegrad group countries;
- ***develop*** analytical thinking skills at assessment of prospects for integration to European educational and scientific space.
- ***use*** the information and basic research results in future careers as young professionals;
- ***provide a high level of*** students’ knowledge and ability to apply them in practice;
- ***improve*** professional skills as future specialists with the knowledge and skills acquired during the course.

When teaching the discipline to pay attention to:

- ***development*** of logical thinking;
- ***obtaining*** research skills about innovation processes in higher education;
- ***formation*** skills on self-study of textbooks on issues educational innovations implementing in higher education;
- ***application*** of acquired knowledge to analyze and simulate decisions concerning existing problems in the process of Ukrainian legislation’ adaptation to the Bologna process, the formation and development of research and innovative university.

3. The program of academic discipline

Topic 1. Bologna process. Conceptual aspects of the common European educational space

The aim of the Bologna process is to create a competitive and attractive European Higher Education environment to European and non-European students, teachers and researchers. The main stages of Bologna process and official documents: the Sorbonne Declaration (May 1998), Bologna convention (June 1999), Conference in the city Salamanca (March 2001), Conference in the city Prague (May 2001), The Berlin Conference (September 2003), Conference in Bergen (May 2005), Conference in London (May 2007), Bologna Policy forum (April, 2009), Ministerial Meeting in Budapest and Vienna (March 2010). The principles of the Bologna process.

Topic 2. Research and innovative University as an integrator of knowledge in modern education

Innovative University that is the element of modernization in education and research sector, formation of the knowledge society. Historical sources of educational innovations as a phenomenon of post-industrial formation. Variety of innovative educational technologies and techniques. Triple helix model and the role of entrepreneurial universities. Classification and features of innovative structures at higher education institutions.

Topic 3. Higher education and innovations: international experience

Sources of information concerning innovation and innovative companies in Europe: Community Innovation Survey, European Innovation Scoreboard (European table of results in innovations), the European report on innovations. Monitoring of sources on innovation activities at certain countries of Europe, Asia and America. The innovative aspects of higher education in some countries of Europe, Asia and America. General principles of forming higher

education systems at European countries. The innovative aspects of higher education in some countries. Comparative analysis of higher education in some European countries.

Topic 4. Features of Innovation Policy of the Visegrad countries concerning higher education

The fundamental importance of Ukraine's relations with the Visegrad Four. Euro-regional cooperation in education, science and technology. Cross-border cooperation. Ukrainian-Polish border, Ukrainian-Hungarian border, Ukrainian-Slovak border. Institutional and legal support of innovations in higher education and scientific field at V4. The main features and characteristics of higher education and science at V4. Science parks: the experience of functioning.

Topic 5. Role of Education and Science in the integration of Ukraine into the European Union

Entering the European educational and scientific space - one of the main priorities of foreign policy of Ukraine and a factor of economic, intellectual and technological innovations and development in Ukraine. The signing of the Association Agreement between Ukraine and the European Union. Reform and modernization of training in higher education institutions and higher education in general. Attracting students to the management of the educational process in higher education, the development of academic mobility. Prospects of Ukraine's accession to the European Union, application the of the Visegrad Group leading universities experience.

Topic 6. Organizational and legal support for the Bologna Process in Ukraine

Ukraine's accession to the Bologna Convention. The difficulties at adapting the national higher education system to European standards. The main directions of reforming higher education in Ukraine in connection with the Bologna process and the signing

of the Association Agreement between Ukraine and the European Union. The need to preserve the best traditions of national higher education. The strategic direction of science at the European education system. Regulatory support of the Bologna process in Ukraine. Adaptation of the main provisions in the field of education and science to EU standards in the implementation of the Law of Ukraine “On Higher Education” and “On Scientific and Scientific-Technical Activities”.

Topic 7. The scientific, scientific-technical and innovative activity in higher education of Ukraine

Overview of legislation in the field of innovations, science and technology. Legal regulation on commercialization of research and development work. Laws of Ukraine “On Higher Education”, “On innovation activity”, “On Scientific and Scientific-Technical Activities” and others. Conceptual bases for innovative activity in Ukraine: Concept of scientific, technological and innovative development of Ukraine, the National Strategy for the Development of Education in Ukraine until 2021 and others.

Topic 8. Infrastructural provision of innovations at higher education institutions

Ministry of Education and Science of Ukraine - key (leading) central executive authority in the field of science, technology and innovation. Key features and priorities for Science Park of Uzhgorod National University. Creation of an effective mechanism to stimulate venture investment. Technology transfer centers and other innovative structures in Ukraine and Uzhgorod National University in particular.

Topic 9. Integration of science, education and industry as a way of increasing the competitiveness of Ukraine

Uzhgorod National University - integrator of knowledge in the Transcarpathian region. Intellectual potential as the basis for the knowledge economy development. Stimulating innovative ac-

tivity by the state. Integration of science, education and industry as the direction to increase the competitiveness of Ukraine. Organizational and institutional support of innovation processes. Strengthening international cooperation in sphere of education, science, technology and innovations. Regionalization of innovative, scientific and technological policy. Technology transfer as the main form to promote innovations.

4. The structure of the discipline

Topic	Number of hours									
	full-time education					external form of education				
	aroundth	l	p	Ind.	i.w.	Around th	l	p	Ind.	i.w.
Module 1.										
Topic 1. Bologna process. Conceptual aspects of the common European educational space	9	2	2		5	11	1			10
Topic 2. Research and innovative University as an integrator of knowledge in modern education	7	2			5	6	1			5
Topic 3. Higher education and innovations: international experience	14	2	2		10	11	1			10
Topic 4. Features of Innovation Policy of the Visegrad countries concerning higher education	14	2	2		10	11	1			10
Topic 5. Role of Education and Science in the integration of Ukraine into the European Union	7	2			5	11	1			10
Topic 6. Organizational and legal support for the Bologna Process in Ukraine	14	2	2		10	11	1			10

Topic 7. The scientific, scientific-technical and innovative activity in higher education of Ukraine	7	2			5	11	1			10
Topic 8. Infrastructural provision of innovations at higher education institutions	9	2	2		5	11	1			10
Topic 9. Integration of science, education and industry as a way of increasing the competitiveness of Ukraine	7	2			5	6	1			5
Modular testing	2	2	-	-	-	-	1	-	-	-
Total by modules	90	20	10	-	10	90	10	-	-	80
Total	90	20	10	-	60	90	10	-	-	80

5. The lectures' topics

Order of lectures	Topic	Amount of hours.
Module		
Lecture 1.	Topic 1. Bologna process. Conceptual aspects of the common European educational space	2
Lecture 2.	Topic 2. Research and innovative University as an integrator of knowledge in modern education	2
Lecture 3.	Topic 3. Higher education and innovations: international experience	2
Lecture 4.	Topic 4. Features of Innovation Policy of the Visegrad countries concerning higher education	2
Lecture 5.	Topic 5. Role of Education and Science in the integration of Ukraine into the European Union	2
Lecture 6.	Topic 6. Organizational and legal support for the Bologna Process in Ukraine	2
Lecture 7.	Topic 7. The scientific, scientific-technical and innovative activity in higher education of Ukraine	2
Lecture 8.	Topic 8. Infrastructural provision of innovations at higher education institutions	2
Lecture 9.	Topic 9. Integration of science, education and industry as a way of increasing the competitiveness of Ukraine	2

6. Topics for practical classes (seminars)

Order of classes	Topic	Amount of hours.
Lesson number 1	Theme 1. Formation of a common European educational space. Bologna process.	2
Lesson number 2	Theme 2. Innovative activity in some universities of Europe, America and Asia.	2
Lesson number 3	Theme 3. Features of Innovation Policy of the Visegrad countries concerning higher education and science	2
Lesson number 4	Topic 4. Legal regulation of innovative activity in Ukraine Universities. The innovative infrastructure of universities in Ukraine.	2
Lesson number 5	Theme 5. Integration of science, education and industry as a way of increasing the competitiveness of Ukraine. International cooperation.	2

7. Individual work

Order	Topic	Number of hours
1.	The main documents of the Bologna Process	5
2.	Triple helix model of innovation research at universities.	5
3.	The innovative infrastructure of universities at some countries of Europe, America and Asia	10
4.	Science parks: the experience of the Visegrad countries.	10
5.	Association Agreement between Ukraine and the European Union: the role and prospects of educational, scientific and technological development.	5
6.	Prospects of higher education and innovations in the context of the Law of Ukraine «On Higher Education».	10
7.	Regulatory provision of scientific, technological and innovative activity in universities of Ukraine.	5
8.	Features of Innovative Infrastructure at the universities of Ukraine	5
9.	Technology transfer as a mechanism for enhancing scientific and technical capabilities of Ukraine.	5
Total		60

8. Theoretical questions for modular testing

Topic 1. Bologna process. Conceptual aspects of the common European educational space

1. Stages at development of European education space.
2. The key documents of the Bologna process.
3. General principles of forming the higher education systems in European countries.

Topic 2. Research and innovative University as an integrator of knowledge in modern education

1. The definition of “innovation”: historiographical review of the issues.
2. Innovative University: Importance and basic functions. Its role in higher education system.
3. The triple helix model: the theoretical issues.
4. The innovative structure of higher education institutions: general overview.

Topic 3. Higher education and innovations: international experience

1. Features of higher education and innovation universities of some European countries: comparative analysis.
2. Innovative aspects of American universities.
3. Innovative Universities of Asia: the value and prospects.

Topic 4. Features of Innovation Policy of the Visegrad countries concerning higher education

1. Regional Policy of the V4: experience for Ukraine.
2. Basic provisions for innovative activity in higher education and science of the Visegrad countries.
3. Institutional and legal provisions of innovations in higher education and science.

Topic 5. Role of Education and Science in the integration of Ukraine into the European Union

1. Entry to the European Education space as a factor of economic, intellectual and technological innovations and development in Ukraine.
2. Association Agreement: the role and prospects of educational, scientific and technological development.
3. Ukraine's participation in educational programs of the European Union.

Topic 6. Organizational and legal support for the Bologna Process in Ukraine

1. Adaptation of Ukrainian legislation to the Bologna process.
2. General characteristics of legislation in sphere of innovations.
3. Prospects for development of higher education and innovations in the context of the Law of Ukraine "On Higher Education".

Topic 7. The scientific, scientific-technical and innovative activity in higher education of Ukraine

1. Legislative provision of scientific, technical and innovative activity in universities of Ukraine.
2. Research universities as centers of innovative development of Ukrainian higher education.
3. Challenges for the development of innovative universities in Ukraine.

Topic 8. Infrastructural provision of innovations at higher education institutions

1. Ministry of Education and Science of Ukraine as the central authority in the sphere of innovations.
2. Techno parks: peculiarities of functioning in Ukraine.
3. Science Parks as the structure for the commercialization of innovations.

4. Venture capital funds - investing mechanisms for science and education.
5. Technology transfer centers and other innovative structures.

Topic 9. Integration of science, education and industry as a way of increasing the competitiveness of Ukraine

1. The development of intellectual potential of Ukraine.
2. Technology transfer as a mechanism for enhancing scientific and technical capabilities of Ukraine.
3. International cooperation in sphere of education, science, technology and innovations. The prospects of further cooperation.

**9. The tasks for individual work
and verification of knowledge**

Topic 1. Bologna process. Conceptual aspects of the common European educational space

1. The purpose of forming the Bologna process.
2. What are the main stages of the Bologna process and official documents, which were adopted as part of official meetings and conferences?
3. List the principles of forming higher education systems at European countries.

Topic 2. Research and innovative University as an integrator of knowledge in modern education

1. Who among the scientists examined the definition of “innovation”? Please list their works.
2. What functions perform an innovative university and its importance in higher education?
3. What elements are of triple helix model of innovation research universities?
4. List the major innovative structure of higher education.

Topic 3. Higher education and innovations: international experience

1. What are the main elements in the formation of higher education and innovation activities of certain countries in Europe, Asia and America?
2. Make a comparative analysis of innovation activity:
 - Universities in Europe and Asia;
 - Universities in Europe and America;
 - Universities in America and Asia.

Topic 4. Features of Innovation Policy of the Visegrad countries concerning higher education

1. What are the main moments in the formation of the regional policy of the V4, which would be useful for Ukraine?
2. Name the basic provisions for innovation in higher education and science of the Visegrad Group.
3. What is the institutional and legal framework for innovation in sphere of higher education and science?

Topic 5. Role of Education and Science in the integration of Ukraine into the European Union

1. In which document independent Ukraine for the first time announced move into European Education sphere?
2. Why is it important for Ukraine to join the European area of education and science? Analyze and compare the experience of neighboring countries.
3. What role and perspectives of educational, scientific and technological development within the signing and implementation of the Association Agreement.
4. To which European Union programs Ukraine is involved?

Topic 6. Organizational and legal support for the Bologna Process in Ukraine

1. What problem should solve the Ukraine during the adaptation of the requirements of the European Union?

2. What are the legal documents that govern innovation?
3. Prospects for development of higher education and innovation in the context of the Law of Ukraine “On Higher Education”.

Topic 7. The scientific, scientific-technical and innovative activity in higher education of Ukraine

1. What are the legal documents governing the scientific, technical and innovation activities in high school in Ukraine?
2. Research universities as centers of innovation development of Ukrainian higher education.
3. Problems in the development of innovative universities in Ukraine.

Topic 8. Infrastructural provision of innovations at higher education institutions

1. What is the state body responsible for innovation?
2. Name and describe the main components of the innovation infrastructure in Ukraine.
3. How is provided the financial support of innovation activity in Ukraine and abroad?

Topic 9. Integration of science, education and industry as a way of increasing the competitiveness of Ukraine

1. What is the role of the intellectual potential of Ukraine in the context of European integration?
2. How do you understand the definition “technology transfer”?
3. With which states Ukraine is cooperating in the sphere of education, science and technology? Describe the prospects for further cooperation.

10. The theoretical question for testing

1. The content and the main characteristics of the Bologna process.
2. Stages to creating a European education space.
3. The main documents of the Bologna process.
4. General principles of forming higher education systems in European countries.
5. The term “innovation”: historiographical review of issues.
6. Innovative University: Importance and basic functions. The role of higher education.
7. Triple helix Model of innovative research at university: theoretical position.
8. The innovative structure of higher education institutions: general overview.
9. General provisions to formation of higher education and innovation activity in some European countries: comparative analysis.
10. Innovative aspects of Universities of America.
11. Innovative Universities of Asia: the value and prospects.
12. Comparative characteristics of innovation policy and innovation universities of Europe and America.
13. Comparative characteristics of innovation policy and innovation institutions in Europe and Asia.
14. Comparative characteristics of innovation policy and innovation universities in Asia and America.
15. Regional Policy of the V4: experience for Ukraine.
16. Basic provisions for innovation in higher education and science of the Visegrad Group.
17. The institutional and legal framework for innovation in sphere of higher education and science at V4.
18. Innovative activity and organization of scientific parks in Hungary.
19. Innovative activity and organization of scientific parks in Poland.

20. Innovative activity and organization of scientific parks in the Czech Republic.

21. Innovative activity and organization of scientific parks in Slovakia.

22. Historical aspects of Ukraine's accession to the European Education Space.

23. Entry to the European Education space as a factor of economic, intellectual and technological innovations and development in Ukraine.

24. Association Agreement: the role and prospects of educational, scientific and technological development.

25. Ukraine's participation in educational programs of the European Union.

26. Adaptation of Ukrainian legislation to the Bologna process.

27. Overview of legislation in sphere of innovation.

28. Prospects for higher education and innovation in the context of the Law of Ukraine "On Higher Education".

29. Legal provision of scientific, technical and innovation activity in universities of Ukraine.

30. The order of state registration of innovative projects and state registry of innovative projects.

31. The Law of Ukraine "On Scientific and Scientific-Technical Activities".

32. Analyze the key points of the National Strategy for the Development of Education in Ukraine until 2021.

33. Research universities as centers of innovation development of Ukrainian higher education.

34. The activities of universities Ukraine with the status of research.

35. Problems in the development of innovative university in Ukraine.

36. Give a detailed description of the Laws of Ukraine "On innovation activity" and "On innovation activity priorities in Ukraine."

37. Infrastructure support innovation universities of Ukraine.
38. Education of Ukraine as the central authority in the field of innovation.
39. Technology parks: features functioning in Ukraine.
40. Consider the Law of Ukraine “On Special Regime of Innovation Activity of Technological Parks”
41. Science parks as the structure of the commercialization of innovations.
42. Legal basis of scientific parks.
43. State regulation of science parks in the context of the Law of Ukraine “On Scientific Parks”.
44. The experience of science parks in Ukraine.
45. Venture capital funds - mechanisms for investment in science and education.
46. Financing innovation in Ukraine.
47. Technology transfer centers and other innovative structures.
48. The development of intellectual potential of Ukraine.
49. Technology transfer as a mechanism to promote innovation in Ukraine.
50. What are the key points of the Law of Ukraine “On state regulation of activities in the sphere of technology transfer”?
51. International cooperation in education, science, technology and innovation spheres. The prospects of further cooperation.
52. Ukraine’s participation in strategic international programs and projects in the sphere of innovation.

LIST OF SOURCES AND LITERATURE RECOMMENDED TO THE DISCIPLINE “INNOVATIONS IN HIGHER EDUCATION: ACTUAL ASPECTS”

Literature recommended

1. Аналіз законодавства України у сфері досліджень, розробок та інноваційної діяльності та пропозиції щодо доповнень до законодавства. Проект ЄС «Вдосконалення стратегій, політики та регулювання інновацій в Україні». – К.:Фенікс, 2011. – 349 с.

2. Андрощук Г.О. Інноваційна політика ЄС: стратегічні напрямки / Г.О. Андрощук // Матеріали міжнародної науково-практичної конференції «Інформація, аналіз, прогноз-стратегічні важелі ефективного державного управління», м. Київ, 29–30 травня 2008 р. – С.7–16.

3. Андрощук Г. Комерційна реалізація ноу-хау: зарубіжний досвід та вітчизняна практика / Г. Андрощук // Міжнародний форум «Трансфер технологій та інновацій» Київ, 20–21 листопада 2008р.– С. 90–108.

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MAIN PRINCIPLES FOR TEACHING AND LEARNING OF DISCIPLINE

1. Principles of Learning

Modern didactics considers the following principles of learning:

- scientific and philosophical consciousness
- regularity and consistency
- didactic accessibility
- cognitive activity and consciousness of students
- connection of education with life, society's needs
- visibility and problematic
- integration of organizational forms and teaching methods
- emotionality and personal approach to students
- strength of knowledge and skills
- unity of educational, developmental and upbringing functions
- the principle of resource provision
- the principle of motivation and expediency.

Didactic principles, that is, the principles of learning theory, determine the content, methodology, forms and methods of educational work. Proper use of the principles of learning theory (didactics) is the basis for the work of the teacher in planning activities, the development of such a structure of classes that encourages creative activity of students, makes them interested and thus allows to achieve good learning outcomes. Didactical provisions in conjunction with the goals and methods of educational work provide a basis for professionally competent, knowledge-

able conduct of various forms of academic work, such as lectures, seminars, laboratory and practical work.

1. *The scientific principle.* Its essence lies in the fact that all the facts, knowledge, regulations and studied laws must be scientifically correct, as well as the method of justifying the regulations and laws, and the formation of concepts in the learning process. The implementation of this principle involves the study of important scientific positions and the use of learning methods close to those used by the specific science. It requires the disclosure of causality phenomena, processes and events; penetration into the essence of phenomena and events; demonstration of the power of the achievements of human knowledge and science and acquaintance with the methods of science; knowledge, the disclosure of the history of science. Implementation of the scientific principle especially manifests itself in the development of curricula and textbooks, which are designed to combine the classical, modern and promising scientific provisions of specific area of expertise.

The scientific principle of development requires from students skills of scientific inquiry, familiarizing them with the methods of scientific organization of labor. This is facilitated by the introduction elements of a problematic nature in training, research, laboratory and practical work, developmental education, teaching students the ability to observe phenomena, record and analyze the results of observations, the ability to conduct a scientific discussion, to defend their point of view, rationally use scientific literature, scientific and bibliographic apparatus.

2. *The principle of regularity and consistency of training.* Conditioned by the logic of science and Cognitive Function, this principle requires that the knowledge and skills were formed in the system, in order, when each element logically binds to another, builds on the previous one, prepares to mastering the new element.

Observance of certain systematicity in the process of learning involves singling out basic (core) concepts in the study, establishing their relationships with other concepts, the disclosure of the genesis of their development, demonstrating their signifi-

cance for some more general laws. The principle of systematicity and legitimacy must be carried out not only in the work of teachers, but also by the students.

3. *The principle of availability of learning.* The essence of accessibility is that students perceive and understand the explanatory material. The accessibility of education means access to the upper limit of capabilities of students to continuously improve these capabilities. At the same time, this upper limit can not be crossed, as in this case, much of the content of learning would be incomprehensible.

4. *The principle of consciousness and activity of students in training.* Education should not only be active, but conscious. Conscious assimilation of knowledge promote clarification of the goals and objectives of the discipline, its significance for solving the problems of life for the prospects of the student, the use of mental operations in the learning process (analysis, synthesis, generalization, induction, deduction); positive emotions; positive motivation of training; rational methods of work in the classroom; critical approach to the teaching material and its assimilation; proper control and self-control. Conscious learning provides a high level of cognitive activity of students. Activization of cognitive activity promote positive attitudes to learning; interest in learning materials; positive emotions; a close relationship of education with life; mutual understanding between teachers and students.

5. *The principle of connection of learning with life.* At its heart is the objective relations between science and industry, theory and practice. Theoretical knowledge is the basis of modern labor productivity, which specifies them, promotes strong, conscious assimilation. This principle provides a close connection of learning with the production in the national economy. Students should be taught not only technology, but also the socio-economic and legal relations in the workplace.

6. *The principle of visibility in education.* Depending on the nature of reflection of reality, visibility is divided into the following types:

- **natural** - plants, animals, tools and products of labor
- **expressive** - training paintings, reproductions of fine art paintings, models, casts, etc .
- **schematic** - geographical, historical maps, charts, diagrams, graphs, drawings, etc.

Teacher must skillfully combine visibility with an explanation. After all, his word primarily directs immediate perception of educational material content, reflected in the presentation, in sequence, helps to understand objects observed, and the linkages between the factors and phenomena.

7. The principle of integration of organizational forms and methods of teaching. In modern didactics, forms of learning are often divided into classroom and extracurricular (tours, workshops, classes in manufacturing, computer work, tests, exams, etc.). As for objectives and content of teaching, they should be age-appropriate for the students. If the choice of methods and means of learning meets the requirements, takes into account the content and opportunities for students, learning efficiency will be the maximum possible under appropriate conditions. It is important that the teacher could see the future allocation of the entire problematical topic, visibility and action.

8. The principle of emotionality of learning and individual approach to students. The main objective of the teacher in implementation of this principle is to control the formation of emotions, activating teaching and learning activities, and prevent those, which have a negative impact on it. The teacher should instill in students the ability to master their mood, emotions, feelings.

9. The principle of strength of mastering of knowledge and skills. The main sign of strength is a conscious and profound assimilation of the most essential facts, concepts, ideas, laws, regulations, a deep understanding of essential features and sides of objects and phenomena, connections and relationships between them and within them. This principle requires, first, that not only academic, but also educational and developmental learning

effect was strong, that is, the ideological and moral convictions were firm, as well as the skills of teaching and learning activities, methods and habits of socially valuable behavior etc. Secondly, this principle implies that the education will provide meaningful learning. Third, it directs education to ensure the effectiveness of knowledge, skills and behaviors, that is, their practical orientation facing towards the solution of problems of life on the basis of professionalism and moral values.

10. The principle of unity of upbringing, educational and developmental functions. This principle stems from the fact that learning is stipulated by the needs of a democratic society in the full and harmonious development of personality. This principle of education increases the role and importance of goal setting in the learning process, making teaching more focused. The application of this principle requires that the teacher knew the main purpose and objectives of learning in higher education, was able to choose the most efficient combination of learning objectives, training and development in a particular situation, single out the principal ones among them, considering the real learning capabilities of students of a certain group, their strengths and weaknesses.

11. The principle of resource provision. As for the professional functions of the teacher of high school, his didactic system as the basis for resource support of the educational process is a set of documents and teaching materials with which the teacher teaches, develops and educates students in the classroom and extracurricular classes. Didactic system of teacher includes educational standards, curriculum, calendar and thematic plans, summaries of lessons, plans of educational work, teaching aids, visual aids, etc.

2. Teaching Methods

According to the concept of activity-design of the educational process, under the **teaching methods (TM)** is understood the methods of the teacher who organize learning activities of students, lead to the assimilation of knowledge and skills and personal development.

Thus, the learning methods are divided into methods of explanation, processing and control. Next, methods are determined by the nature of students' cognitive activity and can be divided into reproductive and productive. The former method is "ready" knowledge, assimilated through informative presentation, problematic conveyance of the content of the material and deductive inference, the latter - the way of explaining the organization of heuristic search, partially directed by the teacher.

Method of communication of ready knowledge through informative presentation, is explained by the teacher content of knowledge and action in an oral or written communication. This is done on the basis of previously acquired subject knowledge and cognitive skills to distinguish and identify when comparing the characteristics of objects and actions, to implement a generalization, summing up under the concept etc.

Method of communication of the ready knowledge through problematic message differs from the previous one, therein the teacher communicates a message as a response to his own pre-set questions to disclose the contents. The student in this case can work more actively, because after formulation of the question may arise independent reasoning and attempt to answer the question before and during the response provided by the teacher.

Method of communication existing knowledge through deductive inference is that the teacher tells students some general provisions, reasons, explanatory principles and thus offers students to deduct more specific knowledge about objects and actions at various levels of specificity.

The subject of the course involves such basic teaching methods:

➤ ***Lectures***, during which each topic, the main issues of a topic, issues that are problematic and are the subject of scientific debate are explained. Lecture is a classroom teaching of the course or part of it (flow of students), which is conducted by leading teachers, lecturers (professors and associate professors of the university, as well as leading scientists and experts invited to give lectures), which sets out the main provisions of the studied subjects, their theoretical problems, the latest scientific achievements in a particular area. Lectures are not focused on the duplication of textbooks and teaching aids. Academic lectures are usually held in the form of public speaking of a teacher, during which the transmission of certain information is conducted. However lecture is not a monologue, but creative communication, interaction between the speaker and audience. Therefore, the student should perceive lectures and to be active during their reading. The lectures are aimed at providing students with systematic and structured scientific and educational material on the main sections, topics, to form legal outlook among the audience, encouraging appropriate practical action through motivation and activation of teaching and exploratory activity of students, familiarization with the method of application of existing forms of organization of learning

➤ ***Note taking*** and the appropriate processing by students of previously proposed issues, which are based on important legal sites, sources, monographs, followed by a discussion of them in the form of the colloquium. Perception and note taking of material is mastering the material and its short record. When taking notes, it is necessary to rethink this information, highlight the main idea and briefly describe it

➤ ***Workshops***. At the workshops under the guidance of a teacher in a small group should take place consolidation, systematization and generalization of theoretical knowledge acquired by students during lectures, additional work on the theoretical material, as well as the formation and development of practical skills.

Important place in the teaching of the discipline play an active, interactive, extractive methods of teaching, discussions and the like

➤ ***Self study*** of the problems of sociology of cross-border processes is based on the methodological framework, mastered by students during the I-III years of schooling, with the addition of new components adapted to the needs of bachelor in the fourth year of their training. It is assumed that during their training during I-III years, students of the Bachelor program must master the knowledge and skills of the ***following types of independent extracurricular work:***

- Sourcebook note taking highlighting key problems of topics
- Preparation and execution of materials to participate in discussions and Other interactive forms of the training sessions
- Preparation of presentation of personally selected
- educational material on one of the key topical issues
- Writing a review of an article or scientific report
- Test solving of different levels of complexity
- Tackling the homework on specific topics and the
- corresponding presentation of the material
- Writing an essay on a given subject
- Development of the individual research project, etc.

In the course of the master's program from the students are required knowledge and skills for independent work of high complexity using the following procedures: the mastery of technology of development, organizing and conducting social research on pressing issues of our time; implementation of a comparative analysis of the data, which represent the realities of Ukraine and other countries or regions; scientifically correct comparison of points of view of different authors; formulation of their own research position with indication of arguments in its favor and so on. Students of the master's program must navigate freely in the structure of socio-humanitarian knowledge, have a clear understanding of the relation of methodology, theory and research

methods to choose methods of empirical research, adequate to their objectives; carry out interdisciplinary research, to choose for their research those theories and fundamental provisions from the works of foreign authors that are methodically appropriate for the Ukrainian soil. In view of the above, the teacher formulates tasks for independent work, which, on the one hand, take into account the level of students' progress, and on the other - develop incorporated prior knowledge, skills and abilities, take them to a qualitatively higher level and prepare an appropriate framework for training (later) in the master's program.

In the study course "**Innovations in higher education: actual aspects**", there is an intention to develop by students different kinds of independent work, covering such **types of training sessions**:

- perform the tasks of different types of self-study
- individual work with the theoretical material is about extracurricular elaboration of theoretical material and presentation of results of independent work in writing, including:
 - Writing an essay on the given issues
 - Analytical review of scientific publications
 - Case study and preparation of analytical report
 - Workshop on discipline using software
 - Implementation of tasks within research projects
- individual work in preparation for the practical training and consolidation of their results. Provides a written, extracurricular performing of training sessions to prepare for the application of the knowledge gained during practical training
 - ***independent performance*** of each student in writing creative tasks (essay), which will confirm the use of the basic methods of scientific knowledge relevant to the subject of discipline, creative thinking
 - ***individual and consulting work***. This is quite an important form of learning designed to test the effectiveness of the

organization and independent work, evaluate the results. It provides for various kinds of advice. ***In content*** consultations might be problematic, synoptical, methodical; ***bv nnwose*** - before the seminar; before the examination, professional; ***bv form*** - group, intergroup, individual. Individual and advisory work provides an opportunity to explore and summarize the experience of those students who successfully study, as well as to establish the causes of low achievement of individual students and help them;

➤ ***Modular test papers*** are represented by two components:

- a) theoretical questions;
- b) tests.

3. Evaluation methods and knowledge control

The work program of the course provides the following types of control:

1) current control, which is carried out in the course of:

- lectures
- execution of two modular written tests
- the fulfillment by each of the students individual research creative task on the subject of content modules
- consultations and working off missed classes

2) the final control exercised during:

- performance of the test for masters.

4. The distribution of points the students get

Assessment of knowledge and practical skills of students on the subject “**Innovations in higher education: actual aspects**” is performed by two components:

- up to 70 points for the evaluation results of each content module;

- up to 30 points the student receives directly under the current assessment at workshops and self-study.

The procedure for distribution of 30 points:

1. For work at each lesson a student can get 1 to 20 points: “excellent” — 5 points, “good” - 4 points, “satisfactory” - 3 points. For the assessment “unsatisfactory” and every missed lesson - (- 0.5 points), if the missing lesson is worked out - 0 points.
2. For the individual assignments - 5 points.

“Excellent” mark deserves an answer of a student, revealing the perfect knowledge of the theoretical course in full, understanding directions and methods of applications of sociological theories, the ability to choose the research methods depending on the perspective, the ability to develop research tools, a clear understanding of the procedures for each method; It also takes into account student’s activity in seminars (practical, laboratory) classes achieving compliance with the program of self-study in full.

“Good” mark deserves an answer of a student disclosing all examination questions, revealing knowledge of the theoretical course in full, understanding directions and methods of applications of sociological theories, the ability to choose the methods of research and develop tools, the ability to represent the procedures of each method; It also takes into account his activity in seminars (practical, laboratory) classes achieving compliance with the program of self-study in full.

“Satisfactory” mark deserves an answer of a student that reveals incomplete knowledge of the theoretical course, understanding of the procedures and research and development tools, but contains inaccuracies, errors, incompleteness of argument; It also takes into account his activity in seminars (practical, laboratory) classes achieving compliance with the program of self-study.

“Unsatisfactory” mark deserves an answer of a student that reveals ignorance of educational material within the curriculum program and the inability to develop tools and procedures for applied research; It also takes into account his activity in seminars

(practical, laboratory) classes achieving compliance with the program of self-study.

Grading scale: national and ECTS

Total points for all the educational activities	Evaluation on the national scale	
	for examination, course project (work) practical work	For test
90-100 A	excellent	Passed
82-89 B	good	
74-81 C		
64-73 D	satisfactory	
60-63 E		
35-59 FX	unsatisfactory with the possibility of reexamination	Not credited with the possibility of reexamination
0-34 F	unsatisfactory with a mandatory repeated studying of discipline	not credited with a mandatory repeated studying of discipline

METHODICAL RECOMMENDATIONS FOR TEACHERS ON KNOWLEDGE ASSESSMENT OF STUDENTS ENROLLED IN CREDIT-MODULAR SYSTEM

1. General Provisions

Knowledge assessment and rating of students is integrated in the credit-modular system of educational process, and determines the characteristics of the educational process in the context of implementing the ideas of the Bologna process.

The main objectives of credit-modular system are:

- increase in objectivity of assessment of students' knowledge by conducting modular and semester controls during the semester, and the use of a 100-point scale to assess students' knowledge integrated in each module;
- improving the quality of professionals and competitiveness by promoting independent and systematic work of students during the academic semester, the establishment of ongoing feedback with each student and timely adjustment of his learning activities;
- increase the mobility of students through the use of ECTS credits for measurement of volume of modules of educational and the professional program of a student, and ECTS scale for the assessment of students' knowledge;
- providing individual oriented organization of educational process;
- developing students' interest and increasing motivation to learn, the introduction of healthy competition in train-

ing, the identification and development of creative abilities of students through: systematic control of knowledge and accumulation of student's points on learning and research activities; opportunity to deepen and consolidate the knowledge through compilation of a modular and examination controls. Use semester ratings as the basis for determining the amount of the scholarship of students, the appointment of scholarships and providing students with additional incentives (bonuses, material assistance, cheaper vouchers for Sports and Health Camp of the University, etc.) at the expense of 10% scholarship fund. Rating of the student as a basis for priority in the transition from one bachelor program to another (related), during the competitive selection for education and qualification level of "specialist", "master" and the choice of specialty and specialization. Priority will be given to enrolling in the postgraduate school, to study or practice abroad, to work in prestigious companies, organizations and institutions; receive priority in obtaining permits for recovery in the holiday period and the choice of a dorm room, etc.

2. The organization of a modular control

1. Assessment of knowledge of students for each discipline is based on results of modular and final (exam, test) controls.

2. Throughout the semester, for all academic disciplines, provided by the curriculum, are carried out modular controls, mandatory for all students. Number of modular controls depend on the volume of the discipline: up to 36 classroom hours - one modular control, for more than 36 classroom hours - not less than two (in accordance with the work program of the discipline).

3. The division of educational material on modules (content modules), a checklist of tasks for each semantic unit, the evalua-

tion criteria are defined by the working program of the control task of the discipline.

4. To conduct modular control, the teacher prepares the same or similar tasks. Written component is compulsory and is conducted through the performance of control tasks. The department may determine the discipline, modular control tasks, which will be held in the form of computer-based testing.

5. The teacher introduces students with a list of control tasks and their evaluation two weeks prior to testing.

6. Modular assessment takes into account the results of monitoring for all laboratory, practical works, seminars, colloquiums, tests, independent and individual work. Each module control is evaluated maximum of 100 points. The ratio of marks for current performance and the result of the modular work is determined by the work program of discipline. On a written component of module control are assigned two academic hours.

7. All students are admitted to a modular control.

Modular control:

- performance of control tasks is carried out by a student individually. A student may request the teacher to explain the contents of the control task. During the control module it is allowed to use reference materials as defined by the department. Students are forbidden to communicate in any form or use unauthorized materials. If a student violates established rules of control module, teacher dismisses his work, makes on it an entry and evaluates it in zero points. Results of a modular control of student who failed to come, is also estimated in zero points;
- written test results of control tasks are communicated to students no later than three business days after their performance. A student who does not agree with the assessment, may apply to the teacher and receive a thorough explanation. In case of disagreement with the assessment of the teacher, the student has the right to ap-

peal in writing to the head of the department not later than the next business day after the announcement of the results. Lecturer and Head of Department in the presence of the dean of the faculty and the student within three days shall consider the appeal and make a final decision. As a result of the student's appeal, his mark can not be lowered;

- a student who has a good reason to not come to a module control, with the permission of a dean can pass it within a specified by the dean period;
- student who as a result of the modular control was rated «F» (0-34 points), must retake the module before the final (semester) control, according to the schedule approved by the dean's office, or while teachers in the department are on duty;
- rating grade of discipline is defined as the average of all modular tests and is estimated by 100-point scale, ECTS scale and national scale;
- if the arithmetic mean of all module tests exceeds 70 points, despite the fact that one of them received a bad mark (0-59 points), the rating will be determined by the student's 59 points;
- if there is one modular control on discipline, the result of it also becomes the rating assessment;
- method of assessment of student's performance depends on the type of discipline:
 - a) purely lecture course;
 - b) lectures and practical work, lecture and lab, lecture and seminary course;
 - c) practical or laboratory course.

Thus it is necessary to be guided by the following recommendations: for purely lecture subjects 50% of score evaluation of module control is the result of written tests, and the remaining 50% - the total score on the essays on theoretical problems of discipline and other forms of individual tasks. Of lectures and practi-

cal work, lecture and lab or lecture and seminary disciplines, 50% of score evaluation of module control puts a lecturer on the basis of checking the level of assimilation of the theoretical material of discipline (theoretical evaluation component).. The theoretical component consists of a total evaluation of tests' results, essays and other personal work. 50% of points (practical component) puts a teacher who conducts practical, laboratory work or seminars. Practical evaluation of a component of modular control of lectures and practical work, lectures and laboratory work, or lecture and seminar courses consists of the audit of the results, current progress, of oral and written responses during training, assessment of written homework, performance of laboratory work;

- For purely practical or laboratory courses 50% of evaluation of module control is the result of writing (test), 30% - the current performance, 20% - other forms of skills control.

3. Organization of the final (semester) control

1. Final (semester) control is carried out in accordance with the schedule of the educational process and schedule of test-exams approved in due course.

2. The final (semester) control is carried out on all academic disciplines in the curriculum, in the following forms: credit, differentiated test, examination, defense of the thesis. The department may determine subjects, final control of which is held only in the form of computer testing.

3. The final control in the form of a semester exam is conducted on educational materials, specific working curriculum of discipline per semester in full. To carry out a semester exam, lecturer prepares variants of the same (equal) tasks (cards), which should cover the study material of the discipline learned during the semester. Structure of the problem, criteria for evaluating the responses are approved at a meeting of the relevant department.

4. The final control in the form of a differential or an ordinary test is carried out on educational materials according to the specific working curriculum of discipline in full for the semester. To conduct semester test, the teacher prepares a list of issues and practical problems, which should cover the course material of the discipline for the semester. The list of questions and practical tasks and criteria for assessing the responses are approved at a meeting of the relevant department.

5. Tasks to be considered for final evaluation, and evaluation criteria of student's performance during the examination are communicated to students at the beginning of each semester.

6. For the final control of discipline are not admitted students who did not fulfill the terms of the training and all types of compulsory work (laboratory, practical, essays, etc.) provided by the work program, and as the result of at least one module tests scored less than 35 points. The responsible employee in the dean's office in his statement makes a mark against the name of the student, "not admitted."

7. Students who were not allowed to pass the exam or a test shall be permitted to retake them only if they work out in the vacation period the required mandatory types of activities.

8. In the case of unsatisfactory performance evaluation at the final control, the student does not lose the right to continue to take exams (tests), to protect coursework within the deadline set schedule.

9. If the rating grade is at least 60 points, with the consent of the student, it can be counted as the final score of the semester of the course. Otherwise, or if desired to increase the rating, the student passes the exam (test).

4. Performing documentary registration of the results of modular and final control

A. Modular control

- Before the beginning of the weekly respective control, lecturer receives in the dean's office a sheet for modular control, and must pass it filled in to the dean's office no later than two working days after the date of the modular control.
- The lecturer records the results of each of the modular control in sheet for modular control. Rating scores less than one hundred are recorded in two figures 09, 43 and the like. The lecturer is required to fill out a statement clearly, corrections are not allowed.
- If as a result of an appeal on assessment of control task and consequently modular assessment increases, the change in the valuation is recorded in a coupon of Appeal (additional sheet), which is stored together with the basic statement in the dean's office.
- Written answers of students on task module tests are stored in the relevant departments until the end of the next semester.
- Students who did not come to modular control, in the column "Rating score" the teacher writes "did not come" (abbreviated as "n / c").

B. Final control

- Teacher receives in the dean's office entry sheet of performance before the final control (semester exam, test), and personally returns it to the the dean's office no later than the next business day after the final control of the discipline. In the information are entered the names of all the students of academic groups.
- Evaluation of total control is an assessment on a 100-point scale, obtained by student at exam (test). In

this case, it also corresponds to a semester subject evaluation. Semester substantive evaluation on a 100-point scale and national scale the teacher writes to the entry sheet of progress and student gradebook. Moreover, in the gradebook is entered only positive result of final control (50 or more points on a 100-point scale, and score on an extended national scale).

- If a student is not admitted by the department to pass the final control, the employee of the deanery in the entry sheet of performance records “Not admitted” (abbreviated as “n / a”). If a student being admitted to the final control, failed to appear for the exam (test) at a certain time, the teacher writes in a statement “did not come” (abbreviated as “n / c”).

ANNEXES

**Basic approaches to the definition of “innovation”
by researchers of the Visegrad Group Countries**

Country	Author (s)	Source (s)	Definition of the term
1	2 J.Dombrowski and J. Kaladkevych	3 The innovative practice of Polish enterprises [19]	4 Innovations are considered by taking into account three main parameters: - the sphere to which they relate, - the method of implementation and - the object changes that they cause. Thus the process of creating innovations, in their opinion, should take into account the implementation of three phases that come one after another: opening (appearance of a new idea), the first of its use, distribution of use and implementation of ideas and solutions.
Poland	Fabian An-drushkevych	1. Innovations in Polish and Ukrainian education as a result of signing declarations of European education: comparative analysis [4] 2. The main directions and forms of Ukrainian-Polish academic cooperation [5]	Analyzes innovations and model of modern system of academic education. Underlines that educational reforms of Poland based on the principles of democratic education system that reflect the specific of the country, and are reflected in the <u>Law «On education system»</u> , adopted in 1991 by the Sejm of Poland.

		<p>3. Polish «educational breakthrough» and its significance for the Ukrainian educational innovations [6]</p> <p>Tools for innovative support of SMEs: the experience of Poland and the European Union [9]</p>	<p>Effective innovative policy should be targeted to the needs, have prolonged nature, reach critical mass and based on a real basis. The basic aspects of a regional approach to economic development and building regional innovation strategies. Presented practical example of this strategy, described a role of innovative centers and development of innovation.</p>
Slovakia	<p>Alexandr Bonkovski, Michal Klepka, Krzysztof Matysiak, Jerzy Stshelyets, Krzysztof Zasyadly</p> <p>F. Valyenta</p>	<p>Creative activity – innovations – effect [10]</p> <p>The strategy of innovation management at the enterprise [15]</p> <p>Innovations in Organizations [32]</p>	<p>Innovation – changes in the original structure of production organism, ie transition of its internal structure to a new state.</p> <p>Innovation – target change in the functioning of the company as a system.</p> <p>Innovation – is any purposeful, positive and progressive change of tangible and intangible elements (parameters) of the organization, ie any change that promotes development, growth and improvement of the efficiency of the organization. Because of this innovation is not random, not natural changes, but the result of conscious, purposeful activities of the organization.</p>
Czech Republic	<p>I. Perlaki</p>		

	A special place in the study of innovative educational policy of the Czech Republic occupied periodicals. Publications by the Network of Institutes and Schools of Public Administration in Central and Eastern Europe (The Network of Institutes and Schools of Public Administrations in Central and Eastern Europe - NISPACE) and documents of the Program SIGMA (Support for Improvement and Management in General and Eastern European Countries) allow you to get acquainted with the educational policy reforms in public administration, administrative reform, public policy in Central and Eastern Europe. [38]
Hungary	<p data-bbox="157 148 381 700">B. Santo</p> <p data-bbox="157 148 381 700">1. The power of innovation self-development [33]</p> <p data-bbox="157 148 381 700">2. Innovation as a tool for economic [34]</p>
	<p data-bbox="381 1117 676 1299">Innovation – is a socio-techno-economic process through which the practical use of ideas and inventions leading to the creation of the best in quality products, technologies and makes a profit (in the case when innovation is focused on economic benefits), its appearance on the market can bring additional income.</p> <p data-bbox="381 1117 676 1299">Creation and implementation of competitive technological advantages.</p>

*Characteristic of the mechanism to obtain higher education
in some European states [13]*

Country	The enrollment for higher education	Norma and restrictions for admission to universities
1 Austria	2 General requirements for access to higher education: a valid certificate of graduation from high school or equivalent. There are specific requirements for admission to study the chosen program. Allowance is also something which country issued certificate high school graduation.	3 No restrictions on admission to universities. Admission to <i>Fachhochschulen</i> limited entrants take entrance exams.
Belgium(fr)	By universities can be credited to all applicants who have valid certification on graduation from high school. Exception - several areas with special requirements (eg, Engineering); for education in the following specialties must pass an entrance exam.	Restrictions in.
Belgium(nl)	Except for a few areas with special requirements, a university can be admitted all students who have a valid certificate of graduation from high school. Entrance examinations are students (Flemish or others) who have chosen areas of study engineer, architect, dentist, medical science (university degree), marine science and art (degree <i>Hogeschoolen</i>)	

1	2	3
UK	General requirements for access to higher education, exams increased levels of two or more subjects or equivalent qualifications, which includes the following professional qualifications: National Diplomas GNVQs, NUQs at BTEC. To enroll as necessary to perform basic and special course requirements.	Restrictions for admission are in some areas under-preparation. Institutions have the right to set their own limits.
Greece	General requirements for access to higher education: a valid certificate of graduation from high school and exams <i>Panhellenic</i> .	Admission to universities conducted with careful selection, limitations to recording exists in all areas of training. Under the new reform "Education 2000", <i>Panhellenic</i> examinations canceled and introduced more flexible system of admission to universities.
Denmark	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent. There are specific requirements for admission to study the chosen program.	Except for a few areas of training (medicine, some paramedics specialty and so on. al.), restrictions on admission there. The institutions have the right to establish restrictions in its sole discretion, eg, for lack of seats.

1	2	3
Ireland	General requirements for access to higher education: a valid certificate of graduation from high school. In part, there are specific entry requirements.	Complete restriction for admission there, but universities have the right to select students in accordance with their own standards.
Iceland	Despite the general requirements for access to higher education (effective certificate of graduation from high school or its equivalent), there are specific requirements for admission to study the chosen program	Limitations exist when enrolling in some training areas.
Spain	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent qualification and one year training courses COU or <i>Bachillerato LOGSE</i> . In addition, the entrance examination for admission is made in most areas of study.	Limitations exist when enrolling in some training areas.
Italy	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent qualifications.	Limitations exist when enrolling for courses DU, as for those limited number -university courses.
Liechtenstein	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent qualifications.	No information.

1	2	3
Luxembourg	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent qualifications.	Restrictions for admission there.
Netherlands	General requirements for access to universities: current certificate of graduation from high school (VWO-13-year secondary education). General requirements for access to <i>Hogescholen</i> (universities of professional education) - a valid certificate of graduation from high school (HAVO -12-year secondary education). Admission depends on the specific requirements for admission to study the chosen program.	Limitations exist when enrolling in some training areas.
Germany	Access to admission to universities require 12-13 years of secondary education (<i>Abitur</i>) or equivalent qualification. Access to <i>Fachhochschulen</i> requires 12-year secondary education. (Fachhochschulreife) or an equivalent qualification. There are specific entry requirements for admission to training for some programs, especially music academies and academies of Fine Arts.	Except for some areas of general restrictions on admission to the universities there. Admission to <i>Fachhochschulen</i> limited in some areas.
Norway	Despite the general requirements for access to higher education (effective certificate of graduation from high school or its equivalent), there are specific requirements for admission to study the chosen program.	Restrictions for admission are the majority-line training Kyiv

1	2	3
Portugal	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent qualifications.	Limitations exist when enrolling for most seminars training. Students have the right to have them offered a place of study, but it may not always co-fall from the student's choice.
Ukraine	There is the presence of the certificate of graduation from high school or special vocational institution certificate external testing.	Total number of students enrolled to universities, determined the licensed volume covered by the state licensing agency. Number of prospective students who come to study state-determined public order, forming the Ministry of Education and Science of Ukraine.
Finland	General requirements for access to higher education: a valid certificate of graduation from high school or equivalent qualification and examination for admission to the university. Enrollment is usually run Based on estimates exam admission to universities / certificate of high school graduation and entrance tests.	Limitations exist when enrolling for most areas of learning.
France	General requirements to access universities: valid certificate of graduation from high school. Other admission requirements there. The rest of the educational institutions have different entry requirements.	The system is limited adoption for admission to university is not applicable. Other types of institutions (IUT and <i>Grandes Ecoles</i>) or title conduct a thorough, careful selection of tea for admission.

1	2	3
Sweden	Despite the general requirements for access to higher education (effective certificate of graduation from high school or its equivalent), there are specific requirements for admission to study the chosen program.	Restrictions for admission exist in all areas of training. The school has the right to set limits on the number of students.

Note: According to the Lisbon Treaty (*Lisbon Convention*), the terms «*access*» (access) and «*enrollment*» (admission) connected to each other, but have different meanings. They represent different stages of the same process that leads to participation in higher education. Compliance access(*access*) is necessary but not always sufficient in order to be admitted to study in higher education (to get a place of education).

*The organization of the academic year at universities
of some European countries[13]*

Country	Beginning school year	Organization of the school year
1	2	3
Austria	September - October	The school year consists of two semesters; training in the first term -with 1 October to end of January, in II –from March 1 to the end of June.
Belgium (fr)	September - October	The academic year at universities can be an organization: a) training and exams for a year at the end of June; b) the division of the year into semesters, exams at the end of each semester.
Belgium (nl)	October	The academic year at universities can be an organization: a) training and exams for a year at the end of June; b) the division of the year into semesters, exams at the end of each semester; c) division, at the trimester exams at the end of each trimester.
UK	End of September - beginning of October	Educational Institutions differently organized academic year. The basic model of the school year based on a system of trimesters and semesters. Some schools organize work for the semester of semester structure. Periods of exams set their own educational institutions. Expected to increase the number of educational institutions that organize academic year for the semester.
Greece	Education begins in mid-September	Training calendar is divided into semesters. The first semester starts in mid-September and ends with examinations in January / February. The second semester starts in late February and ends in mid-June exams.

1	2	3
Denmark	The middle of August - first week of September	Typically, the academic year is divided into three semesters: September - end of January, February - end of June. Most exams consist in January and June. The academic year in some training programs in the non-university sector is not divided into semesters, examinations are at the end of the school year.
Ireland	Of course, in October, at times - in September	. Typically, the academic year is divided into three trimesters. Recently, however, many universities have moved to a system of two semesters, so the problem of the division of the academic year into semesters and trimesters is being actively discussed.
Iceland	Beginning in September	The academic year is divided into two semesters. First semester: September - December, the second January-May. Exams take place in January-May.
Spain	First / second week of October	Training organized by the annual system. Some universities use the semester.
Italy	Until recently academic year starts on 1 November. Recently, some universities have introduced semester system because training starts earlier.	The academic year at universities may have the organization: -rich-in basis - the basis of compact semester - a familiar semester basis. The most commonly used base compact semester.
Liechtenstein	Late October	The academic year is divided into semesters. The first semester begins no later than the end of October and the second - in April.

1	2	3
Luxembourg	Beginning in October	The academic year at the University of Luxembourg center (Centre Universitaire de Luxembourg) consists of two semesters.
Netherlands	Late August - early September	The academic year is organized by one of the following models: a) division of the year into two semesters. First semester: September - the end of December; second semester: January / February - July) modular system. Usually consists of five modules / blocks, each of which lasts about eight weeks (two before Christmas, three after Christmas). Exams consist of the end of each semester or block.
Germany	September-October	The basis of the academic calendar is two semesters system. There are some differences in academic calendars between university and non-university sector. The first semester usually starts in early or mid-October and ends in mid-February, the beginning of the second semester in the middle. April, ending - in July. Exams consist of the end of each semester.
Norway	Mid-August	Typically, the academic year is divided into two semesters. The first semester lasts from mid-August to December, the second from mid-January to mid-June, including the examination period. Some schools use the system trimesters
Portugal	Beginning in October	The most commonly used semester system. Exams typically consist in January-February and June-July.

1	2	3
Ukraine	1st of September	The academic year usually consists of two semesters (September 1 - the beginning of January, 1 February - end of June). In some universities the academic year is divided into three trimesters.
Finland	The middle of August or middle of September	The academic year is divided into two semesters. Exams consist at the end of each
France	the 1st of October. Training starts at times can vary	Organization of the school year may be based on: a) an annual basis with exams at the end of the school year (in June);b) semester basis with exams after each semester (usually in January and June).
Sweden	End of August	Organization of the school year is not regulated by the state. Most schools use the system 'division into two semesters. Training courses and the program can begin in January.

***Tuition fee and financial support for students
study abroad in some European countries [13]***

Country	The tuition fee	System support students to study abroad
1 Austria	2 Free training for students who are citizens of the country, the EU and some other categories. Pay teaching students who are nationals of countries not mentioned above.	3 Financial assistance may be available for the entire period of study. Students who receive a national grant, are eligible for financial aid to study abroad for a period not exceeding 20 months.
Belgium(fr)	After checking the solvency set fee for registration and fees. The amount depends on the level of study. Low salaries have also been established for participating in the examinations. Tuition fees - about 650 euro per year.	Financial assistance for study abroad is not available.
Belgium(nl);	After checking the solvency is charged for tuition. It depends on the level of study. Tuition fees - about 460 euro per year.	Financial assistance for study abroad is not available.
UK	Students who are nationals of countries or the EU, and the students are making different the rest of the tuition fees. Students OK-citizens or EU competition bachelor education in hospital costs 1,025 pounds. Tuition fees set after checking the solvency and can partially or completely dependent on profits.	Financial assistance may be granted for study abroad at current rates (both part of the course, and for the full course leading to a degree).

1	2	3
	Educational institutions independently set the amount paid for tuition for part-time students, students who obtain post-bachelor degree students and citizens of countries that are not EU members.	
Greece	Free training for students who are citizens of the country and the EU. Students study in other countries pay.	General government financial support for study abroad No
Denmark	Free training for students who are citizens of the country and for foreign students.	Financial assistance may be provided for training at current rates (both part of the course, and for the full course leading to a degree) lasting four years. The maximum term of six years in the Nordic countries.
Ireland	1996 abolished the system of payment for training for the first level. All next level education paid.	Financial support may be granted for the full cycle.
Iceland	Free training for students who are nationals of the country and the EU for foreign students.	General government financial support for study abroad there.
Spain	After checking the solvency set tuition fees of the students who are nationals of countries, EU and foreign students.	General government financial support for study abroad there.

1	2	3
Italy	After checking the solvency set tuition fees of the students who are nationals of countries, EU and foreign students. The amount depends on the level of study.	General government financial support for study abroad there.
Luxembourg	Study is uncompensated.	General government financial support for study abroad there.
Netherlands	After checking the solvency of the students who are citizens of EU countries and will be charged tuition fees of about 1,200 euro. For foreign university students determine the amount of premium own.	Financial assistance may be granted for studies abroad in existing programs (both part of the course, and for the full course leading to a degree).
Germany	Free training for students who are nationals of the country and for foreign students.	Financial assistance may be granted for study abroad for a period of 1 to 1,5r.
Norway	Free training for students who are nationals of the country and the EU for foreign students.	Financial assistance may be granted for study abroad at current rates (both part of the course, so for the full course leading to a degree).
Portugal	Tuition fees charged to students who are nationals of countries, EU and foreign students. For programs for the degree of Bachelor amount is 294 euro	Students studying abroad for a short period of time, not suspended the payment of their grant.

1	2	3
Ukraine	For students who study on public order, education free. In addition, the successful training paid a monthly stipend by the state. Admission to the study carried out at the expense of the state to order the state (target direction) or tender conditions. Citizens have the right to study at their own expense and costs employers, sponsors and others. For foreign citizens study paid, except as provided by international agreements	Financial aid for training, generally not covered, except as provided by international agreements. Possible tuition loans from government institutions.
Finland	Free training for students who are citizens of countries with the EU and for foreign students.	Financial assistance may be granted for study abroad at current rates (both part of the course, and for the full course leading to a degree).
France	After checking the solvency is charged for the registration of students who are nationals of countries, EU and foreign students. The amount ranges from 100 to 230 euro.	Financial assistance for study abroad may be granted for a period not exceeding one year.
Sweden	Free training for students who are nationals of the country and the EU for foreign students.	Financial assistance may be granted for studies abroad and at current rates (both part of the course, and for the full course leading to a degree).

**Characteristics of the main development stages
of technology parks in the world**

Characteristic feature of the stage	Development stages of the technology parks		
	<i>Phase1 (1947-1970)</i>	<i>Phase2 (1971-1985)</i>	<i>Phase3 (1986-2011)</i>
1. The dominant form of the technology park	University technology park, regional branch technology park, scientific town	Mega Technopark (technopolis), technological incubators, specialized technology parks, technology transfer centers	Network technology park, technology parks associations
2. Main characteristics of the dominant forms of technology park	Created at universities	Created as regional structures, targeted by industry	Created as a platform for communication
3. The basic process	Conducting of scientific and research developments	The commercialization of scientific and research developments	Creating a space for information exchange, joint projects
4. Core	University laboratories, complex design and research bureau of multinational corporations	Office complexes of technological business incubators	Virtual networks, networks of the technology parks departments
5. Owners of the park	Universities, multinational corporations	Office complexes of technological business incubators	Virtual networks, networks of the technology parks departments
6. Product of the technology park	Innovative product	Technological solutions and technologies	Scientific and research potential

7. Basic service of the technology park	Access to knowledge source (higher education institution) or source of practical tasks (company)	Favorable conditions (real estate business), advanced related services	Access to the professional community
8. Countries Leaders	USA, Great Britain	Europe, Asia	USA

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