

Syllabus
selective component of VC

Land resource assessment methods

Discipline name:	Land resource assessment methods
Level of higher education:	First (undergraduate)
Course page in Moodle:	https://dl2022.khadi.kharkov.ua/course/view.php?id=959
The volume of the educational component	4 credits (120 hours)
Form of final control	Test
Consultations:	on schedule
Name of the department:	Department of Road Design, Geodesy and Land Management
Language of instruction:	English
Course leader:	Tymoshevska Tetyana Igorivna, Candidate of Economic Sciences
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Brief content of the educational component:

The goal is formation of theoretical knowledge about the principles, methods and tools of land resource assessment, regulation of the land relations market, as well as acquisition of practical skills and abilities regarding the use of a methodical approach in assessment activities.

Subject: a system of economic, organizational and legal relations regarding immovable property, based on current legislative and regulatory acts regulating the management of land resources and carrying out civil-law operations with them in order to obtain the desired commercial or social result.

The main tasks of studying an academic discipline are:

- acquire the theoretical basis of land valuation;
- to study the legal basis of monetary valuation of lands in Ukraine;
- study the information base of monetary assessment;
- analysis of land management documentation during land evaluation;
- carry out normative monetary valuation of lands;
- learn the basic principles of expert monetary valuation of land;
- to know the general procedure of land assessment;
- to know methodical approaches and methods of expert monetary valuation of lands.

Prerequisites for studying the educational component:

Geodesy; Higher mathematics; Land management

Competencies acquired by the acquirer:

General competences:

Ability to apply knowledge in practical situations.

Ability to use information and communication technologies.

Special (professional) competences:

Ability to apply regulatory and legal acts, regulatory and technical documents, reference materials in professional activities.

The ability to use modern information, technical and technological support to solve complex issues of geodesy and land management.

The ability to develop land management and land valuation documentation, cadastral documentation, fill in data from state land, town planning and other cadastres.

Learning outcomes:

Know and apply in professional activity regulatory and legal acts, regulatory and technical documents, reference materials in the field of geodesy and land management and related fields.

To develop land management documentation, cadastral documentation and land valuation documentation using computer technologies, geo-information systems and digital photogrammetry, to fill with data state land, town planning and other cadastres.

Apply conceptual knowledge of regulatory and expert monetary valuation of land, implementation of valuation activities.

Thematic plan

Topic number	Title of topics (LK, LR, PR, SZ, SR)	Number of hours	
		Full-Time	Correspondence
1	2	3	4
1	LK - Earth as a natural resource. Classification of natural resources. A plot of land as a real estate object.	2	–
	PR -	–	–
	SR – Study of topic material 1. Structuring of lands of Ukraine.	4	–
2	LC – Definition of the main approaches to cost estimation. Normative provision of assessment activities in Ukraine.	2	–
	PR -	–	–
	SR – Study of topic material 2. The procedure for carrying out evaluation activities.	4	–
3	LK - Rent and its components. The negative value of the land plot. Characteristics of the land market in Ukraine.	2	–
	PR -	–	–
	SR – Study of topic material 3. Characteristics of the land market in Ukraine.	4	–
4	LK – Normative monetary valuation of agricultural lands.	2	–
	PR -	–	–
	SR - Zoning of the territory of Ukraine	4	–
5	LK – Normative monetary valuation of the lands of settlements	2	–
	PR – Definition of NGO 1 m2 of land of different functional use	2	–
	SR – Study of the structure of costs for the development and arrangement of the territory of the settlement	4	–
6	LC – Normative monetary valuation of non-agricultural lands.	2	–
	PR -	–	–
	SR - The procedure for drawing up technical documentation with NGOs	4	–
7	LK - Methods of assessing the market value of land. The method of capitalization of land rent. Method of residuals. Sales comparison method. Allocation method.	2	2
	PR - Determination of the basic value of land.	2	2
	SR – Study of topic material 7. Method of intended use.	4	12
8	LK - Methods of assessing the market value of land. The method of determining development costs. A method of determining costs for reproduction or replacement of infrastructure. The method according to the terms of investment contracts.	2	2
	PR - Cost approach to determining the market value of land.	2	–

	SR – Study of topic material 8. Method according to the terms of investment contracts.	4	12
9	LK – Evaluation by the cost approach. Features of the cost approach. Methods of calculating reproduction cost and replacement cost.	2	–
	PR – Determining the cost of land valuation works for the preparation of a report on normative monetary valuation.	2	–
	SR – Study of topic material 9. Methods of calculating the cost of reproduction and the cost of replacement.	4	12
10	LK – Valuation according to the income approach. Features of the application of the income approach. Method of direct capitalization of income.	2	2
	PR – Land valuation using financial ratios.	2	–
	SR – Study of the material of topic 10. Formation of an extract from the normative monetary assessment of the land plot of the settlement.	4	12
11	LK – Evaluation by the method of comparative sales analysis. Characteristics of the comparative approach. Advantages and disadvantages of the approach.	2	–
	PR – Development of an extract from the technical documentation on the normative monetary assessment of the land plot.	2	2
	SR – Study of topic material 11. Correction of data on analogous objects.	4	10
12	LK – Methodology of expert monetary valuation of land plots. The procedure for the monetary assessment of land plots.	2	–
	PR – Method of analogues.	2	–
	SR – Study of the material of topic 12. Completion of an extract from the technical documentation on the normative monetary assessment of the land plot.	4	10
13	LK - Types of expert monetary valuation of land plots. Expert monetary valuation of the land plot by the pairwise comparison method, by the economic method, by the correlation method, by the profit method	2	–
	PR – Development of an extract from the report on the expert monetary valuation of the land plot.	2	–
	SR – Study of topic 13. Investment method	6	10
14	LK - Types of expert monetary valuation of land plots. Expert monetary valuation of a land plot using the residual method for land, according to the method distribution of income, according to the method of development, for by the method of statistical analysis of the market	2	–
	PR -	–	–
	SR - Studying the material of topic 14. Preparation for practical classes. Issuance of an extract from the report on the expert monetary valuation of the land plot.	6	10
15	LK - Analysis of the value of land plots. Selection of similar land plots. Calculation of the correction for the location of the land plot. Determination of the capitalization rate coefficient by the extraction method. Forecasting the value of land. Monitoring of the land market	2	–
	SR - Studying the material of topic 15. Preparation for practical classes. Development of an algorithm for calculating the market value of a land plot.	6	10

16	LK – Professional training of appraisers on expert monetary valuation of land plots. Stages of professional training. Subjects of professional activity	2	–
	SR – Studying the material of topic 16. Preparation for practical classes. Generalization of data on price-forming factors of land plots. Determining the value of the right to use a land plot. Determining the amount of damages to land owners and land users.	6	12
In just one semester		120	120
ALL by discipline		120	120

Teaching methods:

verbal (lecture, explanation, story, conversation, discussion, work with a book), visual (the method of illustrations and demonstrations), practical tasks and independent work of the acquirer.

Grading system and requirements:

Current success

1 The current success of applicants for the performance of educational types of work in training sessions and for the performance of tasks of independent work is assessed using a four-point scale of grades, followed by recalculation into a 100-point scale. During the assessment of current performance, all types of work provided for by the curriculum are taken into account.

1.1 Lectures are evaluated by determining the quality of the specified tasks.

1.2 Practical classes are assessed by the quality of the control or individual task, the performance and design of practical work.

1.3 Laboratory classes are assessed by the quality of the implementation of reports on the performance of laboratory work.

1.4 Seminars are evaluated by the quality of the individual task / abstract.

2 Evaluation of the current performance of applicants for higher education is carried out at each practical lesson (laboratory or seminar) on a four-point scale ("5", "4", "C", "2") and recorded in the journal of accounting for academic performance.

– "excellent": the applicant perfectly mastered the theoretical material, demonstrates deep knowledge of the relevant topic or academic discipline, the main provisions;

– "good": the applicant has well mastered the theoretical material, owns the main aspects from primary sources and recommended literature, reasonably teaches it; has practical skills, expresses his reasoning about certain problems, but assumes certain inaccuracies and errors in the logic of presenting theoretical content or in the analysis of practical;

– "satisfactory": the applicant has mainly mastered the theoretical knowledge of an academic topic or discipline, is oriented in primary sources and recommended literature, but unconvincingly answers, confuses concepts, uncertainly answers additional questions, does not have stable knowledge; answering questions of a practical nature, reveals inaccuracies in knowledge, does not know how to evaluate facts and phenomena, connect them with a future profession;

– "unsatisfactory": the applicant has not mastered the educational material of the topic (discipline), does not know scientific facts, definitions, is almost not oriented in primary sources and recommended literature, there is no scientific thinking, practical skills are not formed.

3 The final score for current activities is recognized as the arithmetic average sum of points for each lesson, for individual work, current tests according to the formula:

$$K^{nomoy} = \frac{K1 + K2 + \dots + Kn}{n},$$

where K^{nomoy} – is the final assessment of success based on the results of current control;

$K1, K2, \dots, Kn$ – assessment of the success of the measure of current control;

n – the number of measures of current control.

Scores are converted to points according to the recalculation scale (Table 1).

Table 1 – Recalculation of the average score for current activities into a multi-point scale

4-point Scale	100-point Scale	4-point Scale	100-point Scale	4-point Scale	100-point Scale	4-point Scale	100-point Scale
<u>5</u>	<u>100</u>	<u>4,45</u>	<u>89</u>	<u>3,90</u>	<u>78</u>	<u>3,35</u>	<u>67</u>
<u>4,95</u>	<u>99</u>	<u>4,4</u>	<u>88</u>	<u>3,85</u>	<u>77</u>	<u>3,3</u>	<u>66</u>
<u>4,9</u>	<u>98</u>	<u>4,35</u>	<u>87</u>	<u>3,80</u>	<u>76</u>	<u>3,25</u>	<u>65</u>
<u>4,85</u>	<u>97</u>	<u>4,3</u>	<u>86</u>	<u>3,75</u>	<u>75</u>	<u>3,2</u>	<u>64</u>
<u>4,8</u>	<u>96</u>	<u>4,25</u>	<u>85</u>	<u>3,7</u>	<u>74</u>	<u>3,15</u>	<u>63</u>
<u>4,75</u>	<u>95</u>	<u>4,20</u>	<u>84</u>	<u>3,65</u>	<u>73</u>	<u>3,1</u>	<u>62</u>
<u>4,7</u>	<u>94</u>	<u>4,15</u>	<u>83</u>	<u>3,60</u>	<u>72</u>	<u>3,05</u>	<u>61</u>
<u>4,65</u>	<u>93</u>	<u>4,10</u>	<u>82</u>	<u>3,55</u>	<u>71</u>	<u>3</u>	<u>60</u>
<u>4,6</u>	<u>92</u>	<u>4,05</u>	<u>81</u>	<u>3,5</u>	<u>70</u>	from 1,78 to 2,99	from 35 to 59
						Reassembly	
<u>4,55</u>	<u>91</u>	<u>4,00</u>	<u>80</u>	<u>3,45</u>	<u>69</u>	from 0 to 1,77	from 0 to 34
<u>4,5</u>	<u>90</u>	<u>3,95</u>	<u>79</u>	<u>3,4</u>	<u>68</u>	Re-study	

Final assessment

1 The applicant for higher education receives credit at the last lesson in the discipline based on the results of the current assessment. The average score for current activities is converted into points on a 100-point scale, according to the recalculation table (Table 1).

Applicants for higher education who have an average current grade in a discipline lower than "3" (60 points) in the last lesson can increase their current score by passing tests in the discipline.

Assessment of knowledge of applicants by testing is carried out on a scale:

- "Excellent": at least 90% of correct answers;
- "Very good": from 82% to 89% of correct answers;
- "Good": from 74% to 81% of correct answers;
- "Satisfactory": from 67% to 73% of correct answers;
- "Satisfactory enough": from 60% to 66% of correct answers;
- "Unsatisfactory": less than 60% of correct answers.

2 The condition for obtaining the test is:

- working out all missed classes;
- the average current score in the discipline is not lower than "3" (60 points).

3 For the implementation of individual independent work and participation in scientific events, applicants are awarded additional points.

3.1 Additional points are added to the sum of points scored by the higher education student for current academic activities (for disciplines for which the test is the final form of control), or to the final grade in the discipline for which the exam is the final form of control.

3.2 The number of additional points awarded for different types of individual tasks depends on their volume and significance:

- prizes in the discipline at the international / all-Ukrainian competition of scientific student works – 20 points;
- prizes in the discipline at the All-Ukrainian Olympiads – 20 points;
- participation in the international / all-Ukrainian competition of scientific student works – 15 points
- participation in international / all-Ukrainian scientific conferences of students and young scientists – 12 points;
- participation in all-Ukrainian olympiads in the discipline – 10 points
- participation in olympiads and scientific conferences of KhNADU in the discipline – 5 points;
- implementation of individual research (educational and research) tasks of increased complexity – 5 points.

3.3 The number of additional points may not exceed 20 points.

4 The result of training is evaluated (*choose the right one*):

- on a two-point scale (credited/not credited) according to table 2;
- on a 100-point scale (for differentiated standings) according to Table 3.

The final score, together with additional points, cannot exceed 100 points.

Table 2 – Scale of transfer of points to the national grading system

On a 100-point scale	On a national scale
from 60 points to 100 points	enrolled
less than 60 points	unaccounted for

Table 3 – Scale of assessment of applicants' knowledge based on the results of the final control in the discipline

Score in points	National scale score		ECTS score	
	Exam	Passed	Score	Criteria
90-100	Perfectly	Enrolled	A	The theoretical content of the course is mastered entirely, without gaps, the necessary practical skills of working with the mastered material are formed, all the training tasks provided by the training program have been completed, the quality of their implementation is estimated by the number of points close to the maximum

80–89	Well	Enrolled	B	The theoretical content of the course is mastered entirely, without gaps, the necessary practical skills in working with the mastered material are mainly formed, all the training tasks provided by the training program have been completed, the quality of most of them is estimated by the number of points close to the maximum
75-79			C	The theoretical content of the course is mastered entirely, without gaps, some practical skills of working with the mastered material are not sufficiently formed, all the training tasks provided by the training program have been completed, the quality of none of them is assessed by the minimum number of points, some types of tasks are performed with errors
67-74	Satisfactory		D	The theoretical content of the course is partially mastered, but the gaps are not significant, the necessary practical skills in working with the mastered material are mainly formed, most of the training tasks provided by the training program have been completed, some of the tasks performed may contain errors
60–66			E	The theoretical content of the course is partially mastered, some practical skills of work are not formed, many of the training tasks provided by the training program have not been completed, or the quality of some of them is estimated by the number of points close to the minimum.
35–59	Disappointing	Not credited	FX	The theoretical content of the course is partially mastered, the necessary practical skills of work are not formed, most of the provided training programs have not been completed, or the quality of their implementation is estimated by the number of points close to the minimum; with additional independent work on the course material, it is possible to improve the quality of the training tasks (with the possibility of re-compilation)
0–34	Unacceptable		F	The theoretical content of the course has not been mastered, the necessary practical skills of work are not formed, all completed training tasks contain gross errors, additional independent work on the course material will not lead to any significant improvement in the quality of the training tasks (with a mandatory repeated course)

Course Policy:

- the course involves teamwork, the environment in the audience is friendly, creative, open to constructive criticism;
- mastering the discipline involves the obligatory attendance of lectures and practical classes, as well as independent work;
- independent work involves the study of individual topics of the discipline, which are made in accordance with the program for independent study, or were considered briefly;
- all tasks envisaged by the program must be completed within the prescribed period;
- if the applicant for higher education is absent from the classroom for a good reason, he presents the completed tasks during the independent preparation and consultation of the teacher;
- while studying the course, applicants for higher education must comply with the rules of academic integrity set forth in the following documents: "Rules of academic integrity of participants in the educational process of KhNADU" (https://www.khadi.kharkov.ua/fileadmin/P_Standart/pologeniya/stvnz_67_01_dobroch_1.pdf), "Academic integrity. Verification of the text of academic, scientific and qualification works for plagiarism" (https://www.khadi.kharkov.ua/fileadmin/P_Standart/pologeniya/stvnz_85_1_01.pdf), "Moral and ethical code of participants in the educational process of KhNADU" (https://www.khadi.kharkov.ua/fileadmin/P_Standart/pologeniya/stvnz_67_01_MEK_1.pdf).
- in case of detection of the fact of plagiarism, the applicant receives 0 points for the task and must re-complete the tasks provided for in the syllabus;
- write-offs during tests and exams are prohibited (including using mobile devices). Mobile devices are only allowed to be used during online testing.

Recommended Books:

1. Tymoshevsky V.V. Application of three-dimensional models in the development of land management projects // Problems of land management: Scientific journal of the Lviv National Agrarian University. Lviv: LNAU, 2021. P. 109-112.
2. Methodological foundations of monetary valuation of land in Ukraine: Science. View. / Yu.F. Dekhtyarenko, M.G. Lyhogrud, Yu.M. Mantsevich, Yu.M. Palekha K.: Profi, 2007. 256 p.
3. Kirichuk Yu.O. K43 Land valuation. Tutorial. Dnipropetrovsk: Litograf, 2016. 454p.
4. Pankiv Zinovii Normative monetary valuation of land in Ukraine: study guide / Pankiv Zinovii, Yamelynets Taras. Lviv: LNU named after Ivan Franko, 2021. 344 p.
5. Tymoshevsky V.V. Economic evaluation of the shortcomings of the spatial arrangement of land uses // Economics: Bulletin of KhNAU No. 3, 2021. P. 58-62.
6. Shchepak V.V. Regulatory and legal provision of land monitoring / V.V. Shchepak, A.M. Karyuk, G.I. Sharyi, V.V. Tymoshevsky // Business Inform. 2018. No. 10. P. 209–214.
7. Tymoshevsky V.V. Evaluation of land consolidation / V.V. Tymoshevskyi, T.I. Tymoshevska // Problems of land management. 2019. No. 3. P. 32–38.
8. Management of land resources: training. manual / G.I. Sharyi, V.V. Tymoshevskyi, R.A. Mishchenko, I.A. Yurko Poltava: PolNTU, 2019. 172 p.
9. Verveiko A.P. Land cadastre. Land valuation. Practicum / A.P. Verveiko. K.: Odyssey, 2009.
10. Methodical instructions for practical classes in the discipline "Methods of evaluation of land resources" / A.H. Batrakova, S.M. Urdzik, V.V. Tymoshevsky. Kharkiv: Khnadu, 2020. 96 p.

Additional sources:

1. distance course:
<https://dl2022.khadi.kharkov.ua/course/view.php?id=959>
2. Directory of indicators of normative monetary assessment of lands of settlements: [Electronic resource]. – Access mode: <http://land.gov.ua/hroshova-otsinka-zemel/otsinka-zemelnaselenykh-punktiv.html>
3. Public cadastral map of Ukraine: [Electronic resource]. – Access mode: <http://map.land.gov.ua/kadastrova-karta>
4. <http://files.khadi.kharkov.ua>
5. <http://www.nbvv.gov.ua>
6. <http://korolenko.kharkov.com>

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