

Ministry of Education and Science of Ukraine
Sumy National Agrarian University
Faculty of Construction and Transport
Department of Architecture and Engineering Surveys

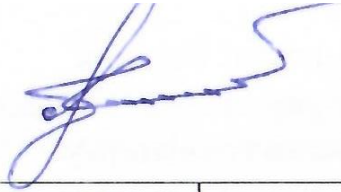
Syllabus of the Educational Component

**EC 3 ARCHITECTURAL DESIGN AND LANDSCAPING OF
MULTIFUNCTIONAL COMPLEXES (1ST YEAR MASTER'S)**


Implemented within the Educational Program
Architecture and Urban Planning

Under the Specialty 191 Architecture and Urban Planning
at the Second Level of Higher Education

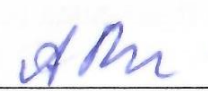
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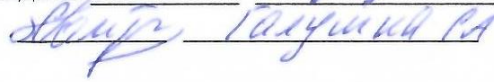
Бородай С.П., старший викладач

| | |
|--|---|
| Розглянуто та схвалено на засіданні кафедри архітектури та інженерних вишукувань | протокол від _____ № _____ |
| | Завідувач кафедри  Бородай Д.С. |

Погоджено:

Гарант освітньої програми  Бородай А.С.Декан факультету, де реалізується освітня програма  Соларьов О.О.

Рецензія на робочу програму надана


Методист відділу якості освіти,
ліцензування та акредитації (Надія Баранівська)Зареєстровано в електронній базі: дата: 18.07 2024 р.

Information about the review of the course program (syllabus)

| Academic year in which changes are made | Appendix number to the course program with a description of the changes | Changes reviewed and approved | | |
|--|--|--|---------------------------|------------------------|
| | | Date and number of the department meeting protocol | Head of the Department | Program Coordinator |
| | | | | |
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1. GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

| | | | | |
|------|---|---|-----------------------------|--------------------|
| 1. | Title of the educational component | EC 2: Architectural Design and Improvement of Multifunctional Complexes | | |
| 2. | Faculty/Department | Faculty of Construction and Transport / Department of Architecture and Engineering Surveys | | |
| 3. | Status of the educational component | Mandatory | | |
| 4. | Program/Specialty (programs) to which the educational component is part of (to be filled in for mandatory educational components) | Educational and Professional Program "Architecture and Urban Planning" of the second (master's) level of higher education in the specialty 191 "Architecture and Urban Planning," qualification: Master of Architecture. | | |
| 5. | The educational component may be offered for (to be filled in for elective components) | | | |
| 6. | Level | 7 Level | | |
| 7. | Semester and duration of study | Full-time – 1 Semester, 1-15 week | | |
| 8. | Number of credits | 5 | | |
| 9. | Total number of hours and their distribution | Contact hours (classes) | | Independent work |
| | | Lectures | Practical / Seminar classes | Laboratory classes |
| | | - | 74 | |
| 10. | Language | English | | |
| 11. | Instructor/Coordinator of the educational component | Serhii Borodai, senior lecturer | | |
| 11.1 | Contact information | Office 431e; tel +380503441096; sergboroday@gmail.com | | |
| 12. | General description of the educational component | Architectural Design' is a component of the training for a Master of Architecture, aimed at comprehensive understanding of the principles of organizing spatial environments for human habitation in highly complex objects. This includes the simultaneous development of urban planning, functional and spatial planning, structural, and architectural-artistic tasks when executing architectural projects. | | |
| 13. | Purpose of the educational component | The goal is to reinforce and deepen theoretical and practical knowledge and skills in the comprehensive development of urban planning and volumetric-spatial solutions for highly complex architectural objects (consequence class), as well as ensuring compliance with the requirements of current architectural and urban planning legislation. | | |
| 14. | Prerequisites for studying the educational component, | <input type="checkbox"/> The educational component is based on knowledge from the following educational components: Fundamentals and Methods of | | |

| | | |
|-----|---|---|
| | connection with other educational components of the program | Architectural Design, Basics of Building and Structure Typology, Basics of Urban Planning, Architectural Working Design, and Architectural-Building Physics." <input type="checkbox"/> "The educational component serves as the foundation for the following educational components: Architectural and Urban Planning Legislation, Regional Features of National Architecture, and Contemporary Issues in Architecture and Urban Planning. |
| 15. | Academic Integrity Policy | Adherence to academic integrity for higher education students entails: independent completion of educational tasks, assignments for formative and summative assessment; proper citation of sources when using ideas, statements, or information; compliance with copyright legislation; and providing accurate information about the results of one's educational or research activities. Violations of academic integrity in the study of the educational component "Methodology of Scientific Research" include: academic plagiarism, academic fraud (such as cheating, deception, or presenting someone else's work as one's own), and the use of electronic devices during summative assessments. For violations of academic integrity, students may face the following academic consequences: Academic Plagiarism: A grade of 0 and a requirement to redo the assignment. Academic Fraud: Nullification of received grades; re-evaluation; and redoing the assignment that was not independently completed. Use of Electronic Devices During Summative Assessments: Removal from the examination, a grade of 0, and redoing the summative assessment. |
| 16. | Course link in the system Moodle | https://cdn.snau.edu.ua/moodle/course/view.php?id=4984 |

2. LEARNING OUTCOMES FOR THE EDUCATIONAL COMPONENT AND THEIR CONNECTION TO PROGRAM LEARNING OUTCOMES"

| Learning Outcomes for the Educational Component: "Upon completing the educational component, the student is expected to be able to..." | Program Learning Outcomes that the Educational Component Aims to Achieve (please specify the number according to the numbering provided in the program) | | | | | | | | | | | | | | How the Learning Outcomes are Assessed |
|---|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|
| | PO ₀₁ | PO ₀₂ | PO ₀₃ | PO ₀₄ | PO ₀₅ | PO ₀₆ | PO ₀₇ | PO ₀₈ | PO ₀₉ | PO ₁₀ | PO ₁₁ | PO ₁₂ | PO ₁₃ | PO ₁₄ | |
| LO 1. Capable of analyzing initial data for the design of architectural | + | + | + | + | + | + | + | | | + | | | + | + | Creative and calculation-practical assignment, modular |

| | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| volumetric-spatial objects. | | | | | | | | | | | | | | | architectural project, credit |
| LO 2. Capable of addressing the problem of functional zoning in urban planning objects, residential, and public buildings. | + | + | | + | + | + | | + | + | + | + | + | + | + | Creative and calculation-practical assignment, modular architectural project, pass/fail assessment |
| LO 3. Capable of developing master plans for urban formations, including the organization of public centers and the layout of individual buildings in accordance with current standards. | + | | | | + | + | + | + | + | + | | + | | + | Creative and calculation-practical assignment, modular architectural project, credit |
| LO 4. Capable of solving functional-planning and compositional tasks in the design of residential, public, and industrial buildings in accordance with state building codes | + | | + | | + | + | + | + | + | + | + | + | | + | Creative and calculation-practical assignment, modular architectural project, credit for the assignment, calculation and graphic work |
| LO 5. Capable of making optimal structural decisions in the design of buildings and structures | + | | + | + | | + | | | | | + | + | + | + | Creative and calculation-practical assignment, modular architectural project, credit |

3. CONTENT OF THE EDUCATIONAL COMPONENT (COURSE SYLLABUS)

| Topic List of questions to be covered within the topic | Distribution within the Overall Time Budget | | | | Recommended Reading |
|--|---|-----------|-----|------------------|---------------------|
| | Classroom Work | | | Independent Work | |
| | Lectures | Practical | Lab | | |
| Project of a multifunctional baggage and multi-storey building (complex) for residential and public use | | | | | |
| <p>Topic 1. Conducting a pre-project analysis.</p> <p><input type="checkbox"/> Issuing a task for the development of the architectural project. Objectives and content of the architectural project. Literature review.</p> <p><input type="checkbox"/> Seminar on the topic of the architectural project. Prerequisites for the formation of multifunctional buildings and complexes. Features of organizing sites for residential-public and public multifunctional objects, functional-planning and spatial-planning aspects of their design.</p> <p><input type="checkbox"/> Additional collection of initial data, studying analogous projects. If necessary, site survey in the field.</p> <p><input type="checkbox"/> Reviewing the collected initial data. Conducting the urban planning component of the pre-project analysis, determining the main characteristics of the object and its site.</p> <p><input type="checkbox"/> Conducting the functional-typological component of the pre-project analysis, determining the main characteristics of the object.</p> | | 8 | | 15 | 1, 2,5,6,7,11 |
| <p>Topic 2: Development of Conceptual Sketches (at least 2 options) for the Proposed Object.</p> <p>1. Clause 1: "Functional-Planning Solution of the Object." Independent search for a functional-planning solution for the object, considering urban planning constraints.</p> <p>2. Clause 2: "Architectural-Planning Solution of the Object." Independent search for an architectural-planning solution for the object, considering structural constraints.</p> <p>3. Discussion of the results from Clause 2. Analysis of the quality of the results from both clauses.</p> | | 24 | | 32 | 1, 3,4,6,7,11,15 |

| | | | | | |
|--|--|----|--|----|--------------------------|
| <p>4. Development of conceptual sketches for the functional-planning solution of the site in two variants, including necessary calculations.</p> <p>5. Review of options and approval of the conceptual sketch for the functional-planning solution of the site.</p> <p>6. Development of two (or three) variants of the functional-planning and spatial-structural organization of the object.</p> <p>7. Finalization of the conceptual sketch, its graphical presentation, revisions based on feedback, and review of reports.</p> <p>8. Approval of the conceptual sketch based on a comparative analysis of the variants developed for all sections. Evaluation of the report.</p> <p>9.</p> | | | | | |
| <p>Topic 3: Development and Approval of the Conceptual Design:</p> <p>1. Development of the functional structure of the multifunctional residential and public building (MRPB) with differentiation into planning elements.</p> <p>2. Development of the architectural and aesthetic solution for the volume of the complex.</p> <p>3. Verification of the compliance of the adopted architectural and planning solutions with current standards and regulations.</p> | | 38 | | 23 | 1,2,3,4,6,7,11,15 |
| <p>Topic 4: Graphic Presentation of the Project, Preparation of the Explanatory Note, and Project Defense.</p> <p>1. Development of architectural details and color scheme for the complex.</p> <p>2. Assembling the project on presentation sheets.</p> <p>3. Preparation of the explanatory note and project defense</p> | | 4 | | 6 | 2,4,6,7,9,10,11,14,16,17 |
| Total | | 74 | | 76 | |

4. TEACHING AND LEARNING METHODS

| Learning Outcomes | Teaching Methods (Activities Conducted by the Instructor) | Number of Hours | Learning Methods (Types of Learning Activities to be) | Number of Hours |
|-------------------|---|-----------------|---|-----------------|
|-------------------|---|-----------------|---|-----------------|

| | During Classroom Sessions and Consultations) | | Performed Independently by the Student) | |
|-------|---|----|--|----|
| LO 1. | <p>Deductive methods – related to the formulation of general principles, norms, laws, and their application to the fundamentals of architectural design, as well as the demonstration of material using multimedia technologies.</p> <p>Practical methods – pre-design analysis based on individual tasks.</p> <p>Use of platforms – MOODLE and ZOOM during blended learning</p> | 15 | Working with archival documents, methodological guidelines, reference materials, manuals, analogous projects, and online resources | 15 |
| LO 2. | <p>Methods for harmonizing creative exploration, related to the differentiation of architectural concepts into graphical components.</p> <p>Practical methods – developing diagrams for the spatial arrangement of architectural elements and the interrelationships between individual components.</p> <p>Use of platforms – MOODLE and ZOOM during blended learning</p> | 15 | <p>Understanding theoretical material, working with methodological guidelines, textbooks, and manuals.</p> <p>Completion of individual tasks related to the graphical presentation of the project.</p> | 15 |
| LO 3. | <p>Functional modeling methods: related to the differentiation of architectural objects into compositional components.</p> <p>Integrated architectural design method: combining theory and practice in education, integrating creative exploration while considering functional and aesthetic requirements for architectural objects.</p> <p>Practical methods: performing individual architectural tasks.</p> <p>Use of platforms: MOODLE and ZOOM during blended learning</p> | 20 | Working with normative literature, reference books, and analogous projects. Completion of individual architectural tasks | 20 |

| | | | | |
|-------|--|----|---|----|
| LO 4. | <p>Integrated architectural design method: combining theory and practice in education, integrating creative exploration while considering functional and normative requirements in the design of architectural objects.</p> <p>Practical methods: performing individual functional-planning and compositional tasks.</p> <p>Use of platforms: MOODLE and ZOOM during blended learning</p> | 20 | <p>Working with normative literature, reference books, and analogous projects.</p> <p>Completion of individual architectural and volumetric-spatial tasks.</p> | 20 |
| LO 5. | <p>Integrated architectural design method: involves simultaneously addressing compositional, functional, and structural tasks in the design of architectural objects.</p> <p>Practical methods: designing structural drawings based on individual tasks.</p> <p>Use of platforms: MOODLE and ZOOM during blended learning.</p> | 14 | <p>Use of theoretical materials, methodological guidelines, working with textbooks and manuals, and online resources.</p> <p>Completion of individual practical and calculation tasks</p> | 16 |

5. EVALUATION OF THE EDUCATIONAL COMPONENT

5.1. Diagnostic Assessment (specified as needed)

5.2. Summative Assessment

5.2.1. To assess the expected learning outcomes, the following are provided:

| № | Methods of Summative Assessment | Weight in the Overall Grade | Date |
|---|---|-----------------------------|---|
| 1 | Individual creative tasks at the end of each topic. | 30 points/ 30% | Individual creative tasks upon completion of each topic |
| 2 | Individual architectural project | 70 points/ 70% | Individual architectural project by weeks 14-15 |

5.2.2. Evaluation Criteria (оконч.)

| Component | Unsatisfactory | Satisfactory | Good | Excellent |
|--|---|--|---|--|
| Individual Creative Assignments in the Process of Studying Each Topic (4 Topics) | <4,5 points | 4,5- 5,4 points | 5,5- 6,5 points | 6,6-7,5 points |
| | The individual creative assignment does | The individual creative assignment generally meets | The individual creative assignment meets the set objectives | The individual assignment meets the set objectives |

| | | | | |
|----------------------------------|---|--|---|---|
| | not meet the set objectives. | the set objectives and is completed at a satisfactory level | and is completed at a sufficiently high level with minor errors | and is completed at a high level |
| Individual Architectural Project | <35 points | 35-50 points | 51-64 points | 65-70 points |
| | The architectural project does not meet the assigned task, and the drawings are preliminary | The architectural project meets the assignment and is executed at a sufficient level, but has significant errors | The architectural project is executed at a sufficiently high level and has minor errors | The architectural project is executed at a high level |

5.3. Formative assessment:

For assessing current progress in learning and understanding areas for further improvement, the following are provided:

| № | Elements of formative assessment | Date |
|----|---|------------------------|
| 1. | Oral feedback from the instructor during the work on the individual creative assignment | Each practical session |
| 2. | Oral feedback on the architectural project | Every week |

Self-assessment can be used both as an element of summative assessment and as formative assessment.

6. EDUCATIONAL RESOURCES (LITERATURE)

6.1. Primary Sources

1. Kovalskij L.M. Tipologiya gromadskih budinkiv i sporud: navch. posib-nik (dlya stud. vish. navch. zakl.) / L.M. Kovalskij, V.M. Lyah, A.Yu. Dmitrenko ta in. – Poltava: PoltNTU, 2011. – 225 s.: il.

2. Anikin V.I. Arhitekurnoe proektirovanie zhilyh rajonov.– Minsk: Vyshejschaya shkola, 2002. – 206 s.

3. Kryvoruchko N. I. Osnovy naukovykh doslidzhen: konspekt lektsii (dlya zdobuvachiv dennoi formy navchannia pershoho (bakalavrskoho) rivnia vyshchoi osvity zi spetsial'nosti 191 – Arkhitektura ta mistobuduvannia osvितnoi prohramy «Arkhitektura») / N. I. Kryvoruchko; Kharkiv. nats. un-t misk. hosp-tva im. O. M. Beketova. – Kharkiv : KHNUMH im. O. M. Beketova, 2021. – 131 s.

4. Budinki i sporudi. Zhitlovi budinki. Osnovni polozhennya. DBN B 2.2-15:2019. – K. Minregion Ukrayini, 2022.

5. V. M. Lyah, A. S. Borodaj, D. S. Borodaj. Tipologiya zhitlovih ta virob-nichih budinkiv i sporud: navch. posibnik / Za zag. red. V. M. Lyaha. – Poltava, PoltNTU, 2015. – 269 s.: il.

6. Budinki i sporudi. Gromadski budinki ta sporudi. Osnovni polozhennya. DBN V.2.2.-9-2018. – K. Minregion Ukrayini, 2022.

7. Korol V. P. Arhitekturne proektuvannya zhitla: navch. posib. / V.P. Korol – K.: FENIKS, 2006. – 208 s.: il.

8. Krizhanovska N. Ya. Konspekt lekcij z disciplini «Arhitektura zhitlovih budivel» (dlya studentiv osvitnogo rivnya «magistr» spetsialnosti 191 – Arhitektura ta mistobuduvannya. Arkhitektura budivel i sporud) / N. Ya. Krizhanovska, O. V. Smirnova; Harkiv. nac. un-t misk. gosp-vaim. O. M. Beketova. – Harkiv : HNUMG im. O. M. Beketova, 2017. – 104 s.

9. Lyah V.M. Tipologiya budivel i sporud. – Poltava: PDTU, 2000. – 262 s.

10. Osnovni vimogi do proektnoyi ta robochoyi dokumentaciyi: DSTU B A.2.4-4:2009. – K. : Minregionbud Ukrayini, 2009. – 70 s. – (Nacionalnij standart Ukrayini).

6.1.1. Methodological Support

11. Borodaj S.P. Metodichni vkazivki do vikonannya etapiv ta oformlennya arhitekturnogo proektu na temu: «Bagatofunkcionalnij zhitlovij kompleks» dlya studentiv 1m kursu dennoyi formi navchannya napryamu pidgotovki «Arhitek-tura» OKR «Magistr» – Sumi: SNAU, 2017. – 42 s.

12. Borodaj S.P. Metodichni vkazivki do vikonannya arhitekturnogo proektu na temu: «Rekonstrukciya arhitekturnogo ob'yektu pid zhitlove abo gromadske priznachennya» dlya studentiv 1m kursu specialnosti 191 «Arhitektura ta mi-stobuduvannya» OKR «magistr» dennoyi formi navchannya - Sumi: SNAU, 2018. – 38 s.

6.1.2. Other Sources

13. DNB B 2.2-12:2019. Planuvannya i zabudova teritorij.

14. DNB B 2.2-15:2019. Budinki i sporudi. Zhitlovi budinki. Osnovni polo-zhennya.

15. DNB V.2.2.-9-2018. Budinki i sporudi. Gromadski budinki ta sporudi. Osnovni polozhennya.

16. Visochin I.A., Andruh S.L., Borodaj S.P., Borodaj A.S., Borodaj D.S., Galushka S.A. Problema prostorovogo buttya meshkancya megapolisa. Naukovij visnik budivnictva. Harkiv, HNUBA №3, 2020. – S. 62-71

17. Borodaj D.S., Borodaj A.S., Borodaj S.P., Borodaj Ya.O. Arhitekturno-planuvalni tendenciyi formuvannya rekreacijnih kompleksiv v pozamiskih zo-nah na prikladi Sumskoyi oblasti. Mistobuduvannya ta teritorialne planu-vannya: Nauk.-tehn. zbirnik / Golovn. red. M.M. Domin. – K., KNUBA, 2021. – Vip. 76. – S. 28-36.

6.2. Additional Sources

18. <http://dbn.at.ua> - DNB (Derzhavni budivelni normi Ukrayini)