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<tr><th>Course title</th><th>Research and Scientific-Pedagogical Work, and Preparation of the Master’s Thesis (30 ECTS)</th></tr>
<tr><td>Course/Module Code</td><td>ITIPIMDT3123438</td></tr>
<tr><td>Semester(s) in which the course is taught</td><td>Semesters 1, 2, 3 and 4</td></tr>
<tr><td>Course instructors</td><td>Musayev Sharof mamarajabovich, t.f.f.d., dotsent;
Gadoyev Abror Niyazovich, t.f.d. (DsC) rofessor.
Pirnazarov Ilhom Islomovich, t.f.f.d., dotsent;
Xolbutayev Boybek Toshtemir o’g’li, t.f.f.d., dotsent;
Sattarov Akbarali Baxodir o’g’li, t.f.f.d., (PhD) dotsent;
Ustemirov Shoxrux Rustam o’g’li, t.f.f.d. (PhD) dotsent;
Sultonov Akmal Obodovich, i.f.f.d. dotsent.</td></tr>
<tr><td>Language of instruction</td><td>Uzbek</td></tr>
<tr><td>Course status in the curriculum</td><td>Compulsory</td></tr>
<tr><td>Workload (including independent study)</td><td>Total workload — 900 hours
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<tr><th>Semestrlar</th><th>1</th><th>2</th><th>3</th><th>4</th></tr>
<tr><td>Jami yuklama (soat)</td><td>120</td><td>240</td><td>180</td><td>360</td></tr>
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<tr><td>ECTS credits</td><td>30</td></tr>
<tr><td>Course aim and objectives / learning outcomes</td><td>The aim of the course is to prepare the master’s student for independent research and teaching activities. The main outcomes are the preparation of a master’s thesis, conducting experiments, organizing teaching practice, and successfully defending the thesis.
Learning outcomes
- apply scientific methods of inquiry in independent research, and develop and implement innovative ideas;
- master the methodology of scientific inquiry, and analyse and evaluate philosophical and methodological issues when addressing research and innovation challenges;
- design and conduct comprehensive, systematic research based on knowledge and skills in the construction sector, including innovative research;
- use modern information technologies to address research and innovation tasks;
- conduct research in the energy sector using modern research methods and information and communication technologies;
- adapt the results of contemporary energy and engineering research to solving problems in the electric power system.</td></tr>
<tr><td>Course content (topics)</td><td>1. Relevance and necessity of the research topic.
2. Selection and approval of the master’s thesis topic.
3. Aim and objectives of the master’s thesis.
4. Structure and rules for organizing the content of the thesis.
5. Procedures and methods for preparing a literature review within the thesis topic.
6. Conducting experiments as part of the thesis.
7. Conducting experimental research on the research topic, summarizing and analysing the results.
8. Preparing and publishing scientific abstracts and articles based on the research conducted and the results obtained for the master’s thesis.
9. Applying the research conducted within the master’s thesis and its results in practice.
10. Studying existing practical problems within the master’s thesis and developing recommendations for their research-based solutions.
11. Participating in various conferences and research seminars and delivering presentations based on the research conducted.</td></tr>
<tr><td>Form of assessment</td><td>The report shall be submitted in the form of a presentation.</td></tr>
<tr><td>Teaching / learning and assessment requirements</td><td>A maximum of three days shall be allocated for preparing the final report. During this period, master’s students shall finalize their individual plans and prepare a written report and a presentation. Each master’s student shall submit:
- Report text;
- Individual plan and the supervisor’s evaluation;
- Electronic presentation by the master’s student-trainee.
The credits for research activities (internship) shall be awarded by a committee in accordance with the approved procedure, with the participation of all master’s students and their academic supervisors. During the attestation, the competencies acquired by master’s student-trainees through their research activities shall be assessed.</td></tr>
<tr><td>Student assessment criteria</td><td>
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<tr><th>Grade 5</th><th>100 points</th><th>Grade</th><th>Assessment criteria</th></tr>
<tr><td>5</td><td>90–100</td><td>Excellent</td><td>Draws independent conclusions and makes decisions, thinks creatively, conducts independent observations, applies knowledge in practice, and explains the subject matter fully.</td></tr>
<tr><td>4</td><td>70–89,9</td><td>Good</td><td>Conducts independent observations, applies knowledge in practice, understands and explains the subject matter.</td></tr>
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	3	60–69,9	Satisfactory	Applies knowledge in practice, understands the subject matter, and explains its main content.
	2	0–59,9	Unsatisfactory	Has not mastered the course syllabus, does not understand the subject matter, and has no understanding of the course.

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<tr><td rowspan="12">Assessment criteria for research and pedagogical work and preparation of the master's thesis</td><td>No.</td><td>Activities and assignments</td><td>Allocated points</td><td>Report format</td></tr>
<tr><td>1.</td><td>Relevance and necessity of the research topic.</td><td>0–5</td><td>A presentation-format report shall be prepared on the relevance and necessity of the research topic.</td></tr>
<tr><td>2.</td><td>Selection and approval of the master's thesis topic.</td><td>0–5</td><td>A presentation-format report shall be prepared on the selection and approval of the master's thesis topic.</td></tr>
<tr><td>3.</td><td>Aim and objectives of the master's thesis.</td><td>0–5</td><td>A presentation-format report shall be prepared on the aim and objectives of the master's thesis.</td></tr>
<tr><td>4.</td><td>Structure and rules for organizing the content of the thesis.</td><td>0–5</td><td>A presentation-format report shall be prepared on the structure of the thesis content and the rules for its formatting.</td></tr>
<tr><td>5.</td><td>Procedures and methods for preparing a literature review within the thesis topic.</td><td>0–10</td><td>A presentation-format report shall be prepared on the procedures and methods for analysing literature related to the thesis topic.</td></tr>
<tr><td>6.</td><td>Conducting experiments as part of the thesis.</td><td>0–15</td><td>A presentation-format report shall be prepared on conducting experiments as part of the thesis.</td></tr>
<tr><td>7.</td><td>Conducting experimental research on the research topic, summarizing and analysing the results.</td><td>0–15</td><td>A presentation-format report shall be prepared on conducting experimental research on the research topic, summarizing and analysing the results.</td></tr>
<tr><td>8.</td><td>Preparing and publishing scientific abstracts and articles based on the research conducted and the results obtained for the master's thesis.</td><td>0–10</td><td>A presentation-format report shall be prepared on preparing and publishing scientific abstracts and articles based on the master's thesis research.</td></tr>
<tr><td>9.</td><td>Applying the research conducted within the master's thesis and its results in practice.</td><td>0–10</td><td>A presentation-format report shall be prepared on applying the research conducted within the master's thesis and its results in practice.</td></tr>
<tr><td>10.</td><td>Studying existing practical problems within the master's thesis and developing recommendations for their research-based solutions.</td><td>0–10</td><td>A presentation-format report shall be prepared on studying existing practical problems within the thesis and developing recommendations for their research-based solutions.</td></tr>
<tr><td colspan="4">* Note: 60% of the points allocated for current and interim assessment shall be assigned to independent study tasks. Independent study tasks shall be assessed systematically through the electronic platform.</td></tr>
<tr><td>Recommended literature</td><td colspan="4">Main literature:
1. Urban Planning Code of the Republic of Uzbekistan. – Tashkent: O‘zbekiston, 23.05.2021.
2. Law of the Republic of Uzbekistan “On Drinking Water Supply and Wastewater Disposal” (O‘RQ-784). Tashkent, 28.04.2022.
3. Resolution of the President of the Republic of Uzbekistan “On additional measures to further improve the drinking water supply and sewerage system” (PQ-343). Tashkent, 24 October 2023.
4. Rizaev A.N., Xudoyberganova N.T. “Physico-Chemical Treatment of Natural and Waste Waters”. Study guide. Tashkent: Lesson Press, 2021. 236 p. (in Uzbek)
5. Qutlimurodov U. “Water Supply and Wastewater Disposal Systems”. Textbook. Tashkent, 2021. 252 p. (in Uzbek)
6. Sultonov A.O., Gadayev A.N. “Design of Water Conveyance Networks”. Study guide. Tashkent, 14.04.2025. 197 p. (in Uzbek)
7. Qutlimurodov U.M., Musayev Sh.M. “Water Supply and Wastewater Disposal Systems”. Textbook. Imperis Media. Tashkent, 06.11.2023. 246 p. (in Uzbek)
8. Alibekova N.N. “Design of Water Supply Systems of Industrial Enterprises”. Study guide. Jizzakh, 2023. 101 p. (in Uzbek)
9. Yakubov K.A., Bo‘riyev E.S. “Wastewater Treatment”. Textbook for higher education institutions. Tashkent, 2020. 220 p. (in Uzbek)
10. Rules for the preparation, legal expert review and registration of urban planning norms and rules, phytosanitary requirements, sanitary rules, norms and hygienic standards, environmental norms and rules, veterinary and veterinary-sanitary rules and norms. Annex 1 to Order No. 17-mh of the Minister of Justice of 29 July 2024, registered by the Ministry of Justice of the Republic of Uzbekistan on 6 August 2024 under No. 3545.
Internet resources:
1. www.gov.uz – Government portal of the Republic of Uzbekistan.
2.www.lex.uz – National database of legislation of the Republic of Uzbekistan.
3.https://t.me/archbookuz</td></tr>
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