

### **Learning Outcome Matrix - MA 70730308 – Construction Materials Technology**

| <b>Learning Outcomes</b>                                                                                                                                                                                            | <b>Subject</b>      |                                                                    |
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| <b>LO 1.</b> Able to apply scientific research methodology, formulate research objectives, select appropriate research methods, analyze experimental data, and draw scientifically sound conclusions.               | <b>ITM1104</b>      | <b>Methodology of Scientific Research</b>                          |
| <b>LO 2.</b> Able to apply modern methods and pedagogical approaches for teaching specialized subjects and effectively organize educational activities in the field of construction materials technology.           | <b>MFO'M1104</b>    | <b>Methods of Teaching Specialized Subjects</b>                    |
| <b>LO 3.</b> Able to apply regulatory and technical documents governing construction activities and use relevant standards and requirements in professional practice.                                               | <b>QSM1104</b>      | <b>System of Regulatory Documents in the Construction Industry</b> |
| <b>LO 4.</b> Able to analyze and apply innovative technologies in the production and processing of construction materials and evaluate their technical and performance characteristics.                             | <b>QMIT1106</b>     | <b>Innovative Technologies in Construction Materials</b>           |
| <b>LO 5.</b> Able to evaluate the durability of concrete, identify factors affecting its long-term performance, and apply methods for improving concrete durability under various operating conditions.             | <b>BU1110</b>       | <b>Concrete Durability</b>                                         |
| <b>LO 6.</b> Able to analyze the structure and structural characteristics of construction materials and apply modern methods of structural analysis to assess their properties and performance.                     | <b>MSST1204</b>     | <b>Materials Structure and Structural Analysis</b>                 |
| <b>LO 7.</b> Able to select and effectively use chemical and mineral admixtures in concrete and mortars to regulate their technological, mechanical, and operational properties.                                    | <b>QBQ1206</b>      | <b>Admixtures for Mortars and Concrete</b>                         |
| <b>LO 8.</b> Able to design reinforced concrete structures, perform engineering calculations, and select appropriate structural solutions in accordance with relevant design requirements and standards.            | <b>TBKL1210</b>     | <b>Design of Reinforced Concrete Structures</b>                    |
| <b>LO 9.</b> Able to develop and apply technological solutions for the production and placement of monolithic concrete, taking into account material properties, construction conditions, and quality requirements. | <b>MBT2204</b>      | <b>Technology of Monolithic Concrete</b>                           |
| <b>LO 10.</b> Able to select non-metallic mineral materials and apply appropriate technologies for their processing and production in accordance with specified technical requirements.                             | <b>NMUICHt2204</b>  | <b>Non-Metallic Materials and Their Production Technology</b>      |
| <b>LO 11.</b> Able to select and apply dry construction mortars for finishing works, taking into account their composition, technological properties, application conditions, and performance requirements.         | <b>PIQQQ2304</b>    | <b>Dry Construction Mortars for Finishing Works</b>                |
| <b>LO 12.</b> Able to develop and optimize technological processes for the production of concrete and mortars and ensure the required quality and performance of finished products.                                 | <b>BQICHt2304</b>   | <b>Technology of Concrete and Mortar Production</b>                |
| <b>LO 13.</b> Able to select modern protective materials and apply appropriate production technologies to improve the durability and protection of construction materials and structures.                           | <b>ZHMUICHt2304</b> | <b>Modern Protective Materials and Their Production Technology</b> |

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| <b>LO 14.</b> Able to apply scientific and technical methods for the forensic examination of construction materials, identify defects and causes of material failure, and prepare scientifically justified conclusions.                  | <b>QMKAT2304</b>            | <b>Forensic Examination of Construction Materials</b>                               |
| <b>LO 15.</b> Able to conduct scientific research and scientific-pedagogical activities, independently develop a master's thesis, process research results, and formulate scientifically based conclusions.                              | <b>ITIPIMDT<br/>3123438</b> | <b>Research and Scientific-Pedagogical Work, Preparation of the Master's Thesis</b> |
| <b>LO 16.</b> Able to apply pedagogical methods and scientific knowledge in educational activities, organize practical training, and perform scientific-pedagogical work in the field of construction materials technology.              | <b>IPI312314</b>            | <b>Scientific-Pedagogical Work</b>                                                  |
| <b>LO 17.</b> Able to apply theoretical and practical knowledge in a professional environment, conduct practical and experimental activities, gain professional experience, and analyze the results obtained during scientific practice. | <b>IA3408</b>               | <b>Scientific Internship (Practical Training)</b>                                   |

