NCJSC «S. Seifullin Kazakh Agrotechnical Research University»

APPROVED
S. Seifullin Kazakh Agrotechnical Research University
Dean of the Energy Faculty
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«___» 06 _____ 2024 y.

CATALOG OF ELECTIVE DISCIPLINES
according to the educational program 8D07101 - «Renewable Energy»

Astana 2024

Catalog of elective disciplines. – Astana, 2024.

This catalog contains a list and content of elective component disciplines, prerequisites and post-prerequisites of elective disciplines, as well as the corresponding volume of loans offered by the university for the development of educational programs doctoral program **8D07101 - «Renewable Energy»** and is intended for students under the credit system.

№	The name of discipline (Code of subject)	Discipline cycle/ Component	Number of credits	Course/ Academic period	Pre-requisitions	Post-requisitions	Brief content of the discipline
1	Methods of ultimate energy conservation in high temperature technology (MPEVT 7307)	AS/ES	5	1/1	Methods of extim energysaving	PhD student's research work, incl. doctoral thesis	Formation of knowledge among doctoral students: types, scope, design and operational features of high-temperature installations; about the existing methods of limiting energy saving in high-temperature technology, the search for new ways to improve the energy efficiency of high-temperature installations, methods for calculating energy saving and energy efficiency indicators.
2	Resource-based technologies based on agricultural waste (RTOSO 7307)	AS/ES	5	1/1	Production of secondary fuels from waste	PhD student's research work, incl. doctoral thesis	Formation of doctoral students' competencies for the introduction of resource-saving, environmentally friendly and low-waste technologies into agricultural production. Familiarization of students with: types of agricultural waste, their impact on the environment, existing methods of waste disposal, the concept of creating waste-free and low-waste agricultural production.
3	Designs of furnaces and burners for burning biogas and agricultural waste (KTGUDSBSHO 7306)	AS/ES	4	1/1	Designs of furnace-burner devices for heat supply of buildings and structures	PhD student's research work, incl. doctoral thesis	Formation of doctoral students' competencies in the field of biogas combustion and agricultural waste. Knowledge of the designs of furnace and burner devices for use in the production of agricultural products and livestock breeding, a new management psychology focused on resource saving, waste disposal and decarbonization of energy systems.
4	Energy saving in the system of heating, ventilation and air conditioning (ESOVKV 7306)	AS/ES	4	1/1	Structural materials in heat supply and ventilation	PhD student's research work, incl. doctoral thesis	Obtaining knowledge about the current state of science in the field of energy saving, innovative technologies and equipment of DHW systems about the technically possible potential, regularities and principles of operation of systems and equipment, about ways

							to implement energy-efficient technologies for heat supply and create a microclimate for buildings and structures based on modern equipment.

It is recommended by the Methodological Commission of the Department of the academic quality Council of the Technical 21.06.2024 y. protocol №16

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