Head of the TSBN of FOCL
of the «Almatytranstelecom» branch
_____ Myrzabayev A A.
30.03.2023

APPROVED
Director of the A&T Institute
_____ A. Toygozhinova
«30» 03 2023 y.

CATALOG OF ELECTIVE SUBJECTS

EDUCATIONAL PROGRAM: 8D06255 - Radio engineering, electronics and telecommunications

Degree to be conferred: doctoral studies **Period of study: 3 years old** **Year of admission: 2023 y.**

Module	Cycle	Component	Name of discipline	Overall labor intensity		Term	Learning outcomes	Brief description of the discipline	Prerequisites	Postrequests
				in academic hours	in academic hours					
1	2	3	4	5	6	7	8	9	10	11
Module 2-Core competencies	BD	EC	Protection of telecommunications facilities from electromagnetic effects	150	5	1	LO 4, LO 6	The discipline deals with the issues of electromagnetic compatibility (EMC) of radio engineering and telecommunications systems (RTS). Analysis of the electromagnetic environment (EMO) RTS and its statistical model, ways to solve the problem of EMC. The characteristics and models of unintentional interference are studied in detail, taking into account the antenna directivity and propagation attenuation in EMC problems. The characteristics of receptor susceptibility and their models are described	The discipline of specialized disciplines of the Master's degree: The current state of the RET/Scientific and technical problems in the RET	Final certification
			Electromagnetic compatibility in telecommunication technologies				LO 3, LO 6	Formation and development of professional knowledge in the field of the chosen Educational program, consolidation of the received theoretical knowledge in the disciplines of the direction and special disciplines of the master"s program, mastering the necessary professional competencies in the chosen field of training	The discipline of specialized disciplines of the Master's degree: The current state of the RET/Scientific and technical problems in the RET	Final certification

1	2	3	4	5	6	7	8	9	10	11
Module 2-Core competencies	PD	EC	Providing indicators of reliability of telecommunications systems and networks	150	5	1	LO 4, LO 5	The discipline presents a set of questions related to the problem of reliability. The features of ensuring the structural reliability of telecommunications networks based on redundancy and multi-way routing are considered, as well as a method for evaluating the effectiveness of the differentiated approach to providing consumers with the required reliability indicators. Considerable attention is paid to the evaluation of the developed projects of telecommunications networks for the implementation of the specified requirements for the availability factor	The discipline of specialized disciplines of the Master's degree: Digital transmission systems/Operation of digital multichannel systems	Final certification
			Secure telecommunications systems				LO 3, LO 4, LO 5	The discipline is devoted to the study of fundamental and applied works in the field of protected telecommunications systems, the results of experimental studies of protected telecommunications systems, control systems of equipment of protected telecommunications systems, running-in of equipment of protected telecommunications systems, tests for the reliability of equipment of protected telecommunications systems, evaluation of the reliability of human work in protected telecommunications systems, the reliability of software and computer modeling of protected telecommunications systems	The discipline of specialized disciplines of the Master's degree: Digital transmission systems/Operation of digital multichannel systems	Final certification
Total				**300**	**10**					

Head of the Department "ICT" _____ **D.T. Kasymova**