

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K. I. SATBAYEV

APPROVED

Director of the School of Energy and Mechanical Engineering

K.K. Yelemessov

2021 y.

MAJOR ELECTIVE DISCIPLINES for 2020-2021 academic year admission
Educational program 6B07106 - "Mechanical Engineering"

Group of Educational programs 6064 - "Mechanics and metalworking"

Full-time study Study duration : 4 years Academic degree: bachelor of engineering and technology

Year of study	Code of elective	Code of discipline	Name of discipline	Cycle	ESTS	Credits	lec/lab/pr	Prerequisites
3rd semester								
3	3221	GEN160	Finite Elements in Engineering	B	10	5	1/1/1	MAT103
		GEN407	The Strength and Relibility of Machines				1/0/2	GEN410
	Total:				10	5		
	6rd semester							
3	3222	GEN167	Statistical Mechanics	S	10	5	1/1/1	MAT103
		GEN178	Computational Mechanics				1/1/1	GEN405
	Total:				10	5		
4th semester								
7rd semester								
4	4307	GEN159	Dynamics of Machines and Computer Analysis	S	10	5	2/1/0	
		GEN189	Control of Dynamic Systems				2/0/1	
	4309	GEN190	Machine Learning in Engineering	S	10	5	1/1/1	
		GEN188	Computational Fluid Dynamics				1/1/1	GEN404
	Total:				20	10		
	8rd semester							
4	4308	GEN422	Laboratory: Fluid Flowes	S	8	4	0/2/0	GEN404
		GEN423	Laboratory: Heat Transfer				0/2/0	GEN418
	4310	GEN191	Design of Heat and Ventilation Systems	S	10	5	1/2/0	
		GEN192	Renewable Energy Systems				2/1/0	
	4311	GEN193	3D Printing of Machine Elements	S	10	5	2/1/0	
		GEN194	Biofluid Mechanics				2/1/0	GEN404
Total:				28	14			
Total:				68	34			

Credits numbers of elective disciplines over the entire period of study	
Cycle of disciplines	credits
Cycle of general disciplines (G)	0
Cycle of basic disciplines (B)	5
Cycle of special disciplines (S)	29
Total:	34

Decision of the Academic Council of the School of Energy and Mechanical Engineering. Minutes # 12, dated "07-06" 2021.

Head of department "Mechanical Engineering and modelling"

A. Kaltayev

Representative of Specialty council

A.K. Tuleshov