

## PROGRAM SCHEDULE FOR A PHYSICS MAJOR

1 F r e s h m a n	Fall	ECTS	Spring	ECTS
	PHYS 161 Physics for Scientists and Engineers I with Laboratory	8	PHYS 162 Physics for Scientists and Engineers II with Laboratory	8
	MATH 161 Calculus I	8	MATH 162 Calculus II	8
	CSCI 151 Programming for Scientists and Engineers	8	MATH 273 Linear Algebra with Applications	8
	HST 100 History of Kazakhstan	6	WCS 150 Rhetoric and Composition	6
	<b>Total semester ECTS credits</b>	<b>30</b>	<b>Total semester ECTS credits</b>	<b>30</b>

2 S o p h o m o r e	Fall	ECTS	Spring	ECTS
	PHYS 221 Classical Mechanics I	6	PHYS 222 Classical Mechanics II	6
	PHYS 261 Modern Physics with Laboratory	8	PHYS 280 Thermodynamics and Statistical Physics	6
	MATH 263 Calculus III	8	PHYS 270 Computational Physics with Laboratory	6
	MATH 274 Introduction to Differential Equations	6	COMM 102 (updated as COMM 202) or any 200 - level Writing course	6
			General Elective 1	6
	<b>Total semester ECTS credits</b>	<b>28</b>	<b>Total semester ECTS credits</b>	<b>30</b>

3 J u n i o r	Fall	ECTS	Spring	ECTS
	PHYS 361 Classical Electrodynamics I	6	PHYS 362 Classical Electrodynamics II	6
	PHYS 315 Mathematical Method in Physics	6	PHYS 451 Quantum Mechanics I	6
	PHYS 395 Research Methods in Physics	6	PHYS 370 Optics with Laboratory	8
	Major Elective 1	6	Major Elective 2, level 400	6
	Kazakh Language 1	6	Social Science Elective (SOC, PLS, ANT, or ECON)	6
<b>Total semester ECTS credits</b>	<b>30</b>	<b>Total semester ECTS credits</b>	<b>32</b>	

4 S e n i o r	Fall	ECTS	Spring	ECTS
	PHYS 452 Quantum Mechanics II	6	Major Elective 4	6
	Major Elective 3	6	Technical Elective 3	6
	Technical Elective 1	6	General Elective 2	6
	Technical Elective 2	6	Ethics	6
	Kazakh Language 2	6	Business fundamentals and Entrepreneurship	6
	*PHYS 498 Honors Thesis Research	0	*PHYS 499 Honors Thesis	6
<b>Total semester ECTS credits</b>	<b>30</b>	<b>Total semester ECTS credits</b>	<b>30/ 36*</b>	

\*Elective Honors Track