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INTEGRATED APPROACH TO STEMTEACHER TRAINING

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L.N.Gumilyov ENU

2.2.1 Development and updating of STEM modules / courses

Updated disciplines for the educational program (EP) "7M01525-STEM education".

In the educational program "7M01525-STEM education", there are a total of 120 ECTS, of which updated disciplines, taking into account the practice of 104 ECTS (87%) (52 credits updated disciplines, 52 ECTS various types of practices with updated programs), not updated disciplines 16 ECTS (13 %).

Name of the discipline	Total ECTS	taking into account practice	excluding practice
Disciplines not updated	16	13%	24%
Updated and new disciplines	52		76%
Research practice	12		
Research work of a master student	24	87%	
Registration and defense of a master's thesis	12		
Teaching practice	4		
	120	100%	100%

Under the educational program "7M01525-STEM education" undergraduates study in a multilingual group. In the first year, all discipline *" STEM Methods of teaching Computer Science using STEM" i*s taught in English, the rest are taught in Kazakh at the option of master's students.

2) Syllabuses for new disciplines:
- *indicating ECTS;*
In the 2020-2021 academic year, there are 5 subjects in the first semester, of which 3 are optional subjects.

Name of the disciplines	Cycle, component	*ECTS*
Жоғары мектеп педагогикасы Педагогика высшей школы Higher School Pedagogy	БП ЖООК БД ВК BD UK	4
Басқару психологиясы Психология управления Management psychology	БП ЖООК БД ВК BD UK	4
STEM ге кіріспе Введение в STEM Introduction to STEM	КП ТК ПД КВ PD EC	5
STEAM – білім берудің әмбебап оқыту құралы ретінде STEAM – образование как универсальный инструмент преподавания STEAM-education as a universal teaching tool	КП ТК ПД КВ PD EC	5

Информатика оқытудағы STEM STEM образование в Информатике STEM Education in Computer Sciences	КП ТК ПД КВ PD EC	5

In the second semester, there are only 5 subjects, of which 3 are optional subjects.

Название дисциплины	**Цикл, компонент**	*ECTS*
Шетел тілі (кәсіби) Иностранный язык (профессиональный) Foreign language (professional)	БП ЖООК БД ВК BD UK	4
Ғылым тарихы және философиясы История и философия науки History and Philosophy of Science	БП ЖООК БД ВК BD UK	4
Микророботтарды бағдарламау Программирование микророботов Programming microrobots	КП ТК ПД КВ PD EC	5
Информатиканы STEM қолдану арқылы оқыту әдістемесі Методика преподавания информатики с использованием STEM Methods of teaching Computer Science using STEM	КП ТК ПД КВ PD EC	5
STEM жобаларын жүргізу және қолдау Ведение и сопровождение STEM проектов Maintenance and support of STEM projects	КП ТК ПД КВ PD EC	5

Disciplines of 3 semesters are to be chosen at the end of the academic year. New syllables were developed from the 2021-2022 academic year. For 2021-2022, there were changes with the wishes of employers. A course on circuitry has been developed. The content of the named course is reflected in the CED. Circuitry topics will be reflected in SOI 5203 - STEM Education in Computer Science. This course is in the module of basic disciplines and an elective course (BD EC). The volume of the course is 5 credits (15 lectures, 30 practical lessons and 105 IWSs).