Form № H- 3.01

CABINET OF MINISTERS OF UKRAINE
NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE

CURRICULUM
for specialist training in 2013

Degree	"Master of Science"
Branch of knowledge	0505 "Mechanical engineering and processing of materials"
Specialty	8.05050312 "Machines and agricultural equipment"
Specialization	production oriented master program
Master program	"Constructing machines, designing and testing of agricultural machines"
Specialization	research oriented master program
Master program	"Mechatronic systems of machines for agricultural production"
Form of training	full-time
Term of study	1,5 years
Qualification of graduates	M.Sc. Mechanical engineering

Implement Master's programmes

Education and research institute	Technical
Faculty	Engineering and Design of Machinery and Systems of Environmental Management

I. STUDY PLAN

a) for specialist training Master of Science Degree in 2013
“Constructing machines, designing and testing of agricultural machines”

Year of study	2013																		2014							
	September				30	October			28	November				December				30	January			27	February			24
	2 7	9 14	16 21	23 28	IX 5 X	7 12	14 19	21 26	X 2 XI	4 9	11 16	18 23	25 30	2 7	9 14	16 21	23 28	XII 4 I	6 11	13 18	20 25	I 1 II	3 8	10 15	17 22	II 1 III
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
I																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	–	–	:	:	1	2	3	4	5

Year of study	2014																									
	March				31	April			28	May				June				30	July			28	August			
	3 8	10 15	17 22	24 29	III 5 IV	7 12	14 19	21 26	IV 3 V	5 10	12 17	19 24	26 31	2 7	9 14	16 21	23 28	VI 5 VII	7 12	14 19	21 26	VII 2 VIII	4 9	11 16	18 23	25 30
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
I																							X	X	X	X
	6	7	8	9	10	11	12	13	14	15	16	17	:	:	X	X	X	X	X	X	–	–	–	–	–	–

Year of study	2014																	
	September				29	October			27	November				December				29
	1 6	8 13	15 20	22 27	IX 4 X	6 11	13 18	20 25	X 1 XI	3 8	10 15	17 22	24 29	1 6	8 13	15 20	22 27	XII 3 I
	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
II	1	2	3	4	5	6	7	8	9	10	:	:	II	II	II	II	//	

b) for specialist training Master of Science Degree in 2012
“Constructing machines, designing and testing of agricultural machines”

Year of study	2013																		2014							
	September				30	October			28	November				December				30	January			27	February			24
	2 7	9 14	16 21	23 28	IX 5 X	7 12	14 19	21 26	X 2 XI	4 9	11 16	18 23	25 30	2 7	9 14	16 21	23 28	XII 4 I	6 11	13 18	20 25	I 1 II	3 8	10 15	17 22	II 1 III
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
II	1	2	3	4	5	6	7	8	9	10	:	:	II	II	II	II	//									

Year of study	2014																									
	March				31	April			28	May				June				30	July			28	August			
	3 8	10 15	17 22	24 29	III 5 IV	7 12	14 19	21 26	IV 3 V	5 10	12 17	19 24	26 31	2 7	9 14	16 21	23 28	VI 5 VII	7 12	14 19	21 26	VII 2 VIII	4 9	11 16	18 23	25 30
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
II																										

Nomenclature:

	- Auditorium classes	X	- Practical training
:	- Exams	II	- Preparation of Master Theses
-	- Breaks	//	- State certification (State certification exam and Master Theses defence)

II. CURRICULUM

№	Name of educational discipline	Amount		Form of control			Auditorium classes, hours				Self study	Practical training		Division of the week hours per years of study and per semesters		
		hours	credits	Examination	Credits	Course project	total	include				Practical training	Research practical training	1st year of study		2st year of study
								lecture	Laboratory work	Practical classes				1 semester	2 semester	3 semester
														Number of weeks per semester		
														17	17	10
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
1. REGULATORY ACADEMIC DISCIPLINES																
1.1. Cycle of humanitarian and socio-economic training*																
1	Philosophy of science	54	1,5	exam			34	17		17	20			2		
2	Business foreign language	36	1		cr.		17	17			19			1		
Sum per cycle		**90**	**2,5**	**1**	**1**	**0**	**51**	**34**	**0**	**17**	**39**	**0**	**0**	**3**	**0**	**0**
1.2. Cycle of natural (fundamental) training*																
1	Automation of technical systems	108	3		cr.		34	17	17		74			2		
2	Applied computer technologies	162	4,5		cr.		51	17	34		111				3	
3	Measuring devices and methods of measurement	108	3		cr.		20	10	10		88					2
4	Labour protection in agriculture	36	1	exam			17	17			19				1	
Sum per cycle		**414**	**11,5**	**1**	**3**	**0**	**122**	**61**	**61**	**0**	**292**	**0**	**0**	**2**	**4**	**2**
1.3. Cycle of professional and practical training*																
1	Computer aided design systems	144	4	exam	cr.	36	68	34	34		40			2	2	
2	Theory of designing of agricultural machines	144	4	exam			68	34	34		76			4		
3	Mechatronic systems of agricultural technique	90	2,5		cr.		34	17	17		56				2	
4	Theory of technical systems	126	3,5		cr.		20	10	10		106					2
Sum per cycle		**504**	**14**	**2**	**3**	**36**	**190**	**95**	**95**	**0**	**278**	**0**	**0**	**6**	**4**	**2**
2. ELECTIVE ACADEMIC DISCIPLINES																
2.1. Disciplines chosen by University																
2.1.1. Cycle of professional and practical training*																
1	Foreign language	54	1,5	exam			34			34	20			2		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2	Engineering of systems of nature using	90	2,5		cr.		34	17	17		56				2	
3	Patent science and copyright	54	1,5		cr.		17	17			37			1		
4	International standardization and certification of technologies, raw-materials, and end products of agriculture	54	1,5		cr.		17	17			37			1		
5	Mechanics of technical systems constructions	180	5	exam			51	17	34		129				2	
6	History of techniques	36	1		cr.		16	16			20			1		
Sum per cycle		**468**	**13**	**2**	**4**	**0**	**169**	**84**	**51**	**34**	**299**	**0**	**0**	**5**	**4**	**0**
Production oriented disciplines																
Master's program "Constructing, designing and testing of machines of agricultural production"																
1	Methods of construction of agricultural technique	144	4		cr.		20	10	10		124					2
2	Reliability of agricultural machines	162	4,5	exam		36	34	17	17		92			2		
3	Testing of agricultural technique	126	3,5	exam			20	10	10		106					2
4	Design of machines and equipment in animal husbandry	126	3,5	exam			20	10	10		106					2
5	Design of machines and equipment in bioenergetics	126	3,5	exam			20	10	10		106					2
Sum per cycle		**684**	**19**	**4**	**1**	**36**	**114**	**57**	**57**	**0**	**534**	**0**	**0**	**2**	**0**	**8**
Research oriented disciplines																
Master's program "Mechatronic systems of machines of agricultural production"																
1	Testing and certification of agricultural technique	126	3,5	exam			20	10	10		106					2
2	Modern experimental methods of research of agricultural technique	126	3,5	exam			20	10	10		106					2
3	Dynamics of technical systems	144	4	exam		36	20	10	10		88					2
4	Optimization of constructions of technical systems	126	3,5	exam			34	17	17		92			2		
5	Reliability of technical systems	162	4,5	exam		36	20	10	10		106				3	
Sum per cycle		**684**	**19**	**5**		**72**	**114**	**57**	**57**	**0**	**498**	**0**	**0**	**2**	**3**	**6**
2.2. Disciplines chosen by students																
2.2.1. Cycle of professional and practical trainings*																
Production oriented disciplines																
Master's program "Constructing, designing and testing of machines of agricultural production"																
1	Dynamics of machines	126	3,5		cr.	36	20	10	10		70					2
2	Design of vibration machines	108	3	exam			34	17	17		74				2	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3	Design of operating devices of agricultural machines	90	2,5	exam			20	10	10		70					2
4	Mechanics of environments	72	2		cr.		34	17	17		38				2	
5	Theory of mechatronic systems of agricultural machines	72	2	exam			34	17	17		38				2	
6	Mechatronics	72	2		cr.		20	10	10		52					2
Sum per cycle		**540**	**15**	**3**	**3**	**36**	**162**	**81**	**81**	**0**	**342**	**0**	**0**	**0**	**6**	**6**
Research oriented disciplines																
Master's program "Mechatronic systems of machines for agricultural production"																
1	Mathematical modelling of technical systems	126	3,5		cr.		20	10	10		106					2
2	Modern methods of designing of agricultural machines	108	3	exam			34	17	17		74				3	
3	Vibrational processes in agricultural technics	90	2,5	exam			20	10	10		70					2
4	Mechanics of contact interaction of operational devices with agricultural materials	108	3		cr.		20	10	10		88					2
5	Modern mechatronic technical systems	108	3		cr.		20	10	10		88					2
Sum per cycle		**540**	**15**	**2**	**3**	**0**	**114**	**57**	**57**	**0**	**426**	**0**	**0**	**0**	**3**	**8**
Sum per selected components		**2700**	**75**	**13**	**15**	**108**	**808**	**412**	**345**	**51**	**1784**	**0**	**0**	**18**	**18**	**18**
Practical trainings		**360**	**10**									**216**	**144**			
Preparing and defense Master's thesis		**180**	**5**													
Number of course projects						**3**										
Number of credits					**15**											
Number of examinations				**13**												
Sum per program		**3240**	**90**	**13**	**15**	**108**	**808**	**412**	**345**	**51**	**1784**	**216**	**144**	**18**	**18**	**18**

* Names of disciplines cycles in accordance with the requirements of higher education industry standards, ratified after 2007 year, EQH and EPP.

III. DEGREE REQUIREMENTS

Disciplinary areas	Hours	Credits	%
1. Regulatory academic disciplines			
1.1. Cycle of humanitarian and socio-economic training	90	2,5	2,8
1.2. Cycle of naturally (fundamental) training	414	11,5	12,8
1.3. Cycle of professional and practical training	504	14	15,5
2. Elective academic disciplines			
2.1. Disciplines chosen by University			
2.1.1. Cycle naturally scientific (fundamental) training	1152	32	35,5
2.2. Disciplines chosen by students			
2.2.1. Cycle professional disciplines and practical training	540	15	16,7
3. Other	540	15	16,7
Sum per program	**3240**	**90**	**100**

* Names of disciplines cycles in accordance with the requirements of higher education industry standards, ratified after 2007 year, EQH and EPP

IV. TIME SCHEDULE, WEEKS

Year of study	Auditorium classes	Exams	Practical training	Preparation of Master Theses	State certification	Breaks	Sum
1	34	4	10	-	-	8	56
2	10	2	-	4	1	-	17
Sum per program	**44**	**6**	**10**	**4**	**1**	**8**	**73**

V. PRACTICAL TRAINING

№	Practical training	Semester	Hours	Credits	Number of weeks
1	Design oriented practical training	1	144	4	4
2	Production oriented practical training	2	216	6	6

VI. COURSE WORK AND PROJECT

№	Name of educational discipline	Hours	Credits	Course work	Course project
1	Reliability of agricultural machines	36	1	-	1
2	Computer aided design systems	36	1	-	1
3	Dynamics of technical systems	36	1	-	1

VII. STATE CERTIFICATION

№	State certification	Hours	Credits	Number of weeks
1	Preparation and defence of Master Theses	180	5	5