



## **TITLE OF THE Curricula/Module**

**ARABLE FARMING**

**TOHU /Turkmenistan**

## Explanation record of subject / module

<b>Name of higher educational institution / country code</b> <b>Date (month/year)</b>	<b>TOHU-TKM</b> <b>2020</b>
<b>Name of subject / module</b>	<b>Code</b>
<b>Arable farming –</b> 4 ECTS; 16 general theoretical; 32 practical lessons; 70 student independent work	

Lecturers	Department
<b>Prepared by:</b> Senior lecturer Rozygeldi Hallyyev	Agrochemical and pedological
<b>Others:</b> Lecturer Begsoltan Tashliyeva	Agrochemical and pedological

Field of study	Level of subject	Kind of subject
<b>BA/MA/PhD</b>	Field of education	

Kind of education mode	Duration	Language
Full time	16 weeks	Turkmen

Required conditions	
<p style="text-align: center;"><b>Required conditions:</b></p> <p><b>Knowledge of:</b> Chemistry, botany, pedology, agrochemistry, modern computer technologies</p> <p><b>Skills:</b> Know the influence of crops in crop rotation on soil fertility, choose drawings suitable for all parameters, calculate their economic efficiency</p>	<p style="text-align: center;"><b>Other requirements (if necessary):</b></p>

ECTS (module credits)	Total working hours of students	Total lessons	Practical lessons	Student independent work
4	<b>160</b>	48	64	48

Course objective (module): Skills provided by the curriculum
<p>Determining the aggregate composition and structure of the soil. Groups of weeds by biological species. Methods of weed registration. Biological and chemical methods of weed control. Crop rotation. Previous crops in crop rotation. Assessing the economic efficiency of crop rotation. Soil treatment and its scientific basis. Agrotechnics of crop cultivation. Agricultural systems and their components.</p> <p>The arable farming course teaches modern technologies of efficient use of irrigated land, steady increase in soil fertility, and the development and increase of productivity of agricultural crops.</p>



farming laws and soil fertility									
Exact arable farming in agriculture	2							8	
Weeds and measures to combat them	2							8	
Crop rotation system in exact arable farming	2							8	
Intermediate crops in exact arable farming	2							8	
Soil treatment and its types	2							8	
Arable farming system and its composition	2							8	
<b>Total</b>	<b>16</b>							<b>64</b>	

Method of evaluation		Total mark %	Test periods	Evaluation criteria
Intermediate evaluation		50	9 <sup>th</sup> week	Oral conversation
Final examination		50	18-19-20 <sup>th</sup> week	Final examination
Author	Year of publication	Name	Publ. №	Place of publication, printing house or internet web-site
<b>Main references</b>				
Gurbanguly Berdimuhamedov	2008 - 2015	Towards new heights of development. Selected works. Volumes I-VIII		A.: TDNG
Gurbanguly Berdimuhamedov	2010	Economic strategy of Turkmenistan: relying on the people and for the people		A.: TDNG
Gurbanguly Berdimuhamedov	2010	State regulation of social and economic development of Turkmenistan. Volumes I-II		A.: TDNG
	2019	Program of social and economic development of the President of Turkmenistan for 2019-2025		A.: TDNG
Gurbanguly Berdimuhamedov	2013	State bird. Novel.		A.: TDNG
	2017	The doctrine of Arkadag is the foundation of health and spirituality		A.: TDNG

	2016	Constitution of Turkmenistan		A.: TDNG
Hallyyew R., Tashliyeva B., Hapyzova O.	2019	Guide to the method of conducting practical training in arable farming		A.: TOHU

Hallyyew R., Tashliyeva B., Hapyzova O.	2019	Guide to the method of conducting practical training in agriculture		A.: TOHU
Ylyasov Sh., Ibragimov A.	2018	Arable farming. Textbook for higher education institutions		A.: Ylym
Bazdyrev G.I., Loshakov V.G., Puponin A.I. Arable farming	2002	Textbook for higher education institutions.		- M.: Kolos
Additional references				
Ed. by Niklyayev V.S.	2000	Fundamentals of agricultural production technology. Arable farming and plant growing		M.: "Bylina"
Kashtanov A.N. and others	1994	Fundamentals of landscape and ecological arable farming		- M.: Kolos
Kiryushin V.I.	2011	Theory of adaptive landscape arable farming and design of agricultural landscapes		- M.: Kolos
Yakushev V.V.	2016	Exact arable farming		– SP.: FGBNU AFI
Kiryushin V.I.	1996	Ecological foundations of arable farming		- M.: Kolos
1. <a href="http://www.turkmenistan.gov.tm">www.turkmenistan.gov.tm</a> 2. <a href="http://www.nicopa.eu">www.nicopa.eu</a> 3. <a href="http://www.qgis.org">www.qgis.org</a> 4. <a href="http://www.qgistutorials.com">www.qgistutorials.com</a> 5. <a href="http://www.gisinfo.ru">www.gisinfo.ru</a> 6. <a href="http://www.maps.google.ru">www.maps.google.ru</a>				

### **Summary / Course short description**

Arable farming is the main agricultural sector engaged in the cultivation of food, technical and forage crops and the bountiful harvest from them. The main sectors of arable farming in Turkmenistan include grain, cotton, rice, beets and others. As an agricultural science, it is engaged in developing advanced methods of

efficient use of arable farming lands, increasing soil fertility and achieving sustainable high and low cost crops from agricultural crops.

The main task of the arable farming course is to train future agricultural professionals with the knowledge necessary to solve important agricultural problems in their production activities. It includes the nature of the soil, methods of soil conservation, ways to conserve and effectively use the lands, as well as land reclamation, crop rotation, soil treatment, agricultural crops from diseases, pests such as weeds.

### **List and summary of topics**

S/n	Topics	Q-ty of hours
1.	<p style="text-align: center;"><b>Introduction</b></p> <p>Arable farming of Turkmenistan and its main tasks. Arable farming is the main productive sector of agriculture. Functions of arable farming as an independent science. The first session of the People’s Assembly of Turkmenistan, held on September 25, 2018 under the chairmanship of President Gurbanguly Berdimuhamedov, and the decisions and solutions made therein, especially the agricultural workers of our country, have reached the heights. Tasks for agriculture in the “National program for social and economic development of Turkmenistan for 2011-2030”. Its role in the training of arable farming subjects and highly educated agricultural specialists.</p>	2
2.	<p style="text-align: center;"><b>Plant living conditions, arable farming laws and soil fertility</b></p> <p>Living conditions of plants as the material basis of arable farming. Cultivation requirements of cultural plants. Plants’ requirements for light, heat, water, air, and nutrients, and their regulation in arable farming. The yield depends on the type of plant, the variety, the soil, the air, the water, the nutrients, and the technology of their cultivation. The laws of scientific farming as the theoretical basis for the living conditions of plants. Soil strength and its division into groups. Soil fertility indicators. Ways to increase soil fertility. Soil norms.</p>	2
3.	<p style="text-align: center;"><b>Exact arable farming in agriculture</b></p> <p>Explains and teaches what exact arable farming is and what technologies. The ecological impact of exact arable farming. Exact arable farming news and its link to fertilizers.</p>	2
4.	<p style="text-align: center;"><b>Weeds and measures to combat them</b></p> <p>The concept of weeds. Damage to weeds by agricultural crop. Different manufacturing features of weeds. Weeds are divided into groups according to their nutritional capacity, life expectancy, and reproductive capacity. Divide weeds into groups. Warning and destruction</p>	2

	agrotechnical, biological and chemical measures. Chemical weed control measures. Feature of chemical control measures.	
5.	<p style="text-align: center;"><b>Crop rotation system in exact arable farming</b></p> <p>Concept of crop rotation system. Scientific grounds and reasons for the need for crop rotation. Assessing the results of individual crops. Assessing the effectiveness of crop management. Environmental, energy and soil protection indicators.</p>	2
6.	<p style="text-align: center;"><b>Intermediate crops in exact arable farming</b></p> <p>Crop rotation diagrams. Types of intermediate crops and their importance. Harvested crops, winter intermediate crops, additional crops. Features of the use of intermediate crops abroad. Effect of intermediate crops on soil fertility.</p>	2
7.	<p style="text-align: center;"><b>Soil treatment and its types</b></p> <p>The concept of soil treatment. Functions of soil treatment. Soil treatment as a condition for soil fertility and cultural upliftment. Technological phenomena in soil treatment. Physical-mechanical (technological) properties of the soil and its impact on the quality of their treatment. Types of soil treatment: basic, superficial and special soil treatment. The concept of autumn and spring herd. The time, instrument and depth of their transfer.</p>	2
8.	<p style="text-align: center;"><b>Arable farming system and its composition</b></p> <p>The concept of the arable farming system and its key components: land reclamation, crop rotation, protection of agricultural crops from diseases, pests and weeds, soil treatment, fertilizer use, irrigation rules, irrigation of agricultural crops and seeding of agricultural crops.</p>	2