



**TITLE OF THE Curricula/Module**

**GRASSLANDS OF TURKMENISTAN**

**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>Grasslands of Turkmenistan –</b> 4 ECTS; 32 general theoretical; 32 practical lessons; 32 student independent work	

Lecturers	Department
<b>Prepared by:</b> Lecturer Dayanch Reyimov <b>Others:</b> Senior lecturer S.Annamuhammedov	Epizootology and parasitology  Livestock

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

Kind of education mode	Duration	Language
Full time	16 weeks	Turkmen

Required conditions	
<b>Required conditions:</b> <b>Knowledge of:</b> Higher mathematics, engineering and computer graphics, modern computer technology, geodesy <b>Skills:</b> Be able to manage ArcGIS, QGIS, MapGIS software	<b>Other requirements (if necessary):</b>

ECTS (module credits)	Total working hours of students	Total lessons	Practical lessons	Student independent work
4	<b>96</b>	32	32	32

Course objective (module): Skills provided by the curriculum
<p>Topics of the course include the prudent policies of the President on the modern development of the agricultural sector in the era of prosperity, the National program for social economic development of Turkmenistan for 2011-2030 in accordance with modern requirements, Resolutions of the 1st Session of the People's Council of Turkmenistan (25.09.2018), the Concept of improving the teaching of foreign languages in Turkmenistan and the Concept for the development of the digital economy in Turkmenistan for 2019-2025</p> <p>The main objectives of the course are to teach students the reliable ways to use and improve grasslands on a scientific basis, taking into account the local natural and</p>

climatic conditions of the country, which will be carried out by conducting general education and practical lessons.

The main purpose of the grasslands of Turkmenistan course:

1. To teach the types of grasslands of Turkmenistan, the climate, the types of lands and the natural geographical localization of the country, to acquaint with the history of study and development of grasslands;

2. To develop practical skills for students to conduct educational activities in accordance with modern requirements;

3. To teach livestock specialists in the future the peculiarities of different types of grasslands and the scientific basis for their use, which form the basis of the fodder base of the livestock of our country;

4. To train assessment of valuable fodder plants growing in grasslands and their degree of use;

5. To teach how to irrigate and improve grasslands.

<b>Tasks of subject</b>	<b>Methods of teaching</b>	<b>Methods of evaluation</b>
<p><i>Knowledge of:</i></p> <ul style="list-style-type: none"> <li>– Methods of determining the chemical composition and nutrition of grasslands;</li> <li>– Ways and methods of efficient use of various grasslands;</li> <li>– Determining the area of grassland per head;</li> <li>– Determining the demand for flocks of sheep;</li> <li>– Scientific organization of the use of grasslands of various types;</li> <li>– Determining the amount of additional food to be fed to sheep grazing in the winter;</li> </ul>	<p>General lessons, presentations, seminars, practical trainings, independent work</p>	<p>Independent work, test questions, midterms, credits, test</p>
<p><i>Skills:</i></p> <ul style="list-style-type: none"> <li>– Preparation of forage in the forage laboratory and work on inspection methods;</li> <li>– Determination of grassland nutrition based on the data obtained;</li> <li>– Qualitatively integrated assessment of grasslands;</li> <li>– Development of measures to improve and irrigate grasslands;</li> <li>– Development and implementation of grassland management.</li> </ul>	<p>Performing independent work</p>	<p>Curriculum implementation presentation</p>
<p><i>Capacity of:</i></p> <ul style="list-style-type: none"> <li>– Information on the composition</li> </ul>	<p>Performing independent work</p>	<p>Curriculum implementation</p>



Irrigation of desert grasslands	2						2	
Methods to improve grasslands	2						2	
Scientific-technical and information-technological bases of exact arable farming	2						2	
Development of information and technological reserves of exact arable farming and the importance of its implementation	2						2	
<b>Total</b>	<b>32</b>						<b>32</b>	

Method of evaluation	Total mark %	Test periods	Evaluation criteria
1st midterm	10	4th week	Computerized test examination
2nd midterm	15	8th week	Computerized test examination
3rd midterm	15	13th week	Computerized test examination
Final examination	40	17-18th week	Final examination

  

Author	Year of publication	Name	Publ. №	Place of publication, printing house or internet web-site
<b>Main references</b>				
Gurbanguly Berdimuhamedov	2015	Towards new heights of development. Selected works. Volume 8		Ashgabat: Turkmen state publishing house
	2019	Program of social economic development of the President of Turkmenistan for 2019-2025		Ashgabat: Turkmen state publishing house
	2016	Source of wisdom		Ashgabat: Turkmen state publishing house
	2017	Turkmenistan is the heart of the Great Silk Road		Ashgabat: Turkmen state publishing house
Hanazarov Ch.	2010	Breeding of livestock		Turkmen state publishing house
Herremov Sh.R.	2015	Livestock. Textbook		Ashgabat: Ylym
Rejepgulyyev	2010	Feeding of livestock		TDKP publishing

M.K.				house
Yakushev V.V.	2016	Exact arable farming: theory and practice		Saint-Petersburg
Reilly M. and Willenbockel D.	2010	Managing uncertainty: a review of food system scenario analyses and modeling		Philosophical Transactions of the Royal society, Biological sciences
<b>Additional references</b>				
Nikolayev V.N.	1972	Natural forage resources of Turkmenistan		Ashgabat: Ylym
Rejepgulyyev M.K., Bakyyev V.	2015	Textbook of practical lessons on the subject of grasslands of Turkmenistan		Ashgabat: TOHU
Rejepgulyyev M.K.	2010	Grasslands of Turkmenistan (examination textbook)		TOHU
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.maps.google.ru">www.maps.google.ru</a>				

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

The main purpose of the grasslands of Turkmenistan course:

1. To teach the types of grasslands of Turkmenistan, the climate, the types of lands and natural geographical localization of our country, to acquaint with the history of study and development of grasslands;
2. To develop practical skills for students to conduct educational activities in accordance with modern requirements;
3. To teach livestock specialists in the future the peculiarities of different types of grasslands and the scientific basis for their use, which form the basis of the fodder base of the livestock of our country;
4. To train assessment of valuable fodder plants growing in grasslands and their degree of use;
5. To teach how to irrigate and improve grasslands.

### **Tasks of course teaching**

Topics of the course include the prudent policies of the President on the modern development of the agricultural sector in the era of prosperity, the National program for social economic development of Turkmenistan for 2011-2030 in accordance with modern requirements, Resolutions of the 1st Session of the People's Council of Turkmenistan (25.09.2018), the Concept of improving the teaching of foreign languages in Turkmenistan and the Concept for the development of the digital economy in Turkmenistan for 2019-2025.

The main objectives of the course are to teach students the reliable ways to use and improve grasslands on a scientific basis, taking into account the local natural and

climatic conditions of the country, which will be carried out by conducting general education and practical lessons.

## List and summary of topics

№	Topics and their content	Q-ty of hours
1.	<p><b>Grasslands of Turkmenistan course and its tasks. Grasslands of Turkmenistan and their role in the livestock sector.</b></p> <p>The importance of grasslands of Turkmenistan course. Areas of grasslands of Turkmenistan and their general characteristics. Grasslands of Turkmenistan and their role in the development of livestock.</p>	2
2.	<p><b>Work on the study of grasslands of our country</b></p> <p>Research by the National institute of deserts, flora and fauna for the study of grasslands.</p> <p>The work of scientists from the Institute of livestock and veterinary of the Turkmen agricultural university named after S.A.Niyazov on the study of grasslands Law of Turkmenistan on “Grasslands”. Plane of the earth. Soil and its types. Surface and groundwater, their use in livestock. Natural geographical diversification of grasslands.</p>	2
3.	<p><b>Natural geographical localization of grasslands</b></p> <p>Grasslands of North-West and Southeast Turkmenistan. Grasslands of the North, Central and Southeast Karakum. Mountain skirts and mountain grasslands.</p>	2
4.	<p><b>Types of grasslands of Turkmenistan and their use</b></p> <p>Grasslands with large shrubs of sandy-desert grasslands. Grasslands with semi-shrubs with clay and saline soils. Grassland. Location and total area of grasslands of the rivers of Turkmenistan.</p>	2
5.	<p><b>Botanical forage characteristics of major species of Karakum grassland</b></p> <p>Shrubs (chogan, gandym, borjak, black saxaul, white saxaul, cherkez). Shrubs and semi-shrubs (cedar, wormwood, bark). Perennial plants (tar, yandak, patlak, bozagan, tetir and male selin). The importance of perennial grasslands for livestock.</p>	2
6.	<p><b>Grasslands of rivers and mountains</b></p> <p>River grasslands in the mountains of Turkmenistan. Large grassy meadows on the banks of the river. Grassland meadows. The role of river and mountain grasslands in the development of livestock.</p>	2
7.	<p><b>Grasslands with shrubs and semi-shrubs</b></p> <p>The importance of grassland with shrubs and semi-shrubs. Distribution of grasslands with shrubs and semi-shrubs. Crop yields and grassland use with shrubs and semi-shrubs.</p>	2



8.	<p align="center"><b>Determination of fodder value of grasslands</b></p> <p>Assessment of grasslands for grassland vegetation. Grazing of grasslands. Botanical description of grasslands. Determining the number of sheep that can be placed in grasslands.</p>	2
9.	<p align="center"><b>Importance of grasslands in livestock</b></p> <p>The main areas for grazing sheep. Choosing grasslands for the lambing season in animal husbandry. The importance of shepherding sheep on the basis of grassland management.</p>	2
10.	<p align="center"><b>Organization of grazing of sheep</b></p> <p>Use of grassland by sheep. Seasonal variation in grassland nutrition. The organization of grazing of sheep. The importance of natural and artificial grasslands in animal husbandry. Seasonal organization of grassland use. Grassland rations for sheep.</p>	2
11.	<p align="center"><b>Feeding and breeding of camels in the conditions of Turkmenistan</b></p> <p>Some biological features of camels. Arrangement for keeping and feeding camels throughout the year. Feeding camels by age and gender. Putting camels in grassland conditions. The use of camels grassland during the seasons.</p>	2
12.	<p align="center"><b>Poisonous and harmful plants growing in grasslands</b></p> <p>Poisonous plants (ajy buyan, garaja borjak, demirtiken, daligojele, mangyrchak, messek, cherrick). Botanical features of poisonous plants. Protection of livestock from poisonous plants when grazing. Harmful plants (pishikdyrnak, bogunly chayyr, burmek, syzgan, dele, sule, ketgen, etc.). Botanical features of harmful plants. Measures to protect and control harmful plants when grazing.</p>	2
13.	<p align="center"><b>Irrigation of desert grasslands</b></p> <p>Technological requirements and regulations. Traditional methods of irrigating grasslands. Modern methods and means of irrigating grasslands.</p>	2
14.	<p align="center"><b>Methods to improve grasslands</b></p> <p>Features of improving grasslands of different types. Agrotechnology for grassland improvement. Seedling time and rules.</p>	2
15.	<p align="center"><b>Scientific and technical and information and technological bases of exact arable farming</b></p> <p>Exact arable farming as an important way to increase soil fertility. The concept of exact arable farming. The main parts of exact arable farming</p>	2
16.	<p align="center"><b>Development of information and technological reserves of exact arable farming and the importance of its implementation</b></p> <p>Concept and method of development. Specific soil enrichment practices. Conducting agrochemical activities and its geoinformation.</p>	2
	<b>Total:</b>	<b>32</b>