The Ministry of Agriculture of the Republic of Kazakhstan
S.Seifullin Kazakh Agrotechnical University

considered
at a meeting of the Academic Council
Protocol number _13_
from " _31_ " _08_ 2022

APPROVED
Chairman of the Board
JSC "S.Seifullin Kazakh Agrotechnical
University"

_____
« _31_ » _08_ 2022

EDUCATIONAL PROGRAM
"Sustainable forest management"
(Program name)

Code and classification of the field of education:
8D08 Agriculture and bioresources
Code and classification of areas of study:
8D083 Forestry
Code in the International Standard Classification of Education: 8D083
Qualification: Doctor of Philosophy PhD in the educational program 8D08301
"Sustainable management of forest resources"

Apprenticeship: 3 years
Full-time form of education

Astana 2021

Authors:

Full Name	Place of work	Position, academic degree, rank
Sarsekova Dani Nurgisaevna	KATU them. S.Seifullin	Head of Department, Doctor of Agricultural Sciences, Associate Professor
Yesmurzayeva Aida Kadyrbaevna	KATU them. S.Seifullin	Candidate of Agricultural Sciences, Associate Professor
Abzhanov Talgat Sagidollaevich	KATU them. S.Seifullin	PhD Doctor, Senior Lecturer
Aydarhanova Gulnar Sabitovna	KATU them. S.Seifullin	doctor of biological sciences, Professor

The team of authors was approved by the order of JSC "KATU named after S.Seifullin" No. 923-H dated 12.12.2018y.

The educational program "Sustainable Management of Forest Resources" was considered at a meeting of the Department "Forest Resources and Forestry" Protocol No. 1 dated August 2, 2022, approved by the Council of the Faculty "Forestry, Wildlife and Environment" Protocol No. 1 dated "27" August 2022

Dean of the Faculty   Sarsekova D.N.

Department head "Forest resources and forestry"   Boranbai Zh.T.

The content of the educational program

1. Passport of the educational program

1.1 The purpose of the educational program

The purpose of the educational program is to train specialists with a high level of professional culture, competitive in the modern labor market, aimed at understanding and developing the principle of sustainable forest management as the main principle of forestry in the state forest management system and state forest policy.

1. The formation of the basic professional competencies of future professionals;

2. The creation of prerequisites for self-exploration and research activities of doctoral students;

3. The ability to work with scientific and technical information, to use domestic and foreign experience in professional activities.

The educational program includes a clear focus on the future, which manifests itself in the possibility of building their sustainable forest management education in view of the success in personal and professional activities, satisfying the requirements of employers.

Learning Outcomes

LO 1 - Know the statistical processing of digital materials obtained in the planned process; evaluate the reliability of quantitative indicators obtained in the course of annual scientific research; be able to assess the reliability of conclusions and practical recommendations, present scientific information in oral and written form, independently study certain aspects of the topic; own the initial conceptual and terminological apparatus, the skills of public and scientific speech, the ability to independently master new research methods.

LO 2 - Know the biological characteristics of ornamental tree and shrub species; principles of forest seed zoning; methods and techniques for collecting seeds of ornamental plants; fundamentals of designing decorative forest nurseries; agrotechnics of growing forest planting material. To be able to predict the yield of ornamental species, draw up a project for an ornamental forest nursery; develop agrotechnics for growing planting material; draw up settlement and technological maps for tillage and cultivation of planting material. Own: methods of forecasting, collecting, harvesting, processing, extracting, storing forest seed raw materials, determining the sowing qualities of seeds of ornamental species, designing ornamental forest nurseries

LO 3 - Know the biological diversity, viability and health of forests, productive and protective socio-economic, legal, political and organizational conditions that ensure sustainable forest management; understand the criteria and indicators of sustainable forest management; Be able to assess the function of forest resources and the contribution of forests to the global carbon cycle, use in practice forest management activities aimed at maintaining and improving the social and economic well-being of the local population, compare, formulate conclusions, monitor and evaluate the forest, form social and economic a responsibility

LO 4 - Know the system properties of natural objects, problematic issues of modern forest science, forestry, forest pyrology, forest management, be able to use cognitive work methods in the forest in the practice of scientific research, have practical skills in working with scientific research methods, identifying structural and functional relationships in forest ecosystems ; The ability to compare, formulate, analyze conclusions, build their own argumentation, judgment and conclusion

LO 5 - Know the provisions of the Forest Code on private forestry and its application; economic and legal conditions for the development of private forestry in Kazakhstan, the scientific basis for the organization of private forestry, the theory of growing plantation forest plantations, the system of care and felling; the main agrotechnical measures based on systemic irrigation. To be able to form a scientific approach to the organization of private forestry to obtain additional wood raw materials in a short time for numerous tasks of economic use.

2. General characteristics of the education program
(Urgency, particularly competitive advantage, uniqueness, stakeholders, etc.)

The doctoral education program contains: - theoretical training, including basic and specialized disciplines; - research work; - interim and final state certification; - implementation and defense of a doctoral dissertation. Theoretical training consists of a cycle of basic, core disciplines. The cycle of basic disciplines includes disciplines of the compulsory component and the component of choice. The cycle of core disciplines consists only of the disciplines of the component of choice. The list of disciplines of the required component is determined in accordance with the specialty of doctoral candidate training. The corresponding minimum volumes of credits of disciplines of the compulsory component are determined by state generally binding standards of postgraduate education for doctoral studies. The list of elective disciplines and the corresponding minimum loan volumes are established by the department independently in accordance with the requests of employers and the needs of the labor market.

Competitive advantage of this is highly OP faculty having practical skill in forestry and gardening. Teaching in a foreign language, a combination of methods of domestic and foreign practice, training in computer classes, laboratories with the latest equipment, own forest nursery allow the implementation of quality training of young cadres.

The goals of global trends involves the creation of conditions for development of scientific fields, such as:

- the development of new digital technologies for a variety of scientific and industrial sectors in forestry;
- intensification of the processes of transition to the convergence of science and forestry technology development;
- increased support for scientific research carried out in universities, in line with global trends and challenges, which criteria are the ratings publications, Hirsch index and others.

OP stakeholders are institutions and enterprises in the field of forestry and gardening: **Higher education institutions of Kazakhstan and countries of near and**

far abroad, LLP "Kazakh Research Institute of Forestry and agroforestry" JSC "Astana Zelenstroy" and so on. D.

3. Competence model (portrait) graduate

3.1 Areas of professional activity:

National, regional, district, state forestry institutions; joint stock companies, cooperatives, limited liability partnerships, firms toward gardening and forestry; research institutions in the field of forestry; higher, secondary vocational schools; wood processing enterprises.

Graduates of the department will be able to carry out production activities of the enterprises in the Kazakh Republican State Forest Seed institution RMK "Kazgiproleskhoz" RMK "Kazlesproekt", a branch of the Northern region of the State Enterprise "National forest breeding center";

- research activities in "KazSRIoPP" LLP, Kazakh Scientific Research Institute of Plant Protection . State national natural parks, national parks, reserves and other specially protected natural territories of the Republic of Kazakhstan;

- management, education, economic activity in the MES organizations, the Ministry of Agriculture in accordance with the qualification of Doctor of Philosophy.

3.2 Types of professional activity:

The main types of professional activities include: processing of scientific, technical, service information in the field of sustainable forest management; planning andthe execution of works on protection, reproduction and rational use of forest resources. The objects of professional activity of graduates are: the state forestry agency, national and natural parks, nature reserves, landscaping company, forest management and design businesses, forest nurseries, protected areas, reserves, research laboratories of the Institute of Forestry, Republican Kazakh state forest seed establishment, RSE "Kazgiproleskhoz" RGP "Kazlesproekt".

3.3 Of general competence:

- the ability of practical application of acquired knowledge in the learning process and skills in professional activities in the sustainable management of forest resources;

- the ability of practical application of acquired knowledge in the learning process and skills in professional activities on protection, reproduction and rational use of forest resources.

 The study of doctoral discipline must:

- know the relationship of the main aspects of forest management: technical, economic and socio-political; particular manifestation of the fundamental laws in forest management; Modern Problems of creation and functioning of the natural and man-made systems in forestry;

- be able to put into practice the provisions of legislation governing environmental protection activities in Kazakhstan;

- have a problem situation analysis skills in the field of forest management and the choice of solutions sustainable forest management, the development of measures for the rational use of forest resources.

3.4 Basic competence:
- own methodology of systematic approach to organization, management and analysis of the situation in the management of forestry; methods of diagnosis and the organization of events in the solutions to the problems in the forest industry.
- qualified to solve practical problems of management and to put these solutions into practice, be prepared for the implementation of management functions and to be able to solve professional problems in the interests of forestry;
- possess the knowledge, abilities and skills necessary to engage in the corresponding administrative positions and based on a deep understanding of the market economy, functions and economic role of the state, understanding the environmental problems in a civilized commitment to ethical standards of forest management;
- be able to assess current problems and prospects of social and economic development of Kazakhstan to sustainable forest management, to understand the current trends of the world economy and the globalization of the world's forests, to focus on international competition.

3.5 Professional competences:
- the ability of practical application of acquired knowledge in the learning process and skills in professional activities on sustainable management of forest resources;
- know the basics of the laws and processes to maintain and expedient nature management in forestry, the importance of forests in the global carbon exchange; especially the conservation of biological diversity of nature, its protection and appropriate reproduction of the forest ecosystem;
- be able to implement measures to preserve the health and vitality of forests, to increase the productivity of forest resources;
- have the skills of forest protection, the rational use of forest resources to the increase is a component for use care practices in forest areas.

4. Base of professional practice
Pedagogical practice is held on the basis of the Department of Forest Resources and Forestry of JSC "KATU named after S.Seifullin". Practice is a mandatory section of the EP and is a type of training, directly oriented to the professional and practical training of students.

The purpose of teaching practice: preparation for scientific and pedagogical activities in higher education, the acquisition and consolidation of practical skills in the implementation of the educational process in higher education, including the teaching of special subjects, the organization of educational activities of students, scientific and methodological work on the subject.

The purpose of postgraduate industrial internship is the acquisition and consolidation of key competencies, the acquisition of practical skills and professional experience in the profile of a future specialty.

The purpose of the research practice of postgraduate education is the study of the latest theoretical, methodological and technological achievements of domestic and foreign science, consolidation of practical skills, the use of modern methods of collecting, processing and interpreting experimental data in the dissertation research.

Research practice is conducted on the basis of forestry institutions and enterprises of protected areas in accordance with the theme of the doctoral dissertation: State Enterprise "Zhasyl Aimak", JSC "Astana Orman", State Enterprise "Kokshetau Selection Center", LLP "KazNIILH", SNNP "Burabai", SNNP "Kokshetau" , GNPP "Bayan-Auyl", state nature reserves "Semey Orman" and "Yertis Orman" and other state institutions and the protected areas of Kazakhstan within the framework of foreign and domestic scientific grants.

5. The structure of the educational program (apprenticeship) - 3 years.

The structure of the educational program of doctoral studies in scientific and pedagogical direction

№ p / p	Name of cycles of disciplines and activities	Total labor	
		in academic hours	academic credits
1	2	3	4
1.	The educational component	1590	53
1.1	basic disciplines cycle (DB)	330	11
1)	The university component	180	6
2)	optionally component	150	5
3)	Teaching practice		5
1.2	Cycle majors (PD)	510	17
1)	The university component	180	6
2)	optionally component	150	5
	Vuzovskiy component and (or) optionally Component	180	6
3)	research practice		20
2	Research work	3450	115
1)	The research work of doctoral student, including an internship and execution doctoral thesis		
3	Additional kinds of training		
4	final examination	360	12
1)	Writing and defense of the doctoral dissertation	360	12
	in total	5400	180

Appendix 1: Academic Calendar

Министерство сельского хозяйства Республики Казахстан
АО "Казахский агротехнический университет им. С.Сейфуллина"

Академический календарь на 2019-2022 учебный год для образовательной программы «Устойчивое управление лесными ресурсами» по направлению подготовки
80083 Лесное хозяйство

Курсы / Год	Авг	Сентябрь (1–4)				Октябрь (5–8)				Ноябрь (9–13)					Декабрь (14–18)					Январь (19–22)				Февраль (23–27)					Март (28–31)				Апрель (32–35)				Май (36–40)					Июнь (41–44)				Июль (45–48)				Август (49–52)			
№ нед	26	1	2	3	4	5	6	7	8	9	10	11	12	13	#	15	16	17	18	19	20	21	22	23	24	25	26	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
Курс 1: 2019–2020	2	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24
Курс 2: 2020–2021	30 / ПН	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	1	8	15	22	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23
Курс 3: 2021–2022	ПН	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22

Условные обозначения / активности по неделям (строки I, II, III):
- Курс I — преимущественно Н (научно-исследовательская работа), сессия (С), каникулы (К), практики (Пп)
- Курс II — Н, Ши, Пп, С, К
- Курс III — Н, Х, ИА (Итоговая аттестация, недели ~38–44), К

Условные обозначения:

* НИРД - в период теор. Обуч. -27 кредитов
ПН - презентационная неделя
● - теоретическое обучение
РК - рубежный контроль
С - сессия экзаменационная
Л - летний семестр

Н - научно-исследовательская работа докторанта
Пп - педагогическая практика
Ши - исследовательская практика
Х - Оформление докторской диссертации
ИА - Итоговая аттестация

К - каникулы

Праздничные дни:

30 августа - День Конституции
21 августа - Курбан Айт
1 декабря - День Первого Президента
16, 17 декабря - День независимости
1, 2 января - Новый год
7 января - Рождество Христово

8 марта - Международный женский день
21, 22, 23 марта - Наурыз мейрамы
1 мая - Праздник единства народа Казахстана
7 мая - День защитника Отечества
9 мая - День Победы
6 июля - День столицы

Всего недель:

теоретическое обучение - 30 недель
экзаменационная сессия - 4 недель
каникулы зимние - 3-4 недели
каникулы летние - 6-9 недель
летний семестр - 6 недель

Декан агрономического факультета ___ Г.Ж.Стыбаев "___" "___" 2019 г.

Заместитель директора ДАВ - руководитель ОР ___ Г.Ж.Солтан "___" "___" 2019 г.

Appendix 2. Working curriculum (n.-p.)

№s/№	Module name	discipline cycle	discipline component	code of discipline	Name of the discipline	ECTS credits	types of control	Total	classroom: lectures	classroom: Workshops (laboratory works (practice exercises))	extracurricular: PSAS	extracurricular: SRO	extracurricular: Preparation and submission of interim and final control	1 (1 to)	2	3	4 (2k)	5	6	7 (3k)	8	9
	Unit number 1 - The methodology of scientific research and ornamental forest nurseries	DB	VC	MNI 7201	Scientific Research Methodology		Exam	180	22	32	36	90		5								
		Teaching practice	PP																			
		VC	AP	DLP 7204	Decorative tree nurseries		Exam	150	45	15	30	60			5							
	Total DB					53																
	Module number 2 - Recent developments in forestry and sustainable forest management	AP	VC	UUL 7204	Sustainable forest management		Exam	180	22	32	36	90		5								
		AP	HF	SPL 7205	Modern Problems of Forest		Exam	150	45	15	30	60			5							
		AP	HF	ChL 7203	private forestry		Exam	180	22	32	36	90		5								
		AP	SP		research practice										5	10			13			
	Total PD																					
	The research work of doctoral student, including an internship and execution doctoral dissertation (NIRD)					115								10	10	10	20	20	7	20	20	8
	Research work					115								10	10	10	20	20	7	20	20	8
	Writing and defense of the doctoral dissertation					12																12
	Final certification (IA)					12																
	in total					180		840	156	126	168	390		20	20	20	20	20	20	20	20	20

11

Appendix 3. Description of compulsory and university components disciplines

1. Basic information about the discipline:	
Name of the discipline	Methodology of scientific research
2. The number of credits	5
3. Prerequisites:	Organization of research, problems of rational use of forest resources
4. Post requisites:	The knowledge gained in the study of the discipline will be used in research and the preparation of a doctoral thesis.
5. Competencies:	**A.** Research methodology - a complete knowledge of the natural phytocenosis and scientific knowledge about the impact of economic activities; to know the statistical processing of digital material produced in the planning process; to evaluate the accuracy of the quantitative indicators obtained during the annual research, ie to evaluate the accuracy, s conclusions and practical recommendations based on these indicators; **AT.** organization, planning and research; the ability to use quantitative data, statistical analysis; application software for processing of the materials; **WITH.** development problems of research questions, the use of research methods, to monitor and maintain statistics on the data; **D.** gather information, and make the series of distributions of the table, drawing graphics izobrezheniya statistical distribution; **E.** use computer programs for specific applications.
6. Course Author	Kazangapova NB - Ph.D., Senior Lecturer.
7. The main literature	Summary: 1. Gerasimov Yu.Yu., Khlyustov V.K. Mathematical methods and models in computer calculations. Publishing house of MSU forest. M., 2001 2. Fedorov A.I. Methods of mathematical statistics in biology and experimental work. Publishing house "Kaynar", Alma-Ata, 1967. 3. A.V. Ivannikov Biometrics, Astana, 2006 4. Lakin G.F. Biometrics, Publishing House Higher School. M. 2000 5. Orman Codex. Almaty, Lawyer Publishing House, 2003 6. Armor B.A. Field experience. M., Kolos, 1979 7. Seytov I.S. Egis təzhiriblelerin zhүrgizudиика methods. Almaty, Kaynar, 1990,216 beta. 8. Rodin A.R., Rodin S.A., Rysin S.L. Forest landscaping: A manual for students specials. 260400 and 260500. - M .: MSU L, 2002. - 126 p. 9. Rodin A.R., Rodin S.A. Forest cultures and forest

reclamation. - M .: IN "Agropromizdat", 1987. - 320 p.
10. Krechetova N.V., Vasilyev N.D., Karaseva M.A., Yakovlev A.S. Protective afforestation: A manual for students specials. 260400. - Yoshkar-Ola, MarSTU, 1996. - 128 p.

Additional:
1.Kentbaev E.ZH., Kentbaeva B.A. Computer programs "Biometrics", "Correlation Analysis", "Dispersion Analysis" on electronic media. Almaty, 2007.
2.Zaitsev G.N. Mathematical statistics in experimental botany, Publishing House Science, 1984
3. Fedorov A.I. Methods of mathematical statistics in biology and experimental work. Publishing house "Kaynar", Alma-Ata, 1967.
4. Svalov N.N. Variation statistics. Publishing house Lesprom, M, 1977
5. Plokhinsky N.A. Biometrics. Publishing house "High School", M., 1982.
6. Tomilov V.A. Methods of experienced business in crop production. Akmola, 1978.
7. .AB. Ivannikov. Biometrics workshops. Astana, 2009

8. The content of the discipline. This discipline covers a range of issues related to development policy issues and research methods, planning of scientific experiments in the field of forestry and conduct research, statistical processing of field data and the use of different methods of analysis.

1. Basic information about the discipline:	
Name of the discipline	Decorative forest nurseries
2. The number of credits	**5**
3. Prerequisites:	Exotic species for forest cultivation in Kazakhstan, Ecotourism
4. Post requisites:	The knowledge gained in the study of the discipline will be used in research and the preparation of a doctoral thesis.
5. Competencies:	**BUT.** Doctoral students should get in-depth knowledge of growing seedlings of ornamental trees and shrubs; **AT.** To put into practice the theoretical foundations Nursery, to draft a decorative forest nursery. **WITH.** To be able to compare those or other arguments on the application of new types of seeds of trees and shrubs in the nursery, to justify its position. **D.** In the field of communication have a sense of tolerance, respect for others' opinions of foresters and specialists in the field of afforestation.

	E. In the field of education to pay more attention to the key issues of the creation of new nurseries, explore the history of the local nurseries.
6. Course Author	Kazangapova NB -k.g.n., Art. Ven.
7. The main literature	Summary: 1. Bezchenov PP, Goloshchapov G.V. Sadovo - park construction of Kazakhstan. Directory. - Alma - Ata.1988. 2 Methods of inventory of green settlements of the Republic of Kazakhstan and localities. Kaz NAU Almaty. 2006 3. On the rules of maintenance and protection of greenery of the city of Astana. Normative.kz. dated 28.04.2004. No. 324 4. Novoseltseva A.I., Smirnov N.A. Handbook of forest nurseries. - Moscow: "Forest industry", 1983. 5. Medvedev A.N. Forest nurseries in Kazakhstan. - Almaty, 1997. 6. Selection and reproduction of forest tree species. - M., 2003. 7. Protasov A.N. Forest nurseries in the conditions of Kazakhstan. - Almaty, 2004. 8. Baizakov, S. B., Medvedev, A.N., Mukanov, B.M., Iskakov, S.I. Forest cultures in Kazakhstan. - Almaty, 2010. 9. Kentbaev E.ZH., Kentbaeva B.A. Trees and shrubs in Kazakhstan for afforestation. - Almaty, 2008. Additional: 1. Determination of indicators of the replacement cost of green space in Almaty. Reporting document. SME "Almatyekologologostroy", Almaty, 2001. 2. Greening cities. Terms and Definitions. GOST 28329-89 3. P. Ratha Krishnan Rajwant K. Kalia J.C. Tewari M.M. Plant Nursery Management of Swarm: Principles and Practice of the Central Arid Zone Research Institute (Indian Agricultural Research Council) Jodhpur - 342 003 (Rajasthan) 2014. -40 P. 4. A.N. Medvedev, I.A. Palgov, V.P. Beschetnov. Organizational and economic plan of the forest nursery (guidelines for course development), KAZSHI. - Alma-Ata, 1984. 5. Bhimraj Bhujbal (ed.). 2012. Horticulture Resource Book, Nursery, YCMOU, NAIP, ICAR, p. 264. 6. Kentbaeva B. A. Forest seed business. - Almaty, 2006.

8. The content of the discipline. This course is aimed at gaining knowledge and skills in the design of decorative forest nurseries, to choose the best option for growing planting material in a decorative nursery and the most rational placement of nursery departments in general. When performing work, a review of the scientific literature is provided, which additionally forms a theoretical horizons for students and instills research skills.

Appendix 4. Description disciplines optionally component

1. Basic information about the discipline:	
Name of the discipline	Sustainable forest management
2. The number of credits	**5**
3. Prerequisites:	The principles of the organization of monitoring of biological resources, biodiversity and methods of assessment, recreational potential of the area and ecological tourism
4. Post reguisites:	the knowledge gained in the study of the discipline will be used in research and the preparation of a doctoral thesis.
5. Competencies:	**A.** Doctoral students should get in-depth knowledge on sustainable management of forest resources. Understanding of the criteria and indicators for sustainable forest management. **B** Using practical measures for forest management focused on maintaining and improving the social and economic welfare of the local population. **WITH.** The ability to compare and draw conclusions, to be able to carry out monitoring and evaluation of the forest. **D.** Formation of social and economic responsibility, professional literacy. **E.**The development of knowledge and skills. In the area of training to be able to develop an action plan for sustainable forest management
6. Course Author	Yesmurzayeva AK -k.s.h.n., Associate Professor
7. The main literature	Summary: 1.Bayzakov SB, BM Mukanov Problems of sustainable development of forestry in 2007. 2. RK Forest Code. - Astana 2014 3. Baizakov SB The history of the development of forestry in Kazakhstan - Almaty, 2014. - 576 p. -ISBN 978-601-241-538-4 4. Dementieva SM, Andreev EA, AA Notov Forestry. Part 1: Forestry: -Tver Tiberias. state. University Press, 2014. - 36 p. 5. IS Melekhov Forestry: [foreword. VI Obydennikova]. - 3-ed., Rev. and ext. -Moscow: Moscow State. Univ

forests, 2005. -371 p. : Yl, Tab.. -Predm. Decree .: p. 364-367. -Posvyasch. 100th anniversary of the birth of Ivan Stepanovich Melehova. -ISBN 5-8135-0291-2: 205.00.

6. SN Sennov Silviculture: a textbook. -Izd. 3rd, Revised. and ext. - St. Petersburg ; Moscow; Krasnodar: Lan, 2011. -329 p. : Yl, Tab.. ; 21 cm. - Bibliogr .: p. 325. -ISBN 978-5-8114-1151-1.

7. SN Sennov Silviculture [electronic resource]-Moscow: Lan, 2011. -336 p.

5.Belyaeva NV Laws governing the functioning of pine and spruce phytocenoses southern taiga on the objects of the comprehensive care of the forest: Abstract. Diss. a. agricultural Sciences. - SPb .: SPBGLTA, 2006. - 20 c.

8. Gryazkin AV, Konovalenko VM, ES Melnikov. Non-wood forest products: guidelines. -2006. - 28.

9. Gryazkin AV, Smirnov AP Non-wood forest products: a tutorial. - SPb .: Publishing House politehn.un Press, 2007. - 400 p.

10. AB Egorov, AA Bubnov, Ryabinkov AP The use of herbicides for growing conifers and birch trees in the forest nurseries: practical recommendations. - SPb .: SPBNIILH, 2005. - 49 p.

Additional:

1.Melehov IS Forestry: -Moscow: Forestry, 1980. -406 p. : Yl. -Bibliogr .: p. 381-398. -Predm. Decree.: p. 399-402.

2.Smirnov AV Forestry: Proc. Manual / AV Smirnov; Kalinin. state. Univ; Kalinin. state. Univ. -Kalinin: Publishing House of Kalinin. University Press, 1975. -127 p. : Yl. -Bibliogr .: s.123-126. -0.75.

3.Popova OS Woody plants of the forest, and protection of green spaces: -Saint Petersburg; Moscow; Krasnodar Lan 2010. -188 [1] to [12] l.. col. yl. : Yl, Tab.. - (Textbooks for high schools) (Special literature). - Bibliogr .: p. 179-180 (20 references.). -Alf. decree. eng., latin. titles. Plants: a. 181-188. -ISBN 978-5-8114-0940-2.

FOUR.ON. Konovalov, EA Pugach - The basics of forest breeding and varietal seed Edition 2, Moscow 1978 169s.

8. Contents Sustainable forest management is carried out taking into account environmental and socio-economic criteria. The criteria are a set of basic provisions for forestry, the following of which ensures the conservation and sustainable development of forests. Corresponding criteria and indicators make it possible to assess the degree of a country's progress towards sustainable development in the field of forestry.

The subject of this course covers important areas such as the current state of the forests of

the Republic of Kazakhstan, the tasks of forest legislation, the forest fund of the Republic of Kazakhstan. Land forest fund. Competencies of local executive authorities, state forestry authorities. Forest resources and their use. The ecological importance of forests. Multipurpose use of forests. Ownership of forests. Paid forest use. Forestry financing. Economic incentives for sustainable forest management.

1. Basic information about the discipline:	
Name of the discipline	Modern problems of forest sciences
2. The number of credits	5
3. Prerequisites:	Total forestry, problems of rational use of forest resources, "Theory and practice of growing forests for various purposes"
4. Post requisites:	The knowledge gained in the study of the discipline will be used in research and the preparation of a doctoral thesis.
5. Competencies:	**BUT**. Ability to use in the practice of scientific research methods poznavatelskoy work in the forest, the system properties of natural objects. **AT**. The acquisition of practical skills in working with the methods of scientific research, identifying the structural and functional relationships in forest ecosystems. **WITH**The ability to compare, formulate, analyze the findings, to build their own reasoning, judgment and reasoning; **D**. In the field of communication - knowledge of problematic issues of modern forest science of forestry, forest fire science, forest management **E**.in the field of education - the ability to analyze and implement the practice of forestry and the whole forest complex of cutting-edge research and development
6. Course Author	Maysupova IK - PhD, Art. Ven.
7. The main literature	Summary: 1.Baizakov SB The history of the development of forestry in Kazakhstan - Almaty, 2014. - 576 p. -ISBN 978-601-241-538-4 2.Dementeva SM, Andreev EA, AA Notov Forestry. Part 1: Forestry: -Tver Tiberias. state. University Press, 2014. - 36 p. 3.Melehov IS Forestry: [foreword. VI Obydennikova]. -3-ed., Rev. and ext. -Moscow: Moscow State. Univ forests, 2005. -371 p. : Yl, Tab.. -Predm. Decree .: p. 364-367. - Posvyasch. 100th anniversary of the birth of Ivan Stepanovich Melehova. -ISBN 5-8135-0291-2: 205.00. 3.Sennov SN Silviculture: a textbook. -Izd. 3rd, Revised.

and ext. - St. Petersburg ; Moscow; Krasnodar: Lan, 2011. -329 p. : Yl, Tab.. ; 21 cm. - Bibliogr .: p. 325. -ISBN 978-5-8114-1151-1.

4.Sennov SN Silviculture [electronic resource]-Moscow: Lan, 2011. -336 p.

5.Belyaeva NV Laws governing the functioning of pine and spruce phytocenoses southern taiga on the objects of the comprehensive care of the forest: Abstract. Diss. a. agricultural Sciences. - SPb .: SPBGLTA, 2006. - 20 c.

6. Gryazkin AV, Konovalenko VM, ES Melnikov. Non-wood forest products: guidelines. -2006. - 28.

7. Gryazkin AV, AP Smirnov Non-wood forest products: a tutorial. - SPb .: Publishing House politehn.un Press, 2007. - 400 p.

8. AB Egorov, AA Bubnov, Ryabinkov AP The use of herbicides for growing conifers and birch trees in the forest nurseries: practical recommendations. - SPb .: SPBNIILH, 2005. - 49 p.

9. Egorov AB, Omel'yanenko AJ, MV Postnikov, AA Bubnov The use of herbicides in the care of the forest: the practical rekomendatsii.- SPB .: SPBNIILH, 2005. - 29 p.

10. Zhigunov AV, Egorov AB Reproduction of commercially valuable species using chemical method: a tutorial. - SPb .: SPBGLTA, 2001. - 40 s.

11. The concept of Forestry Development of the Russian Federation for 2003-2010. By the Federal Government on January 18, 2003 №69-p.

12. The Forest Code of Kazakhstan. 2014

13. Martynov A., Melnikov E., NV Belyaeva modern forest growing problem (chemical and comprehensive forest care): 2006 - 16.

Additional:

1.Melehov IS Forestry: -Moscow: Forestry, 1980. -406 p. : Yl. -Bibliogr .: p. 381-398. -Predm. Decree .: p. 399-402.

2.Smirnov AV Forestry: Proc. Manual / AV Smirnov; Kalinin. state. Univ; Kalinin. state. Univ. -Kalinin: Publishing House of Kalinin. University Press, 1975. -127 p. : Yl. -Bibliogr .: s.123-126. -0.75.

3.Popova OS Woody plants of the forest, and protection of green spaces: -Sankt Petersburg; Moscow; Krasnodar Lan 2010. -188 [1] to [12] l.. col. yl. : Yl, Tab.. - (Textbooks for high schools) (Special literature). - Bibliogr .: p. 179-180 (20 references.). -Alf. decree. eng.,

	latin. titles. Plants: a. 181-188. -ISBN 978-5-8114-0940-2. FOUR.ON. Konovalov, EA Pugach - The basics of forest breeding and varietal seed Edition 2, Moscow 1978 169s.

8. Contents Disclosure issues of modern forest science, focusing on issues of scientific research, structure and methods of scientific research, the specificity of the object and methods of research work in the forest, the forest features the knowledge of nature, the system properties of natural objects, to identify structural and functional relationships in forest ecosystems.

The subjects of the course addresses the most problematic issues of Modern Forest Science, Forestry, forest fire science, forest management, including non-timber forest products, a number of other silvicultural disciplines.

1. Basic information about the discipline:	
Name of the discipline	Private forestry
2. The number of credits	5
3. Prerequisites:	Total forestry, problems of rational use of forest resources, "Theory and practice of growing forests for various purposes"
4. Post requisites:	the knowledge gained in the study of the discipline will be used in research and the preparation of a doctoral thesis
5. Competencies:	A. Scientific basis of private forestry organizations, the theory of growing plantation afforestation, care systems and logging. B. Examine ways forest cultivation by the private forest in the dry, but the supply of water resources regions of the private forestry organizations C. To help the formation of a scientific approach to private forestry organizations to obtain additional raw wood in the short term for the many challenges of economic use. D. Know the basic agro-technical measures, based on the system of irrigation in the area of communication - to improve the skills of practical ownership of forestry techniques **E.** Own modern forestry methods, know regulations and legislation in the field of private afforestation
6. Course Author	Mazarzhanova KM -k.s.h.n., Senior Lecturer.
7. The main literature	Summary: 1.Malahovets PM Plantations. - Archangel: ed. CPI NArFU, 2012 2.Çevre ve Orman Bakanlığından: Özel Ormanlarda ve Hükmi Şahsiyeti Haiz Amme Müesseselerine Ait Ormanlarda Yapılacak İş ve İşlemler Yönetmelik. - Ankara, 2000. 3GI Redko, 1-2. - Moscow: izdMerzlenko MD, Babich

NA Danilov, Yu Plantations and protective afforestation. - Moscow: Ed. "The Academy", 2008

4.Rodin AR, Kalashnikov EA, Rodin SA Plantations. - Moscow: VNIILM, 2002

5.Bayzakov SB Scientific and innovation priorities of forestry in Kazakhstan. Sat. Proceedings / SB Baizakov. - Almaty: «Gauhar», 2010

6.Bayzakov SB, Medvedev AN, Iskakov SI, BM Mukanov Plantations in Kazakhstan. - Almaty KazNAU, ed. "Agrouniversiteta", 2007

Additional:

1.Otchet Committee for Forestry and Hunting in 2008, the manuscript, with the -208.

2.Markova IA Danilov, Yu Plantations. - Moscow: Ed. "Academy", 2011

3.M.Ozdonmez., T.Istanbullu., A. Akesan., A.Ekizoglu. OrmancilikPolitikasi. -Istanbul 1996

4.Ormancilik. OzelIhtisas Komisyonu Raporu. Sezinci Kalkinmaplani. -Ankara 2001.

5. Kazakhstan respublikasynyң Orman kodeksi. -Almaty: Lawyer 2004

6. AI Pisarenko, Merzlenko MD The creation of artificial forests. - Moscow: Ed. "Agropromizdat", 1990

7. AI Pisarenko, radish GI Merzlenko MD Artificial forest. Ch 1-2.- Moscow: Ed. YUNIFIR VNIITslesresurs conjunction with, 1992y.

8.Sokolov AA Private forestry (Agricultural Polytechnic). Vol. 1-2. - Moscow-Leningrad: Ed. "Selkhozgiz", 1930

9.OGM. Özel Ormanlar, Orman Genel Müdürlüğü Kadastro ve Mülkiyet Dairesi Başkanlığı. -Ankara, Report 2006 Forestry and Hunting Committee of the 2007 manuscript, with -254.

10.Tolsky AP Plantations (general part). Private forestry: silvicultural bases of the case. T. 3. - Leningrad: Ed. "Forestry and forest industry", 1930

11.Bayzakov SB Economic evaluation of forest resources. - Alma-Ata: "Kaynar", 1987

8. The content of the discipline. State and problems of regulatory support and development of private forestry in Kazakhstan. Reforms in forest management and private forestry development trends in some countries of the CIS. Analysis of forestry organizations and private forestry business in foreign countries. Comparative analysis of the features and differences in the organization of forestry and private businesses in the forestry sector of individual countries. The state of development of private entrepreneurship in the forest sector of the economy of Kazakhstan. Private forestry and afforestation plantation resources

in Kazakhstan. Classification of objects and types of economic activity in the forest industry in Kazakhstan. Analysis of the types of state support of individual sectors of agricultural production in the country. The basic principles and directions of development of private forestry in Kazakhstan. The creation of artificial forests and its development prospects in Kazakhstan. The main forms of state support and promote the development of private forestry in Kazakhstan. Socio-economic and general ecological efficiency in private forestry.