Academic Program Description Form
University Name: **University of Mosul**
Faculty/Institute: **College of Agriculture and Forestry**
Scientific Department: **Forest Sciences Department**
Academic or Professional Program Name: **Graduate Studies**
Final Certificate Name: **Forest Sciences Ph.D** Academic System: **Semesters**
Description Preparation Date: 1\9\2025
File Completion Date: 1\9\2025

Signature :
Head of Department Name:
Prof. Dr. Sumod Husain Ali
Date: 1\9\2025

Signature :
Scientific Associate Name:
Prof. Dr. Hameed Hamoud Ali
Date: 1\9\2025

The file is checked by:
Director of the Quality Assurance and University Performance

Department: **Assistant Lecturer : Oday Abdulhadi Adday**

Quality Assurance Unit Head: Asst. Dr. Ramia Amer Khalil

Date: 3/9/2025

Signature:

Approval of the Dean
Prof. Dr. Ali Farouq Al-Ma'athedi

To be a leader in education and scientific research in the field of forestry sciences, and to contribute effectively to community service and sustainable development, in accordance with the highest international academic standards.

2. Program Mission

Qualifying highly qualified graduates in forestry sciences, through applied academic programs and research directed towards the sustainability of ecosystems, with a commitment to developing postgraduate programs that keep pace with environmental challenges and contribute to serving the community and the local and global labor market.

3. Program Objectives

- Producing advanced scientific knowledge through conducting original research that contributes to the development of forest sciences and natural resource management.
- Applying sustainability concepts at an advanced level in planning and managing forest resources, and addressing complex environmental challenges such as desertification and climate change.
- Analyzing complex environmental problems and developing innovative solutions based on scientific evidence and modern technologies.
- Leading research and applied projects in the fields of afforestation, fire management, and vegetation development.
- Promoting integration between scientific research and practical application in support of sustainable development and environmental and food security.
- Developing critical thinking and advanced analytical skills to evaluate environmental studies and data and make evidence-based decisions.
- Contributing to the development of environmental policies and strategic planning for natural resource management at local and regional levels.
- Building scientific and professional partnerships with research institutions, government bodies, and the private sector.
- Disseminating scientific knowledge through academic writing and participation in scientific conferences.

4. Program Accreditation

Nothing

5. Other external influences

The family problems facing students negatively affect the students' performance in the academic program Extracurricular activities help students achieve greater achievements in implementing the academic program
The economic situation of students and their involvement in work to save money negatively affects their academic performance The student's learning competence

in his preparatory studies is one of the most important indicators of excellence in the performance of the academic program

6. Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	3	6	% 12.5	
College Requirements	-	-	-	
Department Requirements	10	42	87.5	
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

First semester (autumn)					
Name of the academic subject	Material symbol	Theoretical hours	Practical hours	Units	Course type
Afforestation of Arid Regions	Ag.Fo.701	2	3	3	Basic
Advanced Forest Ecology	Ag.Fo.704	2	3	3	Basic
Plant–Water Relations	Ag.Fo.712	2	3	3	Basic
Applications of Remote Sensing in Forestry	Ag.Fo.711	2	3	3	Basic
Plant Growth Regulators	PLGR307	2	3	3	Elective
Seminar 3	Ag.Co.701	1	0	1	Elective
English Language 3	Ag.Co.702	2	0	مستوى	Elective

The second semester (spring)					
Name of the academic subject	Material symbol	Theoretical hours	Practical hours	Units	Course type
Natural Resources Management	Ag.Fo.703	2	3	3	Basic
Forest tree physiology	Ag.Fo.702	2	3	3	Basic
Forest Plantation Establishment	Ag.Fo.705	2	3	3	Elective
Genetic Engineering	Ag.Cr.716	2	3	3	Elective
Geological Environment	Env203	2	3	3	Elective
Land Use and Land Cover Classification	Ag.Fo.710	2	3	3	Elective
Urban Afforestation	Ag.H.736	2	3	3	Elective
Computer Applications 3	Ag.Co.703	2	0	مستوى	Basic
Research Methodology 2	Ag.Co.715	1	0	مستوى	Basic
Seminars 3	Ag.Fo.701	1	0	1	Basic

8. Expected learning outcomes of the programmer	
	Knowledge
The student should be able to explain biodiversity, its importance, and how to conserve natural resources in the environment.	A5
The student should be able to recognize the fundamentals of basic and applied sciences and modern technologies related to agriculture and food, as well as the principles of planning and implementing agricultural operations.	A6
he student should be able to explain the fundamentals of applied sciences related to agricultural sciences, food, natural resources, the environment, and biological systems	A7
The student should be able to demonstrate the fundamentals of agricultural engineering and the principles of planning and implementing agricultural processes.	A9

The student should be able to understand the classification of pathogens (fungi, bacteria, viruses, and nematodes) and agricultural pests (insect and animal), as well as the damage they cause affecting plants and their productivity during production, transport, and storage stages	**A10**
The student should be able to explain the fundamentals of integrated pest management (IPM) for various pests and pathogens, and the most important modern control methods used.	**A11**
The student should be able to identify different scientific methods for the development and improvement of agricultural resources, facilities, and sectors.	**A13**
The student should be able to explain biodiversity and its importance in conserving natural resources, highlighting the importance of the safety and quality of agricultural and food products, and quality and safety programs that comply with food laws and regulations.	**A14**
The student should be able to explain the principles of planning and implementing agricultural operations and understand market needs through analyzing supply and demand prices.	**A15**
The student should be able to explain the main stages and elements of planning and implementing agricultural and cultural activities in agricultural communities.	**A16**
The student should be able to compare market needs through the analysis of supply and demand prices.	**A18**
The student should be able to explain the relationship between macroeconomics, microeconomics, and statistics with agricultural production.	**A19**
The student should be able to explain the principles of basic and applied sciences and modern technologies related to agriculture, land, water, and environmental sciences.	**A20**
The student should be able to list the chemical groups of pesticides, taking into account local and international regulations and standards related to their safe use and their impact on the quality and safety of agricultural and food products.	**A26**
The student should be able to identify forests and other tree types, their distribution, and the associated flora and wildlife.	**A58**
• The student should be able to understand how concepts of tree biology and conservation influence forest management and biodiversity.	**A59**
The student should be able to explain ecological concepts and principles, including ecosystem structure and function, plant and animal communities, competition, diversity, population dynamics, succession, disturbances, and nutrient cycling.	**A60**
The student should be able to recognize how federal, state, and local laws and regulations govern forestry practices.	**A63**

The student should be able to understand management, ownership, organizational, human resource, and legal aspects of forest management institutions.	A64
The student should be able to understand forest policy, its historical context, and the processes through which it is developed.	A65
The student should be able to recognize forestry codes and acknowledge the responsibility to adhere to ethical standards in decision-making related to forests on behalf of others.	A66
The student should be able to identify different harvesting, transportation, and processing systems used in forest resource management and forest product production.	A67
The student should be able to understand how mathematical programming techniques and regional impact analysis are used in forestry decision-making.	A68
The student should be able to understand how resource conditions and social demands interact under different market and non-market structures to influence the valuation and availability of forest goods and services.	A69
The student should be able to understand how market externalities, ecosystem services, and non-market goods and services affect forestry decisions and resource conditions.	A70
Intellectual (Cognitive) Skills	B
• The student should be able to propose commercial production plans for plant, animal, and food crops in accordance with market systems by evaluating the economic conditions of the market and identifying its needs.	B4
• The student should be able to predict the status of plant pests and diseases by identifying monitoring methods, field population surveys, and the level and severity of infestation.	B10
• The student should be able to plan the management of agricultural projects that are free from pests and diseases in accordance with quality and safety standards.	B14
The student should be able to evaluate the management of agricultural projects based on quality and safety standards and their freedom from pests and diseases.	B15
The student should be able to determine and measure land areas and perform spatial analysis.	B48
The student should be able to develop and evaluate management plans with multiple objectives and constraints.	B49
The student should be able to develop appropriate silvicultural characteristics aligned with management objectives.	B50

The student should be able to design and implement comprehensive and appropriate forest resource inventories.	B51
The student should be able to analyze forest inventory data and predict future forest and tree conditions.	B52
Professional (Practical) Skills	C
The student should be able to prepare scientific research and studies in their field of specialization in both Arabic and English.	C3
The student should be able to use laboratory equipment and computers to predict pest outbreaks and plant epidemics, operate agricultural machinery used in pest and disease control, and maintain them.	C6
The student should be able to develop appropriate practical methods for biological control of pests and plant pathogens, including rearing parasitoids, predators, and antagonistic organisms to achieve optimal control solutions.	C8
The student should be able to use effective concepts, models, and techniques to develop and analyze forest resource plans, from timber harvesting to landscape-level management.	C56
The student should be able to apply fundamental mathematical, linear programming, and statistical methods for analysis and problem-solving in forest sciences.	C57
The student should be able to master concepts related to tree pests and diseases and apply them to assess the health and productivity of trees and forests.	C58
The student should be able to conduct assessments of forest conditions and ecosystems.	C59
The student should be able to use computers and other technologies for communication, measurement, analysis, and problem-solving in forest sciences.	C60
Communication and IT Skills	D
The student should be able to use computer software to analyze and present data and information in the agricultural field.	D1
The student should be able to independently develop their cognitive, professional, and research skills within their field of specialization.	D4
The student should be able to engage in self-learning, write reports, and work effectively within an agricultural team.	D9

The student should be able to efficiently use appropriate audiovisual tools to present environmental data and information.	D16
The student should be able to raise community awareness about the importance of increasing green cover as a means to reduce environmental pollution, improve environmental conditions, and enhance the health, psychological, and social well-being of the community.	D21
Values, Autonomy, and Responsibility	E
The student should be able to propose methods for conserving the environment and natural resources within the local community.	E1
The student should be able to contribute to enhancing understanding and awareness of professionalism in the workplace and to assume legal, ethical, and social responsibility.	E2
The student should be able to take responsibility for completing work efficiently while adhering to professional ethics.	E5

10.Evaluation methods
Short tests, semester exams, evaluation of reports, evaluation of discussion, evaluation of research reports

11.Faculty					
Faculty Members					
Academic Rank	Specialization		Special Requirements/Skills (if applicable)	Number of the teaching staff	
	General	Special		Staff	Lecturer

Professor		2			2	
Assistant Professor		4			4	
Teacher		**9**			**9**	
assistant teacher		2			2	

Professional Development
Mentoring new faculty members
✓ Developing skills to enhance self-confidence, a positive orientation towards a culture of quality and requirements, enhancing a sense of responsibility, and belief in the spirit of teamwork and its role in achieving and developing job sense and moral conscience. . ✓ Evaluating academic courses and plans in coordination with academic departments to ensure that they meet labor market requirements ✓ Possessing the skills of guiding and guiding students . ✓ The ability to produce educational materials according to quality specifications, including academic curricula, media, lectures and educational supplies.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.
12.Acceptance Criterion
(Setting regulations related to enrollment in the college or institute, whether central admission or others)
13.The most important sources of information about the program
State briefly the sources of information about the program.
14.Program Development Plan

مخطط مهارات البرنامج

Year / level	Material symbol	Name of the academic subject	Essential or optional	المعرفة																				المهارات																						القيم	
				A1	A2	A3	A4	A5	A6	A7	A8	A10	A13	A14	A18	A20	A58	A59	A60	A64	A67	A68	A69	B1	B3	B5	B15	B49	B50	B51	B52	C1	C2	C3	C4	C5	C56	C57	C60	D1	D3	D4	D5	D9	D16	D21	E1
2025-2026 First semester	Ag.Fo.701	Afforestation of Arid Regions	Basic					*	*					*	*	*	*				*																										
	Ag.Fo.704	Forest tree physiology	Basic					*	*		*																																				
	Ag.Fo.712	Plant-Water Relations	Basic		*		*																	*	*							*															
	Ag.Fo.711	Applications of Remote Sensing in Forestry	Elective	*	*	*	*	*	*															*		*							*		*								*				
	PLGR.807	Plant Growth Regulators	Elective	*	*	*																		*									*	*	*	*					*						
	Ag.Co.701	Seminar 3	Basic																									*			*			*						*		*		*			*
	Ag.Co.702	English Language 3	Basic	*																				*																							
2025-2026 Second semester	Ag.Fo.703	Natural Resources Management	Basic														*	*	*	*			*					*			*																
	Ag.Fo.702	Advanced Tree Physiology 2	Basic						*	*						*	*	*	*												*																*
	Ag.Fo.705	Forest Plantation Establishment	Elective					*	*		*	*																																			
	Ag.Cr.716	Genetic Engineering	Elective						*	*			*	*		*	*	*										*																			
	Env.203	Geological Environment	Elective							*			*	*		*	*	*	*										*																		
	Ag.Fo.710	Land Use and Land Cover Classification	Elective												*				*									*																			
	Ag.H.736	Urban Afforestation	Elective					*	*	*			*														*			*	*							*							*		
	Ag.Co.703	Computer Applications 3	Basic													*												*			*							*	*	*							
	Ag.Co.715	Research Methodology 2	Basic													*	*	*	*									*	*					*			*		*	*		*		*		*	
	Ag.Fo.701	Seminars 3	Basic																									*			*			*										*			