Republic of Iraq
Ministry of higher education & scientific research
Supervision and scientific evaluation directorate
Quality assurance and academic accreditation

Academic Program Specification Form
For The Academic

University: Northern Technical University
College: Technical Agricultural College of Mosul
Department: Plant Production Techniques
Date of form completion: 8/1/2024

Signature

Assit. Prof. Dr. Fahad khalaf yassen
Head of Department
Date: 8 / 1 / 2024

Signature

Assit. Lec. Mahmood Shaker Mahmood
Dean`s Assistant for Scientific Affairs
Date: 8 / 1 / 2024

Assit. Lec. Haneen Mowfak Ahmeed
Quality Assurance and University Performance Manager

Date: 8 / 1 / 2024
Signature

صادق

The Dean
Prof. Dr. Shihab Ahmed Yossuf

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme

1. Teaching Institution	Northern Technical University
2. University Department/Centre	Technical Agricultural College
3. Programme Title	Plant Production Techniques
4. Title of Final Award	Bachelor
5. Modes of Attendance offered	Quarterly
6. Accreditation	non
7. Other external influences	There is a close relationship with the labor market that receives our graduates, as the labor market and its needs are monitored and compared with the school curricula and through communication with official and semi-official departments focusing on agriculture in those departments, as the curricula are updated accordingly.
8. Date of production/revision of this specificatio	9 / 1 / 2024

9. Aims of the Programme: The program aims to prepare qualified technical staff who possess some qualities such as:

• Technical qualifications that enable them to enter the labor market efficiently. Providing specialized knowledge in the principles of agricultural engineering techniques through learning the disciplines of plants, soil sciences, horticulture, field crops, the environment and life technologies, in addition to agricultural extension and economics, in addition to modern methods and methods in dry agriculture, water regulation and conservation.

• High skills in various agricultural sciences and disciplines that are able

to deal with work requirements using modern technical methods and develop the specialized skills needed in the implementation and design of laboratory and field projects, in addition to developing the ability to address problems that occur using the latest methods used at the global level.

• Enhancing the concepts of qualitative and quantitative excellence in order to achieve quality standards and scientific efficiency.

• Communication skills and developing the ability to organize and present information effectively, whether oral or written, or using video and audio means of communication.

•Preparing the graduate to be successful in completing his scientific career by obtaining post-bachelor certificates and providing broad attention to the problems that arise in professional practice, including teamwork, leadership, occupational safety, ethics, service and economics.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Knowledge and Understanding

A1. Creating and preparing qualified technical staff in the field of plant life techniques in the fields of plant improvement and propagation, production of field and horticultural crops, and plant protection from pests and diseases.

A2. The ability to graduate a cadre capable of working in the specialized axes in the science of plant biotechnologies, as follows:
- Genetic engineering programs to improve genetic assets.
- Projects for the production of field and horticultural crops and the management of their fields.
- Beekeeping projects.
- Work in laboratories for testing, certification and purification of grains.

A3. Design and management of field nurseries, shades and various greenhouses.

A4 . Participation in the preparation and design of agricultural fields and the use of various appropriate applications.

B. Subject-specific skills

B1 - The ability to design and conduct experiments.

B 2 - The ability to carry out agricultural work in the fields and

laboratories.
B 3 - The ability to manage agricultural fields and projects using the latest modern technical methods.
B 4- The ability to use technological applications and tools and modern technology to accomplish the necessary tasks.

Teaching and Learning Methods

•lecture.

• Laboratory.

• Views fields and orchards.

•summer training

Assessment methods

• Oral exams.

• Daily exams.

• Practical exams.

• Quarterly exams.

•final exams.

• Practical projects.

C. Thinking Skills
C1- Brainstorming.
C - the ability to analyze.
C 3- The ability to solve problems.
C4 - the ability to infer.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D 1- The ability to work in a team.
D2 - the ability to communicate effectively.
D3 - Effective influence in society and the labor market through training and development programs related to specialization at various levels.

Teaching and Learning Methods
- lecture. - Laboratory. - Views fields and orchards. - summer training.
Assessment Methods
•Oral exams. •Daily exams. •Practical exams. •Quarterly exams. •final exams. •Practical projects.

11. Programme Structure

Level/ Year	Course or Module Code	Course or Module Title	Credit rating	
			Theory	Practical
First	…..	Plant Production Techniques	**22 h/week**	**27 h/week**
Second	…..	Plant Production Techniques	**19 h/week**	**34 h/week**
Third	…..	Plant Production Techniques	**17 h/week**	**28 h/week**
Fourth	……	Plant Production Techniques	**22 h/week**	**27 h/week**

Study Level (First)						
Compulsory Courses						
Type of Requirement	**Course Name**	**Number of theoretical hours**	**Number of practical hours**	**Number of Units**	**Smoother, if any**	**Code**
	In English					
University Requirements	**Human Rights and Democracy**	**2**	**0**	**2**		**NTU100**
	Baath Party crimes	**2**	**0**	**2**		**NTU 106**
	English language (1)	**2**	**0**	**2**		**NTU101**
	Computer Principles(1)	**1**	**1**	**2**		**NTU102**
	Computer Principles(2)	**1**	**1**	**2**		**NTU103**
	Arabic Language	**2**	**0**	**2**		**NTU104**

	Elective			2		NTU
College Requirements	Mathematics	1	0	1		TAMO101
	Engineering Drawing	0	3	1		TAMO102
	Plane surveying	1	3	2		TAMO103
	General Chemistry	1	3	2		TAMO104
	Elective	2	0	2		FINE
Department Requirements	General Botany	1	3	2		PLP 101
	Principles of Soil Sciences	2	3	3		PLP 102
	Principles of Horticulture	2	3	3		PLP 103
	Plant anatomy	1	3	2		PLP 104
	Pollution and Environment	1	2	2		PLP 105
	Elective			3		PLP
	Elective			3		PLP
	Elective			2		PLP
Total units of the academic level		22	27	37		

Study Level (First)						
Elective Courses						
Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
University Requirements	Sport	1	1	2		NTU104
	French Language	2	0	2		NTU105
College Requirements	Economies Natural Resources	2	0	2		TAMO151
	Agricultural Extension	2	0	2		TAMO152
Department Requirements	Laboratory Techniques	0	3	1		PLP 151

	Cytology	1	3	2		PLP 152
	Microbiology	1	3	2		PLP 153
	General Insects	1	3	2		PLP 154
	Cilviculture	1	2	2		PLP 155
	Seeds Storage	1	2	2		PLP 156
	Sustainable Agriculture	1	0	1		PLP 157
	Desert Plants	1	2	2		PLP 158
Total units of the academic level		14	19	22		
Required Units				10		

Study Level (Second))						
Compulsory Courses						
Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
University Requirements	English language (2)	2	0	2		NTU200
	Professional ethies	2	0	2		NTU204
College Requirements	Organic Chemistry	2	3	3	TAMO104	TAMO201
	Agriculture Statistics	1	2	2		TAMO202
	Elective			2		FINE
Department Requirements	Cereal and Legume Winter Crops	1	3	2		PLP 201
	Deciduous Fruit Trees	2	2	2	PLP 103	PLP 202
	Production of Winter Vegetables	1	3	2	PLP 103	PLP 203

	Plant Physiology	1	3	2	PLP 101	PLP 204
	Fertility and Fertilization	2	3	3	PLP 102	PLP 205
	Nurseries and Plant Propagation	1	3	2	PLP 103	PLP 206
	Evergreen Fruit Trees	1	3	2	PLP 202	PLP 207
	Production of Summer Vegetables	1	3	2	PLP 203	PLP 208
	Cereal and Legume Summer Crops	1	3	2	PLP 201	PLP 209
	Tractors and Agricultural Equipment	1	3	2		PLP 210
	Summer Training (1)					PLP 211
	Elective			2		PLP
	Elective			2		PLP
	Elective			2		PLP
Total units of the academic level		19	34	38		

Study Level (Second)						
Elective Courses						
Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
College Requirements	Agro nanotechnology	1	2	2		TAMMOTO51
	Food Industry	1	3	2		FINE252
Department Requirements	Plant Taxonomy	1	2	2	PLP 101	PLP 251
	Date Palm Propagation	1	3	2	PLP 103	PLP 252
	Forestry	1	2	2		PLP 253
	Irrigation Techniques	1	2	2		PLP 254
	Soil and Plant	1	3	2	PLP 102	PLP 255

	Analysis					
	Analytical Chemistry	1	3	2		PLP 256
	Water Harvesting	1	2	2		PLP 257
	Breeding and Pruning of Fruit Trees	1	2	2	PLP 103	PLP 258
Total units of the academic level		10	24	20		
Required Units				8		

Study Level (third)						
Compulsory Courses						
Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
University Requirements	English language (3)	2	0	2		NTU 301
College Requirements	Computer Applications (3)	1	2	2		TAMO301
	Biochemistry	2	3	3	TAMO104	TAMO302
	Elective			2		FINE
Department Requirements	Principles of Genetics	2	3	3		PLP 301
	Plant Nutrition	1	3	2		PLP 302
	Protected Agriculture Techniques	٢	3	٣	PLP 103	PLP 303
	Decoration Plants	2	2	3		PLP 304
	Plant Growth Regulators	1	3	2		PLP 305
	Molecular Genetics	1	2	2	PLP 301	PLP 306
	Industrial Crops	1	2	2		PLP 307
	Post-Harvest physiology	1	2	2		PLP 308
	Useful Insects	1	3	2	PLP 154	PLP 309

	Summer Training (2)				PLP 211	PLP 310
	Elective			3		PLP
	Elective			2		PLP
	Elective			2		PLP
Total units of the academic level		17	28	36		

Study Level (third)						
Elective Courses						
Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
College Requirements	Recycling of Agricultural Wastes	1	2	2		TAMO٥١
	Organic Agriculture	1	2	2		TAMOA٥٢
Department Requirements	Plant Pathology	١	٣	٢		PLP 351
	Forage Crops	١	٢	٢		PLP 352
	Grape Production	١	٣	٢		PLP 353
	Pasture Management	١	٢	٢		PLP 354
	Horticultural Crop Industry	١	٢	٢		PLP 355
	Seeds Production	١	٣	٢		PLP 356
	Harvesting Equipments	١	٢	٢		PLP 357
	Seeds Storage	١	٢	٢		PLP 358
	Economical Entomology	١	٢	٢		PLP 359
	Wood Chemistry	١	٢	٢		PLP 360
	Wood Industry	١	٢	٢		PLP 361
	Modern planting techniques	١	٢	٢		PLP 362
	Automateed analysis methods	٠	٣	١		PLP 363
Total units of the academic level		16	34	31		

Required Units			8		

Study Level (Fourth)						
Compulsory Courses						
Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
University Requirements	English language (4)	2	0	2		NTU 401
	Scientific research methodology	2	0	2		NTU400
College Requirements	Experimental Design	1	3	2	TAMO202	TAMO401
	Computer Applications (4)	1	3	2		TAMO402
	Elective	2	0	2		FINE
Department Requirements	Plant Breeding(1)	2	2	٣		PLP 401
	Medical Plants	1	2	2		PLP 402
	Crop Quality	2	2	3	PLP 201	PLP 403
	Weeds Control	1	2	2		PLP 404
	Plant Breeding(2)	2	2	3	PLP 401	PLP 405
	Plant Tissue Culture	2	2	3	PLP 101	PLP 406
	landscape Design	2	3	3	PLP 304	PLP 407
	Seminar and Project (1)	1	3	2		PLP 408
	Seminar and Project (2)	1	3	2	PLP 408	PLP 409
	Elective			2		PLP
	Elective			2		PLP
	Elective			2		PLP
Total units of the academic level		22	27	39		

Academic Level (Fourth) Elective Courses

Type of Requirement	Course Name In English	Number of theoretical hours	Number of practical hours	Number of Units	Smoother, if any	Code
College Requirements	Safety	2	0	2		TAMO451
	Agricultural marketing	2	0	2		TAMO452
Department Requirements	Bio Fertilizers	1	2	2		PLP451
	Seed Technology	1	2	2	PLP356	PLP452
	Biological Control	1	2	2		PLP453
	Biotechnologies	1	2	2		PLP454
	Farm Management	1	2	2		PLP455
	Natural Products	1	2	2		PLP456
	Storage Pests and Control	1	3	2	PLP154	PLP457
	Conservation Agriculture	1	2	2		PLP458
	Post-Harvest Techniques	1	2	2		PLP459
Total units of the academic level		13	19	٢٤		
Required Units				٨		

12. Personal Development Planning

The faculty members must be within the established staff and according to the ratio of students to the number of faculty members. Efficiency must have a role to cover all curricula, and there must be an ability to manage the institute sufficiently to accommodate levels of interaction, student guidance, counseling, university, professional and development services activities and interaction With practitioners and professionals as well as employers.

13. Admission criteria

• Average for graduates of the preparatory school / scientific stream.

14. Key sources of information about the programmer

-Head of the department.
-Renewal of specialization.
-The technical trainer in the department.

13.Personal Development Planning

Faculty members must be within the prescribed staff and according to the ratio of students to the number of faculty members and must Competence should have a role to cover all curricula, There must be a capacity to manage the college adequately to accommodate levels of interaction, student counseling, counseling, university, vocational and developmental service activities, and interaction with practitioners and professionals as well as employers.

14.Admission criteria

- Average for graduates of preparatory school / scientific branch / agricultural vocational branch.

15. Key sources of information about the programme

1- Book and textbook
2- Scientific catalogues
3- Scientific research and publishing paper
4- Internet

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
Programme Learning Outcomes																			
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skil				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
First	**NTU 100**	**Human Rights and Democracy**	O			√		√	√			√						√	
	NTU 106	**Baath Party crimes**	O		√					√		√				√			
	NTU 101	**English language (1)**	O			√		√	√	√			√					√	
	NTU 102	**Computer Principles(1)**	O	√										√		√			
	NTU 103	**Computer Principles(2)**	O		√							√				√			
	NTU 104	**Arabic Language**	O	√								√					√		
	NTU	**Elective**	O	√								√					√		
	TAMO 101	**Mathematics**	O			√		√	√				√			√			
	TAMO 102	**Engineering Drawing**	O	√								√						√	
	TAMO 103	**Plane surveying**	C		√							√							
	TAMO 104	**General Chemistry**	C	√										√				√	
	TAMO	**Elective**	C		√					√			√				√		
	PLP 101	**General Botany**	C	√								√				√			
	PLP	**Principles of**	C	√									√			√			

	102	**Soil Sciences**																	
	PLP 103	**Principles of Horticulture**	C			√		√	√	√		√						√	
	PLP 104	**Plant anatomy**	C											√				√	
	PLP 105	**Pollution and Environment**	C	√									√				√		
	PLP	**Elective**	C			√		√	√	√		√						√	
	PLP	**Elective**	C	√									√				√		
	PLP	**Elective**	C	√									√				√		
Second	**NTU200**	**English language (2)**	O	√				√				√					√		
	NTU204	**Professional ethies**	O	√					√				√						
	TAMO 201	**Organic Chemistry**	C	√				√					√				√		
	TAMO 202	**Agriculture Statistics**	C		√			√				√				√			
	FINE	**Elective**	C	√						√			√				√		
	PLP 201	Cereal and Legume Winter Crops	C		√					√		√				√			
	PLP 202	Deciduous Fruit Trees	C		√			√				√					√		
	PLP 203	Production of Winter Vegetables	C	√				√					√				√		
	PLP 204	Plant Physiology	C		√			√						√		√			
	PLP 205	Fertility and Fertilization	C		√					√			√			√			
	PLP 206	Nurseries and Plant Propagation	C	√					√				√			√			
	PLP 207	Evergreen Fruit Trees	C		√				√			√						√	
	PLP 208	Production of Summer Vegetables	C			√				√			√			√			

	PLP 209	Cereal and Legume Summer Crops	O	√					√				√				√		
	PLP 210	Tractors and Agricultural Equipment	O		√				√			√						√	
	PLP 211	**Summer Training (1)**	C			√				√			√			√			
	PLP	Plant Diseases	C		√					√				√				√	
	PLP	Protected Agriculture	C	√				√				√					√		
	PLP	Biochemistry	C		√					√				√				√	
Third	**NTU 301**	**English language (3)**	O	√				√				√						√	
	TAMO 301	**Computer Applications (3)**	O	√					√			√				√			
	TAMO 302	**Biochemistry**	C		√					√			√				√		
	FINE	**Elective**	C	√				√				√					√		
	PLP 301	**Principles of Genetics**	C	√				√				√				√			
	PLP 302	**Plant Nutrition**	C			√			√				√					√	
	PLP 303	**Protected Agriculture Techniques**	C	√				√				√				√			
	PLP 304	**Decoration Plants**	C			√			√				√					√	
	PLP 305	**Plant Growth Regulators**	C	√				√				√				√			
	PLP 306	**Molecular Genetics**	O			√			√				√					√	
	PLP 307	**Industrial Crops**	O		√			√				√				√			
	PLP 308	**Post-Harvest physiology**	C																
	PLP	**Useful**	C	√						√			√					√	

	309	**Insects**																	
	PLP 310	**Summer Training (2)**	C	√				√					√				√		
	PLP	**Elective**	C		√			√						√			√		
	PLP	**Elective**	C	√					√				√			√			
	PLP	**Elective**	C		√			√								√			
Fourth	**NTU 401**	**English language (4)**	O	√					√				√			√			
	NTU400	**Scientific research methodology**	O		√			√						√		√			
	TAMO 401	**Experimental Design**	C	√					√				√				√		
	TAMO 402	**Computer Applications (4)**	O		√			√				√				√			
	FINE	**Elective**	C	√						√				√				√	
	PLP 401	**Plant Breeding(1)**	C			√			√			√				√			
	PLP 402	**Medical Plants**	C	√				√					√				√		
	PLP 403	**Crop Quality**	C		√			√								√			
	PLP 404	**Weeds Control**	C		√				√					√			√		
	PLP 405	**Plant Breeding(2)**	C			√				√			√			√			
	PLP 406	**Plant Tissue Culture**	C		√			√				√				√			
	PLP 407	**landscape Design**	C	√					√				√					√	
	PLP 408	**Seminar and Project (1)**	C		√			√					√					√	
	PLP 409	**Seminar and Project (2)**	C	√					√					√				√	
	PLP	**Elective**	C	√					√				√				√		
	PLP	**Elective**	C	√					√				√				√		
	PLP	**Elective**	C	√					√				√				√		

Course Description Form

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

1. Educational institution	**Northern Technical University**
2. Scientific Department / Center	**Plant Production Techniques**
3. Course Name/Code	**General Botany/PLP 101**
4. Available Attendance Forms	**Theoretical , Practical**
5. Courses /Year	**Courses**
6. Number of credit hours (total)	**٦٠ h**
7. Date of preparation of this description	**٩/1/20٢٤**
8. Course Objectives 1- Teaching and training the student to know its plant classification . 2- Teaching and training the student to take plants tissue.	

9. Course Outcomes and Methods of Teaching, Learning and Assessment
A - Cognitive objectives A1- The student has knowledge about dry areas and their nature A2- Identify the available techniques to cope with drought A3- Identifying the nature of plants and their types and the extent to which they are affected by the environment of this region. **B - Skills objectives of the course.** B1- The use of techniques to confront desertification and moisture tension B2- The possibility of managing agricultural and livestock activity in dry

agriculture areas in order to achieve the best possible efficiency
B3- Developing means, equipment and machinery in line with the nature of dry areas

C- Emotional and value goals

C1- What the student studies should be commensurate with his tendencies and thinking directions
C2- The student should feel the importance of correcting refractive errors in the eye
C3- The student should listen carefully to the professor's explanation
C4- The student should feel what cognitive excellence and excellence mean
C5- The student should know the impact of science and scientists
C6- The student should care about respecting the time and class system

D- General and qualifying skills transferred (other skills related to employability and personal development).

D1- Types of communication in the field of work
D2- The ability to express and convey ideas clearly and confidently
D3- Teamwork.

10. Teaching and learning methods

Theoretical , Practical, Summer Training

11. **Assessment methods**

1- Theoretical exams (daily, monthly, final)
2- Oral examinations
3- Participation inside the hall
4- Homework

12. Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Unit / Subject Name**	**Method of education**	**Evaluation method**
1	1	Student learning on the primary classification	Kingdom monerans	theoretical	Exams
2	1	The student learned to read the Euglena	Structure of euglena	theoretical	Exams
3	1	The student learned fungi	Fungi	theoretical	Exams
4	1	The student learned the plant kingdom	Plant kingdom	theoretical	Exams
5	1	The student learned vascular plants	Vascular plant	theoretical	Exams
6	1	The student learned Cell Structure	Cell Structure	theoretical	Exams
7	1	The student learning Cell division	Cell division	theoretical	Exams
8	1	The student learned the classification of flowering plants	Flower plant	theoretical	Exams
9	1	Student learn the roots of plants	Root system	theoretical	Exams
10	1	The student learned stem buds	Structure of stem ,buds	theoretical	Exams
11	1	Student learning Leaf Structure	Leaf Structure	theoretical	Exams
12	1	The student learns about the types of flowers	Flowers	theoretical	Exams
13	1	The student learned about fruits and seeds	Fruits and seeds	theoretical	Exams
14	1	The student learned to leaves and photosynthesis	Energy transfer in green leaves, stromata	theoretical	Exams
15	1	The student learned Seed germination	Seed germination	theoretical	Exams

Course Structure					
The week	**Hours**	**Required Learning Outcomes**	**Unit / Subject Name**	**Method of education**	**Evaluation method**
1	3	The student learned plant classification	Plant classification	Practical	Exams
2	3	The student learned microscope	Microscope	Practical	Exams
3	3	The student learned Cell division	Cell division	Practical	Exams
4	3	The student learned the chemical compound	Chemical compound of plant	Practical	Exams
5	3	The student learned to about plants body	Plant body	Practical	Exams
6	3	The student learned about Gymnosperm plants	Gymnosperm plant	Practical	Exams
7	3	Student learning about Angiosperm plants	Angiosperm plant	Practical	Exams
8	3	The student learns osmosis	Experiment about diffusion and osmosis	Practical	Exams
9	3	The student learns Absorption and transport of water	Absorption and transport of water	Practical	Exams
10	3	The student learns Transport across cell membranes membranes	Transport across cell membranes	Practical	Exams
11	3	The student learned about plant tissues in roots,stem	Anotomy of roots,stem, leaves and flowers	Practical	Exams
12	3	The student learns through watching research through films	Show scientific films	Practical	Exams
13	3	The student learned Seed structure	Seed structure and germination	Practical	Exams
14	3	The student learns about Vegetative reproduction	Vegetative reproduction	Practical	Exams
15	3	The student learns	Plant hormones	Practical	Exams

		Plant hormones			

13. Infrastructure	
1 Required textbooks	**General Botany**
2 Main references (sources)	**General Botany**
Recommended books and references (scientific journals, reports ,....)	
B Electronic references, websites	

14. Course Development Plan
1. Access to modern scientific literature. 2. Participation in relevant scientific conferences 3. Scientific laboratories with other universities.

Link of department

https://ntu.edu.iq/ar/%D8%A8%D9%83%D9%84%D9%88%D8%B1%D9%8A%D9%88%D8%B3-%D9%82%D8%B3%D9%85-%D8%AA%D9%82%D9%86%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D8%A7%D9%86%D8%AA%D8%A7%D8%AC-%D8%A7%D9%84%D9%86%D8%A8%D8%A7%D8%AA%D9%8A/