وزارة التعليم العالي والبحث العلمي
جهاز الإشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي
قسم الاعتماد

Guide to Describing the Academic Program and the Course

2024

Introduction:

The educational program is an organized package of courses that includes procedures and experiences organized in the form of study vocabulary. Its main purpose is to build and refine the skills of graduates, making them qualified to meet the labor market requirements. It is reviewed and evaluated annually through internal and external audit procedures and programs like the external examiner program.

The description of the academic program provides a summary of the program's main features and its courses, showing the skills that students are working on acquiring, based on the goals of the academic program. This description is important because it represents the cornerstone in obtaining program accreditation, and the teaching staff participates in writing it under the supervision of scientific committees in the scientific departments.

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the developments in the educational system in Iraq, which included a description of the academic program in its traditional form (annual, semester), as well as adopting a generalized description of the academic program according to the Department of Studies' book No. 3/2906 dated May 3, 2023, regarding programs that rely on the Bologna path as a basis for their work.

In this regard, we cannot but emphasize the importance of writing a description of academic programs and courses to ensure the smooth running of the educational process.

Concepts and Terms:

- **Description of the academic program:** It provides a concise summary of its vision, mission, and goals, including an accurate description of the targeted learning outcomes according to specific learning strategies.
- **Course Description:** It provides a concise summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether they have made the most of the available learning opportunities. It is derived from the program description.
- **Program Vision:** An ambitious picture of the future of the academic program to be a developed, inspiring, motivating, realistic, and applicable program.
- **Program Message:** It briefly explains the goals and activities necessary to achieve them, and defines the program's development paths and directions.
- **Program Goals:** These phrases describe what the academic program intends to achieve within a specified period and are measurable and observable.
- **Curriculum Structure:** All courses/subjects included in the academic program according to the adopted learning system (semester, annual, Bologna path), whether they are required (ministry, university, college, and scientific department) with the number of study units.
- **Learning Outcomes:** A compatible set of knowledge, skills, and values that the student acquired after completing the academic program, and the learning outcomes for each course must be determined in a way that achieves the program's goals.
    - **Teaching and Learning Strategies:** These are the strategies used by the faculty member to develop student teaching and learning, and they are plans that are followed to reach learning goals. That is, it describes all classroom and extracurricular activities to achieve the learning outcomes of the program.

Academic Program Description Template

- **University Name:** Northern Technical University
- **College/Institute:** College of Agricultural Technology / Mosul
- **Scientific Department:** Department of Animal Production Techniques
- **Name of the academic or professional program:** Bachelor of Technical Animal Production
- **Final Certificate Name:** Bachelor of Technical Animal Production
- **Educational System:** Courses
- **Description Preparation Date:** January 8, 2024
- **File Completion Date:** January 8, 2024

Signature : 

Head of Depart : Asso. Prof . Dr. Donea Abdullrazak

Date : 8/01/2024

Signature : 

Assit. Lec. Mahmood Shaker Mahmood Dean's Assistant for Scientific Affairs

Date : 8/01/2024

File Checked by:

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Assit. Lec. Haneen Mowfak Ahmeed
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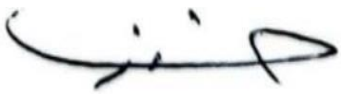
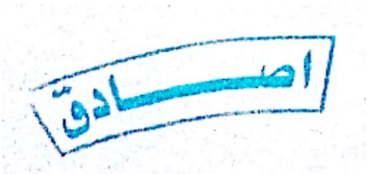
Signature: 



Approval of the Dean

Prof. Dr. Shihab Ahmed Yossuf

1. Program Vision:

The Department of Animal Production Technologies, with its advanced scientific cadres, laboratories, fields, farms, and projects, seeks to be a scientific center that works to develop the reality of animal wealth in Iraq by supplying the labor market with technical agricultural engineering cadres.

2. Program Message:

The Department of Animal Production Technologies is committed to graduating technical agricultural engineering cadres with bachelor's and master's degrees who are ready to enter the labor market with confidence, as they possess the skills and capabilities to work in and manage animal production projects.

3. Program Goals:

The Department of Animal Production Technologies aims, through developing curricula and providing model laboratories, animal fields, fish hatcheries, and fish farms, to graduate qualified cadres to work in:

- Managing hatcheries and poultry fields.
- Managing sheep and calf fattening projects.
- Managing milk production and manufacturing projects.
- Managing hatcheries and fish farms.
- Training and developing the skills of workers in the animal production sector.
- Developing the reality of animal nutrition and feed alternatives.
- Providing scientific and practical advice to breeders and those interested in the animal production sector.

4. Program Accreditation

Not available

5. Other External Influences:

There is a close relationship with the labor market that receives our graduates. We monitor the labor market and its needs and compare them with the curricula. This is done through

communication with official bodies, focusing on the agricultural program implemented in those bodies. Based on this, the curricula are updated.

6. Program Structure:				
Program Structure	**Number of Courses**	**Study Unite**	**Unite Percentages**	**Notes**
Institutional Requirements	**11**	22	**%14.66**	
College Requirements	**14**	28	**%16**	
Department Requirements	**41**	100	**%69.33**	
Summer Training	Available			
Other				

*Notes may include whether the course is basic or optional.

1. وصف البرنامج				
السنة / المستوى	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة	
2023-2024 / الثانية		تغذية حيوان	نظري+ عملي	2نظري +3 عملي

7. Programme Structure				
Level/Year	**Module Code**	**Course or Module Title**	**Credit rating**	
			Theor.	**Pract.**
First Level	**---**	**Animal Production**	**16h/Weekly/Autumn 11h/Weekly/Spring**	**28h/Weekly/fall 13h/Weekly/spring**
Second Level	**---**	**Animal Production**	**13h/Weekly/ Autumn 15h/Weekly/ Spring**	**17h/Weekly/fall 19h/Weekly/spring**
Third Level	**---**	**Animal Production**	**13h/Weekly/ Autumn 13h/Weekly/ Spring**	**21h/Weekly/fall 20h/Weekly/spring**

Fourth Level	**---**	**Animal Production**	**13h/Weekly/ Autumn 11h/Weekly/ Spring**	**20h/Weekly/fall 19h/Weekly/spring**

8. **Learning Outcomes, Teaching, Learning and Assessment Methods**
A1. Knowledge and Understanding:
A1. Learn about the types of animals and how to raise them A2. Learn how to manage farm animals A3. Learn about animal feeding methods and types of feed A4. Identify the types of fields. A5.Identify diseases that affect animals and ways to treat them
B. Subject-specific skills:
B1. Carrying out animal husbandry, fattening, and increasing livestock production B2. The ability to manage farms B3. Using modern technologies in feeding animals B4. The ability to care for animals and ways to treat them
C.Thinking Skills:
C1. Self-learning (through assignments to prepare reports on farm animals and breeding methods) C2. Education and training on collective participation and voluntary work in how to collect information C3. Enhancing professional behavior with owners aimed at building a good relationship to provide the best services.
9. Teaching and Learning Methods
Theoretical lectures, seminars, scientific developments, practical training in laboratories, scientific films, animal and poultry projects, systematic training in the fields, and summer training.
10. Assessment methods

Daily editorial tests, class participation, quarterly and final exams (theoretical + practical), reporting, seminars, practical tests in the fields, and practical tests in the laboratory and the field.

11. Teaching Staff				
Academic Rank	**General Specialization**	**Special Specialization**	**Number of Faculty Members**	
			Full Time	
Assistant Professor	**Veterinary Medicine and Surgery**	**Veterinary Parasitology**	*	
Assistant Professor	**Veterinary Medicine and Surgery**	**Microbiology**	*	
Assistant Professor	**Veterinary Medicine and Surgery**	**Internal and Preventive Medicine**	*	
Assistant Professor	**Veterinary Medicine and Surgery**	**Biochemistry**	*	
Lecturer	**Animal Production Sciences**	**Animal Production Sciences**	*	
Lecturer	**Chemistry**	**Analytical**	*	
Lecturer	**Food Industries**	**Food Industries**	*	
Assistant Lecturer	**Animal Production Sciences**	**Animal Production Sciences**	*	
Assistant Lecturer	**Animal Production Sciences**	**Animal Production Sciences**	*	

Assistant Lecturer	**Animal Production Sciences**	**Animal Production Sciences**	*	
Assistant Lecturer	**Animal Production Sciences**	**Animal Production Sciences**	*	
Assistant Lecturer	**Animal Production Sciences**	**Animal Production Sciences**	*	

Professional Development

There is a close relationship with the labor market that receives our graduates. We monitor the labor market and its needs and compare them with the curricula. This is done through communication with official bodies, focusing on the agricultural program implemented in those bodies. Based on this, the curricula are updated.

Professional Development for Faculty Members

Professional development for new faculty members is essential to ensure the quality of education and enhance their teaching and academic research skills. They are developed through several strategies and programs:

1. **Mentoring and guidance programs:**
2. **Training workshops:**
3. **Training courses in scientific research:**
4. **Continuous learning:**
5. **Training on the use of educational technologies:**
6. **Teaching evaluation and feedback:**
7. **Encouraging innovation in education:**

12. Admission Criteria

- **Grade Point Average (GPA):**
- **Scientific and vocational branches:**
- **Desired:**

13. Most important sources of information about the program

Sources of information about the program can be varied and come from several official and unofficial sources:

1. **The college or university website:**
2. **Student academic guide:**
3. **Academic advisor:**
4. **Books and scientific references:**
5. **Faculty members:**
6. **Scientific conferences and workshops:**

14. Program Development Plan

- **Reviewing the latest scientific literature:**
- **Participating in relevant scientific conferences:**
- **Partially relieving the teaching and training staff to apply and work in the fields and veterinary hospitals:**
- **Hosting specialized professors:**
- **Scientific pairing with other universities and corresponding colleges**
- **Analyzing and evaluating current curricula:**
- **Updating curricula:**
- **Promoting scientific research:**
- **Developing the capabilities of faculty members:**

Curriculum Skills Map																					
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																					
Nursing Branch				Programme Learning Outcomes																	
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to					
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4		
first Level		Democracy and	Gen	√	√			√	√			√	√			√	√				
		English Language	Gen	√	√			√	√			√	√			√	√				
		Arabic Language	Gen	√	√			√	√			√	√			√	√				
		Computer	Assist	√	√			√	√			√	√			√	√				
		Mathematics	Assist	√	√			√	√			√	√			√	√				
		Engineering	Assist	√	√			√	√			√	√			√	√				
		Plane Surveying	Assist	√	√			√	√			√	√			√	√				
		Agricultural	Assist	√	√			√	√			√	√			√	√				
		Natural Resource	Assist	√	√			√	√			√	√			√	√				
		Zoology	Specialty	√	√			√	√			√	√			√	√				
		Principles of Animal	Specialty	√	√			√	√			√	√			√	√				
		Animal	Specialty	√	√			√	√			√	√			√	√				
		Poultry Production	Specialty	√	√			√	√			√	√			√	√				
		Feed and Food	Specialty	√	√			√	√			√	√			√	√				
		Sheep and Goat	Specialty	√	√			√	√			√	√			√	√				
		Animal	Spec																		
		Laboratory	Assist																		
		Forage Crops and Pastures																			
Second Level		Crimes of the Ba'ath Regime in Iraq	Gen	√		√		√		√		√		√		√		√			
		English Language	Gen	√		√		√		√		√		√		√		√			
		Arabic Language	Gen	√		√		√		√		√		√		√		√			
		Computer Science/IT	Assist	√		√		√		√		√		√		√		√			
		Professional Ethics	Gen	√		√		√		√		√		√		√		√			
		Agricultural Statistics	Assist	√		√		√		√		√		√		√		√			

		Organic Chemistry	Specialty	√		√		√		√		√		√		√		√	
		Ruminant Physiology	Specialty	√		√		√		√		√		√		√		√	
		Dairy Cattle Production	Specialty	√		√		√		√		√		√		√		√	
		Fish Environment and Biology	Specialty	√		√		√		√		√		√		√		√	
		Fish Production Techniques	Specialty	√		√		√		√		√		√		√		√	
		Physiology of Reproduction and	Specialty	√		√		√		√		√		√		√		√	
		Buffalo and Camel Production	Specialty	√	√			√	√			√	√			√	√		
		General Genetics	Specialty	√	√			√	√			√	√			√	√		
		Dairy Production Techniques	Specialty	√	√			√	√			√	√			√	√		
Third Level		Computer Applications (3)	Assist	√	√			√	√			√	√			√	√		
		Biochemistry	Assist	√	√			√	√			√	√			√	√		
		Animal Nutrition	Specialty	√	√			√	√			√	√			√	√		
		Mechanization of Animal Production	Specialty	√	√			√	√			√	√			√	√		
		Poultry Nutrition	Specialty	√	√			√	√			√	√			√	√		
		Fish Diseases	Specialty	√	√			√	√			√	√			√	√		
		Veterinary Pharmacology and	Assist	√	√			√	√			√	√			√	√		
		Poultry Physiology	Specialty	√	√			√	√			√	√			√	√		
		Animal Diseases	Specialty	√	√			√	√			√	√			√	√		
		Poultry Breeding and Improvement	Specialty	√	√			√	√			√	√			√	√		
		Histology and Embryology	Specialty	√	√			√	√			√	√			√	√		
Fourth Level		Scientific Research Methodology	General	√	√			√	√			√	√			√	√		
		Design and Analysis of Experiments	Assist	√		√		√		√		√		√		√		√	
		Computer Applications (4)	Assist	√		√		√		√		√		√		√		√	
		Embryo Transfer	Specialty	√		√		√		√		√		√		√		√	
		Animal Breeding and Improvement	Specialty	√		√		√		√		√		√		√		√	
		Wild and Ornamental Animals	Specialty	√		√		√		√		√		√		√		√	
		Seminar	Specialty	√		√		√		√		√		√		√		√	
		Poultry Diseases	Specialty	√		√		√		√		√		√		√		√	
		Beef Cattle Production	Specialty	√		√		√		√		√		√		√		√	

		Techniques of Establishing and Managing Farms	**Specialty**	√		√		√		√		√		√		√		√	
		Reproductive and Obstetrical Diseases	**Specialty**	√		√		√		√		√		√		√		√	
		Egg and Semen Techniques	**Specialty**	√		√		√		√		√		√		√		√	
		Feed Manufacturing	**Specialty**	√		√		√		√		√		√		√		√	
		Project	**Specialty**	√		√		√		√		√		√		√		√	
		Conservation of Genetic Resources	**Specialty**	√		√		√		√		√		√		√		√	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**General Chemistry**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**TAMO104**				
ECTS Credits	**3**				
SWL (hr/sem)	**5**				
Module Level		**First**	**Semester of Delivery**		**First**
Administering Department		**Animal Production**	**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title		Asst.prof	**Module Leader's Qualification**		**Ph.D.**
Module Tutor	Shihab Ahmed Youssef		**e-mail**	**De.shehab.unv.79@ntu.edu.iq**	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**01/06/2021**	**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Anatical Chemistry**	**Semester**	**Second**
Co-requisites module	**biochemistry**	**Semester**	**Third**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**The student becomes familiar with the classification of chemical elements, types of acids, salts, and bases and their properties, and is able to detect them.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	- **Identify solutions and methods of preparing them.** - **Identify the preparation of diluted and concentrated acids and stimulants.** - **Identify the principles of chromatographic analysis.**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** General Chemistry: You learn basic concepts such as atomic structure, electronic structure, ions, and forces operating between molecules.[10] Accurate analysis: To learn how to collect and extract a sample, analyze statistics, and use advanced technological measurements.[10] Thermodynamics and Kinetics: For practice in understanding the laws of thermodynamics and how they relate to chemical systems.[10] Spectrometry and Spectroscopy: Ratios between electromagnetic readings and matter have been discovered.[10].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- **The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل75 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	70	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	5	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Periodic classification of elements
Week 2	Atomic structure
Week 3	Electronic distribution of atoms in the periodic table
Week 4	Electronic theory of valence
Week 5	Chemical bonds
Week 6	Acids base and salts
Week 7	Reduction and oxidation reactions
Week 8	Balancing in acidic and basic media
Week 9	Standard electrode voltage
Week 10	Nuclear chemistry
Week 11	The predominant nonmetallic elements

Week 12	**Ideal gases**
Week 13	**Halogens, their properties and preparation, general properties of group six elements**
Week 14	**General characteristics of the elements in the fifth group**
Week 15	**General properties of the elements in group four**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	**A visit to the chemistry laboratory and learning about the devices and equipment**
Week 2	**Safety in chemical laboratories, dealing with chemicals (simple distillation, crystallization and filtration)**
Week 3	**Use of some laboratory equipment**
Week 4	**Data processing and results**
Week 5	**Estimate the boiling point**
Week 6	**Estimation of melting point**
Week 7	**Purification of chemical materials (simple distillation, crystallization and filtration)**
Week 8	**Estimation of dissolution yield**
Week 9	**Determination of molecular weight by the Victormier method**
Week 10	**Estimating the molecular weights of non-ionized substances**
Week 11	**Estimation of equivalent weights (electrochemical method)**
Week 12	**Estimation of equivalent weights (electrochemical method)**
Week 13	**Estimating the reaction rate**
Week 14	**Estimation of chemical equilibrium**
Week 15	**Estimation of chemical equilibrium**
Week 16	**Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**General chemistry,2014** **مبادئ الكيمياء العامة ,د.محي الدين البكوش 2024**	Yes
Recommended Texts	**General Chemistry,2020**	No
Websites	https://praxilabs.com/arabic/blog/6-most-important-chemistry-laws/	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Arabic Language			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**104NTU**				
ECTS Credits	**2**				
SWL (hr/se3m)	**2**				
Module Level	First		**Semester of Delivery**	**Semester**	
Administering Department	Animal production		**College**	Technical Agricultural College	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Amina mahir azeez		**e-mail**	Amina.mahir@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1- Preparing students who have the ability to pronounce correctly and write without errors as much as possible. 2- Encouraging the student to follow correct spelling rules. 3 - Paying attention to punctuation marks and how to use them in writing.
Module Learning Outcomes	-1 Learn about the basic and important rules of the Arabic language. -2 Focus on correct spelling rules. -3 Paying attention to a lot of reading and reading. To train the student on correct pronunciation and writing without errors as much as possible.
Indicative Contents	Instructional content includes the following: _ Alert students to common linguistic errors, as well as benefit from correcting these errors in their formal and informal writing. (4 hours. _ Knowing the necessary spelling rules. (4 hours _ Knowing punctuation marks and how to use them. (4 hours.

	Part B - practical part

Learning and Teaching Strategies	
Strategies	1- Providing students with the basics and lectures related to the subject. 2- Use slide presentation methods to convey information more clearly. 3 -Urging students to read, read, and go to libraries.

Student Workload (SWL)			
Structured SWL (h/sem)	15	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)		**Unstructured SWL (h/w)**	
Total SWL (h/sem)	15		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The concept of linguistic errors
Week 2	Rules for writing open ta's and open ta's
Week 3	The elongated alif and the short alif
Week 4	Solar letters and lunar letters
Week 5	Dhaad and Dhaa
Week 6	Writing the hamza: connecting and cutting, the middle hamza, the extreme hamza
Week 7	punctuation marks
Week 8	Exam
Week 9	The noun, the verb, and the difference between them
Week 10	The object, the absolute object, the object for its sake, the object in it, and the object with it
Week 11	Formal aspects of administrative discourse, the language of administrative discourse

Week 12	the number
Week 13	Applications of common linguistic errors
Week 14	Meanings of prepositions, the rule of alif al-fariqa, the rule of nun and tanween
Week 15	Exam
Week 16	Review the material before the final exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	Clear Dictation, Abdul Majeed Al-Naimi, Dahham Al-Kayyal, Dar Al-Mutanabbi Library, Baghdad, 6th edition, 1987 AD.	No
Recommended Texts	Lessons in language, grammar, and dictation for state employees, Ismail Hamoud Atwan and others, Ministry of Education Press No. (3), Baghdad, 2nd edition, 1984 AD.	No
Websites		

Grading Scheme

Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	Engineering Drawing			Module Delivery	
Module Type	core			☐Theory ☐ Lecture ☐Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	TAMO 102				
ECTS Credits	1				
SWL (hr/sem)	3				
Module Level	First stage		Semester of Delivery	Semester	
Administering Department	Animal Production ANP		College	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		e-mail	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	YAHYA YOUNUS MOHSIN		e-mail	Mti.lec176.yahya@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	8/1/2024		Version Number	1.0	

Relation with other Modules			
Prerequisite module	-	Semester	-
Co-requisites module	-	Semester	-

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	**1-After completing the chapter, the student will be able to find and analyze any geometric shape.** **2-The ability to analyze different shapes as a section or perspective.** **3-Attracting undergraduate students who are innovative problem solvers, who become leaders in their organizations, and who possess the knowledge and skills required for a wide range of careers and career changes.**
Module Learning Outcomes	**1-The student should have a greater ability to learn, be independent as a learner, and have self-confidence to solve problems.** **2- He has the ability to improve general study and work management skills.** **3-The ability to identify, formulate and solve engineering problems.** **4- Setting personal goals and estimating the level of progress to achieve the desired goal.**
Indicative Contents	**Indicative content includes the following.** **In a detailed explanation of the AutoCAD program, we touched on many of the features that made it one of the most important engineering tools at the present time, so acquiring this skill will of course increase your opportunities and enrich your CV, so do not be complacent about it and allocate part of your day to invest it in learning a program that opens new horizons for you. Therefore, the student must follow the following steps.** **1-To have a better point of view as an engineer.** **2- Ability to understand engineering drawing application programs.** **3- Preparing the student for a successful career in the field of agricultural engineering and expanding his mental awareness to develop his individual and information skills through practicing the AutoCAD program as an engineering drawing while solving homework assignments.**

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	0
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	60		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments				
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	60% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (weekly practical

week	Material Covered
Week 1	Introduction to engineering drawing (AutoCAD program) and the menus and commands it contains
Week 2	Using the program's user interface and how to adjust all settings
Week 3	Use drawing commands (lines, circles, rectangles, arcs, polygons, segmentation, etc.).
Week 4	Use the Modify commands to copy, move, rotate, expand the drawing, and many other uses
Week 5	Deformation, color gradations, and complete change of shape.
Week 6	Annotation commands add texts to the drawing, show drawing dimensions, and insert tables
Week 7	Learn about the different ways to draw rectangles and squares
Week 8	Learn about the different methods of drawing triangles and other polygonal shapes
Week 9	How to use the LINE command to draw different geometric shapes, such as English letters such as H-E-F -L
Week 10	Identify layers
Week 11	Application to drawings and diagrams to draw a complete project
Week 12	Drawing three-dimensional geometric shapes
Week 13	Drawing three-dimensional shapes
Week 14	Modifying 3D graphics
Week 15	Output and printing.
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	”Engineering Drawing for the 1st year By R.B.Gupta”	NO
Recommended Texts	extbook of Engineering Drawing by K. Venkata Reddy	No
Websites	https://gvhti.edu.sa/Home/enrol/index.php?id=150 بالإضافة الى قناة المهندس كريم منصور على اليوتيوب	

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	**English Language**			**Module Delivery**	
Module Type	**Option**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**NTU 101**				
ECTS Credits	**2**				
SWL (hr/sem)	**2**				
Module Level		**First**	**Semester of Delivery**		**First**
Administering Department		**Animal Production**	**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title		Asst.prof.	**Module Leader's Qualification**		
Module Tutor	Nibras Abdul Malik Muhammad		**e-mail**		
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**08/01/2024**	**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Conversation in English**	**Semester**	**Second**
Co-requisites module	**The rules of the English language**	**Semester**	**Second**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. **Enabling students to obtain knowledge and introduction to the rules of the English language** 2. **Enabling students to obtain knowledge of the origins of speech and sentences and what they consist of and their types** 3. **Enabling students to obtain knowledge of the correct pronunciation of English vocabulary**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. **Students acquire general knowledge of the English language** 2. **Gaining students the ability to speak properly and in accordance with the principles of the language** 3. **Acquire and require the ability to correctly pronounce letters and vocabulary** 4. **Students acquire the skill of writing sentences correctly and with the fewest possible errors**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Part A - theoretical part** 1. **Relying on accumulated information on the topic [2]** 2. **Relying on the ability to focus on information[2]** 3. **Clarifying the idea and defining the goal of the lesson[2]** 4. **The ability to collect information about the topic by asking questions[2]**

	Part B - practical part 1. **The skill of thinking according to the student's ability, and the goal of this skill is for the student to believe in what is tangible. [2]** 2. **Understanding when, what and how one should think and working to improve the ability to think sensibly. [2]** 3. **Observation and perception[2]** 4. **Analysis and interpretation[2]** 5. **Preparation and calendar[2]** 6. **Critical thinking strategy in learning[2]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos).**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل60 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	25	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	5	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	0
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**30**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Hello!
Week 2	Your world
Week 3	All about you
Week 4	Family and friends
Week 5	The way I live
Week 6	Every day
Week 7	My favourites
Week 8	Where I live
Week 9	Time past
Week 10	We had a great time
Week 11	I can do that

Week 12	**Please and thank you**
Week 13	**Here and now**
Week 14	**Its time to go**
Week 15	**Review of the article**
Week 16	**final exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**1. Headway plus , pre-intermediate student's book**	Yes
Recommended Texts	**2. Headway plus , intermediate student's book**	Yes
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics**			**Module Delivery**	
Module Type	**Department requirements**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**TAMO101**				
ECTS Credits	1				
SWL (hr/sem)	1				
Module Level	**first**	**Semester of Delivery**		**one**	
Administering Department	**Animal Production**	**College**		**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**	**e-mail**		**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	Asst.prof	**Module Leader's Qualification**		**M.S.EC**	
Module Tutor	**Yahya Younis Mohsen**	**e-mail**		**Mti.lec176.yahya@ntu.edu.iq**	
		Version Number			
Peer Reviewer Name	Name	**e-mail**		E-mail	
Scientific Committee Approval Date	**08/01/2024**			**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Functions**	**Semester**	**Two**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Mathematics aims to empower the learner in the areas of research, interpretation, and the ability to make sound decisions based on a solid foundation of measurement and forecasting while calculating risks, and anticipating the probabilities of success and failure. It aims to give the learner the mathematical skills that enable him to work in the fields of economics, trade, production, and consumption.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1- Increasing the opportunity for students to practice sound thinking methods, such as reflective, deductive, and inductive thinking.** **2- Increasing students' skills in using problem-solving methods.** **3- Helping students recognize the impact of mathematics on cultural development.** **4- Increasing students' skills necessary to comprehend what they are studying and to discover new relationships.** **5- Helping students to rely on themselves in academic achievement in mathematics.** **Develop some good habits, such as cooperation, constructive criticism, mutual respect, and accuracy.** **6- Developing scientific innovations and mental skills.**
Indicative Contents المحتويات الإرشادية	**Part one: theoretical** 1- Studies related to guidance programs to change negative attitudes towards all educational subjects, and in early educational stages. 2- Comparative studies between behavioral counseling techniques and cognitive counseling to modify behavior, change, or create another behavior. -3- Studying the effect of rational-emotional guidance in modifying irrational (negative) thoughts towards studying in some specializations Education is repulsive to students, at various educational levels, including the university stage. 4- Preparing various illustrated guidance programs, and using them in a self-guidance manner, to solve some problems and dilemmas Educational. 5- The role of the school guidance and counseling counselor in preparing, managing and using guidance programs. 6 - The role of the school guidance and counseling counselor in taking care of religious students who suffer from academic, educational and psychological problems. 7- Conduct similar studies to modify and change the negative attitudes towards other basic substances, which still cause a reductionStudents' results in official exams. 8- In view of the importance of mathematics in the academic learning path for all students at the level of all educational levels, and in view of what is witnessed by the students' results in the official examinations, especially the intermediate education certificates, the general secondary school certificate, and the baccalaureate) and in each annual session, the decline in results,

	and the resulting decline in Success rates, he suggests (Therefore, through it, modern techniques and methods are extracted to overcome these difficulties and negative preconceptions about...Researcher) Conducting many studies and field research to diagnose difficulties in learning mathematics and suggest remedial programs Mathematics, at all levels of education, in a simple, easy, and non-offensive manner, helps provide guidance students, and provides them with modern learning skills.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**Working to increase knowledge to gain practical experience from others through educational videos and training courses to obtain new scientific information in the field of knowledge. Practical field training and how to take field measurements. Access to modern scientific literature. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل60 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	50	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	10	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**60**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج ا لاسبوعي النظري

Week	Material Covered
Week 1	Functions
Week 2	Different functions
Week 3	Integration of algebraic functions
Week 4	Unconscious Functions: Logharmal Function - Derivative Logar Function
Week 5	Integration of logarithmal function
Week 6	The Asian Function: Derivative Function
Week 7	Integration of the Asi Function
Week 8	Trigonometric functions: derivatives homosexuality
Week 9	Trigonometric functions
Week 10	Differences of the implied functions
Week 11	Differences of the implied functions
Week 12	Integration methods: Retail integration
Week 13	Integration after fragmentation fragmentation
Week 14	Solve differential equations
Week 15	Solve differential equations
Week	Preparatory week before the final Exam

16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**Applications in calculus** **Written by Dr. Salman bin Abdul Rahman Al-Salman** **Dr.. Ibrahim Deeb Sarmini** **INTRODUCTION TO MATHEMATICAL ECONOMICS Third Edition** **EDWARD T. DOWLING, Ph.D.**	Yes
Websites	https://images.app.goo.gl/dGye5GgMEnfibiWm6	

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Democracy and human rights**			**Module Delivery**	
Module Type				☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**NTU 103**				
ECTS Credits	**2**				
SWL (hr/sem)	**2**				
Module Level		**One**	**Semester of Delivery**		**one**
Administering Department		**Animal production techniques**	**College**	**Technical Agricultural College**	
Module Leader	Dr. Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title		Asst.prof.	**Module Leader's Qualification**		
Module Tutor	**Amina mahir azeez**		**e-mail**	Amina.mahir@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date			**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	.....	**Semester**	....
Co-requisites module	.....	**Semester**	.....

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. **Introducing the student to the most important laws related to human rights** 2. **Introducing the student to the most important Iraqi constitutions and their relationship to human rights.** 3. **Teaching the student to respect the freedom of others in dealing with him, taking into account the differences in cultures in the Iraqi environment**
Module Learning Outcomes محرجات التعلم للمادة الدراسية	**1. Definition of human rights, goals of human rights** **2. Learn about human rights through the divine books.** **3. The student must have complete knowledge of human rights rules and the international and regional recognition of these rights** **4. Teach the student that freedom of expression is guaranteed by the Iraqi Constitution** **5. Identify the components of the social fabric and the differences in their cultures and languages.**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The necessity of visiting to gain experience from others and their different cultures. Obtaining new information in the field of human rights. Good training and familiarization with regional constitutions and their observance of human rights. Access to modern scientific literature. Participate in literary forums related to freedom of expression and respect for the opinions of others.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 30 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غيرالمنتظم للطالب خلال الفصل		**Unstructured SWL (h/w)** الحمل الدراسي غيرالمنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**30**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Human rights, their definition, and goals.
Week 2	The roots of human rights and their development in human history. Human rights in ancient times
Week 3	Human rights in ancient civilizations, especially the Mesopotamian civilization
Week 4	Human rights in divine laws, with a focus on human rights in Islam
Week 5	Human rights in the Middle Ages. Human rights in doctrines, schools and political theories. Human rights in companies, their advertisements, revolutions, and constitutions
Week 6	Human rights in contemporary and modern history: international recognition of human rights
Week 7	Regional international recognition of human rights
Week 8	Non-governmental organizations and human rights
Week 9	National human rights organizations
Week 10	Human rights in Iraqi constitutions between reality and theory
Tweek 11	The relationship between human rights and public freedoms in the Universal Declaration of Human Rights
Week 12	The relationship between human rights and public freedoms in regional charters and national constitutions
Week 13	Necessary human rights and collective human rights
Week 14	Economic, social and cultural human rights and civil and political human rights
Week 15	Modern human rights: facts in development, the right to a clean environment

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**General Botany,2014** **محاضرات في الديمقراطية و حقوق الانسان**	Yes
Recommended Texts		
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	**F** - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Drawing**			**Module Delivery**	
Module Type	**College Requirements**			☐ **Theory** ☐ **Lecture** ☒ **Lab** ☒**Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**TAMO 102**				
ECTS Credits	**1**				
SWL (hr/sem)	**3**				
Module Level		**One**	**Semester of Delivery**		**one**
Administering Department		**Animal production techniques**	**College**	**Technical Agricultural College**	
Module Leader	Dr. Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title		Asst.prof.	**Module Leader's Qualification**		**Master**
Module Tutor	**YAHYA YOUNUS MOHSIN**		**e-mail**	**Mti.lec176.yahya@ntu.edu.iq**	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**08/01/2024**	**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Basics of engineering drawing**	**Semester**	**one**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Teaching students how to recognize and use engineering drawing tools and some operations in engineering drawing, projections, three-dimensional shapes, sections, and some simple shapes in sections of irrigation channels and agricultural facilities.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Using modern techniques in designing fields, agricultural buildings, and gardens 2. The possibility of managing agricultural and livestock activity in dry farming areas in a way that achieves the best possible efficiency through the ideal distribution of irrigation systems. 3. Developing means, equipment, and machines in line with the labor market.
Indicative Contents المحتويات الإرشادية	**<u>part One:</u>** **Get a general idea about the engineering drawing material, the AutoCAD program, drawing tools and their shortcuts, and how to draw straight lines, circles, and two-dimensional rectangles (9 hours).** **<u>Part two</u>:** **Drawing arcs and polygons, learning methods of deletion and addition to drawing, as well as learning to draw triangular projections (9 hours).** **<u>Part three:</u>** **Finding the third plan of the other falls and drawing models of the three falls, in addition to doing applied exercises for drawing trowels and irrigation channels (9 hours).**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**Working to increase knowledge to gain practical experience from others through educational videos and training courses to obtain new scientific information in the field of knowledge. Practical field training and how to take field measurements. Access to modern scientific literature. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 45 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	5	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**45**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**A general idea about the subject of engineering drawing - its importance - learning about the use of engineering drawing tools - drawing the frame of the painting and the title**
Week 2	**Types of fonts - Arabic geometric letters - illustrative examples**
Week 3	**Establishing a perpendicular on a straight line from a point on it and outside it - bisecting a straight line - bisecting a known angle - drawing a straight line parallel to another - dividing a straight line**
Week 4	**Drawing a circle that passes through the vertices of the outside and inside angles of a triangle - finding the center of a circle or arc. Drawing a tangent to a circle from a known point on its circumference and outside of it.**
Week 5	**Draw an arc with a known radius that touches two circles from the outside and inside and from the outside and inside**
Week 6	**Cam cross section drawing - a perspective drawing of a circle at a 30 or 40 degree angle**
Week 7	**The Three Projects (Practical Exercises)**
Week 8	**Finding the third location from the other locations**
Week 9	**Drawing models of the three projections**
Week 10	**Drawing models of the three projections**
Week 11	**Practical exercises for drawing figures**
Week 12	**Drawing sectors and applied exercises on them**
Week 13	**Drawing sewers and irrigation channels of all kinds**
Week 14	**Drawing sections of dams and reservoirs**
Week 15	**How to ink drawings and how to use ink pens**
Week 16	**Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	**A general idea about the subject of engineering drawing - its importance - learning about the use of engineering drawing tools - drawing the frame of the painting and the title**
Week 2	**Types of fonts - Arabic geometric letters - illustrative examples**
Week 3	**Establishing a perpendicular on a straight line from a point on it and outside it - bisecting a straight line - bisecting a known angle - drawing a straight line parallel to another - dividing a straight line**
Week 4	**Drawing a circle that passes through the vertices of the outside and inside angles of a triangle - finding the center of a circle or arc. Drawing a tangent to a circle from a known point on its circumference and outside of it.**
Week 5	**Draw an arc with a known radius that touches two circles from the outside and inside and from the outside and inside**
Week 6	**Cam cross section drawing - a perspective drawing of a circle at a 30 or 40 degree angle**
Week 7	**The Three Projects (Practical Exercises)**
Week 8	**Finding the third location from the other locations**
Week 9	**Drawing models of the three projections**
Week 10	**Drawing models of the three projections**
Week 11	**Practical exercises for drawing figures**
Week 12	**Drawing sectors and applied exercises on them**
Week 13	**Drawing sewers and irrigation channels of all kinds**
Week 14	**Drawing sections of dams and reservoirs**
Week 15	**How to ink drawings and how to use ink pens**
Week 16	**Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Autocad 2014**	Yes
Recommended Texts	https://www.google.iq/books/edition/%D8%A7%D9%84%D8%B1%D8%B3%D9%85_%D8%A7%D9%84%D9%87%D9%86%D8%AF%D8%B3%D9%8A_%D8%A8%D8%A7%D8%B3%D8%AA%D8%AE%D8%AF%D8%A7/llnIDwAAQBAJ?hl=ar&gbpv=1&dq=%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D8%AC%20%D8%A7%D9%88%D8%AA%D9%88%D9%83%D8%A7%D8%AF&pg=PA17&printsec=frontcover	yes

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F** - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
طريقة تلقي المقرر				اسم المقرر	الرسم الهندسي
☐ نظري ☐ محاضرة ☒ مختبر ☒ تعليمي ☒ عملي ☐ ندوة				نوع المقرر	متطلبات الكلية
				رمز المقرر	TAMO 102
				عدد الوحدات	1
				عدد الساعات الاسبوعية	3
الفصل الدراسي	الاول			المستوى الدراسي	الاول
الكلية	الكلية التقنية الزراعية			القسم العلمي	تقنيات الانتاج النباتيPLP
الايميل	Msh41551@ntu.edu.iq			مسؤول المقرر	محمود شاكر محمود
الشهادة الجامعية لمسؤول المقرر	ماجستير			اللقب العلمي	مدرس مساعد
الايميل	Msh41551@ntu.edu.iq			مدرس المادة	محمود شاكر محمود
الايميل	E-mail			المقيم العلمي للمقرر	Name
رقم الجلسة	1.0			تاريخ مصادقة اللجنة العلمية	01/06/2021

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
الفصل الدراسي	الاول	اساسيات الرسم الهندسي	المتطلبات الاساسية

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**تعليم الطلاب كيفية التعرف واستخدام أدوات الرسم الهندسي وبعض العمليات في الرسم الهندسي والمسقطات والأشكال ثلاثية الأبعاد والأقسام وبعض الأشكال البسيطة في أقسام قنوات الري والمنشآت الزراعية.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسة	**1. استخدام التقنيات الحديثة في تصميم الحقول والمباني الزراعية والحدائق** **2. إمكانية إدارة النشاط الزراعي والحيواني في مناطق الزراعة الجافة بما يحقق أفضل كفاءة ممكنة من خلال التوزيع الأمثل لأنظمة الري.** **3. تطوير الوسائل والمعدات والآلات بما يتناسب مع سوق العمل.**
Indicative Contents المحتويات الإرشادية	**<u>الجزء الأول:</u>** **الحصول على فكرة عامة عن مادة الرسم الهندسي وبرنامج الأوتوكاد وأدوات الرسم واختصاراتها وكيفية رسم الخطوط المستقيمة والدوائر والمستطيلات ثنائية الأبعاد (9 ساعات).** **<u>الجزء الثاني:</u>** **رسم الأقواس والمضلعات وتعلم طرق الحذف والإضافة في الرسم وكذلك تعلم رسم المسقطات المثلثية (9 ساعات).** **<u>الجزء الثالث:</u>** **إيجاد المخطط الثالث للشلالات الأخرى ورسم نماذج للشلالات الثلاثة بالإضافة إلى القيام بتمارين تطبيقية لرسم المسجات وقنوات الري (9 ساعات).**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
الاستراتيجيات	**العمل على زيادة المعرفة لاكتساب الخبرة العملية من الآخرين من خلال الفيديوهات التعليمية والدورات التدريبية للحصول على معلومات علمية جديدة في المجال المعرفي. التدريب الميداني العملي وكيفية أخذ القياسات الميدانية. الوصول إلى الأدبيات العلمية الحديثة. المختبرات العلمية مع الجامعات الأخرى.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 45 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	5	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**45**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
الاسبوع 1	فكرة عامة عن مادة الرسم الهندسي– اهميتها– التعرف على استخدام ادوات الرسم الهندسي– رسم اطار اللوحة والعنوان
الاسبوع 2	انواع الخطوط – الاحرف الهندسية العربية – امثلة توضيحية
الاسبوع 3	اقامة عمود على مستقيم من نقطة عليه وخارج عنه–تنصيف الخط المستقيم–تنصيف زاوية معلومة-رسم مستقيم موازي لاخر- تقسيم الخط المستقيم
الاسبوع 4	رسم دائرة تمر برؤوس زوايا مثلث من الخارج والداخل – ايجاد مركز دائرة أو قوس رسم مماس لدائرة من نقطة معلومة على محيطها وخارج عنه
الاسبوع 5	رسم قوس بنصف قطر معلوم يمس دائرتين من الخارج ومن الداخل ومن الخارج والداخل
الاسبوع 6	رسم مقطع الكامة – رسم منظور لدائرة على زاوية 30 أو 40 درجة
الاسبوع 7	المساقط الثلاثة (تمارين تطبيقية)
الاسبوع 8	ايجاد المسقط الثالث من المساقط الاخرى
الاسبوع 9	رسم المجسمات من المساقط الثلاثة
الاسبوع 10	رسم المجسمات من المساقط الثلاثة
الاسبوع 11	تمارين تطبيقية لرسم المجسمات
الاسبوع 12	رسم القطاعات وتمارين تطبيقية عليها
الاسبوع 13	رسم المبازل وقنوات الري بانواعها
الاسبوع 14	رسم مقاطع في السدود والخزانات
الاسبوع 15	كيفية تحبير الرسومات وكيفية استخدام اقلام التحبير
الاسبوع 16	الامتحان

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
الاسبوع 1	فكرة عامة عن مادة الرسم الهندسي– اهميتها– التعرف على استخدام ادوات الرسم الهندسي– رسم اطار اللوحة والعنوان
الاسبوع 2	انواع الخطوط – الاحرف الهندسية العربية – امثلة توضيحية
الاسبوع 3	اقامة عمود على مستقيم من نقطة عليه وخارج عنه–تنصيف الخط المستقيم–تنصيف زاوية معلومة-رسم مستقيم موازي لاخر- تقسيم الخط المستقيم
الاسبوع 4	رسم دائرة تمر برؤوس زوايا مثلث من الخارج والداخل – ايجاد مركز دائرة أو قوس رسم مماس لدائرة من نقطة معلومة على محيطها وخارج عنه
الاسبوع 5	رسم قوس بنصف قطر معلوم يمس دائرتين من الخارج ومن الداخل ومن الخارج والداخل
الاسبوع 6	رسم مقطع الكامة – رسم منظور لدائرة على زاوية 30 أو 40 درجة
الاسبوع 7	المساقط الثلاثة (تمارين تطبيقية)
الاسبوع 8	ايجاد المسقط الثالث من المساقط الاخرى
الاسبوع 9	رسم المجسمات من المساقط الثلاثة
الاسبوع 10	رسم المجسمات من المساقط الثلاثة
الاسبوع 11	تمارين تطبيقية لرسم المجسمات
الاسبوع 12	رسم القطاعات وتمارين تطبيقية عليها
الاسبوع 13	رسم المبازل وقنوات الري بانواعها
الاسبوع 14	رسم مقاطع في السدود والخزانات
الاسبوع 15	كيفية تحبير الرسومات وكيفية استخدام اقلام التحبير
الاسبوع 16	الامتحان

Learning and Teaching Resources مصادر التعلم والتدريس		
	اسم المادة	**هل يتوفر في المكتبات؟**
المنهج الدراسي	**Autocad 2014**	نعم
المصادر الداعمة	https://www.google.iq/books/edition/%D8%A7%D9%84%D8%B1%D8%B3%D9%85_%D8%A7%D9%84%D9%87%D9%86%D8%AF%D8%B3%D9%8A_%D8%A8%D8%A7%D8%B3%D8%AA%D8%AE%D8%AF%D8%A7/llnIDwAAQBAJ?hl=ar&gbpv=1&dq=%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D8%AC%20%D8%A7%D9%88%D8%AA%D9%88%D9%83%D8%A7%D8%AF&pg=PA17&printsec=frontcover	نعم

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
درجة النجاح (100 - 50)	**A** - Excellent	امتياز	90 - 100	امتياز
	B - Very Good	جيد جدا	80 - 89	جيد جداً
	C - Good	جيد	70 - 79	جيد
	D - Satisfactory	متوسط	60 - 69	متوسط
	E - Sufficient	مقبول	50 - 59	مقبول
Fail Group	**FX** - Fail	راسب)قيد المعالجة(	(45-49)	ضعيف
(0 - 49)	**F** - Fail	راسب	(0-44)	راسب

ملاحظة: سيتم تقريب العلامات العشرية التي تزيد أو تقل عن 0.5 إلى العلامة الكاملة الأعلى أو الأدنى (على سبيل المثال، سيتم تقريب علامة 54.5 إلى 55، في حين سيتم تقريب علامة 54.4 إلى 54. لدى الجامعة سياسة عدم التغاضي عن "فشل التمريرة القريبة" لذا فإن التعديل الوحيد للعلامات الممنوحة بواسطة العلامة (العلامات) الأصلية سيكون التقريب التلقائي الموضح أعلاه.

MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	**Sport**			**Module Delivery**	
Module Type				☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**NTU 104**				
ECTS Credits	**2**				
SWL (hr/sem)	**2**				
Module Level		**One**	**Semester of Delivery**		**one**
Administering Department		Animal production	**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title		Asst.prof.	**Module Leader's Qualification**		
Module Tutor	Mohammed Waad Mohammed		**e-mail**	Mohammed.waad88@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**08/1/2024**	**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	.....	**Semester**	
Co-requisites module	....	**Semester**	....

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	4. **Introducing the student to the most important basic information about the types of sports** 5. **Teaching and training the student to know the classification of sports games.** 6. **Teaching and training the student to deal with sportsmanship.**
Module Learning Outcomes محرجات التعلم للمادة الدراسية	**1. Learn about the laws of sports** **2. Developing students' sports skills for various sports.** **3. The student must have full knowledge of the laws of sports.** **4. Learn about the laws of arbitration in sports.** **5. The ability to participate effectively in most sporting activities**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Part A - theoretical part** **Sports needs, stadiums, types, and material needs. [3 hours]** **The basic sport, football, and its needs. [3 hours]** **Volleyball, its physical and spatial needs. [3 hours]** **Types of sports, their formations, sports participation (internal and external). [3 hours]** **Positive results achieved from participation. [3 hours]**

	Part B - practical part **Classification of sports games. [9 hours].** **Active participation in sports activities. [9 hours].** **Focus on major sports. [9 hours].** **Adherence to sports laws. [9 hours].** **Performing as a team in the stadiums. [9 hours].**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of sports (videos). Practical training in the field. Access to modern scientific literature. Participation in local and international tournaments.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 60 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	15	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غيرالمنتظم للطالب خلال الفصل	15	**Unstructured SWL (h/w)** الحمل الدراسي غيرالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**30**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Sports, its definition, importance, and types
Week 2	Mechanism of human body movement
Week 3	Common sports injuries
Week 4	basketball
Week 5	Basketball law
Week 6	Table tennis (table tennis), basic skills
Week 7	Volleyball
Week 8	swimming sport
Week 9	Tennis
Week 10	handball
Week 11	Handball law

Week 12	Athletics
Week 13	soccer
Week 14	Management of competitions and sports competitions
Week 15	Sports laws and legislation
Week 16	Athletics

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	Sports, its definition, importance, and types
Week 2	Mechanism of human body movement
Week 3	Common sports injuries
Week 4	basketball
Week 5	Basketball law
Week 6	Table tennis (table tennis), basic skills
Week 7	Volleyball
Week 8	swimming sport
Week 9	Tennis
Week 10	handball
Week 11	Handball law
Week 12	Athletics
Week 13	soccer
Week 14	Management of competitions and sports competitions
Week 15	Sports laws and legislation
Week 16	Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	ملزمة مادة الرياضة	Yes
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Design and analysis of experiments			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**TAMO 401**				
ECTS Credits	**2**				
SWL (hr/sem)	**4**				
Module Level	fourth		**Semester of Delivery**	fourth	
Administering Department	**Plant Production** PLP		**College**	**Technical Agricultural College**	
Module Leader	Zahraa Abdulrahman Sabri		**e-mail**	**85zahraa@ntu.edu.iq**	
Module Leader's Acad. Title	**lecture**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Zahraa Abdulrahman Sabri		**e-mail**	**85zahraa@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**01/06/2021**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Mathematics**	**Semester**	
Co-requisites module	**Agricultural census**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Providing the student with experience in how to design experiments, then collect data, classify it, analyze it, then summarize it and come up with a recommendation to solve the problem for which the experiment was conducted.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Creating a solid scientific basis in the theoretical and practical aspects applied in the field of statistical programs. Providing the student with the skill of collecting primary data and summarizing it to solve the problem to be studied**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Part A - theoretical part** **Completely randomized design, advantages, disadvantages, use of the design if one observation is recorded for each experimental unit, A- if the number of repetitions is equal (3 hrs)**

	Part B - practical part Statistical analysis of data

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل60 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غيرالمنتظم للطالب خلال الفصل	15	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**60**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week 1	General definitions, experiment, design, working experimental unit, experimental error, conditions for controlling experimental error, basic rules for designing experiments, requirements for a good experiment, steps followed in scientific experiments.
Week 2	Completely randomized design, advantages, disadvantages, use of the design if one observation is recorded for each experimental unit, A- if the number of repetitions is equal
Week 3	Completely randomized design, advantages, disadvantages, using the design in the case of recording one observation for each experimental unit, b - in the case of unequal repetitions.
Week 4	Diagnosing the significance of differences between arithmetic means, the coefficient of variation in the experiment.
Week 5	Completely randomized block design, conditions for using the design, advantages and disadvantages of the design, sources of variation.
Week 6	Analysis of variance, determining the number of replicates, estimating the missing value (or more) in segments
Week 7	Latin square design, terms of use, advantages and disadvantages of the design.
Week 8	Sources of variation in Latin square, analysis of variance, missing value estimation or more.
Week 9	Factorial experiments, their conditions, advantages and disadvantages
Week 10	Sources of variation in factorial experiments, analysis of variance, interaction and its types.
Week 11	Split panel design, conditions, advantages, disadvantages
Week 12	Sources of variation in split plate experiments, analysis of variance
Week 13	A continuation
Week 14	Correlation and regression
Week 15	exame

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	**Types of experiments, how to plan the experiment, and researcher specifications.**
Week 2	**Solve exercises to analyze data for a completely randomized design**
Week 3	**A continuation**
Week 4	**Solve exercises on determining the significance of differences between means**
Week 5	**Solve exercises to analyze data from a randomized complete block design**
Week 6	**A continuation**
Week 7	**Exercises to find the missing value in completely randomized blocks**
Week 8	**Latin square, design, analysis of sources of variation.**
Week 9	Solve exercises to analyze the sources of variation in the design of the Latin square
Week 10	Solve exercises to analyze the sources of variation in the design of the Latin square
Week 11	**designing factorial experiments**
Week 12	**Solve exercises for designing factorial experiments**
Week 13	**To analyze the variation of sources of variation in split panel designs**
Week 14	**Solve exercises to analyze the variance of sources of variation in split panel designs**
Week 15	**Solve exercises to find correlation and regression coefficients.**
Week 16	**Exame**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Design and analysis of experiments book	Yes
Recommended Texts		No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Forage crops and Pastures**			**Module Delivery**	
Module Type	**Core**			☒ Theory ☒Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**PLP 352**				
ECTS Credits	**2**				
SWL (hr/sem)	**3**				
Module Level	**four**	**Semester of Delivery**	**four**		
Administering Department	**Animal Production ANP**	**College**	**Technical Agricultural College**		
Module Leader	**Dr.Donea abdulrazzaq abdullah**	**e-mail**	**Doneaabed@ntu.edu.iq**		
Module Leader's Acad. Title	**Asst.Professor**	**Module Leader's Qualification**	**Ph.D.**		
Module Tutor	**Azhar Idrees Dhanoon**	**e-mail**	**azharadrees16@ntu.edu.iq**		
Peer Reviewer Name	Name	**e-mail**	E-mail		
Scientific Committee Approval Date	**01/06/2021**	**Version Number**	**1.0**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Field crops, Seed technology	**Semester**	**Two**
Co-requisites module	Plant Physiology	**Semester**	**Two**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Teaching the student the foundations and principles of producing forage and pasture crops and their impact on agricultural livestock.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The student will be able to know:- 1- Preparing and preparing the land for cultivation. 2- Cultivation and service of fodder crops. 3- The appropriate stage for cutting plants and presenting them to animals. 4- Exploiting natural pastures and methods of improving them. 5- Preparation of feed mixtures.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A-theoretical: *The importance of various fodder crops.{3 hrs} * Division of crops used for fodder and their modern scientific names.{3 hrs} *Common scientific names for fodder crops.{3 hrs} *The student's knowledge of methods for storing fodder crops in the form of hay or silage.{3 hrs}

	Indicative content includes the following. Part B-practical part: *A general evaluation of coarse and concentrated plant feed materials. The nutritional value of plant feed materials.{9 hrs} * Studying the phenotypic appearance and diagnosing the seeds of the following crops: barley, oats, Sudanese grass, millet, white and yellow corn, beans, jet, clover, and hartman, preparing the soil, amending the panels designated for planting .{9 hrs} *Cultivation of the views field with fodder crops .{9 hrs}

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.

Student Workload (SWL) ساعة 45الحمل الدراسي للطالب محسوب ل			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	15	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**60**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) ,
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	The importance of livestock, the importance of fodder crops and their role in meeting the fodder needs of livestock, the reality of growing fodder crops in Iraq.
Week 2	Factors affecting fodder production and quality, exploitation of saline and dry lands in the production of fodder crops.
Week 3	Production of leguminous fodder crops (1) (Jet) Economic importance, suitable environmental conditions, production of Jet seeds.
Week 4	(2) - (Clover) is the same vocabulary as Jat
Week 5	(3) - (hartman, karat, kakouz) the same vocabulary as before
Week 6	Production of cereal fodder crops (1) Yellow corn, including economic importance, suitable environmental conditions, production foundations, and its fodder uses.
Week 7	(2) - (Sorghum, Sudanese cannabis) The same vocabulary as before, with the mention of species belonging to the genus Sorghum (Soryhum). The danger of green feeding to animals as a result of poisoning with hydrocyanic acid (HCN).
Week 8	(3) - (Barley, oats, millet) economic importance, foundations of production, species used for the purpose of fodder, and their exploitation for the purpose of fodder
Week 9	Concentrated feed materials, their importance in animal nutrition, their sources, their nutritional content (chemical composition).
Week 10	Feed mixtures, their definition, importance, types, and the basics of the elements included in the feed mixture.
Week 11	Threshing, its definition, its importance in feeding animals, why do we resort to threshing, determining the appropriate time for cutting according to the stages of growth, drying methods, types of loss of fodder material during the work of

	threshing.

Week 12	Silage, its definition, the importance of its manufacture, manufacturing steps, determining the stages of cutting, chemical changes to the feed during preservation, methods of preserving silage, preservatives, types of loss in nutritional value resulting from preservation.
Week 13	Pastures, their definition, importance, and types.
Week 14	Foundations of quantitative assessment of pasture germination and determination of pasture productivity.
Week 15	Reasons for the deterioration of natural pastures, methods for improving natural pastures and how to preserve them.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي التطبيقي	
Week	**Material Covered**
Week 1	General evaluation of coarse and concentrated plant feed materials. Nutritional value of plant feed materials.
Week 2	Studying the phenotypic appearance and diagnosing the seeds of the following crops: barley, oats, Sudanese grass, millet, white and yellow corn, beans, jet, clover, and hartman, preparing the soil, and amending the panels designated for planting.
Week 3	The importance of conducting experiments and research in the field of fodder crop production and natural grazing areas, explaining a plan for growing summer fodder crops in the field designated for them, preparing the soil (continuation).
Week 4	Cultivation of the views field with fodder crops.
Week 5	Botanical description of the crop, its types and groups, use of the forage crop in animal nutrition (mowing, grazing, preservation), completion of the remaining field operations.
Week 6	Botanical description of clover, embroidery, exploitation of clover in animal feed (mowing, grazing, preserving).
Week 7	Botanical description of the following crops: hartaman, cocoa, kachun, peas, fodder, and turmeric, and the exploitation of these crops in animal feed.
Week 8	Botanical description of the following cereal fodder crops, yellow and white corn, exploitation of these crops in animal feed, showing scientific films.
Week 9	Botanical description of Sudanese grass, millet, barley, oats, exploitation of these crops in animal feed, field follow-up.
Week 10	Manufacturing green fodder as fodder, preparing work supplies, manufacturing fodder as fodder in the natural and industrial way.
Week 11	Manufacturing green fodder as silage, steps to prepare silage, preparing work supplies, showing a scientific film.
Week 12	Discussing students' reports on their observations, conducting seminars.

Week 13	Scientific visit.
Week 14	Collecting and preserving models of fodder plants, displaying preserved models.
Week 15	Collecting and preserving models of fodder plants, displaying preserved models.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
	Al-Ani, Tariq Ali and Mr. Irfan Muhammad Rashid (1983). Production of fodder crops and pastures. Technical Institutes Foundation. Al-Tikriti, Ramadan Ahmed Al-Tayef, Tawakkol Younis Rizk, and Hikmat Askar Al-Rumi (1981). Fodder crops and pastures, Dar Al-Kutub Foundation for Printing and Publishing, University of Mosul. Mayouf, Mahmoud Ahmed and Abdullah Qasim Al-Fakhri (1982). Introduction of legumes in Iraq. Abdullah, Ghazi Mahmoud (1976). Some methods used in studies of natural pastures. Ministry of Agriculture and Agrarian Reform, Natural Pastures Directorate, Agricultural Affairs Department, Bulletin No. 97.	
Recommended Texts		No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Plane Surveying**			**Module Delivery**	
Module Type	**Second**			☒ **Theory** ☐ **Lecture** ☐**Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**TAMO 103**				
ECTS Credits	**2**				
SWL (hr/sem)	**4**				
Module Level		**first**	**Semester of Delivery**		**Semester**
Administering Department		**Animal production ANP**	**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title		**Asst.Professor**	**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**YAHYA YOUNUS MOHSIN**		**e-mail**	**Mti.lec176.yahya@ntu.edu.iq**	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**8/1/2024**	**Version Number**	**1.0**	

Relation with other Modules			
Prerequisite module	-	**Semester**	-
Co-requisites module	-	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	**1- Introducing the student to the general basics of surveying and its structure so that he has the ability to manage a technician Surveying engineers working on civil projects.** **2- Introducing the student to using some space devices such as the learning device (level) and a device Theodolite (this is so that he can do the small surveying work he needs). In civil engineering, such as measuring levels or measuring a specific angle.** **3- Giving the student priorities about advanced surveys, such as space surveying and measuring coordinates, and this is possibleThe student is in good health.** **4- Developing it in the future through courses or study until it is Professional in space and work space.**
Module Learning Outcomes	**1. Introducing the student to using new and modern techniques in surveying for the sake of accurate measurements.** **2. The student must have knowledge of measurement systems and units of measurement used.** **3- Teaching the student how to use surveying and integrate it with other sciences in areas of life.**
Indicative Contents	**Indicative content includes the following.** **Part A - theoretical part** **1-Setting units of measurement and their conversions.** **2- Full knowledge of setting up surveying equipment in the laboratory before going to work.** **3- Preparing the record of the project's surveying before work.** **4- The surveyor must be fully aware of downloading information into the register** **Part B - practical part** **1- Choosing the appropriate conditions and the appropriate time for surveying work to avoid wind, high temperature or rain in order to reduce the effects on the accuracy of the measurement.** **2- Choosing the appropriate area or place to install the surveying equipment.**

	3- Training on devices to increase practical experience. **4- We advise students to make continuous visits to various state departments, such as the municipality, agriculture, and water resources, to learn about work mechanisms in various fields**

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Devices and tools used in measurement
Week 2	Types of units of measurement and their conversions
Week 3	Drawing scale
Week 4	Guidance and measurement
Week 5	Establishing and lowering columns
Week 6	Obstacles and obstacles in measuring distances
Week 7	The necessary corrections in measuring distances
Week 8	Wiping with chain and tape
Week 9	Wiping with a flat board
Week 10	Leveling machines and their equipment
Week 11	Settlement or budget
Week 12	Topographic maps and their uses
Week 13	Surveying with a compass
Week 14	Theodolite device
Week 15	Water area
Week 16	Preparatory week before the final Exam

Delivery Plan (weekly practical

week	Material Covered
Week 1	Identify the chain, tape, auxiliary measuring tools, and method of measuring in the field
Week 2	Solve specialized exercises with units of length, volume, and angles
Week 3	Solve examples of drawing scale
Week 4	Mechanism for adjusting guidance, measurement, and setting points
Week 5	Establishing and lowering columns via chain and pole in the field
Week 6	Test questions about the different methods and obstacles in measuring distances
Week 7	Test questions for the necessary corrections in measuring distances
Week 8	Practical field survey using chain and tape survey
Week 9	Knowing the mechanism of erecting a level board with high accuracy and identifying the auxiliary tools
Week 10	Adjust the leveling mechanisms with high accuracy in the field
Week 11	Methods of calculating levels practically
Week 12	Methods of defining contours or shoulders with their example
Week 13	Monitoring or surveying with a compass in practice, with examples
Week 14	Installing the theodolite device and taking survey readings
Week 15	Mathematical examples of different methods specialized in water area
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Yassin Obaid Ahmed (0991), Engineering Equity, Ministry of Family Education and Scientific Research, University of Basra, College of Engineering, Basra, Iraq Ziad Abdul Jabbar Al-Bakr. (2112) Engineering and Cadastral Survey, Baghdad..	no
Recommended Texts	Iraqi Technical Institutes Authority / Book by Engineer Ibrahim Daoud Alwan The General Corporation for Technical Education and Vocational Training in the Kingdom of Saudi Arabia / Mudon Area 102	yes

Websites	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Laboratories Techniques			**Module Delivery**	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	ANP 152				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	one		**Semester of Delivery**	Semester	
Administering Department	Animal Production ANP		**College**	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Yahya N.M. ALKATEB		**e-mail**	Yahyanatiq2003@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	7. **Introducing the student to the most important basic information about the laboratories , their rules and equipments .** 8. **Teaching and training the student to know laboratories tests and their classification .** 9. **Introducing the student to the most important basic expereance of handling and uses of laboratory tools.**
Module Learning Outcomes	1. **The collection of usefoll information about the animal general health condition.** 2. **The ability of collecting samples from animals with minemum damages.** 3. **The student has knowledge about the samples , thier preservation , transporting and store .** 4. **the students has a full knowledge of the previnting and controling of contamination and samples wasting .** 5. **the students has a good experience of using laboratory eqipments and tooles.**
Indicative Contents	**Indicative content includes the following.** **Part A - theoretical part** **Classification of samples accoding to there physical and chemical properties and origins. [3 hrs]** **The principles of occupational safty. [3 hrs]** **The importance of laboratory test and results in the diagnosis of diseases. [3 hrs]**
	Part B - practical part **Laboratory principles and procedures . [9 hrs].** **Self safety requirments . [9 hrs].** **Sterelization and disinfection. [9 hrs].**

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Identify the most common and used laboratory tools and equipment
Week 2	Use laboratory tools correctly
Week 3	Preparing solutions for cleaning glassware and tools and how to use them
Week 4	Types of blanders used in the laboratory, specifications of each type and its suitability for samples
Week 5	Preparing and calibrating various standard chemical solutions
Week 6	Preparing and calibrating various standard chemical solutions
Week 7	Dealing with various chemicals and methods of preserving them in the laboratory
Week 8	Operating, maintaining and maintaining the distilled water device
Week 9	Operating the various types of sensitive scales, maintaining and calibrating them
Week 10	Operating and maintaining various types of microscopes
Week 11	Operating and maintaining the pH and E.C measuring devices and maintaining the electrodes
Week 12	Maintaining food analysis devices
Week 13	Use and calibrate the Spectro photometer
Week 14	Operating and maintaining the Flam photometer
Week 15	Operating and maintaining the atomic absorption device

Delivery Plan (Weekly Lab. Syllabus)	
week	**Material Covered**
Week 1	**Identify the most common and used laboratory tools and equipment**
Week 2	**Use laboratory tools correctly**
Week 3	**Preparing solutions for cleaning glassware and tools and how to use them**
Week 4	**Types of blanders used in the laboratory, specifications of each type and its suitability for samples**
Week 5	**Preparing and calibrating various standard chemical solutions**
Week 6	**Preparing and calibrating various standard chemical solutions**
Week 7	**Dealing with various chemicals and methods of preserving them in the laboratory**
Week 8	**Operating, maintaining and maintaining the distilled water device**
Week 9	**Operating the various types of sensitive scales, maintaining and calibrating them**
Week 10	**Operating and maintaining various types of microscopes**
Week 11	**Operating and maintaining the pH and E.C measuring devices and maintaining the electrodes**
Week 12	**Maintaining food analysis devices**
Week 13	**Use and calibrate the Spectro photometer**
Week 14	**Operating and maintaining the Flam photometer**
Week 15	**Operating and maintaining the atomic absorption device**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Veterinary laboratory medicine Clinical biochemistry and haematology Second edition Morag G. Kerr	Yes
Recommended Texts	Color atlas of hematology practical microscopic and clinical diagnosis Harald theml ,m.d.	No
Websites	https://www.bls.gov/ooh/healthcare/clinical-laboratory-technologists-and-technicians.htm	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Agricultural Economics**			**Module Delivery**	
Module Type	**Slection**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	Tamo151				
ECTS Credits	2				
SWL (hr/se3m)	**2**				
Module Level	one		**Semester of Delivery**	**Semester**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Doaa Qasim Sabri		**e-mail**	dqasm0478@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1- Introducing the student , the relationship between resources and production, and the agricultural production function. 2- Analyzing the costs of agricultural production and applying the rules of optimal use of resources. 3- Entering the agricultural sector with distinguished efficiency through participation in government projects And the labor market
Module Learning Outcomes	1- The importance of studying the relationship between agricultural resources and agricultural production and practical applications of production theory in the agricultural sector, 2- studying the costs of agricultural production 3- studying the efficiency of using resources in the agricultural sector. 4- Agricultural marketing is an achievement of commercial activities that ensure the flow of goods and services from a point of emergence Crops and products until they reach the consumer. 5- - Organizing and simplifying many different production activities so that they become routine work that the worker performs easily It saves time and effort 6 - Transferring scientific knowledge and scientific progress from the theoretical field to the field of application and work and benefiting from it in Getting work done
Indicative Contents	Indicative content includes the following. The concept of general economics. The concept of agricultural economics. Branches of agricultural economics. Economics of agricultural production. Economics of animal production.. [2hrs] Demand. The concept of demand. Law of demand. Shifting demand curve curves. Factors affecting demand. Elasticity of demand. Factors affecting elasticity of demand (4 hrs] Presentation. Presentation concept. Shifts of the supply curve. Factors that affect supply. Elasticity of supply. Factors that affect the elasticity of supply. Market equilibrium.. [4 hrs] Law of substitution and substitution. Properties of equal product curves. Isocosts. Isocost curves. Cost minimization criteria. Examples of substitution and substitution .. [4hrs].

	Production. Production concept. Factors of production. Production function. Types of production functions. Constant production function. Bidding production function. Increasing production function. Economic derivatives of the production function. [4 hrs]. Production costs. Types of production costs. Fixed costs. Variable costs. Total costs. Types of average costs. Average fixed costs. Average variable costs. Average total costs. Marginal cost. The relationship between unit curves . [6 hrs]. Mathematical questions about costs. Profit and loss. Mathematical questions about profit and loss. [6 hrs].

Learning and Teaching Strategies	
Strategies	Teaching and learning methods Providing students with the basics and lectures related to the subject. Using slide presentation methods for the purpose of conveying the information in a more clear way. Urging students to go to the library while asking them to do scientific reports on topics related to bioresistance.

Student Workload (SWL)			
Structured SWL (h/sem)	30	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	0
Total SWL (h/sem)	45		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The concept of general economics
Week 2	Economics of agricultural production
Week 3	The Demand and Law of demand
Week 4	Supply and Law Supply
Week 5	The concept of production and production factors
Week 6	production functio
Week 7	Exam
Week 8	Substitution and replacement
Week 9	Production costs
Week 10	Profit and loss
Week 11	Agricultural policy

Week 12	Agricultural Income
Week 13	The economic efficiency of the farm
Week 14	Extinction
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	Foundations and principles of agricultural economics / Dr. Abdul Wahab Matar Al Dhaheri 1969	Yes
Recommended Texts	The agricultural economy / level one / Prof. Dr Muhammad Amin Al-Sheshtawi / 2013	No
Websites	http://agri-science-reference.blogspot.com/	

Grading Scheme

Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Animal Science**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	102 ANP				
ECTS Credits	3				
SWL (hr/se3m)	5				
Module Level	one		**Semester of Delivery**	75	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Waseem Amer Hashim		**e-mail**	Wasseem_amer@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	2
Co-requisites module		**Semester**	2

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1- 1- Introducing students to the animal cell, what its components are, its function, and its characteristics in the body of a living organism. 2- 2- The role of the cell in building tissues and organs of the animal body. 3- 3- Directs students towards the desire to obtain a better experience when applying for postgraduate studies.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- 1- Types of animal cells, their shapes and functions in agricultural animals. 2- 2- How division occurs in the cell. 3- 3- The difference between DNA and RNA. 4- 4- Study of the functions of animal tissues 5- 5- The importance of each system and organ. 6- 6- Functions of the digestive system in agricultural animals.
Indicative Contents المحتويات الإرشادية	Educational content includes the following. Part A - Theoretical part Animal cell types and shapes. {3 hours] The difference between DNA and RNA in animal cells.{3hrs} How a tissue and an organ are formed from a cell. {3 hours} Digestive system function in farm animals. {3 hours}

	Part B - practical part Microscope and its parts. {9 hours} Types of microscopes and their functions.{9 hours} Animal cell shapes. {9 hours} Animal cell divisions. {9 hours} Anatomy of a type of farm animal, such as a rabbit. {9 hours}

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Introducing the student to the study of the evolution of living organisms, starting with the animal cell, tissues, and various body systems, or studying the classification of the animal kingdom, classifying families and genera, and studying their life composition.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	90		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction and historical overview of zoology
Week 2	The exact structure of the cell. Cell theory
Week 3	The living and non-living components of the cell with their functions in the animal cell
Week 4	Study of Turkish DNA and cell division
Week 5	A detailed study of the people of the animal kingdom,
Week 6	A detailed study of the people of the animal kingdom,
Week 7	Study of vertebrates, the law of life formation, its relationship to comparative anatomy, and its relationship to zoology
Week 8	Study of vertebrates
Week 9	Study of invertebrates
Week 10	Study of body systems (digestive system and circulatory system)
Week 11	Study of body systems (respiratory system and excretory system)

Week 12	Study of body systems (reproductive system and glands)
Week 13	A detailed study of the people of the Hawanid Kingdom
Week 14	Study of embryonic development and adaptation
Week 15	Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للجزء العملي	
	Material Covered
Week 1	Compound microscope and how to use it
Week 2	Animal cell shapes
Week 3	Cell: living and non-living components
Week 4	The process of isolating cell chromosomes - cell division - mitosis and meiosis
Week 5	Basic animal tissues
Week 6	The process of tissue staining and tissue dyeing
Week 7	Unicellular animals (amoeba Paramecium euglena
Week 8	Field animals
Week 9	Frog anatomy - digestive, respiratory, urinary, reproductive systems
Week 10	Anatomy of a Frog - Complete the Equipment

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Animal Science	Yes
Recommended Texts	**Animal anatomy**	yas
Websites	https://sc.uobaghdad.edu.iq/wp-content/uploads/sites/64/2022/12/%D8%B9%D9%84%D9%85-%D8%A7%D9%84%D8%AD%D9%8A%D9%88%D8%A7%D9%86-%D8%A7%D9%84%D8%B9%D8%A7%D9%85.pdf	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Sheep and goat production Techniques			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐**Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	105 ANP				
ECTS Credits	**3**				
SWL (hr/se3m)	**5**				
Module Level		Three	**Semester of Delivery**		**Semester**
Administering Department		**Animal Production ANP**	**College**	Technical Agricultural College	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title		**Asst.Professor**	**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**Waseem Amer Hashim**		**e-mail**	Wasseem_amer@ntu.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**8/1/2024**	**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	Principal of Animal production		
Co-requisites module	Meat production Techniques		

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1- Introducing the student to the number of sheep and goats in the world, the Arab world, and Iraq. 2- Introducing the student to the types of sheep and goats internationally in general and Iraqi ones in detail. 3- Directs students towards the desire to obtain a better experience when applying for postgraduate studies.
Module Learning Outcomes	1- The most important breeds of sheep and goats in the world and their areas of origin. 2- Types of Iraqi sheep and goats and what are their characteristics. 3- Reproduction in sheep and goats. 4- Patterns of red meat production from sheep 5- Wool production in sheep. 6- Breastfeeding newborns in sheep and goats and milk production.
Indicative Contents	Educational content includes the following. Part A - Theoretical part The economic importance of sheep and goats in Iraq. {3 hours] Types of Iraqi and international sheep and goats.{3hrs} Reproduction in sheep. {3 hours} Production of meat, wool and milk from sheep and goats. {3 hours}

	Part B - practical part The difference between the morphological and productive traits of Iraqi sheep and goats. {9 hours} Weaning systems used in raising sheep and goats.{9 hours} Records and their importance in raising sheep and goats. {9 hours} Field operations and age estimation in sheep. {9 hours} Male and female reproductive systems in sheep and goats. {9 hours}

Learning and Teaching Strategies	
Strategies	Introducing the student to the types of local and international sheep, their specifications, how to compare them, the types of goats, and methods of feeding and managing them. The student will be able to manage a sheep and goat breeding farm and ways to multiply them and increase their productivity.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The economic importance of sheep, advantages of raising sheep, origin of sheep, methods of dividing sheep
Week 2	International sheep breeds, Iraqi sheep
Week 3	Establishing a sheep flock, choosing the breed, herd size, and when to buy sheep
Week 4	Reproduction in sheep, reproductive organs, sexual maturity, hormonal control of reproduction
Week 5	Pregnancy, birth, care and rearing of lambs
Week 6	Sheep nutrition
Week 7	Meat production, growth and development in sheep, fattening lambs, cutting meat
Week 8	Milk production, milk production process and methods of measuring it, structure and physiology of the mammary gland
Week 9	Wool production, properties and characteristics of wool, growth of wool fibres
Week 10	Wool composition, grades and ranks of wool, some general characteristics of wool
Week 11	Genetic improvement of sheep, methods of improvement, improvement of Iraqi sheep

Week 12	Health care for sheep
Week 13	The economic importance of goats, the origin of goats, goat breeds
Week 14	Iraqi goats, goat reproduction, milk, hair and skin production in goats
Week 15	The future of the sheep industry and intensive production for campaigns

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Identifying the breeds of sheep found in the field and trading sheep
Week 2	Daily field operations, cleaning barns, providing feed and water
Week 3	Seasonal field operations, washing and dipping sheep, preparing the bath, and the chemicals used
Week 4	Shearing wool, manual and mechanical shearing methods, and storing the wool after shearing
Week 5	Permanent field operations: numbering, tail cutting, horn removal
Week 6	Sheep barns, types of barns and their supplies, the preferred type in Iraq
Week 7	Anatomy of the male and female reproductive system
Week 8	Childbirth, preparing the birth pens, weighing newborns, breastfeeding newborns,
Week 9	Sheep teeth, types of teeth, estimating age using teeth
Week 10	Anatomy of the mammary gland in sheep
Week 11	The process of milking sheep, manual milking, mechanical milking, the pros and cons of each
Week 12	Phenotypic characteristics of goat breeds found in the field
Week 13	Preparing for the breeding season, food payment, scouting rams, and vaccination methods
Week 14	Records and field management, types of records, benefits of records
Week 15	Showing films about raising sheep

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	**Principal of Animal production**	Yes
Recommended Texts	**Marketing of animal production**	yas
Websites	https://uomosul.edu.iq/agriculture/wp-content/uploads/sites/11/2023/09/%D9%86%D8%B8%D8%B1%D9%8A_compressed-14.pdf	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Poultry production techniques			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP103				
ECTS Credits	3				
SWL (hr/sem)	5				
Module Level	one		Semester of Delivery	two	
Administering Department	Animal production ANP		College	Technical Agricultural College TAMO	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Ameen R. Ali		e-mail	ameen.r.ali@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module	Principles of animal production	Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Use of modern technology in teaching and research. 2. Preparing students to work in poultry production companies. 3. Providing scientific advice to companies and small projects. 4. Participation in conferences to follow the latest research and technologies. 5. Participation in local and international exhibitions. 6. Improving the economics of poultry production to face the challenges of globalization.
Module Learning Outcomes	1. Understanding modern technology: Students will gain a deep understanding of the modern technology used in the poultry industry. 2. Ability to produce efficiently: Students will learn how to achieve high efficiency in converting food materials and improving growth rate. 3. Genetic improvement: Students will gain knowledge of the genetic processes that help improve poultry products. 4. Ability to handle challenges: Students will learn how to deal with challenges associated with increasing demand for poultry products. 5. Ability to deal with diseases: Students will learn how to detect disease and find sick birds before the entire flock is affected. 6. Ability to improve food safety: Students will gain the necessary knowledge to improve the detection of Salmonella, Campylobacter, and E. coli. 7. Ability to improve production: Students will learn how to increase the yield of meat or eggs.

Indicative Contents	1. Advanced technology use: Focus is on how to use advanced technology in poultry production. 2. Genetic improvement and nutrition: The study of how dietary components interact with genes and their products. 3. Disease control: Focus is on the ability to detect disease and find sick birds before the entire flock is affected. 4. Increasing production: Focus is on how to increase the yield of meat or eggs. 5. Quality control of production: Focus is on how to control the quality of animal production. 6. Advancement in technology: Focus is on how to use advancements in technology to achieve higher levels in breeding and efficiency. 7. Application of advanced technology: Focus is on how to apply advanced technology in poultry production.

Learning and Teaching Strategies	
Strategies	1. Active Learning: Students are encouraged to actively participate in the learning process through practical experiments, group projects, and interactive activities. 2. Project-Based Learning: Application projects are assigned that require students to apply the concepts and skills they have learned in a real-world context. 3. Research-Based Learning: Students are encouraged to conduct their own research and explore topics of interest to them. 4. Collaborative Learning: Students are encouraged to work together in groups to solve problems and complete projects. 5. Self-Directed Learning: Students are encouraged to take responsibility for their own learning and develop independent learning skills. 6. Technology-Based Learning: Technology is used as a tool to enhance learning and provide access to resources and information. 7. Continuous Assessment: Students are continuously assessed to track progress and identify areas that may need additional support. 8. Case-Based Learning: Case studies and realistic scenarios are used to enhance students' understanding of topics and apply knowledge in real-world contexts. 9. Experiential Learning: Students are encouraged to benefit from practical experiences, such as field training and practical training. 10. Discussion-Based Learning: Students are encouraged to participate in group discussions to enhance critical thinking and effective communication.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Introduction to poultry science and its branches, local chicken, the poultry industry in Iraq and the factors affecting it
Week 2	Origin and classification of poultry, external body parts of the bird, methods of classifying poultry (broiler breeds and egg production)
Week 3	Parts of the digestive, respiratory, and circulatory systems in poultry
Week 4	Parts of the male and female reproductive and urinary systems in poultry
Week 5	Skeleton, muscles, skin and feathers in poultry
Week 6	Poultry production in hot and cold climates. Production of broilers and laying hens
Week 7	Poultry production in hot and cold climates. Production of broilers and laying hens
Week 8	Glands and hormones and their relationship to egg production, egg production diagram
Week 9	Problems related to bird behavior

Week 10	The effect of nutritional relations on poultry production (meat and eggs)
Week 11	Dealing with the products of poultry farming and ways to benefit from them

Week 13	Poultry meat preparation and marketing operations
Week 14	A visit to the poultry fields (broilers and eggs) and the slaughterhouse
Week 15	Breeding and producing turkeys, ducks, geese, and guinea fowl, each type

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Identifying and comparing types of foreign and local chicken, advantages and disadvantages of local chicken
Week 2	Identifying and studying the external body parts, taking measurements of the body parts, and how to catch the bird
Week 3	Anatomy of the digestive and respiratory systems, circulation, and identification of their parts
Week 4	Anatomy of the male reproductive system, female reproductive system, and urinary system, identifying its parts, measuring its length, and seeing the egg formation sites.
Week 5	Anatomy of the skeleton, identification of muscles, and study of the structure of the chicken feather
Week 6	Heat stress and its impact on the production process and ways to overcome heat stress
Week 7	Completion
Week 8	Diagnosis of laying hens, their specifications
Week 9	The process of egg formation in chickens, the egg-laying chain, sperm production in males, calculations in egg production, factors affecting production.
Week 10	Techniques for eliminating sleeplessness in chickens, causes of sleeplessness, factors affecting the decline in egg production
Week 11	Broiler production
Week 12	Calculating the percentage of clearance and recovery, and the factors affecting it
Week 13	Pecking and predation, their effect on egg production and fertility, their causes, and methods of treatment
Week 14	The effect of anti-metabolic substances on egg and meat production
Week 15	A visit to a typical poultry field

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Poultry farming and care, Dr. Sami Allam	Yes
Recommended Texts	Textbook of Poultry Production and Management, Dr. Girrag Goyal	No
Websites	https://www.aalameldawagen.com/ar/articles/%D8%AA%D8%B1%D8%A8%D9%8A%D8%A9-%D8%AF%D9%88%D8%A7%D8%AC%D9%86/%D8%A7%D9%84%D8%AA%D9%82%D9%86%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D8%AD%D8%AF%D9%8A%D8%AB%D8%A9-%D9%88%D8%B5%D9%86%D8%A7%D8%B9%D8%A9-%D8%A7%D9%84%D8%AF%D9%88%D8%A7%D8%AC%D9%86-%D8%A7%D9%84%D9%88%D8%A7%D9%82%D8%B9-%D9%88%D8%A7%D9%84%D9%85%D8%A3%D9%85%D9%88%D9%84/	

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information				
Module Title	Animal Ecology and behavio		Module Delivery	
Module Type	Core		☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP101			
ECTS Credits	3			
SWL (hr/sem)	5			
Module Level	one	Semester of Delivery	**Semester**	
Administering Department	Animal production ANP	College	Technical Agricultural College	
Module Leader	**Dr.Donea abdulrazzaq abdullah**	**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**	**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Ameen R. Ali	e-mail	ameen.r.ali@ntu.edu.iq	
Peer Reviewer Name	Name	e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**	Version Number	1.0	

Relation with other Modules			
Prerequisite module	Principles of animal production	Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	7. Introducing the student to the importance of organizing animal communities: The student learns how to organize and balance animal communities and the role they play in preserving the environment. 8. Ways to deal with farm animals: The student learns the best ways to deal with animals on the farm, including health care, nutrition, and training. 9. The influence of environmental factors on animal behavior: The student learns how environmental factors such as weather and habitat affect animal behavior and how they can adapt to these changes. 10. The influence of genetic factors on animal behavior: The student learns how genes and heredity affect animal behavior and how this knowledge can be used in animal husbandry. 11. Ability to organize special care for each animal: The student acquires the skills necessary to provide appropriate care for each animal based on its individual needs. 12. The ability to care for animals at various stages of development: The student learns how to care for animals at all stages of their lives, from birth to old age.
Module Learning Outcomes	8. Understanding the organization of animal communities: The student is able to understand how animal communities are organized and balanced and the role they play in environmental conservation. 9. Ability to handle farm animals: The student will be able to effectively handle animals on the farm, including health care, feeding, and training. 10. Understanding the influence of environmental factors on animal behavior: The student is able to understand how environmental factors such as weather and habitat affect animal behavior and how to adapt to these changes. 11. Understanding the influence of genetic factors on animal behavior: The student is able to understand how genes and heredity influence animal behavior and how this knowledge can be used in animal husbandry. 12. Ability to organize special care for each animal: The student is able to provide appropriate care for each animal based on its individual needs. 13. The ability to care for animals at various stages of development: The student will be able to care for animals at all stages of their lives, from birth to old age.

Indicative Contents	8. Introduction to animal ecology and behavior: an introduction to the basics of ecology and animal behavior and their importance in the animal world. 9. Organization of animal societies: Study the role of organization and balance in animal societies and how it can affect the environment. 10. Handling Farm Animals: Learn the best ways to handle animals on the farm, including health care, nutrition, and training. 11. The influence of environmental factors on animal behavior: The study of how environmental factors such as weather and habitat affect animal behavior and how they can adapt to these changes. 12. Influence of genetic factors on animal behavior: Understand how genes and heredity influence animal behavior and how this knowledge can be used in animal husbandry. 13. Organizing special care for each animal: Learn the skills needed to provide appropriate care for each animal based on its individual needs. 14. Evaluation and self-evaluation: Continuous assessment of progress and improvement, including self-evaluation and theoretical and practical evaluation.

Learning and Teaching Strategies	
Strategies	11. Project-based learning: Students can conduct research projects on animal behavior in specific environments. This can include direct observation of animals in their natural habitat or academic research. 12. Exploration-based learning: Students can explore natural environments and observe how animals' behavior is affected by their environment. This could include field visits to national parks or nature reserves. 13. Cooperative Learning: Students can work together in groups to study animal behavior and the environment. This could include working on research projects or group discussions. 14. Game-based learning: Educational games can be used to help students understand how animals' behavior is affected by their environment. These can include digital games or card games. 15. Story-based learning: Educational stories and films can be used to illustrate how animals' behavior is affected by their environment. These can include realistic or fictional stories. 16. Research-based learning: Students can conduct independent research on specific topics related to animal ecology and behavior.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Ecology. Definition, introduction, development of ecology and its divisions
Week 2	The ocean and climatic factors and their impact on the animal environment
Week 3	Heat and factors affecting it. Sources of heat
Week 4	Thermogenesis in the animal's body and the glands responsible for it
Week 5	The effect of temperature on various body activities, calories, humidity, and evaporation
Week 6	Lighting and its effect on animals and poultry
Week 7	The effect of barns on animal health, how to choose the location and direction
Week 8	Water flow in animals of hot regions and factors affecting metabolism and food intake
Week 9	Animal behavior. Definition. Introduction. Why is it studied?
Week 10	Definition of climate, acclimatization and adaptation. How do we know that an animal is suffocating?
Week 11	Physiological stability and how to regulate it
Week 12	Types of animal behavior, aggressive behavior, sexual behavior, and mechanisms of sexual behavior

Week 13	Behavior during pregnancy, childbirth, puberty, maturity and motherhood
Week 14	Periodic work to care for farm animals
Week 15	Bad habits in animal behavior and how to control them

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	How to choose a location for a cow field to reduce the harmful impact of the environment on the animal
Week 2	How to choose a poultry field, its types and directions
Week 3	How to approach, hold, and deal with the animal and the sensitive areas of the animal's body
Week 4	Watering the animal and how to distribute feed
Week 5	Recruitment of cows. Divorce of different recitations
Week 6	Sources of pollution: air, water and soil
Week 7	Use sterilizers and spray pesticides
Week 8	Bad habits and how to control them: kicking, preaching, butting
Week 9	Trimming the horns. Preventing their growth. Trimming the hooves
Week 10	Shearing the wool. Trimming the hair around the udder and foreskin
Week 11	Washing and dipping animals
Week 12	Examining the health condition of the animal, opening the mouth, vagina, measuring the temperature
Week 13	Care of newborns, inside barns, nutrition, and prevention using vaccines
Week 14	How to choose a location for a cow field to reduce the harmful impact of the environment on the animal
Week 15	How to choose a poultry field, its types and directions

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Animal Behavior, Ahmed Hammad Al-Husseini	Yes
Recommended Texts	book Ecology and animal behavior , Edward M. Barrows	No
Websites	علم السلوك الحيواني - ويكيبيديا(wikipedia.org)	

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Principal of Animal production**			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP151				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	one		Semester of Delivery	**Semester**	
Administering Department	Animal production ANP		College	Technical Agricultural College	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Harith.N.SH		e-mail	harithalmansour@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module	Sheep and goat production Techniques		
Co-requisites module	Dairy milk production		

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	13. Interactive Lectures: Use interactive lectures to provide basic information about fish and aquatic environments. 14. Project-Based Learning: A project-based learning application where students design and implement research projects related to fish. 15. Field study: Organizing study trips to local aquatic environments to observe fish in their natural habitats. 16. Team-based learning: Encourage collaboration among students by working in teams to solve problems and conduct research. 17. Case-Based Learning: Using real case studies to illustrate theories and concepts related to fish and aquatic environments. 18. Self-paced learning: Encourage students to research and learn independently about fish and aquatic environments. 19. Active Assessment: Use active assessment methods, such as interactive quizzes and class participation, to measure student progress.
Module Learning Outcomes	14. Principles of animal production include the basic concepts and principles that underpin techniques and methods for raising farm animals to improve productivity and profitability1. This subject provides adequately equipped knowledge about the concepts of the subject, the interrelationship between traditional scientific methods of livestock production, and the roles, constraints and strategies associated with livestock production1. 15. 16. Livestock production contributes to approximately 40 percent of total agricultural production in developed countries and 20 percent in developing countries, and provides livelihoods for at least 1.3 billion people around the world2. 17. 18. Animal production includes many fields such as animal genetics, animal husbandry, animal nutrition and feed, antimicrobial resistance, animal health, animal welfare, pastoralism and agroecology2

Indicative Contents	15. Introduction to animal production: definition of animal production and its importance in the global economy1. 16. Animal Genetics: The study of genes and how they affect the characteristics of animals1. 17. Animal Husbandry: Learn how to raise animals in efficient and sustainable ways1. 18. Animal nutrition and fodder: studying the types of feed and how to provide them to animals1. 19. Antimicrobial resistance: understanding how animals resist diseases and microbes1. 20. Animal health and animal welfare: Studying the best ways to maintain animal health and welfare1. 21. Pastoralism and agroecology: understanding how to use land in sustainable ways1.

Learning and Teaching Strategies	
Strategies	17. Interactive Lectures: Use interactive lectures to provide basic information about fish and aquatic environments. 18. Project-Based Learning: A project-based learning application where students design and implement research projects related to fish. 19. Field study: Organizing study trips to local aquatic environments to observe fish in their natural habitats. 20. Team-based learning: Encourage collaboration among students by working in teams to solve problems and conduct research. 21. Case-Based Learning: Using real case studies to illustrate theories and concepts related to fish and aquatic environments. 22. Self-paced learning: Encourage students to research and learn independently about fish and aquatic environments. 23. Active Assessment: Use active assessment methods, such as interactive quizzes and class participation, to measure student progress.

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	60		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction to animal production: definition of animal production and its importance in the global economy1.
Week 2	Animal Genetics: The study of genes and how they affect the characteristics of animals1.
Week 3	Animal Husbandry: Learn how to raise animals in efficient and sustainable ways1.
Week 4	Animal nutrition and fodder: studying the types of feed and how to provide them to animals1.
Week 5	Antimicrobial resistance: understanding how animals resist diseases and microbes1.
Week 6	Animal health and animal welfare: Studying the best ways to maintain animal health and welfare1.
Week 7	Pastoralism and agroecology: understanding how to use land in sustainable ways1.
Week 8	Introduction to animal production: definition of animal production and its importance in the global economy1.
Week 9	Animal Genetics: The study of genes and how they affect the characteristics of animals1.
Week 10	Animal Husbandry: Learn how to raise animals in efficient and sustainable ways1.
Week 11	Animal nutrition and fodder: studying the types of feed and how to provide them to animals1.
Week 12	Antimicrobial resistance: understanding how animals resist diseases and microbes1.

Week 13	Animal health and animal welfare: Studying the best ways to maintain animal health and welfare1.
Week 14	Pastoralism and agroecology: understanding how to use land in sustainable ways1.
Week 15	Introduction to animal production: definition of animal production and its importance in the global economy1.

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Identify the components of ruminant fields and how to control animals
Week 2	Specifications of meat and milk animal model
Week 3	Daily field administrative operations for ruminants, field records
Week 4	Preparing sheep for the vaccination and birth season, shearing the wool and storing it
Week 5	Breastfeeding and artificial feeding methods in livestock fields, postpartum care for newborns
Week 6	Pastures, grazing methods, and pasture area required for each herd.
Week 7	Learn about poultry fields, their types, and how to deal with poultry
Week 8	Identifying poultry breeds, types of chickens, and the external appearance of males and females
Week 9	Daily field administrative operations in poultry fields (meat and layers)
Week 10	The most important things to consider when establishing poultry farming fields
Week 11	Views and learns about the specifications and features of turkey, duck, and goose
Week 12	Practical observations in chicken islands in slaughterhouses (field visit)
Week 13	Identifying the types of fish, their external appearance, distinguishing between males and females, biological measurements of fish.
Week 14	Environmental conditions suitable for fish growth and reproduction
Week 15	A visit to one of the fish ponds near the area

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Principles of animal production, A. M. Muhammad Ali Makki	Yes
Recommended Texts	Cow breeding farms, Abdullah Ali Saeed	No
Websites		

Grading Scheme				
Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
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Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Dairy production techniques**			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	**ANP 204**				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	one		Semester of Delivery	two	
Administering Department	Animal production ANP		College	Technical Agricultural College TAMO	
Module Leader	Mohammed wasfi mustafa		e-mail	mohammed.w.mustafa@ntu.edu.iq	
Module Leader's Acad. Title	Asst. lec.		Module Leader's Qualification	Master degree	
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	01/06/2023		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	/	Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	20. 1-Learning about technical methods for manufacturing dairy products. 21. 2- Knowing the importance of milk and its products. 22. 3- The possibility of avoiding errors in the milk manufacturing process. 23. 4- Develop practical skills in dairy production and management. 24. 5- Preparing graduates capable of competing in the labor market and contributing to the sustainable development of the environment and society.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	19. 1. Introduction to dairy products 20. 2. Gross composition of milk 21. 3. Some natural physical characteristics of milk 22. 4. Milk enzymes and vitamins 23. 5. Sources of milk contamination 24. 6. Sensory characteristics of milk 25. 7. Cheese manufacturing techniques 26. 8. Milk sorting techniques 27. 9. Butter making techniques 28. 10. Techniques for making creamy ice cream
Indicative Contents المحتويات الإرشادية	22. - Enabling students to solve problems related to dairy manufacturing. 23. - Enabling students to solve problems related to the manufacture of dairy derivatives from cheese and butter. 24. – Enabling students to solve problems related to microorganisms in dairy and how to deal with them. 25. - Enabling students to solve problems related to dairy contamination. 26. - Enabling students to solve problems related to the manufacture of ice cream and others. 27. - Enabling students to solve problems resulting from overlapping lines of production units. 28. – Enabling students to solve problems related to control units in food and dairy factories.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	24. - The method of delivering the lecture to provide students with the theoretical basics related to previous educational outcomes. 25. - Applying what has been learned theoretically on a practical level in the fields of dairy processing techniques. 26. - Field visits to dairy production plants. 27. - Asking students during practical lessons to manufacture dairy products, or to detect the microorganisms that are present in them. 28. - Relying on the principle of cooperative learning by dividing students into homogeneous groups for the purpose of preparing research and daily reports.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غيرالمنتظم للطالب خلال الفصل	30	Unstructured SWL (h/w) الحمل الدراسي غيرالمنتظم للطالب أسبوعيا	2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to dairy products, definition of milk, historical overview
Week 2	Gross composition of milk, influencing factors, economic and nutritional importance
Week 3	Some natural physical characteristics of milk, milk components, milk sugar, milk fat, milk salts
Week 4	Milk enzymes and vitamins
Week 5	Sources of milk contamination, diseases that can be transmitted through milk
Week 6	Sensory qualities of milk and the effect of manufacturing techniques on them
Week 7	Thermal treatments of milk before processing and milk collection centers
Week 8	Techniques for receiving milk, and the steps taken to preserve milk
Week 9	Methods of transporting milk to the factory, techniques for receiving milk, filtering, filtration, and modification
Week 10	Techniques for manufacturing dry, semi-dry and soft cheeses
Week 11	Technical steps for making mature cheese
Week 12	Fermented milk, starters for making yoghurt

Week 13	Milk sorting techniques, cream manufacturing and its types
Week 14	Techniques for making butter, free spread and butter substitute
Week 15	Creamy ice cream manufacturing techniques

Learning and Teaching Resources
مصادر التعلم والتدريس

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر.

Week 1	Introducing the student to the dairy factory and milk production fields, how to market it after collection from the milk collection centers to the dairy manufacturing factory, and marketing problems and how they are addressed.
Week 2	Techniques for taking samples (forms) for examination in the laboratory for the quality, health and manufacturing safety of milk samples
Week 3	Techniques for examining milk and its products, checking quality, and estimating milk components
Week 4	Technique for determining the acidity of milk and testing coagulation in boiling and alcohol
Week 5	Techniques for avoiding milk and modifying its components
Week 6	Thermal treatment of milk, pasteurization technology, sterilization
Week 7	Estimating the specific gravity of milk, and identifying milk adulteration
Week 8	Milk sorting technology, parts of the sorter, types of cream and manufacturing methods
Week 9	Butter manufacturing technology, local ghee, butter substitute
Week 10	Technology for manufacturing sweetened condensed milk
Week 11	Powdered milk manufacturing technology
Week 12	Ice cream industry
Week 13	Processed cheese making technology
Week 14	A visit to the dairy processing plant
Week 15	

	Text	Available in the Library?
Required Texts	Basics of the dairy industry - author - Nadia Abdel Majeed Abu Zeid - 2010	Yes
Recommended Texts	**International magazines in SQUISE containers**	No
Websites	https://ar.wikipedia.org/wiki/%D9%85%D9%86%D8%AA%D8%AC%D8%A7%D8%AA_%D8%A7%D9%84%D8%A3%D9%84%D8%A8%D8%A7%D9%86	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded

(0 - 49)	F - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج

وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Organic Chemistry			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**TAMO 201**				
ECTS Credits	**3**				
SWL (hr/sem)	**5**				
Module Level	**second**		**Semester of Delivery**	**second**	
Administering Department	**Animal Production**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.prof		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	شهاب أحمد يوسف		**e-mail**	**De.shehab.unv.79@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**08/01/2024**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**General Chemistry**	**Semester**	**Second**
Co-requisites module	**biochemistry**	**Semester**	**Third**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Introducing the student to the types of chemical bonds, how to store them, and their physical and chemical properties. Discussing hybridization and the theory of repulsion between electronic pairs and their effect on the shape of molecules. Introducing the student to the most important organic compounds and their functional groups.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	- **The student will be familiar with molecular bonds and bonds and their types, as well as have knowledge of organic compounds, the prospects for their use, methods of preparing them, how to distinguish between them, and their most important physical and chemical properties.**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** organic Chemistry: to learn Bonding and properties of molecules. Atomic theory and atomic structure.[10] Accurate analysis: To learn Chemical bonds . Structural theory. Classification of organic compounds..[10] Electron pair repulsion theory. Molecular bonding. Hydrogen bonds. Acids and bases. Solvents in organic chemistry. solubility..[10] Hydrocarbons.[10].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- **The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل75 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	70	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	5	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Bonding and properties of molecules.
Week 2	Atomic theory and atomic structure.
Week 3	Chemical bonds .
Week 4	Structural theory.
Week 5	Classification of organic compounds.
Week 6	Electron pair repulsion theory.
Week 7	Molecular bonding.
Week 8	Hydrogen bonds.
Week 9	Acids and bases.
Week 10	Solvents in organic chemistry.
Week 11	solubility.

Week 12	**Hydrocarbons.**
Week 13	**Aliphatic hydrocarbons.**
Week 14	**Aromatic hydrocarbons.**
Week 15	**Alkanes**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	**Devices and tools used in organic chemistry laboratories**
Week 2	**Methods for measuring the physical constants of organic materials**
Week 3	**Methods for measuring the physical constants of organic materials**
Week 4	**The first experiment determined the melting point of organic compounds**
Week 5	**The second experiment: the experiment of determining the boiling point of organic compounds**
Week 6	**The third experiment: recrystallization of benzene acid**
Week 7	**Methods of purifying liquid organic materials**
Week 8	**Simple distillation of ethanol**
Week 9	**Experiments to differentiate between aliphatic and aromatic compounds**
Week 10	**Nitriding experiment**
Week 11	**Brokerage experience**
Week 12	**Experiments to differentiate between saturated and unsaturated aliphatic compounds**
Week 13	**Applications to preparations in organic chemistry**
Week 14	**Preparing aspirin**
Week 15	**Preparation of paracetamol**
Week 16	**Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	C. Elschenbroich "Organometallics," 3rd Ed., (Wiley-VCH, 2006)	
Recommended Texts		
Websites	https://ar.wikipedia.org/wiki/%D9%83%D9%8A%D9%85%D9%8A%D8%A7%D8%A1_%D8%B9%D8%B6%D9%88%D9%8A%D8%A9#:~:text=J.%20Clayden%2C%20N.%20Greeves%20%26%20S.%20Warren%20%22Organic%20Chemistry%22	

	%20(Oxford%20University%20Press%2C%202012)%2C%20pp.%201%2D15

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Fish Ecology& Biology			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP203				
ECTS Credits	3				
SWL (hr/sem)	5				
Module Level	two		Semester of Delivery	**Semester**	
Administering Department	Animal production ANP		College	Technical Agricultural College	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Harith.N.SH		e-mail	harithalmansour@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	08/01/2024		Version Number	1.0	

Relation with other Modules			
Prerequisite module	**Fish farming and production**		
Co-requisites module			

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	25. Introducing the student to the general description of fish species and their differences in appearance. 26. The student learned the scientific classification of fish and understood the differences between different species. 27. Enhancing the ability to distinguish between different types of fish based on their physical and biological characteristics. 28. Understand the different ways of living of fish and how they are affected by their surrounding environment. 29. Learn about the unique adaptations that enable fish to survive and thrive in their environments. 30. Understand the role that fish play in the marine ecosystem and the importance of conserving biodiversity. 31. Develop critical thinking and scientific abilities through field study and observation.
Module Learning Outcomes	29. The ability to recognize different types of fish and differentiate between them based on their physical and biological characteristics. 30. Understand the scientific classification of fish and be able to use it to identify species. 31. The ability to analyze how fish are affected by their surrounding environment and how they can adapt to that environment. 32. Ability to recognize the role that fish play in the marine ecosystem. 33. Developing scientific research skills through field study and observation. 34. Critical thinking and scientific abilities in understanding and solving environmental problems related to fish. 35. Appreciation and respect for biodiversity and the importance of preserving fish and their habitats.

Indicative Contents	29. General introduction to fish: definition of fish, importance of fish in the ecosystem, and biodiversity of fish. 30. Fish Taxonomy: Understand the scientific classification of fish, including class, order, family, genus, and species. 31. Types of fish and their characteristics: Studying different types of fish and distinguishing between them based on their physical and biological characteristics. 32. Aquatic environments and fish: Understand how fish are affected by their surrounding environment and how they can adapt to that environment. 33. Fish and the marine ecosystem: Study of the role that fish play in the marine ecosystem. 34. Field study and observation: Developing scientific research skills through field study and observation. 35. Conservation of fish and their habitats: Understand the importance of conserving fish and their habitats and the challenges of conserving biodiversity.

Learning and Teaching Strategies	
Strategies	29. Interactive Lectures: Use interactive lectures to provide basic information about fish and aquatic environments. 30. Project-Based Learning: A project-based learning application where students design and implement research projects related to fish. 31. Field study: Organizing study trips to local aquatic environments to observe fish in their natural habitats. 32. Team-based learning: Encourage collaboration among students by working in teams to solve problems and conduct research. 33. Case-Based Learning: Using real case studies to illustrate theories and concepts related to fish and aquatic environments. 34. Self-paced learning: Encourage students to research and learn independently about fish and aquatic environments. 35. Active Assessment: Use active assessment methods, such as interactive quizzes and class participation, to measure student progress.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Aquatic ecosystem, life cycle in water
Week 2	Different aquatic ecosystems, rivers, lakes, physical and chemical characteristics of water, temperature, light, pH, oxygen, salinity, turbidity, nutrients.
Week 3	A general description of the fish's body and the differences in the external appearance of fish
Week 4	Internal body parts of fish
Week 5	Classification of fish
Week 6	Biological and biological factors affecting fish
Week 7	Biological and biological factors affecting fish
Week 8	Biological and biological turbidity and its effect on fish
Week 9	Aquatic plants and their relationship with fish
Week 10	Fish feeding and categorizing fish according to their type of nutrition
Week 11	Fish reproduction, different methods of fish reproduction according to their types
Week 12	Fish migration, types of fish migration and methods of studying them

Week 13	Pollution of the aquatic environment and its impact on fish
Week 14	Methods and means of fishing
Week 15	The size of fish populations in the aquatic environment and its relationship with fishing methods

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Devices and tools used in aquatic environmental studies
Week 2	Methods of collecting and preserving samples and studying the external body shape and external structures of the fish
Week 3	Internal anatomy and identification of the digestive, respiratory and reproductive systems of different fish
Week 4	Conducting biological measurements of fish and classifying fish
Week 5	Identifying and classifying some local Iraqi fish
Week 6	Methods for measuring salinity in water: electrical and chemical methods
Week 7	Conducting biological measurements of fish
Week 8	Methods of measuring water's physical properties, temperature, light, pH
Week 9	An experiment on the effect of salinity and pH on fish life
Week 10	Measurement of water hardness
Week 11	Examination and diagnosis of local phytoplankton
Week 12	Examination of phytoplankton and zooplankton and method of estimating their quantities
Week 13	Methods for measuring fish age (preparing scales and method for reading age)
Week 14	Measuring GST and fish fertility
Week 15	A film about the ways and means of fishing

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Fish Production, Prof. Dr. Nabil Fahmy Abdel Hakim	Yes
Recommended Texts	Scientific foundations of fish production and care, Abdul Hamid Muhammad Abdul Hamid	No
Websites		

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Analytical chemistry**			**Module Delivery**	
Module Type	**Select**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ANP 353**				
ECTS Credits	**2**				
SWL (hr/sem)	**4**				
Module Level	three		**Semester of Delivery**	**Semester**	
Administering Department	Production Animal ANP		**College**	**Technical Agricultural College**	
Module Leader	**Donea Abdul Razzaq Abdullah**		**e-mail**	**doneaabad@ntn.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**master**	
Module Tutor	**Ghassan fithy mohammed**		**e-mail**	**Ghassanalubaidy1961@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	08/01/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	**Organic chemistry**		
Co-requisites module	**physiology**		

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	1. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand voltage, current and power from a given circuit. 3. This course deals with the basic concept of electrical circuits. 4. This is the basic subject for all electrical and electronic circuits. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform mesh and Nodal analysis.
Module Learning Outcomes	Important: Write atleast 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognize how electricity works in electrical circuits. 2. List the various terms associated with electrical circuits. 3. Summarize what is meant by a basic electric circuit. 4. Discuss the reaction and involvement of atoms in electric circuits. 5. Describe electrical power, charge, and current. 6. Define Ohm's law. 7. Identify the basic circuit elements and their applications. 8. Discuss the operations of sinusoid and phasorsinan electric circuit. 9. Discuss the various properties of resistors, capacitors, and inductors. 10. Explain the two Kirchoff's laws used in circuit analysis. 11. Identify the capacitor and inductor phasor relationship with respect to voltage and current.
Indicative Contents	Indicative content includes the following. <u>Part A - Circuit Theory</u> DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction, Introduction to mesh and nodal analysis. [15 hrs] AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. [15 hrs] AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. [10 hrs] RL, RC and RLC circuits - Frequency response of RLC circuits, simple filter and band- pass circuits, resonance and Q-factor, use of Bode plots, use of differential equations and their solutions. Time response (natural and step responses). Introduction to second order circuits. [15 hrs]

	Revision problem classes [6 hrs] Part B - Analogue Electronics Fundamentals Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, current and voltage division, input resistance, output resistance, coupling and decoupling capacitors, maximum power transfer, RMS and power dissipation, current limiting and over voltage protection. [15 hrs] Components and active devices – Components vs elements and circuit modeling, real and ideal elements. Introduction to sensors and actuators, self-generating vs modulating type sensors, simple circuit interfacing. [7 hrs] Diodes and Diode circuits – Diode characteristics and equations, ideal vs real. Signal conditioning, clamping and clipping, rectification and peak detection, photodiodes, LEDs, Zener diodes, voltage stabilization, voltage reference, power supplies. [15 hrs]

Learning and Teaching Strategies	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the sametime refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction of analytical chemistry
Week 2	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.
Week 3	The evaluation of analytical data: Definition of terms.
Week 4	An introduction to gravimetric analysis: precipitation methods; gravimetric factor
Week 5	The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents.
Week 6	An introduction to volumetric methods of analysis:
Week 7	Volumetric calculations; acid-base equilibrium and pH calculations.
Week 8	Buffer solutions:
Week 9	Theory of neutralization titrations of simple system.

Week 10	Theory of neutralization titrations of complex system
Week 11	Precipitation titrations.
Week 12	Calculation of pH in complex system; Volumetric methods based on complex system.
Week 13	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.
Week 14	The evaluation of analytical data: Definition of terms.
Week 15	An introduction to gravimetric analysis: precipitation methods; gravimetric factor

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Examination of samples of simple solutions such as water
Week 2	Carbohydrate reactions Detection of sugars in vitro
Week 3	Fahlink detection, parvoid detection
Week 4	How to differentiate between monosaccharides and disaccharides
Week 5	Detection of complex sugars
Week 6	Estimating blood sugar
Week 7	Anonymous diagnosis of sugars to determine the type of sugars
Week 8	Fats and their solubility reactions in organic solvents
Week 9	Cholesterol interactions
Week 10	Protein interactions
Week 11	Melon detection Biuret detection
Week 12	Coagulation of proteins by heat
Week 13	Chemical reactions of urine
Week 14	Physical reactions of urine
Week 15	Estimation of blood chemical components

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Biochemistry Textbook	yes
Recommended Texts		
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information					
Module Title	Animal Nutrition			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	ANP 301				
ECTS Credits	3				
SWL (hr/se3m)	5				
Module Level	three		**Semester of Delivery**	**Semester**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Waseem Amer Hashim		**e-mail**	Wasseem_amer@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	4- 1- Preparing students who have the ability to work in the field of animal nutrition and food formation according to modern scientific curricula linked to the developments taking place in the developed countries of the world in this field. 5- 2- Entering the agricultural sector with distinguished efficiency through participation in government projects and the labor market 6- 3- Directs students towards the desire to obtain a better experience when applying for postgraduate studies.
Module Learning Outcomes	7- 1- The importance of agricultural business in increasing information and experience in advancing livestock and raising the productivity of its products of meat, eggs, and milk. 8- 2- - Using production elements with the highest economic efficiency in order to reduce the cost of production and increase profits at the facility level 9- 3- Organizing and simplifying many agricultural tasks to become routine work that is easy for the worker to do, which saves time and effort. 10- 4- Transferring scientific knowledge and scientific progress from the theoretical field to the field of application and work and benefiting from it in completing the work 11- 5- Optimal exploitation of production factors on the farm and achieving economic efficiency. 12- 6- The ability to provide advice in the field of farm management, especially in determining the financial and economic situation 13- For the facility and identifying the areas that give the highest return.
Indicative Contents	Instructional content includes the following. Part A - Theoretical part Optimal exploitation of production factors on the farm that are included in feed components. {3 hours] The principle of determining the best level of production. In component relationships. While reducing costs.{3hrs} The principle of comparative advantage by determining the proportion of energy and protein in the diet. Taking into account production level planning. And methods of herd management. {3 hours} Identify the fodder materials that can be fed to animals.{3 hours}

	Part B - practical part Identifying the crops that can be used in the formation of feed {9 hours} Work on analyzing the components of feed materials {9 hours} Study how the bush is formed. {9 hours} How to calculate the animal's need according to the type of production. {9 hours} Production cost feasibility study, an article with relationship components. {9 hours}

Learning and Teaching Strategies	
Strategies	Providing students with the basics and lectures related to the subject. Using slide presentation methods to convey information more clearly. Urging students to create animal diets and asking them to prepare scientific reports on topics related to nutrition.

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The metabolism of CHO , fat and proteins.
Week 2	Dairy cows feeding .
Week 3	Ration formuted voluntary feed intake green roughage .
Week 4	The animal and its food from cereals .
Week 5	Feeding methods , the importants at dairy cows nutrition .
Week 6	Feeding of Dairy cows befor and after the delivery .
Week 7	Calves fattening , methods and feed conversion ratio .
Week 8	Feeding of dry cows and bulls .
Week 9	Feeding of calves from wearing to maturaty age .
Week 10	Energy allowances and feeding system for ruminants.
Week 11	Feeding of sheep pregnant and lactating ewes .

Week 12	Sucking methods for lamb from birth to maturaty .
Week 13	Feeding of ewes lamb from birth to maturaty .
Week 14	Goats requirement from energy and protien .
Week 15	Exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	The use of requirements table to estimate allowance prot.
Week 2	Practicaly mathematic to estimate ruminants requirement.
Week 3	Practical example to estimate fattening calves.
Week 4	Using roughages for cattle with no pasture .
Week 5	Using requirement table to study ewes & rams feeding .
Week 6	Practical example to estimate the ewes requirement .
Week 7	Requirement of lambs feeding .

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	Principles of animal nutrition	Yes
Recommended Texts	Ruminant feeding	yas
Websites	https://uomosul.edu.iq/agriculture/wp-content/uploads/sites/11/2023/09/%D9%86%D8%B8%D8%B1%D9%8A-6.pdf	

Grading Scheme

Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Meat production technology			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP308				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	three		Semester of Delivery		**Semester**
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		Module Leader's Qualification		**Ph.D.**
Module Tutor	Mohammed Waad Mohammed		e-mail	Mohammed.waad88@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module	Meat cattle production	Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	36. The meat industry in the industrialized world is the largest segment of the food industry. Its main purpose is to obtain livestock from producers and to process the livestock into meat and nonfood products. 37. Addition of different ingredients to meat improves taste and flavour. Specific processing conditions and ingredients improve shelf life. Processed products are convenient to handle and eat. Processing improves nutritive value. 38. Meat preservation helps to control spoilage by inhibiting the growth of microorganisms, slowing enzymatic activity, and preventing the oxidation of fatty acids that promote rancidity. 39. Meat and poultry are great sources of protein. They also provide lots of other nutrients your body needs, like iodine, iron, zinc, vitamins (especially B12) and essential fatty acids. So it's a good idea to eat meat and poultry every week as part of your balanced diet. 32.
Module Learning Outcomes	In the practical meat production lesson in the Department of Animal Production in the third stage of our college, focus is on topics such as Islamic slaughter, cutting, muscle separation, and studying proportion equations between different parts. This lesson is supervised by Professor Dr. Rabie Mezher Mahmoud[1]. These topics are considered an essential part of the Meat Production and Processing Technology major, where the principles of animal production and its importance are taught[2].

Indicative Contents	1. Intrduce the student about the importance of Humane Animal Treatment Humane animal treatment is one of the fundamental principles of ethical meat production. 2. Significance of Sustainable Farming Practices Sustainable farming practices are another crucial aspect of ethical meat production. 3. Role of Responsible Use of Antibiotics and Hormones. 4. Concept of Transparency and Traceability in Meat Production

Learning and Teaching Strategies	
Strategies	Teaching and training students: The curriculum aim to teach and train undergraduate and graduate students in the field of meat and its quality. Maintaining high standards of meat quality: The curriculum strictly conducts meat quality tests according to set standards. The curriculum provides its services to the community by providing knowledge and advice about meat quality.

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Meat composition Histological composition of muscles
Week 2	Chemical composition of meat
Week 3	Factors affecting the nature and composition of meat
Week 4	Meat slaughterhouses
Week 5	Differences between animal sacrifices
Week 6	Estimating the age of animals
Week 7	Cutting animal carcasses and related considerations
Week 8	Methods of preserving meat
Week 9	Preserving meat by cooling and freezing
Week 10	Microorganisms in meat
Week 11	Diseases common between humans and animals
Week 12	Tenderizing meat
Week 13	Fish spoilage and preservation methods
Week 14	Spoilage of poultry meat and preservation methods
Week 15	Manufacturing processes performed on meat and meat marketing

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Histological composition of meat
Week 2	Chemical composition of meat
Week 3	Animal slaughters
Week 4	Poultry slaughterhouses
Week 5	Differences between animal sacrifices
Week 6	Estimating the age of animals
Week 7	Cutting carcasses
Week 8	Methods of preserving meat
Week 9	Methods of preserving meat: cooling and freezing
Week 10	Microorganisms in meat
Week 11	Methods of transmission of common diseases between humans and animals
Week 12	Tenderizing meat
Week 13	Fish spoilage and preservation methods
Week 14	Spoilage of poultry meat and preservation methods
Week 15	Manufacturing processes performed on meat

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Meat preservation and processing book/group of authors	Yes
Recommended Texts	book of Meat and meat processing , Edited by Y.H.Hui phd	No
Websites	انتاج اللحوم(wikipedia.org)	

Grading Scheme				
Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings

	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Veterinary Pharmacology and toxicology			**Module Delivery**	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	ANP 302				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	THREE		**Semester of Delivery**		Semester
Administering Department	Animal Production ANP		**College**	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	Yahya N.M. ALKATEB		**e-mail**	Yahyanatiq2003@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives	10. Introducing the student to the most important basic information about the veterinary pharmacology , their uses and side effects. 11. Teaching and training the student to know its drugs classification . 12. Introducing the student to the most important basic expereance of routes of administration.
Module Learning Outcomes	6. The collection of usefoll information about the animal general health condition and animal needs of suplementation. 7. The ability of managing moderate animal diseases with minemum loses. 8. The student has knowledge about the drugs , there uses and side effects . 9. the students has a full knowledge of the preveanting and controling of animal diseases by vaccination. 10. the students has a good experience of using drugs and suplemintarry treatments
Indicative Contents	Indicative content includes the following. Part A - theoretical part Classification of drugs accoding to there effects , origins and chemical composition. [3 hrs] The suplimintation addative and controling of animal diseases. [3 hrs] The importance of vaccenation programs and prevaccenation system . [3 hrs]
	Part B - practical part Routes of adminstration and animal manegments . [9 hrs]. vitamins and menirals requirments . [9 hrs]. doses and toxicity of drugs . [9 hrs].

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	VETERINARY PHARMACOLOGY
Week 2	PHARMACOKINETICS
Week 3	PHARMACODYNAMIC
Week 4	VETERINARY TOXICOLOGY
Week 5	ANTIMICROBIALS
Week 6	ANTIMICROBIALS RESISTANCE
Week 7	Oral fluid therapy
Week 8	Drug bioavailability
Week 9	Oral antibacterial therapy
Week 10	Drug excretion
Week 11	non-steroidal anti-inflammatory agents
Week 12	Steroidal anti-inflammatory agents
Week 13	Fever, trace metals and disease. The effect of antipyretic agents
Week 14	Enzyme induction and inhibition
Week 15	Residues of drugs

Delivery Plan (Weekly Lab. Syllabus)	
week	**Material Covered**
Week 1	**VETERINARY PHARMACOLOGY**
Week 2	**PHARMACOKINETICS**
Week 3	**PHARMACODYNAMIC**
Week 4	**VETERINARY TOXICOLOGY**
Week 5	**ANTIMICROBIALS**
Week 6	**ANTIMICROBIALS RESISTANCE**
Week 7	**Oral fluid therapy**
Week 8	**Drug bioavailability**
Week 9	**Oral antibacterial therapy**
Week 10	**Drug excretion**
Week 11	**non-steroidal anti-inflammatory agents**
Week 12	**Steroidal anti-inflammatory agents**
Week 13	**Fever, trace metals and disease. The effect of antipyretic agents**
Week 14	**Enzyme induction and inhibition**
Week 15	**Residues of drugs**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Veterinary Pharmacology and Toxicology EDITED BY Yves Ruckebusch	Yes
Recommended Texts	**Pharmacology and treatment** **Written by: Prof. Dr. Ali Ismail Obaid Al-Sanafi** **2012**	No
Websites	https://www.toxicology.org/ **https://www.aau.in/site**	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	fish Disease			**Module Delivery**	
Module Type	Core			☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	ANP 303				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	THREE		**Semester of Delivery**	Semester	
Administering Department	Animal Production ANP		**College**	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Yahya N.M. ALKATEB		**e-mail**	Yahyanatiq2003@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	13. Introducing the student to the most important basic information about the fish diseases, their diagnosis, controle and treatments. 14. Teaching and training the student to know the fish diseases classification .
Module Learning Outcomes	11. The collection of usefoll information about the fish general health condition. 12. The ability of managing moderate fish diseases with minemum loses to acheve the best possible efficiency 13. The student has knowledge about the couses of common disease . 14. the students has a foll knowledge of the preveanting and controling of fish diseases. 15. the students has a good experience of using drugs and suplemintarry treatments
Indicative Contents	Indicative content includes the following. Part A - theoretical part Classification of fish diseases accoding to the etiology ,affected fish type and the seasional of incedance . [3 hrs] The preveanting and controling of fish diseases. [3 hrs] The importance of vaccenation programs and prevaccenation system . [3 hrs]
	Part B - practical part fish environment and fish manegments . [9 hrs]. fish feeding and menirals requirments . [9 hrs]. Routes of diseases transmetion . [9 hrs].

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	**Introduction . animals relations and animals diseases.**
Week 2	**Fishs enemies .**
Week 3	**The pathological effects on fishs growth.**
Week 4	**Adaptation .**
Week 5	**Patological signes.**
Week 6	**Nutritional diseases.**
Week 7	**Bacterial diseases.**
Week 8	**Fungal diseases.**
Week 9	**Parasitic diseases**
Week 10	**Controle of diseases.**
Week 11	**Trematoda .**
Week 12	**Tapeworms.**
Week 13	Strongyloides.
Week 14	**Protozoal diseases.**
Week 15	**Arthropoda.**

Delivery Plan (Weekly Lab. Syllabus)	
week	**Material Covered**
Week 1	**Tools and instruments used in the diagnosis of fish diseases.**
Week 2	**Pathological signs, mucous membrane and appearance of diseased fish.**
Week 3	**Behavior and apperance of diseased fish.**
Week 4	**Diagnosis of some bacterial diseases.**
Week 5	**Diagnosis of some viral diseases.**
Week 6	**Diagnosis of some fungal diseases.**
Week 7	**Diagnosis of some protozoal diseases.**
Week 8	**Examination of some fishs infected with flagella diseases.**
Week 9	**Examination of some fishs infected with Ciliates diseases.**
Week 10	**Examination of some fishs infected with sporediom diseases.**
Week 11	**Examination of some fishs infected with trematoal diseases.**
Week 12	**Examination of some fishs infected with tapeworms diseases.**
Week 13	**A scientific visit to the fish pools .**
Week 14	**Examination of some fishs infected with strongoloides .**
Week 15	**Examination of some fishs infected with arthropods.**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Fish Diseases and Medicine - 1st Edition - Stephen A. Smith	Yes
Websites	**https://msc.uobasrah.edu.iq/index.php/2017-10-31-08-15-50/9271-2018-05-29-06-16-45.html**	

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Animal Disease**			**Module Delivery**	
Module Type	**Core**			☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**ANP 306**				
ECTS Credits	**2**				
SWL (hr/sem)	4				
Module Level	**THREE**		**Semester of Delivery**		**Semester**
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**Yahya N.M. ALKATEB**		**e-mail**	**Yahyanatiq2003@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	**1.0**	

Relation with other Modules			
Prerequisite module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	15. **Introducing the student to the most important basic information about the animals diseases, their diagnosis, controle and treatments.** 16. **Teaching and training the student to know its animal diseases classification .**
Module Learning Outcomes	16. **The collection of usefoll information about the animal general health condition.** 17. **The ability of managing moderate animal diseases with minemum loses to acheve the best possible efficiency** 18. **The student has knowledge about the couses of common disease .** 19. **the students has a foll knowledge of the preveanting and controling of animal diseases.** 20. **the students has a good experience of using drugs and suplemintarry treatments**
Indicative Contents	**Indicative content includes the following.** **Part A - theoretical part** **Classification ofAnimal diseases accoding to the etiology ,affected animal and the seasional of incedance . [3 hrs]** **The preveanting and controling of animal diseases. [3 hrs]** **The importance of vaccenation programs and prevaccenation system . [3 hrs]**
	Part B - practical part **Animal housing and animal manegments . [9 hrs].** **Animal feeding and menirals requirments . [9 hrs].** **Routes of diseases transmetion . [9 hrs].**

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Disease definition , classification of the diseases ,methods of transmission and control.
Week 2	The Internal diseases .
Week 3	Respiratory system diseases .
Week 4	Urinary system diseases.
Week 5	Metabolic diseases.
Week 6	Infectious diseses.
Week 7	Anthrax and hemorrhagic septicemia.
Week 8	Tetanus ,foot rot , tuberculosis and pseudotuberculosis.
Week 9	Viral diseases.
Week 10	Diseases that couses abortion.
Week 11	Mastitis.
Week 12	Dermatitis.
Week 13	Parasitic diseases.
Week 14	Protozoal diseases.
Week 15	Equine diseses.

Delivery Plan (Weekly Lab. Syllabus)	
week	**Material Covered**
Week 1	**Vital signes.**
Week 2	**Pathological signs, body temperature, mucous membrane ,pulses and lymph nodes.**
Week 3	**Prescapular,supramammary lymph node examination.**
Week 4	**body temperature examination.**
Week 5	**Pulses examination.**
Week 6	**mucous membrane examination.**
Week 7	**Digestive tract examination.**
Week 8	**Respiratary tract examination and lung auscultation.**
Week 9	**Urinary tract examination .**
Week 10	**Identifacation of veterinary druges in the farm farmacy.**
Week 11	**Routes of administration.**
Week 12	**oral administration.**
Week 13	**Parenral administration**
Week 14	**Intramuscular, intravenal and intradermal injuction.**
Week 15	**A scientific visit to the veterinary hospital**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	A text book of the diseases of cattle, sheep, pigs, goats and Horses **Radostitis,** O. M., Gay, C. C., Blood, D. C., Hinchcliff, K. W. and Constable, P.D.(2000). Veterinary medicine (). 10th ed. W.B. Saunders , Elsevier, London.	Yes
Recommended Texts	**Diseases common between humans and animals** **Written by: Martin Shakespeare** **Translated by Dr. Musaed bin Ahmed Al-Dhabib**	No
Websites	https://animaldiseases.biomedcentral.com/ https://www.nidirect.gov.uk/articles/animal-diseases	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	poultry physiology			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐**Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	305 ANP				
ECTS Credits	3				
SWL (hr/se3m)	5				
Module Level	three		**Semester of Delivery**	**Semester**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Dr.Azhar majid ibrahim		**e-mail**	dr.azharm@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	7- **Understanding the Basic Anatomy and Physiology**: To provide students with a comprehensive understanding of the basic anatomy and physiology of poultry. This includes understanding the digestive, respiratory, circulatory, and reproductive systems of poultry. 8- **Nutrition and Metabolism**: To educate students about the nutritional needs of poultry and how their bodies metabolize different nutrients. This includes understanding the role of different nutrients in poultry health and productivity. 9- **Health and Disease Management**: To equip students with knowledge about common poultry diseases, their symptoms, prevention, and treatment. This also includes understanding the role of physiology in disease resistance and health management. 10- **Reproduction and Breeding**: To teach students about the reproductive system of poultry, the process of egg formation, and principles of breeding. This includes understanding genetic factors affecting poultry production. 11- **Application of Knowledge**: To enable students to apply their knowledge of poultry physiology in practical settings like poultry farming and research. This includes understanding how physiological principles can be applied to improve poultry health and productivity. 12- **Research Skills**: To develop students' skills in conducting physiological research in poultry. This includes designing experiments, collecting and analyzing data, and drawing conclusions. 13- **Communication Skills**: Since the course is taught in English, an additional objective would be to enhance students' academic English communication skills, particularly within the context of poultry physiology. This includes reading, writing, and discussing topics in English.
Module Learning Outcomes	14- Nutrition and Metabolism: Students should be able to understand the nutritional needs of poultry and how the body metabolizes different nutrients. 15- Health and Disease Management: Students should be able to recognize common diseases in poultry, their symptoms, and how to prevent and treat them. 16- Reproduction and Husbandry: Students should be able to understand the reproductive system of poultry, the egg formation process, and husbandry principles. 17- Application of Knowledge: Students should be able to apply their knowledge of poultry physiology in practical settings such as poultry farming and research. 18- Research Skills: Students should be able to develop their skills in conducting physiological research in poultry. 19- Communication Skills: Students should be able to communicate effectively about poultry physiology topics in English, whether through writing or discussion.

Indicative Contents	1. **Introduction to Poultry Physiology**: Overview of the course, importance of poultry physiology in poultry production, and introduction to the basic physiological systems in poultry. 2. **Digestive System**: Structure and function of the digestive system in poultry, process of digestion and absorption, and nutritional requirements of poultry. 3. **Respiratory and Circulatory Systems**: Anatomy and physiology of the respiratory and circulatory systems, understanding the process of respiration and circulation in poultry. 4. **Reproductive System**: Understanding the reproductive system in poultry, process of egg formation, and principles of breeding. 5. **Endocrine System**: Overview of the endocrine system in poultry, role of different hormones in growth, reproduction, and metabolism. 6. **Nervous System**: Structure and function of the nervous system in poultry, understanding the sensory, motor, and control functions. 7. **Immune System**: Understanding the immune system in poultry, common diseases, and principles of disease prevention and treatment. 8. **Metabolism in Poultry**: Understanding the metabolic processes in poultry, role of different nutrients, and energy balance. 9. **Practicals**: Hands-on sessions to apply the theoretical knowledge, including dissection, disease diagnosis, and nutritional assessment. 10. **Research Methodology**: Introduction to research methods in poultry physiology, including experimental design, data collection and analysis, and report writing.

Learning and Teaching Strategies	
Strategies	1. **Lectures**: Traditional classroom lectures can be used to deliver theoretical knowledge. This can be supplemented with PowerPoint presentations, videos, and other visual aids to enhance understanding. 2. **Interactive Discussions**: Encourage students to participate in class discussions. This can help them to better understand the subject matter and to develop critical thinking skills. 3. **Practical Sessions**: Hands-on practical sessions are crucial in a course like this. These sessions can include dissections, disease diagnosis, and nutritional assessments. 4. **Group Projects**: Assign group projects where students have to apply their theoretical knowledge. This can help to develop teamwork and problem-solving skills. 5. **Research Assignments**: Assign research projects on relevant topics. This can help students to develop research skills and to stay updated on the latest developments in the field. 6. **Quizzes and Exams**: Regular quizzes and exams can be used to assess the students' understanding of the course material. 7. **Guest Lectures**: Invite industry experts or researchers for guest lectures. This can provide students with insights into the practical applications of poultry physiology. 8. **Online Learning Resources**: Provide students with access to online resources such as e-books, research articles, and educational videos related to poultry physiology. 9. **Language Support**: Since the course is taught in English, provide language

	support to students who need it. This can include additional English classes or providing course materials in the students' native language. 10. **Feedback and Revision**: Regularly collect feedback from students about the course and make necessary revisions. This can help to continuously improve the course and to ensure that it meets the students' needs.

Student Workload (SWL)

Structured SWL (h/sem)	75	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The concept of physiology, the importance of physiology, the history of physiology, methods of studying physiological processes
Week 2	Structure of cell physiology
Week 3	Tissue physiology installation
Week 4	Digestive system physiology

Week 5	Physiology of the circulatory system
Week 6	Physiology of the circulatory system
Week 7	Respiratory system physiology
Week 8	Physiology of the urinary system
Week 9	Physiology of the male reproductive system
Week 10	Physiology of the female reproductive system
Week 11	Endocrine system and hormones
Week 12	Endocrine system and hormones
Week 13	The history of heat stress
Week 14	Ecology and definition of ecology
Week 15	Visit one of the poultry production fields

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Learn about the physiology laboratory, how to deal with it, and how to take the results
Week 2	Learn about cell physiology
Week 3	Showing slides and films about types of tissues
Week 4	Anatomy of the digestive system
Week 5	Anatomy of the circulatory system
Week 6	Anatomy of the circulatory system
Week 7	Anatomy of the respiratory system and identifying its parts
Week 8	Anatomy of the urinary system to identify the weight and length of the kidney and ureter
Week 9	Anatomy of the male reproductive system
Week 10	Anatomy of the female reproductive system
Week 11	Anatomy of a chicken to identify and observe the types of endocrine glands, their location, weight, and diameters
Week 12	Anatomy of a chicken to identify and observe the types of endocrine glands, their location, weight, and diameters
Week 13	Measuring the temperature of a bird exposed to heat stress
Week 14	Measuring ammonia inside poultry fields
Week 15	Visit one of the poultry production fields

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Poultry bird slaughter, Prof. Dr. Diaa Hassan Al-Hassani, 2000	Yes
Recommended Texts	Animal physiology d. Dhia Hassan Al-Hassani Dr. Sadiq Muhammad Amin Al-Hiti 1990	yas
Websites	https://sc.uobaghdad.edu.iq/wp-content/uploads/sites/64/2022/12/%D8%B9%D9%84%D9%85-%D8%A7%D9%84%D8%AD%D9%8A%D9%88%D8%A7%D9%86-%D8%A7%D9%84%D8%B9%D8%A7%D9%85.pdf	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F** - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Marketing animal products			**Module Delivery**	
Module Type	**elective**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	Anp352				
ECTS Credits	2				
SWL (hr/se3m)	4				
Module Level	three		**Semester of Delivery**	**Semester**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Doaa Qasim Sabri		**e-mail**	dqasm0478.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	1

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	14- Introducing the student to the course and the concepts it entails that add new knowledge to the student. 15- Understanding and developing the ability to apply marketing concepts to problems that may be faced in the field of agriculture. 16- Understanding the basic concepts in agricultural marketing and how to apply them in the agricultural field to confront problems potential. 17- Provide an overview of agricultural management principles, business structures, and agricultural policies
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	20- l Understand how to market agricultural products locally and internationally and the role of the wholesaler and retailer in the marketing process 21- Understanding the process of storing agricultural products using modern methods 3 - Applying examples of grading and classifying agricultural products and analyzing the government's role in supporting agricultural production and the pricing mechanism 4 - The role of technology in enhancing the concept of production and marketing of animal products 5 - Introducing the student to advertising methods to increase sales 6 -Evaluating the role of technology in marketing animal products, the direct marketing mechanism, and agricultural commodity distribution channels
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A - theoretical part The concept of agricultural marketing and marketing development stages {3 hrs] Marketing objectives, functions and importance.{3hrs} Marketing mix elements.{3hrs} The concept of agricultural marketing, its nature, marketing information that helps the farmer make marketing decisions, and the added value of agricultural marketing. .{3hrs} Agricultural marketing outlets and agricultural marketing categories.{3hrs}

	Part B - practical part Marketing sheep and calves and manufacturing some of their products{ 9 hrs} Meat freezing, storage, processing and packaging{ 9 hrs} Marketing of chilled poultry and slaughtered birds and special conditions for export. { 9 hrs} Marketing frozen birds. . { 9 hrs} Fish marketing. { 9 hrs}

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Preparing for the lecture, presenting its objectives before the discussion, and preparing for the topic of the next lecture at the end of each lecture. Using various teaching strategies: direct teaching, case studies, group work, and problem-solving learning Practice, and use the brainstorming method within lectures. Workshops, discussion panels, field visits, method of delivery .Methods of self- and distance learning

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوع النظري	
	Material Covered
Week 1	Marketing overview
Week 2	Agricultural marketing concept
Week 3	Marketing and consumption of agricultural commodities
Week 4	Marketing mix and elements of the marketing mix
Week 5	Farm decisions
Week 6	Marketing jobs
Week 7	Markets and brokers
Week 8	Marketing margin
Week 9	Exam
Week 10	.Methods of studying agricultural markets
Week 11	Marketing costs

Week 12	Wholesalers and retailers
Week 13	.. Agricultural marketing policies
Week 14	Agricultural marketing policies
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوع للجزء العملى	
	Material Covered
Week 1	Marketing sheep and manufacturing some of its products
Week 2	Methods of selling animals
Week 3	Poultry marketing
Week 4	Marketing slaughtered birds
Week5	Packing and freezing of poultry
Week 6	Fish marketing
Week7	Fish marketing methods

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Khaled Sabaa Al-Najjar1982 .	Yes
Recommended Texts	Akef Al-Zoghbi 2005 ..	No
Websites	https://www.agro-lib.site/2023/04/blog-post_554.html?m=1	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Animal production Machinery			**Module Delivery**	
Module Type	Select			☒ Theory ☐ Lecture ☐Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP 351				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	Three		**Semester of Delivery**	Semester	
Administering Department	animal Production ANP		**College**	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	YAHYA YOUNUS MOHSIN		**e-mail**	Mti.lec176.yahya@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	Fodder crops and pastures	**Semester**	Two
Co-requisites module	-	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	**1. Introducing the student to the most important basic information about the new technologies used in mechanizing animal production, methods of using them, and choosing the best ones.** **2. Teaching and training students to use machines to mechanize animal production.** **3. Teaching and training the student to choose the type of machine used in agricultural production**
Module Learning Outcomes	**1. Using new and modern technologies to control humidity, heat and cold inside barns and poultry halls.** **2. The possibility of managing agricultural and livestock activity in dry farming areas in a way that achieves the best possible efficiency through modern agricultural mechanization** **3. Developing means, equipment, and machines that are appropriate to the nature of dry areas for producing basic animal feed.** **4. The student must have knowledge of modern agricultural mechanization systems, including dairy farms, slaughterhouses, and fodder delivery mechanisms.** **5- Teaching the student how to use mechanization in the field of animal production in order to develop skills and increase productivity.**
Indicative Contents	**Indicative content includes the following.** **Part A - theoretical part** **1-Control the environmental conditions inside barns and poultry halls.** **2-How to deliver water to the location of the animals.** **3- The agricultural tug, its parts, types, and its rotation in the field.** **4- Methods of harvesting and collecting fodder of all types, dry and wet.** **5-Mechanical milking of cows.** **Part B - practical part** **1- The mechanism for controlling the temperature of the barn in terms of heat and cooling and providing ventilation through the correct operation of air extractors of all types.** **2- Choosing the appropriate water pumps to deliver water from the source to the barn and methods for storing it.** **3- Teaching workers and technicians to drive tractors in agricultural fields.** **4- Manufacture of fodder and methods of harvesting and assembling fodder of all types, dry and wet.** **5- Training on mechanical milking and parlor management in terms of organization and cleanliness.** **6- We advise students to make continuous visits to laboratories, slaughterhouses, automated milking parlors, animal halls and barns, in cooperation with the Ministry of Agriculture and the private sector.**

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
Week	**Material Covered**
Week 1	**Agricultural buildings used for animal production and how to construct them**
Week 2	**Controlling environmental conditions inside animal pens**
Week 3	**Providing water to animal pens for daily consumption and storage**
Week 4	**Pumps used in animal production, their types and sizes, and choosing the best one for the project**
Week 5	**Agricultural tractors, their sizes and operating mechanisms**
Week 6	**Mechanisms for harvesting and collecting fodder in the field**
Week 7	**Mechanization of production and storage of gum as animal feed**
Week 8	**Exam**
Week 9	**Automated milking equipment and systems**
Week 10	**Mechanization of cleaning and disposal of animal waste**
Week 11	**Technological methods for crushing fodder for animals**
Week 12	**Mechanization of wool shearing for sheep**
Week 13	**Hatcheries and egg packing equipment**
Week 14	**Animal slaughter equipment (sheep, cows)**
Week 15	**How to benefit from animal waste and slaughterhouse waste as animal fertilizer that is beneficial to plants**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (weekly practical

week	Material Covered
Week 1	Conditions that must be followed when designing agricultural buildings
Week 2	Mechanism to control temperature, humidity, and ventilation for barns
Week 3	Components of the water supply network
Week 4	Pump maintenance, cleaning and installation
Week 5	Teaching the student to drive agricultural tractors in the field
Week 6	Regulations for various types of conveyors
Week 7	Maintaining and adjusting feed baling and handling equipment before work
Week 8	Exam
Week 9	Preparing cows for automatic milking and maintaining the parlor
Week 10	Transport vehicles, their types, and ways to connect them to agricultural tractors
Week 11	Grinders and feed mixers and their working mechanism
Week 12	Cleaning, preparing and sterilizing the sheep before shearing the wool
Week 13	Visiting a model field for raising poultry and producing table eggs and learning about the work of hatcheries
Week 14	Visit to typical slaughterhouses and learn the correct methods of slaughtering animals
Week 15	Types of mechanical composting mechanisms for animal waste and how they work
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Book on mechanization of animal production / Dr. Muhammad Jassim Al-Naama Book of animal production mechanization equipment / Dr. Lotfi Hussein	Yes
Recommended Texts	Lectures on animal production mechanization equipment, written by Mahmoud Hassan Rafiq and Othman Moayed	No
Websites		

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Poultry Nutrition			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP307				
ECTS Credits	3				
SWL (hr/sem)	5				
Module Level	Three		Semester of Delivery	**Semester**	
Administering Department	Animal production ANP		College	Technical Agricultural College TAMO	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Azhar M. Ibrahem		e-mail	ameen.r.ali@ntu.edu.iq	
Peer Reviewer Name	Ameen R. Ali		e-mail	ameen.r.ali@ntu.edu.iq	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module	Principles of animal production	Semester	two
Co-requisites module	Animal Nutrition	Semester	one

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	33. Introducing the student to the importance of poultry food: The student learns about the vital role that food plays in the health and productivity of poultry. 34. How to calculate energy, protein, vitamins, and nutrients: The student learns how to calculate the appropriate amounts of energy, protein, vitamins, and other nutrients needed to form a balanced diet for poultry. 35. Ability to supervise poultry fields in the field: The student acquires the skills necessary to directly supervise poultry fields and ensure that the poultry receives the appropriate food. 36. Giving recommendations for formulating balanced diets: The student learns how to give practical recommendations for formulating balanced diets that meet the nutritional needs of poultry.
Module Learning Outcomes	36. Understanding the basics of poultry nutrition: The student should be able to explain the basics related to poultry nutrition including proteins, vitamins, minerals and energy. 37. Ability to design and evaluate diets: The student must be able to design and evaluate balanced diets for poultry based on their nutritional needs. 38. Ability to manage feeding programs: The student must be able to manage and optimize feeding programs for poultry based on specific conditions. 39. Ability to analyze feeding problems and suggest solutions: The student must be able to analyze problems associated with poultry nutrition and suggest practical solutions. 40. Ability to research and continuously learn: The student must be able to research new and current information related to poultry nutrition and continuously learn in this field.

Indicative Contents	40. Introduction to poultry nutrition: an introduction to the importance of nutrition in the health and productivity of poultry. 41. Basic nutrients: A detailed explanation of proteins, carbohydrates, fats, vitamins, minerals, and water and their importance in poultry nutrition. 42. Designing balanced diets: How to calculate the appropriate amounts of nutrients to form a balanced diet. 43. Nutrition according to growth stages: Different feeding recommendations for poultry according to the different stages of growth (chickens, growth, production). 44. Nutrition in special conditions: Nutrition in conditions of heat stress, diseases, and other special circumstances. 45. Nutrition Management: How to manage and optimize nutrition programs to increase productivity and reduce cost. 46. Analyzing problems associated with nutrition: How to analyze problems associated with poultry nutrition and suggest practical solutions.

Learning and Teaching Strategies	
Strategies	36. Interactive lectures: Traditional lectures can be used with interactive techniques such as questions and answers and group discussions to enhance understanding. 37. Project-based learning: Students can apply what they have learned in real-life projects related to poultry nutrition, such as designing a balanced diet or analyzing a feeding problem. 38. Case-based learning: Using real study cases to illustrate concepts and principles related to poultry nutrition. 39. Self-learning and scientific research: Encouraging students to research and self-learn to stay up to date with the latest research and developments in the field of poultry nutrition. 40. Hands-on learning: Opportunities for hands-on learning, such as field visits to poultry farms or laboratories, can be very valuable. 41. Continuous evaluation: Use periodic and ongoing evaluations to measure progress and identify areas that may need additional review or enhancement.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The concept of nutrition: basic nutrients and their functions in the bird's body
Week 2	Energy: The concept of energy
Week 3	forms of energy, measurement of energy,
Week 4	fate of energy in the bird's body
Week 5	Protein: The concept of protein,
Week 6	classification of proteins, amino acids, their definition, division, and importance. Poultry needs for protein
Week 7	Fats: their definition, general properties, classification of fatty acids, their properties, and importance
Week 8	Vitamins: their definition, nutritional classification, the effect of their deficiency on birds, and their functions
Week 9	Mineral elements: their definition, functions of mineral elements in the bird's body, nutritional classification of mineral elements, symptoms of calcium and phosphorus deficiency with vitamin D.
Week 10	Interactions affecting the nutritional needs of poultry: nutrition and genetics, nutrition and diseases, nutrition and egg quality.
Week 11	Nutritional and non-nutritional requirements in poultry diets
Week 12	Feeding poultry in hot regions
Week 13	Poultry food fractionation, methods used in feed inspection
Week 14	Forms of feed and methods of feeding poultry
Week 15	Non-traditional feeds used in poultry feeding and how to treat them

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Feed materials used in feeding poultry, divided according to sources of energy, plant and animal protein, and sources of vitamins and minerals (identification of primary feed materials)
Week 2	Energy calculations:
Week 3	Calculations of energy needs in poultry (laying chickens and broilers),
Week 4	basic net energy calculations
Week 5	Protein: Calculations of the daily protein requirements for laying hens and broilers
Week 6	Protein: Calculations of the daily protein requirements for laying hens and broilers
Week 7	Feed conversion efficiency:
Week 8	Calculations of feed conversion efficiency for broilers and laying hens, factors affecting feed conversion efficiency
Week 9	Calculating the needs of calcium and phosphorus and calculating the fodder needs of poultry for laying hens and broilers
Week 10	Composing poultry diets: balancing them with energy, protein, amino acids, nutrients, and vitamins. Using a calculator to formulate the diet. Mixing the composition of the diet mechanically or manually.
Week 11	A visit to a feed factory
Week 12	Practical examples of calculating feed cost
Week 13	Toxins and feed storage: aflatoxins, factors affecting the formation of mycotoxins, and feed storage methods
Week 14	Diseases caused by malnutrition
Week 15	Nutritional requirements of turkeys, ducks and geese

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Basics of poultry nutrition, Dr. Ismail Khalil Ibrahim	Yes
Recommended Texts	Poultry Nutrition , Vincenzo Tufarelli	No
Websites	تغذذيه الدجاج- الطاقه و البروتين و الاحماض - ألموقع ألعربي ألتعليمي للدواجن (arabicpoultryedu.com)	

Grading Scheme				
Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Analytical chemistry**			**Module Delivery**	
Module Type	**Select**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ANP 353**				
ECTS Credits	**2**				
SWL (hr/sem)	**4**				
Module Level	three		**Semester of Delivery**	**Semester**	
Administering Department	Production Animal ANP		**College**	**Technical Agricultural College**	
Module Leader	**Donea Abdul Razzaq Abdullah**		**e-mail**	doneaabad@ntn.edu.iq	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**master**	
Module Tutor	**Ghassan fithy mohammed**		**e-mail**	**Ghassanalubaidy1961@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	**Organic chemistry**		
Co-requisites module	**physiology**		

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand voltage, current and power from a given circuit. 3. This course deals with the basic concept of electrical circuits. 4. This is the basic subject for all electrical and electronic circuits. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform mesh and Nodal analysis.
Module Learning Outcomes	Important: Write atleast 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognize how electricity works in electrical circuits. 2. List the various terms associated with electrical circuits. 3. Summarize what is meant by a basic electric circuit. 4. Discuss the reaction and involvement of atoms in electric circuits. 5. Describe electrical power, charge, and current. 6. Define Ohm's law. 7. Identify the basic circuit elements and their applications. 8. Discuss the operations of sinusoid and phasorsinan electric circuit. 9. Discuss the various properties of resistors, capacitors, and inductors. 10. Explain the two Kirchoff's laws used in circuit analysis. 11. Identify the capacitor and inductor phasor relationship with respect to voltage and current.
Indicative Contents	Indicative content includes the following. <u>Part A - Circuit Theory</u> DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction, Introduction to mesh and nodal analysis. [15 hrs] AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. [15 hrs] AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. [10 hrs] RL, RC and RLC circuits - Frequency response of RLC circuits, simple filter and band- pass circuits, resonance and Q-factor, use of Bode plots, use of differential equations and their solutions. Time response (natural and step responses). Introduction to second order circuits. [15 hrs]

	Revision problem classes [6 hrs] Part B - Analogue Electronics Fundamentals Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, current and voltage division, input resistance, output resistance, coupling and decoupling capacitors, maximum power transfer, RMS and power dissipation, current limiting and over voltage protection. [15 hrs] Components and active devices – Components vs elements and circuit modeling, real and ideal elements. Introduction to sensors and actuators, self-generating vs modulating type sensors, simple circuit interfacing. [7 hrs] Diodes and Diode circuits – Diode characteristics and equations, ideal vs real. Signal conditioning, clamping and clipping, rectification and peak detection, photodiodes, LEDs, Zener diodes, voltage stabilization, voltage reference, power supplies. [15 hrs]

Learning and Teaching Strategies	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the sametime refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Introduction of analytical chemistry
Week 2	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.
Week 3	The evaluation of analytical data: Definition of terms.
Week 4	An introduction to gravimetric analysis: precipitation methods; gravimetric factor
Week 5	The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents.
Week 6	An introduction to volumetric methods of analysis:
Week 7	Volumetric calculations; acid-base equilibrium and pH calculations.
Week 8	Buffer solutions:
Week 9	Theory of neutralization titrations of simple system.

Week 10	Theory of neutralization titrations of complex system
Week 11	Precipitation titrations.
Week 12	Calculation of pH in complex system; Volumetric methods based on complex system.
Week 13	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.
Week 14	The evaluation of analytical data: Definition of terms.
Week 15	An introduction to gravimetric analysis: precipitation methods; gravimetric factor

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Examination of samples of simple solutions such as water
Week 2	Carbohydrate reactions Detection of sugars in vitro
Week 3	Fahlink detection, parvoid detection
Week 4	How to differentiate between monosaccharides and disaccharides
Week 5	Detection of complex sugars
Week 6	Estimating blood sugar
Week 7	Anonymous diagnosis of sugars to determine the type of sugars
Week 8	Fats and their solubility reactions in organic solvents
Week 9	Cholesterol interactions
Week 10	Protein interactions
Week 11	Melon detection Biuret detection
Week 12	Coagulation of proteins by heat
Week 13	Chemical reactions of urine
Week 14	Physical reactions of urine
Week 15	Estimation of blood chemical components

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Biochemistry Textbook	yes
Recommended Texts		
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Scientific research methodology			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**NTU 410**				
ECTS Credits	**2**				
SWL (hr/sem)	**2**				
Module Level	**Fourth**		**Semester of Delivery**	**Fourth**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**Dr. Abd Al-Bar Al-Farha**		**e-mail**	**dr.abdalbar@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**01/06/2021**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Seminar and Project**	**Semester**	**Second**
Co-requisites module		**Semester**	**Third**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Training the student on scientific thinking and research, how to conduct scientific experiments and apply them in the field, and how to take readings, analyze them, and give a logical analysis of the results.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	- **The student will be able to develop a research plan in any scientific subject, apply it, take the results, analyze them statistically, and give a scientific discussion of the results obtained from the research.**
Indicative Contents المحتويات الإرشادية	The modern scientific method,.[2] the beginning of the scientific theory and its steps,.[2] the assumptions on which the scientific approach to natural phenomena is based,.[2], the basic characteristics of scientific research,.[2], the characteristics of the successful researcher,.[2], the types of research and their applications,.[2], scientific research institutions, ,.[2] the foundations of choosing the problem,.[2] exploratory readings and review of previous research,.[2] the formulation of research hypotheses,.[2]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- **The student will be able to think scientifically in solving any problem and develop a strategy to conduct research and investigate scientific facts to solve the problem, take data, analyze it logically, and come up with recommendations to address the problem.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل75 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	2	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**32**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	The modern scientific method
Week 2	the beginning of the scientific theory and its steps
Week 3	the assumptions on which the scientific approach to natural phenomena is based .
Week 4	the basic characteristics of scientific research .
Week 5	the characteristics of the successful researcher .
Week 6	the types of research and their applications,
Week 7	scientific research institutions,
Week 8	the foundations of choosing the problem,
Week 9	Ways to display information
Week 10	Discussing research
Week 11	Publishing research

Week 12	**Introduction to the Internet and its uses**
Week 13	**exploratory readings and review of previous research,**
Week 14	**the formulation of research hypotheses,**
Week 15	**The Internet and scientific research**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lectures on scientific research methodology / Professor Dr. Iyad Youssef Al-Haj Ismail / 2019	
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Zonotic Disease**			**Module Delivery**	
Module Type	**Select**			☒ **Theory** ☐ **Lecture** ☐**Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ANP 454**				
ECTS Credits	**2**				
SWL (hr/sem)	4				
Module Level		**Four**	**Semester of Delivery**		**One**
Administering Department		**Animal Production** department	**College**	**Technical Agricultural College**	
Module Leader	**Donea Abdul Razzaq Abdullah**		**e-mail**	**doneaabad@ntn.edu.iq**	
Module Leader's Acad. Title		**Asst.Professor**	**Module Leader's Qualification**		**Phd.**
Module Tutor	**Yahya N.M. ALKATEB**		**e-mail**	**Yahyanatiq2003@ntu.edu.iq**	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/06/2023	**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	17. **Introducing the student to the most important basic information about the zonotic diseases, their diagnosis,transmition, controle and treatments.** 18. **Teaching and training the student to know the zonotic diseases classification .**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	21. **The collection of usefoll information about the animal and human general health condition.** 22. **The ability of managing moderate zonotic diseases with minemum loses to acheve the best possible efficiency** 23. **The student has knowledge about the couses of famous disease .** 24. **the students has a foll knowledge of the preveanting and controling of zonotic diseases.** 25. **the students has a good experience of using drugs and suplemintarry treatments**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Part A - theoretical part** **Classification of zonotic diseases accoding to the etiology ,affected animals types and the seasional of incedance . [3 hrs]** **The preveanting and controling of zonotic diseases. [3 hrs]** **The importance of vaccenation programs and prevaccenation system . [3 hrs]**

Part B - practical part

animal environment and animal manegments . [9 hrs].

animal feeding and menirals requirments . [9 hrs].

Routes of zonotic diseases transmetion . [9 hrs].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل60 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غترالمنتظم للطالب خلال الفصل	15	**Unstructured SWL (h/w)** الحمل الدراسي غترالمنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**60**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Preface to “Zoonotic Diseases and One Health
Week 2	**Mood of transmition**
Week 3	**The importance of zonotic diseases**
Week 4	**Farm animal zonotic diseases**
Week 5	**Birds zonotic diseases**
Week 6	**Cats zonotic diseases**
Week 7	**Dogs zonotic diseases**
Week 8	**Foood borne zonotic diseases**
Week 9	**Mad cow diseases**
Week 10	**Poplic health education**
Week 11	**Examination**
Week 12	**Bacterial diseases.**
Week 13	**Fungal diseases.**
Week 14	**Parasitic diseases**
Week 15	**Controle strategies of diseases.**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	Preface to “Zoonotic Diseases and One Health
Week 2	**Mood of transmition**
Week 3	**The importance of zonotic diseases**
Week 4	**Farm animal zonotic diseases**
Week 5	**Birds zonotic diseases**
Week 6	**Cats zonotic diseases**
Week 7	**Dogs zonotic diseases**
Week 8	**Foood borne zonotic diseases**
Week 9	**Mad cow diseases**
Week 10	**Poplic health education**
Week 11	**Examination**
Week 12	**Bacterial diseases.**
Week 13	**Fungal diseases.**
Week 14	**Parasitic diseases**
Week 15	**Controle strategies of diseases.**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Zoonotic Diseases and One Health** Special Issue Editors **Marcello Otake Sato** **Megumi Sato** **Poom Adisakwattana** **Ian Kendrich Fontanilla**	No
Websites	https://www.mdpi.com/books/reprint/2312-zoonotic-diseases-and-one-health	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Design and analysis of experiments			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**TAMO 401**				
ECTS Credits	**2**				
SWL (hr/sem)	**4**				
Module Level	fourth		**Semester of Delivery**	fourth	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Zahraa Abdulrahman Sabri		**e-mail**	**85zahraa@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**01/06/2021**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Mathematics**	**Semester**	
Co-requisites module	**Agricultural census**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Providing the student with experience in how to design experiments, then collect data, classify it, analyze it, then summarize it and come up with a recommendation to solve the problem for which the experiment was conducted.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Creating a solid scientific basis in the theoretical and practical aspects applied in the field of statistical programs. Providing the student with the skill of collecting primary data and summarizing it to solve the problem to be studied**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Part A - theoretical part** **Completely randomized design, advantages, disadvantages, use of the design if one observation is recorded for each experimental unit, A- if the number of repetitions is equal**

	Part B - practical part Statistical analysis of data

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل60 ساعة			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غيرالمنتظم للطالب خلال الفصل	15	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**60**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week 1	General definitions, experiment, design, working experimental unit, experimental error, conditions for controlling experimental error, basic rules for designing experiments, requirements for a good experiment, steps followed in scientific experiments.
Week 2	Completely randomized design, advantages, disadvantages, use of the design if one observation is recorded for each experimental unit, A- if the number of repetitions is equal
Week 3	Completely randomized design, advantages, disadvantages, using the design in the case of recording one observation for each experimental unit, b - in the case of unequal repetitions.
Week 4	Diagnosing the significance of differences between arithmetic means, the coefficient of variation in the experiment.
Week 5	Completely randomized block design, conditions for using the design, advantages and disadvantages of the design, sources of variation.
Week 6	Analysis of variance, determining the number of replicates, estimating the missing value (or more) in segments
Week 7	Latin square design, terms of use, advantages and disadvantages of the design.
Week 8	Sources of variation in Latin square, analysis of variance, missing value estimation or more.
Week 9	Factorial experiments, their conditions, advantages and disadvantages
Week 10	Sources of variation in factorial experiments, analysis of variance, interaction and its types.
Week 11	Split panel design, conditions, advantages, disadvantages
Week 12	Sources of variation in split plate experiments, analysis of variance
Week 13	A continuation
Week 14	Correlation and regression
Week 15	exame

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
week	**Material Covered**
Week 1	**Types of experiments, how to plan the experiment, and researcher specifications.**
Week 2	**Solve exercises to analyze data for a completely randomized design**
Week 3	**A continuation**
Week 4	**Solve exercises on determining the significance of differences between means**
Week 5	**Solve exercises to analyze data from a randomized complete block design**
Week 6	**A continuation**
Week 7	**Exercises to find the missing value in completely randomized blocks**
Week 8	**Latin square, design, analysis of sources of variation.**
Week 9	Solve exercises to analyze the sources of variation in the design of the Latin square
Week 10	Solve exercises to analyze the sources of variation in the design of the Latin square
Week 11	**designing factorial experiments**
Week 12	**Solve exercises for designing factorial experiments**
Week 13	**To analyze the variation of sources of variation in split panel designs**
Week 14	**Solve exercises to analyze the variance of sources of variation in split panel designs**
Week 15	**Solve exercises to find correlation and regression coefficients.**
Week 16	**Exame**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Design and analysis of experiments book	Yes
Recommended Texts		No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Emberyo Transfer			**Module Delivery**	
Module Type	Core			☒ Theory	
Module Code	ANP 402			☐ Lecture ☒ Lab	
ECTS Credits	3			☐ Tutorial ☐ Practical ☐ Seminar	
SWL (hr/sem)	4				
Module Level	One		**Semester of Delivery**	Semester	
Administering Department	Animal prodection ANP		**College**	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Mohammed azeez mohammed		**e-mail**	Mddazz84@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	Animal production	**Semester**	Two
Co-requisites module	Reprodective physiology and artifecial insenination	**Semester**	Two

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	**1. Introducing the student to the fertilization methodes** **2. Teaching and training the student to Embero transfer technology .** **3. Teaching and training the student to be able to work in emberyo lab.**
Module Learning Outcomes	**1. The learning outcome of veterinary embryo transfer involves understanding the process of embryo transfer, pregnancy diagnosis techniques, , and artificial insemination1 (https://fkh.ugm.ac.id/educations/undergrad-program/).** **2. and the ability to explain reproductive technology in cattle, sheep, goats, and horses. 3. This includes ovulation induction, synchronization, embryo transfer, pregnancy diagnosis, gamete micromanipulation, preservation and cryopreservation of gametes and embryos** **4. The program aims to improve reproductive efficiency and enable students to apply the concept of reproductive technology in real-world scenarios. Additionally, students should be able to conduct teamwork to discuss multidiscipline problems related to reproductive**
Indicative Contents	**Indicative content includes the following.** **Part A - theoretical part** The indicative content of veterinary embryo transfer includes embryo collection, evaluation, and transfer techniques. Embryo collection involves the use of a catheter recovery fluid to collect embryos, which are then evaluated under a microscope for fertilization and quality14. Embryos are classified based on their morphology, stage of development, and quality, with only fair, good, or excellent embryos being transferred Embryo transfer is typically done non-surgically using a small plastic straw and specialized pipette, with the number of embryos transferred depending on the species and individual circumstances

	Part B - practical part **Superovulation is often used to maximize the number of embryos collected, with two generally accepted methods involving the administration of equine chorionic gonadotropin (eCG) or follicle-stimulating hormone (FSH)1 (https://www.msdvetmanual.com/management-and-nutrition/embryo-transfer-in-farm-animals/embryo-transfer-in-cattle)2).** **Embryo transfer is a valuable tool for improving herd genetics and can result in multiple offspring from a single donor animal** **Veterinary students can learn about embryo transfer through coursework and hands-on experience, with opportunities available for current veterinarians to maintain their expertise in the field2 (https://fkh.ugm.ac.id/educations/undergrad-program/)4 (https://vetmed.iastate.edu/story/embryo-transfer).**

Learning and Teaching Strategies

Strategies	**he review highlights the importance of recognizing problems, gathering information, and proposing economically viable solutions1. The 5-element process includes defining the problem list, creating a timeline, describing the anatomical system or pathophysiological principle, proposing management, and identifying unique features**

Student Workload (SWL)

Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction emberyo terminology
Week 2	Super ovulation techniquehormones regulate ovarys
Week 3	Hormones regulate ovary
Week 4	Super ovulation treatment
Week 5	Embryos collection
Week 6	When should embryos be collected
Week 7	Surgical method non –surgical methods
Week 8	Evaluation of embryos
Week 9	Synchrnizing oestrus in donor and recipient
Week 10	How to breed the donor cow
Week 11	How to choose donorsfor embryo tramsfer

Week 12	Age of embryo at transfer
Week 13	Methods of sexing embryos
Week 14	Procedures for freezing embryo
Week 15	procedures for thawing embryo
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	Super ovulation techniques
Week 2	Super ovulation technique
Week 3	Embryos collection
Week 4	Surgical method
Week 5	Continue…
Week 6	Non-Surgical methods
Week 7	Continue…
Week 8	Evaluation of embryos
Week 9	Synchrnizing oestrus in cow and sheep
Week 10	Transfer techniques
Week 11	Transfer with cassou gun
Week 12	Procedures for freezing embryo
Week 13	procedures for thawing embryo
Week 14	Procedure for frozen storage of cattle embryo
Week 15	Synchrnizing oestrus in cow and sheep
Week 16	Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	https://books.google.com/books/about/Veterinary_Embryology.html?id=lNYtDwAAQBAJ	no
Recommended Texts	(https://vetmed.iastate.edu/story/embryo-transfer).	No
Websites	(https://fkh.ugm.ac.id/educations/undergrad-program/	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded

(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Ruminants Digestive Physiology			**Module Delivery**	
Module Type	**Core**			☒ **Theory**	
Module Code	ANP 408			☐ **Lecture**	
ECTS Credits	**3**			☐ **Lab**	
SWL (hr/se3m)	**5**			☒ **Tutorial**	
				☐ **Practical**	
				☐ **Seminar**	
Module Level	Four		**Semester of Delivery**	**Semester**	
Administering Department	**Animal Production ANP**		**College**	Technical Agricultural College	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**Waseem Amer Hashim**		**e-mail**	**Wasseem_amer@ntu.edu.iq**	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	Ruminants Physiology	**Semester**	Two
Co-requisites module	Physiology of Digestion	**Semester**	Two

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	18- Students are introduced to the organs of the digestive system and the function of each part of it in the digestion process according to modern scientific curricula linked to the developments witnessed by the developed countries of the world in this field. 19- The extent of the digestive system and its relationship to production in ruminant animals. 20- Directs students towards the desire to obtain a better experience when applying for postgraduate studies.
Module Learning Outcomes	22- 1- The importance of the digestive system, its environment, its contents, and its role in the decomposition of feed materials. 23- 2- Anatomy of the digestive system and knowledge of the mechanics of how each part of it works. 24- 3- Organizing and simplifying many digestive system tasks to become routine work that is easier for the breeder to do than providing food. 25- 4- Transferring scientific knowledge and scientific progress from the theoretical field to the field of application and work and benefiting from it in completing the work 26- 5- Optimal utilization of feed provided to farm animals and achieving economic efficiency. 27- 6- The ability to provide advice in the field of animal nutrition.
Indicative Contents	Educational content includes the following. Part A - Theoretical part The difference between the simple and compound stomach, what is the function of each, and the nature of its work with food. {3 hours] What is the rumen and what are the microorganisms present inside it and their types.{3hrs} The working principle of the digestive system and its connection to nervous control. {3 hours} Types of ruminants, the nature of their digestive system, and the type of their nutrition. {3 hours}

	Part B - practical part Anatomy of the digestive system and identification of the complex parts of the stomach. {9 hours} Classification of microorganisms according to the nature of their analysis of feed materials. {9 hours} The effect of energy and protein sources on the type of rumen bacteria. {9 hours} A study of the mechanism of rumination. {9 hours} The difference between the compound stomach and the simple stomach. {9 hours}

Learning and Teaching Strategies	
Strategies	Introducing the student to the organs of the digestive system of ruminants and the functions of each organ and to facilitate his better understanding of feed materials to obtain the best productivity from the animal through proper and consistent performance between all organs and food materials consumed.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The development of the stomach and intestines during the stages of an animal's life, comparing the stomach of ruminants to non-ruminants and semi-ruminants
Week 2	Feed ingestion, chewing, and animal behavior during consumption and breastfeeding
Week 3	Saliva: quantities, chemistry and functions
Week 4	Passage of consumed feed through the digestive tract, rumination, burping, rumen pressure, and movements and coordination of ingestion and defecation.
Week 5	Rumen bacteria, their ciliates, and enzymes secreted from them, as well as from the digestive tract
Week 6	Rumen fermentations: carbohydrates and lipids
Week 7	Rumen fermentations: nitrogenous compounds and the role of vitamins and inorganic elements in rumen fermentations
Week 8	A look at the anatomy and physiology of the digestive system in poultry
Week 9	Movement of nutrients within the digestive system of poultry
Week 10	Factors affecting feed intake in poultry (feed intake model, energy requirements, other nutrients, special appetites, water, egg laying, other secondary factors such as medications, stress, urging and pushing)
Week 11	Physiological control of food intake (central nervous system, metabolic control, gastrointestinal control)

Week 12	Production and storage of energy in chickens
Week 13	The role of the pancreas in digestive processes in poultry (pancreatic enzymes, bile)
Week 14	Regulating feed consumption in poultry
Week 15	Exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Anatomy of the ruminant stomach and surgical modifications of the digestive tract
Week 2	Factors affecting the development of the digestive tract and saliva secretion
Week 3	Functions of the digestive system: mouth, stomach, quadriceps, and intestines
Week 4	Methods for taking samples of nutrients in the rumen
Week 5	Methods of examining samples taken from the rumen of animals fed different feeds
Week 6	Cultivating germination and incubation of models taken from the rumen of animals and identifying the bacterial colonies and ciliates in them.
Week 7	Treatment of some digestive problems and the gastrointestinal tract: bloating, bloating, and poisoning with harmful plants or apolipoprotein nitrogenous compounds.
Week 8	Anatomy of the digestive system of poultry and identification of its different parts
Week 9	Explaining poultry and identifying all of the body's glands (pituitary, pineal, thyroid, pancreas, adrenal and the functions of each gland and their relationship to digestion and absorption processes in poultry)
Week 10	Conducting a field experiment in poultry nutrition by marking the feed with colored reagents, following the stages of digestion, absorption, and feed collection, measuring protein and some other nutritional elements in the fodder and feed materials to give an idea of the process of digestion and absorption of these nutrients and calculating the digestibility coefficient.

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	Physiology of digestion in ruminants	Yes
Recommended Texts	Physiology of digestion	yas
Recommended Texts	Physiology of ruminants	
Websites	https://bu.edu.eg/portal/uploads/Agriculture/Animal%20Production/1096/crs-15239/Anim.prod.1(phys.)6-digestive%20system.pdf	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	**Farm Management and establish techniques**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ANP 405**				
ECTS Credits	2				
SWL (hr/se3m)	4				
Module Level	four		**Semester of Delivery**	**Semester**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Doaa Qasim Sabri		**e-mail**	dqasm0478@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**8/1/2024**		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	21- Preparing students with the ability to work in the field of crop protection according to modern scientific curricula related to the developments that occur in developed countries in the world in this field 22- Entry into the agricultural sector with outstanding efficiency through participation in government projects And the labor market 23- directs students towards the desire to have better experience when applying for postgraduate studies.
Module Learning Outcomes	28- The importance of farming businesses in increasing information and expertise in the progress of agriculture and raising agricultural productivity - for one dunum 29- - the use of production elements with higher economic efficiency in order to reduce the cost of production and increase profits at the facility level 3 - Regulating and simplifying many Farmwork works to become a routine work that the worker can easily perform, saving time and effort. 4 - Transferring scientific knowledge and scientific progress from the theoretical field to the field of application and work and benefiting from it in completing work 5 -Optimal exploitation of production factors on the farm and achieving economic efficiency. 6 - The ability to provide advice in the field of farm management, especially in determining the financial and economic position For the facility and identifying the areas that give the highest returns.
Indicative Contents	Indicative content includes the following. Part A - theoretical part Optimal exploitation of production factors on the farm and achieving economic efficiency. {3 hrs] The principle of determining the best level of production. Substitution and substitution. The principle of opportunity costs.{3hrs} The principle of comparative advantage and the principle of equal marginal returns. Farm planning. Farm management methods.{3hrs} Full and partial budget. Measures of economic efficiency. .{3hrs} Risk and uncertainty.{3hrs}

	Part B - practical part Production component management. Land statistics { 9 hrs} Establishing farms. Estimating the value of agricultural land { 9 hrs} Department of Labor . Types of farm work. { 9 hrs} Mazari work specifications. Work and diamond head. . { 9 hrs} Divisions and forms of capital, basic agricultural management. { 9 hrs}

Learning and Teaching Strategies

Strategies	Providing students with the basics and lectures related to the subject. Using slide presentation methods for the purpose of conveying the information in a more clear way. Urging students to go to the library while asking them to do scientific reports on topics related to bioresistance.

Student Workload (SWL)

Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	The concept of farm management, its objectives and duties
Week 2	Farm management science and economic foundations
Week 3	Farm revenues
Week 4	Farm decisions
Week 5	The principle of determining the best level of production
Week 6	The principle of substitution and substitution
Week 7	The principle of opportunity costs
Week 8	Exam
Week 9	The principle of comparative advantage and the principle of equal marginal returns
Week 10	Farm planning
Week 11	Farm management methods
Week 12	Economic feasibility of projects
Week 13	Measures of economic efficiency
Week 14	Risk and uncertainty
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Law of diminishing returns
Week 2	Agricultural projects and the factors that affect the election of any agricultural project
Week 3	Establishment of farms
Week 4	Estimating the value of agricultural land

Week 5	Production elements
Week 6	Labor and capital
Week 7	Extinction

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Farm Administration, Hashim Alwan Al-Samrani, 1981.	Yes
Recommended Texts	Agricultural Establishments Management - Khaled Al-Ruwais 2003.	No
Websites	https://coagri.uobaghdad.edu.iq	

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F** - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Wild animals and decorations			Module Delivery	
Module Type	**elective**			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	ANP451				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	four		Semester of Delivery	**Semester**	
Administering Department	**Animal Production ANP**		**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Mohammed Waad Mohammed		e-mail	Mohammed.waad88@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module		Semester	
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Wildlife is one of the most important pillars of tourism, as humans are attracted to the beauty and life of wild animals. This reflects positively on the economy, creates new jobs, and also reflects positively on the environment and the preservation of these animals. 2. Historically, wildlife has played a large role in the daily lives of many cultures; As part of religious ceremonies, community events, and community bonding, wild animals still play a large role in many Third World countries. 3. Wildebeest migration, distribution and behavior patterns can be a vital indicator of ecosystem health and the deeper impacts of climate change. 4. Scientists can use animal distribution models to determine the best ways to preserve the natural environment; Animal behavior can also be an important indicator of unprecedented events, such as earthquakes, tsunamis or large storms; Historical information shows that wild animals can behave differently when they sense an imminent threat, and if this knowledge is harnessed effectively, it can save countless lives through early warning systems.
Module Learning Outcomes	Terrestrial animals can be divided into different species according to their taxonomic categories including phylum, class, order and family, and are further divided into categories such as invertebrates; Those that do not have spinal cords, and vertebrates; Those that have spinal cords. Invertebrates consist of animals such as insects, worms, crustaceans, molluscs, and cephalopods, while vertebrates consist of animals such as mammals, reptiles, fish, birds, and amphibians. These animals are considered land animals if not animals that It can be raised at home

Indicative Contents	. Wild animals are free-ranging animals that live and reproduce in the wild. They are the opposite of domesticated animals. They depend on themselves to hunt and find a shelter for themselves without human intervention. They constitute an important part of livestock, and cannot be dispensed with in the animal world for any reason. They are They are exposed to many risks, such as extinction, hunting, and predation from more powerful predators, compared to animals that live under human care Therefore, it requires careful study and attention.

Learning and Teaching Strategies	
Strategies	Teaching and training students: Animals acquire the character of the wild when they possess these characteristics: Living in nature: An animal is classified as a wild animal when its natural habitat is the wilderness. Inability to be tamed: An animal is classified as wild when it depends on itself to find its home and obtain its food to survive, and it does not interact with humans.

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The natural and economic importance of wild animals
Week 2	Groups of wild animals and their classifications
Week 3	The importance of wild animals among Arabs before and after Islam and the present time
Week 4	Nutritional care for various wild animals, both in zoos and nature reserves
Week 5	Veterinary and reproductive care for wild animals
Week 6	Genetic improvement, breeding and selection for wild animals
Week 7	Types of ornamental chickens
Week 8	Ornamental chicken specifications
Week 9	Nutrition and management of ornamental chickens
Week 10	Types of ornamental pigeons
Week 11	Feeding of ornamental pigeons
Week 12	Managing of ornamental pigeons
Week 13	Reproduction in pigeons
Week 14	Diseases affecting pigeons and methods of prevention and treatment
Week 15	General review of the curriculum

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Wild animal pens and cages
Week 2	Definition of the reserve and management of wild animal reserves
Week 3	Catching, handling and transporting wild animals
Week 4	Feeding, cleaning, daily treatments and newborn feeding
Week 5	Reproductive care, multiplying newborns, training them, and releasing them into the wild
Week 6	Zoo records management
Week 7	Estimating the age of the animal
Week 8	Learn about the specifications of ornamental chickens
Week 9	formation of ornamental chicken feeds
Week 10	Composition of ornamental pigeon diets
Week 11	Mating
Week 12	Monitor egg incubation and hatching
Week 13	Monitoring the feeding of mother pigeons to her young
Week 14	Raising hatched chicks
Week 15	General review of the curriculum

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Wild Animal Management Book / Written by: Prof. Dr. Hamid Majeed Al-Bayati	No
Recommended Texts	Textbook of wild and zoo animals/jacob v.cheeran	No
Websites	الحيوانات البرية(wikipedia.org)	

Grading Scheme				
Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings

	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Genital diseases and obstetrics**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ANP 406**				
ECTS Credits	**2**				
SWL (hr/sem)	4				
Module Level		**four**	**Semester of Delivery**		**Semester**
Administering Department		**Animal Production ANP**	**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title		**Asst.Professor**	**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**Dr. Abd Al-Bar Al-Farha**		**e-mail**	**dr.abdalbar@ntu.edu.iq**	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		**8/1/2024**	**Version Number**	**1.0**	

Relation with other Modules			
Prerequisite module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

Module Objectives أهداف المادة الدراسية	Introducing the student to the importance of pregnancy, its duration, the most important diseases associated with it, fetal diseases, as well as the phenomenon of miscarriage. The student will be able to deal with cases of dystocia and treat various reproductive diseases. 19. **Introducing the student to the most important basic information about obstitrics, abortion and causes of abortion, other reproductive diseases, their diagnosis, controle and treatments.** 20. **Teaching and training the student to know the mechanism of obstitrics in farm animals, dystocia and manpulation techniques .**
Module Learning Outcomes	26. **The student can be able to describe various genital disorders and obstitrics of farm animals.** 27. **The student can be able to diagnose, cntrol and treat different genital diseases.**
Indicative Contents	**Indicative content includes the following.** **Part A - theoretical part(30hrs) 2 hrs/each lecture)** **1- Introduction to Venereal Diseases and Physiology of the Female Reproductive System** **2- Infectious venereal diseases** **3- Brucellosis (Malta fever)** **4- Vaginitis is another disease of the female reproductive system** **5- Hormonal disorder that leads to infertility** **6- Estrus cycle failure or lack of estrus** **7- Nutritional and genetic causes of infertility** **8- Pathological causes of infertility affecting the ovaries** **9- Recurrence of estrus in cows and problems of breeding and management** **10- Physiology of sheep reproduction Infertility in sheep Anatomical causes** **11- Causes, changes and pathological pests affecting the reproductive system of sheep** **12- Introduction to veterinary childbirth and obstetric anatomy** **13- Childbirth signs of near-birth** **14- Time of intervention in natural childbirth** 15- **Dystocia, causes of dystocia**

Part B - practical part (30 hrs)

1. **Obstetric operations to correct the position of the fetus (6 hrs)**
2. **Wounds, bruises and diseases for the postpartum period (4 hrs)**
3. **Metabolic or nutritional diseases affecting animals (4 hrs)**
4. **Postpartum diseases and injuries Placental retention (4 hrs)**
5. **Diseases and injuries after Infertility (4 hrs)**
6. **Physiology of male reproduction (4 hrs)**
7. **Diseases and accidents that occur during pregnancy, Abortion (4 hrs)**

Learning and Teaching Strategies	
Strategies	**The necessity of visiting to gain experience from others. Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)			
Structured SWL (h/sem)	60	**Structured SWL (h/w)**	1
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	75		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Introduction to Venereal Diseases and Physiology of the Female Reproductive System
Week 2	Infectious venereal diseases
Week 3	Brucellosis (Malta fever)
Week 4	Vaginitis is another disease of the female reproductive system
Week 5	Hormonal disorder that leads to infertility
Week 6	Estrus cycle failure or lack of estrus
Week 7	Nutritional and genetic causes of infertility
Week 8	Pathological causes of infertility affecting the ovaries
Week 9	Recurrence of estrus in cows and problems of breeding and management
Week 10	Physiology of sheep reproduction Infertility in sheep Anatomical causes
Week 11	Causes, changes and pathological pests affecting the reproductive system of sheep
Week 12	Introduction to veterinary childbirth and obstetric anatomy
Week 13	Childbirth signs of near-birth
Week 14	Time of intervention in natural childbirth
Week 15	Dystocia, causes of dystocia

Delivery Plan (Weekly Lab. Syllabus)	
week	**Material Covered**
Week 1	**Obstetric operations to correct the position of the fetus**
Week 2	**Obstetric operations to correct the position of the fetus**
Week 3	**Wounds, bruises and diseases for the postpartum period**
Week 4	**Wounds, bruises and diseases for the postpartum period**
Week 5	**Metabolic or nutritional diseases affecting animals**
Week 6	**Metabolic or nutritional diseases affecting animals**
Week 7	**Metabolic or nutritional diseases affecting animals**
Week 8	**Metabolic or nutritional diseases affecting animals**
Week 9	**Metabolic or nutritional diseases affecting animals**
Week 10	Postpartum diseases and injuries Placental retention
Week 11	Postpartum diseases and injuries Placental retention
Week 12	Postpartum diseases and injuries Placental retention
Week 13	**Physiology of male reproduction**
Week 14	**Diseases and accidents that occur during pregnancy Abortion**
Week 15	**Diseases and accidents that occur during pregnancy Abortion**

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Obstitrics and Reproductive Disease	Yes
Websites		

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Animal breeding and improvement**			**Module Delivery**	
Module Type	**core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ANP401**				
ECTS Credits	**3**				
SWL (hr/sem)	**5**				
Module Level		**Four**	**Semester of Delivery**		**Semester**
Administering Department		**Animal Production ANP**	**College**	**Technical Agricultural College**	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title		**Asst.Professor**	**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**Haneen mowfak ahmed**		**e-mail**	**haneen.mowfak@ntu.edu.iq**	
Peer Reviewer Name		**Name**	**e-mail**	**E-mail**	
Scientific Committee Approval Date		**8/1/2024**	**Version Number**		**1.0**

Relation with other Modules			
Prerequisite module	**General Genetic**		
Co-requisites module			

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	**1. Identifying the methods of husbandry and improvement for farm animals.** **2. Understanding students' knowledge about methods of improving animal productivity in meat and milk.** **3. Recognizing the history of the evolution of animal husbandry and improvement science and evolution theories.** **4. Familiarizing with selection methods and their techniques.** **5. Enhancing students' skills in methods to increase agricultural animal productivity.**
Module Learning Outcomes	**1. Evolution of the Science of Breeding and Improvement** **2. The Importance of Environment and Genetics** **3. Quantitative and Qualitative Traits** **4. Gene Repetition** **5. Gene Repetition** **6. Equivalents** **7. Reproductive Coefficient** **8. Genetic Linkage** **9. Selection** **10. Selection and Its Types** **11. Selection and Selection Methods** **12. Educational Value** **13. Internal Breeding** **14. Internal Breeding** **15. Modern Techniques in the Science of Breeding and Improvement**

Indicative Contents	

Learning and Teaching Strategies	
Strategies	**1. Explanation and clarification.** **2. Lecturing.** **3. Lecturing.** **4. Playing videos and displaying images.** **5. Daily and monthly exams.**

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Modern Idea About the Origin of Life: The Theory of Evolution
Week 2	Statistical Principles Relevant to Animal Breeding: Ethical Tests, Variance Analysis
Week 3	Genetic Structure, Hardy-Weinberg Law, Analysis of Descriptive Traits
Week 4	Fundamentals of the Inheritance Process: Nature of Inheritance
Week 5	Gene Repetition: Variations in Gene Repetition
Week 6	Phenotypic Variation and its Multiple Causes
Week 7	"Internal Breeding and Degree of Relatedness: Genetic Effects of Internal Breeding"
Week 8	External Breeding, Crossbreeding, Heterosis, Hybridization
Week 9	Total Variation, Gene Effects, Environmental Variation, Reproductive Coefficient Effects
Week 10	Effective Hereditary Equivalents, Variation in Effective Hereditary Equivalents
Week 11	Phenotypic Genetic Linkage
Week 12	Selection of Quantitative Traits and Their Characteristics
Week 13	Improvement of Dairy Cattle: Objectives of Dairy Cattle Improvement
Week 14	Improvement of Beef Cattle: Objectives of Beef Cattle Breeding
Week 15	Sheep Improvement: Breeds and Types of Sheep

Delivery Plan (Weekly Lab. Syllabus)

week	Material Covered
Week 1	The agricultural animals, their directions, and the purpose of their breeding
Week 2	Examples of methods for measuring statistical principles include
Week 3	Examples to illustrate specific laws
Week 4	Practical examples illustrating the nature of inheritance.
Week 5	Methods for measuring gene repetition with practical examples.
Week 6	Methods for measuring phenotypic variation.
Week 7	Experiments in internal breeding: methods for measuring internal breeding.
Week 8	Experiments in external breeding with practical examples.
Week 9	Methods of measurement with examples.
Week 10	Methods for estimating hereditary equivalents.
Week 11	Methods for measuring genetic and environmental correlations.
Week 12	Laws of selection and methods of measurement.
Week 13	Selective breeding of females and males dedicated to dairy cattle.
Week 14	Special laws in deriving new breeds for beef cattle.
Week 15	Basic principles in forming sheep breeds and their meat productivity.

Grading Scheme

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX** - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	**Animal Breeding and Improvement - Authored by Dr. Salah Jalal and Hassan Karam**	**Yes**
Recommended Texts	**International magazines in SQUISE containers**	**No**
Websites	**https://onlinelibrary.wiley.com/journal/14390388**	

(0 - 49)	**F** - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Eggs and sperm Technology**			Module Delivery	
Module Type	Select			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	**ANP 452**				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	Four		Semester of Delivery	**Semester**	
Administering Department	Animal production ANP		College	Technical Agricultural College TAMO	
Module Leader	**Dr.Donea abdulrazzaq abdullah**		**e-mail**	**Doneaabed@ntu.edu.iq**	
Module Leader's Acad. Title	**Asst.Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	Mohammed wasfi mustafa		e-mail	mohammed.w.mustafa@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module	**Animal Histology**		
Co-requisites module			

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	37. The student is introduced to the beginning of the generation of sperm and eggs and predicts them, how to mate, polarize, etc., as well as the pattern of fertilization. The student calls work in artificial insemination laboratories embryos..
Module Learning Outcomes	41. Gametogenesis: Students learn about the process of sperm and egg formation and how they are formed in the body. 42. Fertilization: Students learn about the process of fertilizing an egg and the role of sperm in this process. 43. Stages of Embryonic Development: Students learn about the stages of embryonic development after fertilization, starting from the attachment of the embryo to the uterine lining until the formation of the embryonic layers. 44. Organ Formation and Nervous System: Students study the development of the organs and nervous system of the fetus, including the development of the brain, spine, and head and neck organs.
Indicative Contents	47. sperm and semen in fish 48. Mixing between different types of fish 49. Formation of sperm and mature eggs in birds 50. Physical and chemical properties of semen in birds 51. Semen collection 52. Artificial insemination in birds 53. The process of unifying estrus 54. Egg transfer and freezing

Learning and Teaching Strategies	
Strategies	42. Dialogue and discussion-based learning: Students are encouraged to participate in group discussions about texts and concepts, which helps deepen understanding and develop critical thinking skills. 43. Project-based learning: Students work on research projects related to the topic, which helps them apply knowledge in practical contexts and develop research and analysis skills. 44. Cooperative Learning: Students are divided into small groups to work together on specific tasks, promoting interaction and group learning. 45. Using Multimedia: Presenting content through videos, animations, and presentations to illustrate concepts in a visual and audio manner. 46. Self-learning: Encouraging students to do self-research and reading to enhance independence in learning and develop investigation skills. 47. Self-Assessment and Peer-Assessment: Students evaluate themselves and classmates to enhance self-understanding and provide constructive feedback. 48. Differentiated Instruction: Presenting content in different ways to meet the needs of diverse students and different learning styles

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	sperm and semen in fish, influencing factors, semen preservation
Week 2	Fish eggs, development and hatching, influencing factors
Week 3	Breeding between different types of fish, and productive characteristics of hybrids
Week 4	Producing sterile tetraploid fish by treating eggs and sperm
Week 5	Production of mono-sex fish
Week 6	The process of formation of sperm and mature eggs in birds and the hormones affecting them
Week 7	Physical and chemical properties of semen in birds (sperm shape, chemical composition and metabolism, chemical composition of seminal plasma
Week 8	Semen collection, semen evaluation, composition, volume
Week 9	Semen preservation, freezing, parthenogenetic reproduction
Week 10	Artificial insemination in birds, its benefits, semen dilution
Week 11	Ovulation chart for cows and sheep
Week 12	The process of unifying estrus

Week 13	Egg transfer and freezing
Week 14	Embryo transfer
Week 15	Biological cloning

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Examination of semen and its characteristics, color, density, pH of different fish
Week 2	Examining sperm movement, collective movement, and individual movement of different fish
Week 3	Semen preservation, cooling, freezing
Week 4	Examining the eggs of various types of fish, estimating the eggs by diameter and numbers
Week 5	Transferring eggs according to different stages
Week 6	Observing developments in sperm formation by making slides of mature bird testicles
Week 7	The mechanism of action of sperm penetrating the egg in poultry birds and comparing it with mammals
Week 8	Performing the process of collecting semen from the testicle, performing rapid tests
Week 9	Semen examinations, sperm motility examination, sperm morphology
Week 10	Conducting artificial insemination for female chickens, how to preserve semen
Week 11	Ovulation trigger hormones, ovulation triggering process
Week 12	Hormones in the process of consolidating estrus
Week 13	Egg transfer, egg freezing
Week 14	Embryo transfers
Week 15	Biological cloning

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Animal Behavior, Ahmed Hammad Al-Husseini	Yes
Recommended Texts	book Ecology and animal behavior , Edward M. Barrows	No
Websites	علم السلوك الحيواني - ويكيبيديا(wikipedia.org)	

Grading Scheme

Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	F - Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	Poultry Diseases			**Module Delivery**	
Module Type	Core			☒ Theory	
Module Code	ANP 409			☐ Lecture	
ECTS Credits	2			☒ Lab	
SWL (hr/sem)	4			☐ Tutorial ☐ Practical ☐ Seminar	
Module Level	Four		**Semester of Delivery**	Semester	
Administering Department	Animal prodection ANP		**College**	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		**e-mail**	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Mohammed azeez mohammed		**e-mail**	Mddazz84@ntu.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	8/1/2024		**Version Number**	1.0	

Relation with other Modules			
Prerequisite module	Poultary prodection technology	**Semester**	Two
Co-requisites module	anatomy, physiology, diseases, and pathology.	**Semester**	Two

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	1. Introducing the student to the most common diseases in poultary prodection. 2. Traning the student to recognized sevrity and stages of different diseases. 3. Traning of the student to diagnosis,tratment and protection methodes.
Module Learning Outcomes	1. understanding the definition of a disease and its causes, recognizing the vulnerabilities of poultry 2. , identifying symptoms of high-risk poultry diseases, knowing who to contact when birds are sick, . 3. preventing diseases from spreading. Diseases can be categorized by common causes, such as genetic, mechanical, toxic, and nutritional factors, . 4. infectious and parasitic diseases caused by viruses, bacteria, fungi, protozoa, worms, mites, and lice. 5. Infectious agents move from one susceptible bird to another to survive, and diseases can spread through direct and indirect contact, vectors, and the survival period of the AI virus.
Indicative Contents	The indicative content of a module on poultry diseases includes defining diseases, recognizing disease-causing agents, understanding poultry vulnerabilities, identifying symptoms of high-risk diseases, knowing who to contact when birds are sick, and preventing disease spread. Diseases can be caused by genetic, mechanical, toxic, and nutritional factors, as well as infectious agents like viruses, bacteria, fungi, protozoa, worms, mites, and lice. Prevention involves avoiding contact with wild waterfowl, controlling pests, seeking diagnostic help, and implementing biosecurity measures. Specific diseases like Avian Influenza (AI) and Exotic Newcastle Disease (END) are highlighted with prevention strategies.

	Part B - practical part he content of a poultry disease module covers understanding the definition of diseases, identifying various factors that cause them, and taking measures to prevent their spread. Diseases can be classified into different categories, including genetic, mechanical, toxic, and nutritional factors, as well as infectious and parasitic diseases caused by viruses, bacteria, and fungi. Infectious agents can transmit from one susceptible bird to another, and diseases can spread through various means, such as direct and indirect contact, vectors, and the survival period of the AI virus. Preventive measures include housing poultry indoors, avoiding contact with wild and domestic waterfowl, controlling pests, seeking diagnostic help, and implementing biosecurity measures. The module also discusses exotic Newcastle disease, its spread, and prevention strategies.

Learning and Teaching Strategies

Strategies	**he necessity of visiting to gain experience from others.Obtaining new scientific information in the field of scientific research (videos). Practical training in the field. Access to modern scientific literature. Participation in relevant scientific conferences. Scientific laboratories with other universities.**

Student Workload (SWL)

Structured SWL (h/sem)	45	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	**60**		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Lab. Syllabus)

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week	Material Covered
Week 1	Poultary disease classification
Week 2	Mal nutrition diseases
Week 3	Diagnosis of salmonellosis
Week 4	Diagnosis of E.coli
Week 5	Diagnosis of coryza
Week 6	Diagnosis of CRD
Week 7	Diagnosis of ND
Week 8	Diagnosis gumboro
Week 9	Diagnosis of IB,ILT
Week 10	Diagnosis Neopasia
Week 11	Diagnosis of parasitic diseases
Week 12	Traning for pharmacolgicl preperation
Week 13	Types of vaccine and vaccination methodes
Week 14	Diagnosis of fungal diseaes
Week 15	Diagnosis of mark disease
Week 16	Exam

Delivery Plan (Weekly Syllabus)

Week	Material Covered
Week 1	Clasification of poultary diseases , diagnosis ,and prophylaxis
Week 2	Bacterial diseases/ salmonella,typhoid and paea typhoid
Week 3	E. Coli infections
Week 4	Coryza and fowel cholera
Week 5	Mycoplasma and CRD
Week 6	TB,necrotic enteritis
Week 7	Viral diseases/ ND
Week 8	GUMBORO disaese
Week 9	ILT, IB
Week 10	Neoplasm diseases
Week 11	Coccidia,and parasitic infection
Week 12	Fungal diseases
Week 13	Disase control and prophylaxis
Week 14	Malmangment related diseases
Week 15	Nutrtion diseases
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Poultry Diseases" by Pattison, which is currently in its sixth edition	no
Recommended Texts	‘mportant Poultry Diseases" booklet is also a valuable resource for basic understanding of the most important poultry diseases	No
Websites	https://www.poultryworld.net/health-tool/	

Grading Scheme				
Group	**Grade**	Estimation	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	**FX -** Fail	Precipitate (in process)	(45-49)	More work required but credit awarded
(0 - 49)	**F -** Fail	Precipitate	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

Module Information					
Module Title	**Meat cattle production**			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☒ Practical ☐ Seminar	
Module Code	**ANP403**				
ECTS Credits	2				
SWL (hr/sem)	4				
Module Level	Four		Semester of Delivery	**Semester**	
Administering Department	Animal production ANP		College	Technical Agricultural College	
Module Leader	Dr.Donea abdulrazzaq abdullah		e-mail	Doneaabed@ntu.edu.iq	
Module Leader's Acad. Title	Asst.Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Mohammed wasfi mustafa		e-mail	mohammed.w.mustafa@ntu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	**8/1/2024**		Version Number	1.0	

Relation with other Modules			
Prerequisite module	Animal environment and behavior, meat production techniques		
Co-requisites module			

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	38. Introducing the student to the types of local and international cows and methods of managing them in terms of nutrition, reproduction, and meat production. 39. The student becomes able to establish and manage their fields and keep their records.
Module Learning Outcomes	45. Understanding the basics of animal production and the factors affecting it 46. Applying modern agricultural practices in raising and caring for beef cattle 47. Manage the nutrition and health care of livestock in a sustainable manner 48. Analysis of environmental impacts and climate changes on beef cattle production 49. Evaluating the economic aspects of beef cattle projects and improving production efficiency
Indicative Contents	55. Modern methods of selecting meat animals and methods of preparing carcasses and their cuts 56. Raising calves from birth until weaning 57. Beef livestock housing systems and modern methods for promoting beef livestock projects 58. Climate changes and their impact on the performance of beef cattle 59. Discussing strategies to confront climate change in beef cattle farms 60. Techniques used to reduce feeding costs and maximize profits for beef cattle projects 61. Economics of beef cattle farms, nutritional care and fattening systems for beef cattle 62. Health care of meat production animals

Learning and Teaching Strategies	
Strategies	49. Learning: Encouraging participants to be creative through discussions, presentations, and group projects. 50. Problem-based learning: Using possible scenarios to enhance students' problem-solving skills. 51. Cooperative Learning: Promoting teamwork experiences among students. 52. Self-learning: Motivating students to self-investigate their deeper understanding of topics. 53. Formative Assessment: Conduct periodic assessments to monitor their students' progress towards continuous improvement. 54. Using technology: integrating elements into interactive teaching and understanding. 55. Practical training: Providing permanent employment opportunities on farms or meat production facilities. 56. Learning: Between Friday learning, electronic integration, and the comprehensive experience.

Student Workload (SWL)			
Structured SWL (h/sem)	75	**Structured SWL (h/w)**	3
Unstructured SWL (h/sem)	15	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	90		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	The role of livestock in agriculture and the economic importance of raising them, the advantages of raising livestock, the importance of cows in meat production
Week 2	Origin of livestock, location of the animal kingdom, local and international cow breeds
Week 3	Factors and constraints that affect livestock production, methods for developing meat production
Week 4	Reproductive efficiency, methods for measuring it, physiological factors associated with fertility, methods for raising reproductive efficiency, insemination, pregnancy, childbirth.
Week 5	Factors affecting the health of pregnant cows and the health of newborns
Week 6	How to produce healthy fattening calves
Week 7	Genetic bases for improvement, animal cell, qualitative traits, quantitative traits, estimating the value of genetic improvement
Week 8	Methods of genetic improvement in livestock, selection, mating systems
Week 9	Anatomy and physiology of the digestive process, animals' needs for nutritional elements and compounds
Week 10	Livestock nutrition, the most important livestock feeds, composition and calculation of balanced diets, preparation of feed mixtures, nutritional requirements for beef cattle according to age and productivity.
Week 11	Fattening methods, fattening requirements,

Week 12	Producing healthy meat free of pathogens, causes of poor quality meat, and factors that cause spoilage and spoilage of meat
Week 13	Livestock health, livestock diseases, herd health preventive program
Week 14	Establishing livestock farms, raising calves and heifers, managing herds of different ages,
Week 15	Storage and marketing of livestock products (meat, processed meat)

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Components of cow fields, field management in practice, how to control animals, cow body parts
Week 2	Morphological and productive characteristics of different international breeds and cows and local livestock
Week 3	Characteristics of a meat animal model, judging and using animal measurement tables, body measurements and dimensions
Week 4	Animal pens and accessories (pen pens for cows, calves, and bulls, fattening calves, fattening buildings, maternity houses, isolation pens, feed stores
Week 5	Field records, breeding records, reproduction, nutrition, diseases, births, mortality, growth records, fattening.
Week 6	Daily field operations, seasonal, animal care and service program, numbering, restraining, neutering
Week 7	Pastures and grazing methods, calculating the animal's needs for green fodder, and the area of pastures required for the herd
Week 8	Composition of livestock rations
Week 9	Bad habits in livestock and ways to get rid of them
Week 10	Breastfeeding and artificial feeding methods in livestock fields, postpartum care for newborns, milk substitutes for breastfeeding
Week 11	Feeding method for fattening calves and managing their fields
Week 12	Formation of broiler diets
Week 13	Preparing calves for slaughter, carrots and cutting
Week 14	Freezing and marketing of produced meat
Week 15	A visit to one of the dairy cow stations and calf fattening fields

Grading Scheme مخطط الدرجات				
Group	Grade	Estimation	Marks %	Definition
Success Group (50 - 100)	A - Excellent	Excellence	90 - 100	Outstanding Performance
	B - Very Good	Very good	80 - 89	Above average with some errors
	C - Good	Good	70 - 79	Sound work with notable errors
	D - Satisfactory	Average	60 - 69	Fair but with major shortcomings
	E - Sufficient	Acceptable	50 - 59	Work meets minimum criteria
Fail Group	FX - Fail	Precipitate (in process)	(45-49)	More work required but credit awarded

Learning and Teaching Resources		
	Text	Available in the Library?
Required Texts	Beef cattle, Prof. Dr. Mohamed Salah Ayat	Yes
Recommended Texts	Raising Beef Cattle For Dummies Paperback – Illustrated, July 3, 2012 by Scott Royer (Author), Nikki Royer (Author)	No
Websites	https://almerja.net/reading.php?idm=48213	

(0 - 49)	F - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.