

1	Course title	Dairy Cattle Nutrition
2	Course number	602487
3	Credit hours	3
	Contact hours (theory, practical)	(3,0)
4	Prerequisites/co-requisites	Principles of Animal productions (0602382)
5	Program title	B.Sc. Animal Production
6	Program code	602
7	Awarding institution	The University of Jordan
8	School	Agriculture
9	Department	Animal Production
10	Course level	4 th year
11	Year of study and semester (s)	2 nd semester 2021/2022
12	Other department (s) involved in teaching the course	None
13	Main teaching language	English
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
15	Online platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....
16	Issuing/Revision Date	January, 2022

17. Course Coordinator:

Name: Prof. Hosam Titi Office number: 2 - Green house Email: htiti@ju.edu.jo Phone number: 22384	Contact hours: 10.30 – 14.30 (Sun, Tue, Thu). Students are also welcomed at any time but they are encouraged to schedule meetings.
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18. Other instructors:

Name: Office number: Phone number: Email: Contact hours:
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19. Course Description:

The course is aims to prepare students with the basics of dairy cattle nutrition. Topics covered are Rumen development, feeding baby calves, feeding growing heifers, BCS, plus feeding dry and transition cows. the course will also provide practices on ration formulation, TMR and NRC 2001 software applying. Special topics like nutrition and reproduction, feeding during hot periods will also be covered. The last section will discuss metabolic disorders and Feed additives.

20. Course aims and outcomes:

A- Aims:

The aim of this course is to provide a deep understanding on basic dairy cattle nutrition and main factors affecting and participating in it.

Course outcome

- 1- Acquire knowledge on feeding growing heifers during different growth stages.
- 2- Knowledge of proper feeding during the lactation season for best performance.
- 3- Understanding the different aspects of ration formulation for dairy cows.
- 4- Understand metabolic disorders affecting lactating dairy cow.

B- Students Learning Outcomes (SLOs):

Upon successful completion of this course, students will be able to:

Course SLOs	Program ILOs*						
	ILO (1)	ILO (2)	ILO (3)	ILO (4)	ILO (5)	ILO (6)	ILO (7)
1. Acquire knowledge on feeding growing heifers during different growth stages.	x		x		x	x	
2. Knowledge of proper feeding during the lactation season for best performance.		x	x			x	x
3. Understanding the different aspects of ration formulation for dairy cows.	x		x	x	x	x	x
4. Understand metabolic disorders affecting lactating dairy cow.	x	x	x		x	x	

*** Program ILOs:**

ILO (1): Demonstrate a deep understanding of the basic principles in the various areas of livestock production; including nutrition, physiology, genetics, health and management.

ILO (2): Apply the acquired knowledge in various areas of livestock production.

ILO (3): Utilize critical thinking and logical reasoning in addressing issues related to livestock production.

ILO (4): Communicate effectively with a wide range of related stakeholders and provide appropriate extension services.

ILO (5): Apply the principles of public safety and environmental protection.

ILO (6): Acquire and apply practical skills along with keeping up with recent advances in livestock production.

ILO (7): Identify basic principles of research methodology and evidence-based decision making.

ILO (8): Abide by professional, ethical and legal considerations relevant to the livestock production.

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1 2 3	Development of the Reticulo-rumen.	1, 3, 5, 6	Face to Face	MS Teams	Synchronous	Assignments & quizzes	
2	4 5 6	Feeding Baby Calves.		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
3	7 8 9	Feeding Baby Calves.		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
4	10 11 12	Feeding Growing Heifers		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
5	13 14 15	Growth and Body Condition Score.	2, 3, 6, 7	Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
6	16	1 st Exam		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
	17 18	Feeding Dry and Transition cow.						
7	19 20 21	Feeding Dry and Transition cow.	Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes		
8	22 23 24	Ration Formulation & Total Mixed Rations	1, 3, 4, 5, 6, 7	Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
9	25 26 27	Ration Formulation & Total Mixed Rations		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
10	28 29 30	NRC (2001) and Nutrient requirements.		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
11	31	2 nd exam	2, 3, 6, 7	Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes	
	32 33	Nutrition and reproduction.						

12	34 35 36	Nutrition and reproduction. Feeding in Hot Environments.	1, 2, 3, 5, 6	Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes
13	37 38 39	Feeding in Hot Environments Metabolic Disorders.		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes
14	40 41 42	Metabolic Disorders.		Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes
15	43 44 45	Metabolic Disorders. Feed Additives.	1, 3, 4, 5, 6, 7	Face to Face	MS Teams + Moodle	Synchronous	Assignments & quizzes
16	46	Feed Additives. Final Exam					

22. Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Midterm Exams	30%	1 st Exam cover material up feeding growing heifers. 2 nd Exam cover material up to TMR. Each exam accounts 15 % of your grade.	See the students learning outcomes (SLOs) table	5 th & 10 th week	Face to Face
HW and assignments	20%	Each students have 4 HW each will be graded out of 10 and 2 separate assignments each will be graded out of 10. Average of each part will be added to get your grade out of 20%.		Upon request	Face to Face
Final Exam	50%	All covered topics		16 th week	Face to Face

23. Course Requirements

Students should have a computer, webcam, internet connection, account on a specific software/ platform...etc.):

24. Course Policies:

A- Attendance policies:

Each student is expected to take their own notes (part from the exam) and to attend class. Absence from lectures shall not exceed **15%**. Students are expected to attend all lectures but if a student is absent from class, it is his responsibility to get the material that was missed. You must get any handouts or notes from your classmates.

B- Absences from exams and submitting assignments on time:

Exams will consist of **Essay questions and some multiple choice**. Exams will cover all material presented for each section. Make-up exams will only be provided for students with an excused absence and supporting documentation. The questions and/or format of any make-up exam may differ from that of the original exam. Scheduling of a make-up exam will vary depending upon available dates/times but **MUST** occur before the next-scheduled exam date.

C- Health and safety procedures:

Students should follow the Jordanian government guide

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Academic dishonesty will **NOT** be tolerated. This includes cheating, fabrication or falsification, plagiarism, abuse of academic materials, complicity in academic dishonesty, falsifying grade reports, and misrepresentation to avoid academic work. For this course, evidence of any form of academic dishonesty will result in all involved students receiving zero points for any associated exam, or assignment

E- Grading policy:

2 Mid-exams (15% each)	30%
HW and assignments	20%
Final Exam	50%
Total Points	100%

F- Available university services that support achievement in the course:
 Students account on E-learning, and Microsoft teams

25. References:

A- Required book(s), assigned reading and audio-visuals:

1. **Class material notes.**
2. **Dairy Cattle Feeding and Nutrition.** William Jack Miller. 1979.
3. **NRC of Dairy cattle 2001. 7th ed. and new revised 8th ed 2021.**

B- Recommended books, materials and media:

- Internet publications
- Sheet hand-outs.
- NRC ration formulation software.

PDF copies of all class material is also available.

26. Additional information:

Name of Course Coordinator: Dr. Rabie Irshaid	Signature: ----- Date: 13/12/2021
Head of Curriculum Committee/Department: ----- Signature: -----	
Head of Department: ----- Signature: -----	
Head of Curriculum Committee/Faculty: ----- Signature: -----	