

## Course Syllabus

1	<b>Course title</b>	Dairy Cattle Production
2	<b>Course number</b>	602215
3	<b>Credit hours</b>	3 hrs.
	<b>Contact hours (theory, practical)</b>	3 , 0
4	<b>Prerequisites/corequisites</b>	Principles of Animal Production (602101)
5	<b>Program title</b>	B.Sc. in Animal Production
6	<b>Program code</b>	
7	<b>Awarding institution</b>	University of Jordan
8	<b>School</b>	Agriculture
9	<b>Department</b>	Animal Production
10	<b>Course level</b>	2 <sup>nd</sup> year
11	<b>Year of study and semester (s)</b>	Second semester 2021/2022
12	<b>Other department (s) involved in teaching the course</b>	None
13	<b>Main teaching language</b>	English
14	<b>Delivery method</b>	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
15	<b>Online platforms(s)</b>	<input type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....
16	<b>Issuing/Revision Date</b>	14/3/2022



### 17 Course Coordinator:

Name: Prof. <b>Mufeed A. Alnimer</b>	Contact hours: 9.30 – 10.30 (Sun, Tue, Thu)
Office number: <b>032</b>	Phone number: <b>22383</b>
Email: <b>amufeed@ju.edu.jo</b>	

### 18 Other instructors: No other instructors.

### 19 Course Description:

The purpose of this course is to establish an understanding of the Fundamental principle of economics, genetics, nutrition, physiology, veterinary medicine and knowledge of husbandry practices. Stress is concentrated upon detailed practices about how to breed, feed and manage dairy cows in order to enhance milk production.

### 20 Course aims and outcomes:

#### A- Aims:

The General objective of this course is to Understand the basic competences which the dairyman should have to succeed in dairy farming. Also to Understand the basic principles of breeding and systems of genetic improvement in dairy cattle, the nutrient requirements and feeding practices for dairy cows, understand the anatomy and physiology of the reproductive system and mammary glands in addition to its effect on overall performance of dairy cows.

#### B- Students Learning Outcomes (SLOs):

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

Program SLOs*	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)
SLOs of the course								
(1) Student should know the importance of milk production from dairy cows for human consumption.	X							
(2) Student should have the knowledge of how the use of genetic improvement systems could positively affect the production of milk from dairy cows.	X	X	X			X		
(3) Student should know and understand the basics of dairy cow nutrition and feeding systems and their impact on dairy operations	X	X				X		
(4) The student's ability to understand general endocrinology and analyze the effect of reproduction and its related technologies on dairy farm profitability.	X	X	X			X		
(5) Understanding the cow mammary gland system and how it synthesizes milk components and the process of milk ejection	X							

**\*Program SLOs:**

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

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

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

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

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

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

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

SLO (8): Abide by the 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	1.1	<b>INTRODUCTION AND OBJECTIVES</b>	See the students learning outcomes (SLOs) table		Microsoft Teams	Synchronous	Home works, Quizzes and exams	Chapter 1, Bath et al., 1984.
	1.2			Blended		---		
	1.3	- Dairy cattle and dairyman		Fully Online				
2	2.1			Blended		Synchronous		
	2.2	- Establishment of dairy enterprise						
	2.3	- Nutritional value of milk		Fully Online				
3	3.1	- Milk marketing and pricing		Blended		Synchronous		
	3.2	- Records and record keeping				---		
	3.3	- Animal identification		Fully Online				
4	4.1	- Breeding - Genetic basis for improvement		Blended		Synchronous		
	4.2	- Qualitative and quantitative traits						
	4.3	- Breeding value		Fully Online				
5	5.1	- Estimating the breeding value		Blended		Synchronous		
	5.2	- Evaluating the genotype of cows				---		
	5.3	- Estimating the breeding value of bulls		Fully Online				

							internet sites.
6	6.1	- Methods of genetic improvement	Fully Online	Synchronous	---	Dairy Cattle internet sites.	
	6.2	- Gene frequency Selection Migration					
	6.3	- Systems of mating Breeding programs					
7	7.1	- Nutrition and feeding practices	Fully Online	Synchronous	---	Dairy Cattle internet sites.	
	7.2	- Anatomy and physiology of digestion					
	7.3	- Nutrient requirements					
8	8.1	- Feeding lactating cows - Feeding non-lactating animals	Blended + Fully Online	Synchronous	---	Dairy Cattle internet sites.	
	8.2	- Reproduction					
	8.3	- General endocrinology					
9	9.1	- The nervous and endocrine systems - Regulation of hormone secretion	Fully Online	Synchronous	---	Dairy Cattle internet sites.	
	9.2	- Use of hormones in dairy cattle					
	9.3	- Anatomy and physiology of reproductive systems - Puberty					
10	10.1	- Estrous cycle and ovulation	Blended	Synchronous		Dairy	

	10.2	- Artificial insemination					Cattle internet sites.
	10.3	- Fertilization					
11	11.1	- Pregnancy and Parturition				Synchronous	
	11.2	- Management problems in reproduction					
	11.3	- Measures of reproductive efficiency					
12	12.1	- Physiological factors affecting fertility				Synchronous	Chapter 16, Bath et al., 1984.
	12.2	- Pathological causes of infertility					
	12.3	- Nutritional factors associated with infertility					
13	13.1	- Environmental factors affecting reproduction				Synchronous	Dairy Cattle internet sites.
	13.2	- Anatomy and physiology of the mammary gland - External and internal features					
	13.3	- Growth and development					
14	14.1	- Hormonal control of lactation - Artificial induction of lactation				Synchronous	Dairy Cattle internet sites.
	14.2	- Biosynthesis of milk - Cytology of the secretory cell - Biosynthesis of milk protein					

	14.3	<ul style="list-style-type: none"> <li>- Carbohydrate metabolism</li> <li>- Milk fat synthesis</li> <li>- Factors affecting composition and yield of milk</li> </ul>		Fully Online		---		et al., 1984.  Dairy Cattle internet sites.
15	15.1	<ul style="list-style-type: none"> <li>- Herd management</li> <li>- Care of cow and calf at calving</li> </ul>		Blended		Synchronous		Chapter 20, 21, 22, Bath et al., 1984.
	15.2	<ul style="list-style-type: none"> <li>- Calf raising</li> <li>- Herd health</li> </ul>						Dairy Cattle internet sites.
	15.3	<ul style="list-style-type: none"> <li>- Housing and equipment</li> </ul>		Fully Online		---		

## 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
Mid Exam	30%	<b>CLASS MATERIAL UNTIL LECTURE 8.1 (FEEDING LACTATING AND NON-LACTATING COWS)</b>	<b>See the students learning outcomes (SLOs) table</b>	<b>Sunday 24/4/2022</b>	Face to face
Participation, Reports and Quizzes	20%	<b>Along the semester</b>		<b>Different dates</b>	Online + Face to face
Final Exam	50%	<b>All class materials</b>		<b>According to administration and registration unit</b>	Face to face



## 23 Course Requirements

**Students should have a computer and good internet connection with an account on Microsoft teams.**

## 24 Course Policies:

A- Attendance policies: **Students are expected to attend all lectures but if a student is absent from class, it is their responsibility to get the material that was missed and the UJ regulations will followed if absences exceed the upper threshold limit.**

B- Absences from exams and submitting assignments on time: **Each status will be treated according to UJ regulations.**

C- Health and safety procedures: **Not applicable.**

D- Honesty policy regarding cheating, plagiarism, misbehavior: **According to UJ regulations.**

E- Grading policy: **See the previous section.**

F- Available university services that support achievement in the course: **According to UJ regulations.**

## 25 References:

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

- Bath, D.L., F.N. Dickinson, H.A. Tucker, and R.D. Applman. Dairy Cattle: Principles, Practices, Problems, Profits. Third Edition. Asimon and Schuster Company. Lea and Febiger, Philadelphia, USA. 1984..

B- Recommended books, materials and media:

- Howard D. Tyler and M. E. Ensminger. Dairy Cattle Science. Fourth Edition. Pearson Prentice Hall. 2006
- Ensminger M E. Dairy Cattle Science. Third Edition. Interstate Publisher Inc. USA. 1993
- Robinson P.K. Modern Dairy Technology. Elsevier Applied Science Pub. London. 1986.
- Castle M.E, and Watkins P. Modern Milk Production. Its Principles and Applications for Students and Farmers. Faber and Faber. London-Boston. 1979.
- Russell K. The Principles of Dairy Farming. Seventh Edition. Farming Press LID. Wherfedale Road, Ipswich. 1977.





## 26 Additional information:

No

Name of Course Coordinator: <b>Prof. Mufeed A. Alnimer.</b> -- Date: <b>14/3/2022</b>	Signature: -----
Head of Curriculum Committee/Department: -----	Signature: -----
Head of Department: <b>Prof. Hosam H. Titi</b>	Signature: -----
Head of Curriculum Committee/Faculty: -----	Signature: -----
Dean: <b>Prof. Safwan Shiyab</b>	Signature: -----