



University of Salahaddin

College of Agricultural Engineering Sciences

Department of Animal Resource

Subject: Hatching & Hatchery Management

Course Book: 3rd grade

Lecturer's name, MSc. Sami Mahdi Ahmed

MSc. Ayhan jalal khalil

Academic Year: 2023/2024

Course Book

1. Course name	Hatching and Hatchery Management
2. Lecturer in charge	MSc. Sami Mahdi Ahmed MSc. Ayhan jalal khalil
3. Department/ College	Animal resource
4. Contact	e-mail: : sami.ahmed@ su.edu.krd (07503502350)
5. Time (in hours) per week	Practical: 2
6. Office hours	6
7. Course code	
8. Teacher's academic profile	
9. Keywords	
10. Course overview:	
<p>Many changes have taken place in hatcheries in recent years, such as the introduction of computer monitoring and control of the machines, and automation of many day-to-day hatchery operations. Additionally, there is increasing awareness of the role of the hatchery in disease control.</p> <p>In this class we will discuss a general overview of incubation process history, hatchery functions and importance, as well as in depth lectures on hatchery building, design and hatching operations management ...etc. There is no text book for this class, so students will be expected to take notes during lecture. Students must pay attention in class to record their notes. Students that disrupt the class by talking during lecture will be removed from the classroom. For this class, cell phones and other electronic devices are PROHIBITED in the classroom.</p> <p>Deals with many studies, showing by images of types of eggs, practical in laboratory to see all the shape and size of eggs that required to incubation and also those eggs that not required. However going to some commercial hatchery when the egg incubates with take some notes for more information and also explanation by the expert. One hour lecture, two hours lab per week.</p>	
11. Course objective:	
<p>The objectives of this course is to study the parts of hatchery and how it managed practically and how put the eggs in one point when are in the breeder farms and transport to the hatchery and interred in one direction and cross all parts and the changes that occur in each part then put the eggs in to the hatchery and embryonic developments during incubations and hatcheries, after that hatching day and some services in one day old chicks. Incubation requirement; incubators working, care. Hatchery layout and equipment's. Handing, selection, care of eggs prior and during incubation. Candling. Fumigation. Project reports of setting up a hatchery. Hatchery bio-security, sanitation and</p>	

hygiene. Disposal of hatchery waste. Sexing, grading, packing and dispatch of day old chicks. Economics of hatchery business; Trouble shooting hatch failure: importance of hatchery records, break even analysis of un-hatched eggs. Computer applications for hatchery management Hatchery records and maintenance The fertility and hatchability and Factors affecting fertility and hatchability as well as how the fertility effect on the hatchability. The studied material is very important because in worldwide businessmen and employers build hatchery due to hatchery is a source of money.

12. Student's obligation

Quizzes will occur each week and will cover the material presented during the previous week lecture. Students will have 10 minutes at the beginning of the class period to take the quiz. Students who arrive late will not be given extra time. All information presented during a lecture is fair game for a quiz. It is important to listen to everything the speaker says, do not rely only on the PowerPoint. Students are required to attend each class session and participate in all activities occurring during the class. Students are also required to wear lab-coat to each class. They must be respectful and attentive during lectures; this means no using cell phones during this time. Students are encouraged to take notes during lecture to use as study material for the quiz.

13. Forms of teaching

Power point
White board
Images
Video

14. Assessment scheme

Marks of the Exam: 35 Marks of the total term divided as :

Two exams will be done with quiz and activities .

Practical Exams (2 exam 2*15 marks + quizzes and activities 5 marks) = 35 Marks

15. Examination

Q1/ Numerate the rules of egg storage. (5 Marks)

Q2/ What are the daily duties (works) that you must to perform generally in hatcheries? (5 Marks)

Q3/ a - What is the oviduct functions? (2.5 Marks)

b - Write the length and egg stays in each parts of oviduct? (2.5 Marks)

Q4/ How is the Stages of embryonic development out of the mother's body? (5 Marks)

16. Student learning outcome:

- A. Technical Thinking:** the student will demonstrate competence of technical subject matter in poultry sciences.
- B. Communication Skills:** The student will demonstrate effective oral and written communication skills.
- C. Leadership Skills:** The student will exhibit leadership and other interpersonal skills needed for career placement and advancement.
- D. Problem Solving Skills:** The student will exhibit problem solving skills based on quantitative and analytical reasoning.
- E. Critical Skills:** The student will demonstrate knowledge of poultry production facilities.

17. Course Reading List and References:

1- Hatchery Management Guide.

2-USAD Best Management Practices Handbook. National Poultry Improvement Plan 1506 Klondik Rd. Suite 101 Conyers, GA 30094 (770)922-3496.

3-Comercial chicken production manual. MACK O. NORTH North publishing company inc. Westport, connect 1984.

- 1- Journal of animal science.
- 2- Animal journal.
- 3- National Agriculture Library.
- 4- Agricultural Research Service www.ars.usda.gov
- 5- Agricultural Research Service <http://www.science.gov/search.html>
- 6- Agriculture Network Information Center <http://www.central.agnic.org/>
- 7- Agricultural researches <http://images.google.com/images?q=+a...&start=20&sa=N>
- 8- Veterinary Medicine and Avian Disease Investigation Laboratory.
- 9- Web site: <http://www.biology-resources.com/all-biology-experiments.html>
- 10- Web site: http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter10/

With internet web sites and some new researches until 2018.

18. The Topics:	Lecturer's name
<p>1st Lecture: Course book introduce the lessons and it's important to studying with some examples for explaining more.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>2nd Lecture: Aim of the article: A detailed explanation of what is the hatchery and its importance for hatching egg.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>3rd Lecture: Aim of the article: A detailed explanation for the design of building and division the parts of hatchery and the role of each parts, the daily work for hatchery.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>4th Lecture: The objective of the article: Showing the evolution and stages of embryonic development in theory and in practice.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>- The period of embryonic development within the parent's body. - The period of embryonic development outside the parent's body. - Stages of embryonic development outside the parent's body.</p> <p>Doing this process in scientific laboratory and hatching in order to apply the lessons.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>5th Lecture: The purpose of this lecture is explaining the incubation factors affect hatchery success include temperature, humidity, ventilation, turning and egg position). In addition to what will happen when each factor is incorrect (increase or decrease) and how will affect hatchability and chick quality.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>6th Lecture: Visit the Gardarasha scientific field therefore to apply the lessons in the form of scientific theory and to see parts of the hatchery, and how to manage.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>7th Lecture: The objective of the article: to address an important topic, a cleansing, evaporation and to display the importance of evaporation in each stage of the hatching in order to obtain good results at the end. Fumigation and disinfection, the most important materials used in this area and the proportion of materials and how to do the operation.</p>	<p>Ayhan jalal (2 hrs)</p>

<p>8th Lecture: The aim of this article is to illustrate the measurements after hatching directly as chicks weight then calculated the number of good or healthy chicks, Also the percentage of the number of hatched chicks calculated. The fertility rate also calculated.</p>	<p>Ayhan jalal (2 hrs)</p>
<p>9th Lect.: Aim of the article: The specifications of the quality of chick's one important indicator of the success of hatchery and used in the evaluation of laying hens or chicks mothers. - External standards (body weight of chick, chick length, the case of the navel, physical handicap, dynamic chicks) - Internal criteria.</p>	<p>Ayhan jalal (2 hrs)</p>
<p>10th Lect.: The objective of the article: discuss the embryonic mortality during stages of fetal development. - Periods of fetal deaths (early period (early fetal deaths), the middle period (the average fetal deaths) and the recent period (late fetal deaths). Injected embryos, eggs and their effects on the future performance of the chicken meat. - Examination of eggs during the hatching process.</p>	<p>Ayhan jalal (2 hrs)</p>
<p>11th Lect.: The objective of the article: the processes taking place on the chicks after hatching. The naturalization of chicks, vaccinated chicks, debeaking, specification of quality chicks, chicken meat, breeding success starts from the fields of maternal and hatchery.</p>	<p>Ayhan jalal (2 hrs)</p>
<p>12th Lect.: Doing this process in scientific laboratory and hatching in order to apply the lessons. The objective of the article: Showing the most important forms of the embryo inside the egg during the hatching process that affect the hatching. - Anomalies of the embryo. - The fate of the yolk sac in birds. - How to move the egg yolk to body chicks. - Transmission of HIV from mother to the chicks hatched.</p>	<p>Ayhan jalal (2 hrs)</p>
<p>13th Lect. Doing some reports about the lect.</p>	<p>Ayhan jalal (2 hrs)</p>
<p>14th Lect. Doing some reports about the lect.</p>	<p>Sami Mahdi (2 hrs)</p>
<p>19. Extra notes: Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.</p>	

20. Peer review

پیداچوونہوہی ھاومل

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).