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**Department of Animal welfare**

**College of Agriculture**

**University of Salahaddin**

**Subject: Animal ecology**

**Course Book – (1)**

**Lecturer's name: Nidal Yas and Soadad Mashaan**

**Academic Year: 2017/2018**

**Course Book**

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| **1. Course name** | **Animal ecology** | |
| **2. Lecturer in charge** | **Nidal Yas and Soadad Mashaan** | |
| **3. Department/ College** | **Animal welfare – Agriculture college** | |
| **4. Contact** | **1-Nidhal Yas**  **E-mail Address: nidhalyas@yahoo.com**  **Phone: 0750 735 4500**  **2- Soadad Mashaan**  **Phone: 07517871060**  **E-mail: soadad.abbas@su.edu.krd** | |
| **5. Time (in hours) per week** | **Practical: 6** | |
| **6. Office hours** | **2 hours** | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | **1-** **Nidhal Yas**  I got B.Sc. from Science college ,Biology department (1983) of university of Baghdad and M.Sc. degree (2005) in Ecology of Science college from university of Baghdad.  I worked in education college(Ibn –Alhaitham )of university of Baghdad from 1983 to 2007 as a teaching assistant and then a lecturer assistant .  In 2007 I moved to university of Salahaddin (College of Agriculture).  **2-soadad mashaan abbas**  I got B.Sc. from Science college, Biology department(2002) of university of Baghdad and M.Sc. degree (2008) in parasitology of Veterinary college from university of Baghdad.  I worked in Veterinary college (university of Baghdad) from 2002 as a teaching assistant until 2008 worked as a lecturer assistant,  In 2011 I moved to university of Salahaddin (College of Agriculture). | |
| **9. Keywords** | **Ecology, environment ,pollution** | |
| **10. Course overview:**  Animal ecology is a branch of biology that deals with the relation of organisms to one another and their physical surroundings.  It’s important to study this course because it gives the students comprehensive knowledge of animal ecology in order to cover many phenomena that related with this branch of ecology and the concept of the effect of the environmental climate on the agriculture animals and the effective on its production.  This study include some important terms, studies the important advanced equipment and devices for measuring the temperature, humidity, atmospheric pressure, rain full, lighting & winds, evaporation and how its work.  In addition to what came previously, one important matter should be taken in consider, is to visit many application locations like weather station & water purification station in Erbil city.  The local l tests should be taken also like water local inspect, included, water color, smell and oxygen dissolved water. | | |
| **11. Course objective:**  The aim of this course is to give the students comprehensive knowledge of animal ecology in order to cover many phenomena that related with this branch of ecology and the concept of the effect of the environmental climate on the agriculture animals and the effective on its production. | | |
| **12. Student's obligation**  The students should attend, do weekly quiz at the beginning of the lecture , completion of all exams (mid-term and final term ) and report . | | |
| **13. Forms of teaching:**  Different forms of teaching will be used to make the subjects clear to the students including: Power point presentation, data show, white board, showing some devices and instruments also the lectures include weekly quiz at the beginning of the lecture. | | |
| **14. Assessment scheme**  **Quiz:**3 marks, **Report:**2 marks **Mid-term examination**:10 Marks  ‌ | | |
| **15. Student learning outcome:**  Student should learn about the environment of the animals and their optimal needs like the optimal temperature and humidity to increase animal production so they must learn about the devices and how to use them to measure climatic factors in the fields. | | |
| **16. Course Reading List and References‌:**  ▪ Key references: Ecology, heat, humidity  ▪ Useful references:  al-Sa’adi Hussein (2002) Ecology & Pollution. Baghdad University.  را د .بيئة الحيوان الزراعي العملي (1992) أكرم ذنون، الخفاف- 1  .الموصل- الكتب للطباعة و النشر  التلوث و البيئة (1990) الاعظمي احمد حسين، السعدي حسين ، بهرام خضر، مولود -2 .العملي  (الماء فحوصات) للبيئة العملية الهندسة (1990) سليمان محمد و عبد سعاد عباوي -3  ▪ Magazines and review (internet):   1. www.ecology.com 2. www.esapubs.org. 3. www.eoearth.org | | |
| **17. The Topics:** | | **Lecturer's name** |
| 1st week– Some important ecological terms Ecology, Ecosystem, Flora, Fauna, Biosphere, Habitat, etc.  2nd week –  The relationship between living organisms. Positive relationship includes commensalism, mutualism.  Negative relationship includes competition, Predation & parasitism.  3rd week –  The Heat The amount of heat, heat losing by 1) Radiation. 2) Contact. 3) Conduction & 4) Evaporation.  4th week –  The temperature 1) Unites of temperature. 2) Instruments of measuring ……..  a- Thermometer, b- Maximum & Minimum thermometer, c-Thermograph, d-Soil Thermometer & e- Water thermometer.  5th week –  Humidity 1) Psychomotor, 2) Hygrometer, 3) Hygrograph &4) Thermo hygrograph.  6th week –  Rain full 1) Rain gauge, 2) Evaporation pan & 3) Solar radiation.  7th week – 1st Examination  8th week -Visit to weather station – Erbil    9th week –  Atmospheric pressure & Winds ( Anometer).  1) Unites of pressure, 2) Instruments measuring pressure…..  a- Torricelli’s barometer, b – Barometer, c – Aneroid barometer & d – Barograph.  10th week –  The air. Practical steps to take samples of air barn testing, methods to determine the samples includes: a- carbocidometer, b – Petten Koffers method  11th week – Visit to water purification station in Erbil.    12th week – 2nd Examination.    13th week – Water local inspection. 2/ Chemically properties.  a- Determination of Oxygen dissolved.  14th week - Water local inspection. 2/ Chemically properties.  b- Determination of water acidity.  15th week - Water local inspection. 2/ Chemically properties.  c- Determination of water alkalinity.  16th week - Water local inspection. 2/ Chemically properties.  d- Determination of hardiness and chloride. | | Nidal Yas and Soadad Mashaan  (3 hrs)  15/10/2017  22/10/2017  29/10/2017  5/11/2017  12/11/2017  19/11/2017  26/11/2017  3/12/2017 |
| **18. Practical Topics (If there is any)** | |  |
| 1-Visit to weather station  2- Visit to water purification station in Erbil | | (3-4 hrs) 3/12/2017 |
| **19. Examinations:**  ***1. Compositional:***  **1-** Define the following:  a. Evaporation: The amount of water losing from land and water surface.  b. Rain gauge: Is the device to measure the quantity of rain that has falling ate given location.  2- Numerate the practical steps to take samples of air for testing:  a. Boil one bottle test in water for 10 minutes and then filled it with boiling water and closed it tightly.  b. Inside the barn that we want to take the sample of the air, open the bottle and totally pour the boiling water, in this case the air replaced the water in the bottle and closed directly.  c. Take the bottle to the library to make the concerned test.  3- Fill in the blanks:  a. The temperature units are (C°), (F°) & (Kelvin).  b. The negative relation between living organism are (competition), (predation), & (Parasitism).    4- Draw and label the following:  a. Thermometer.  b. Torricelli’s Barometer.  ***2. Multiple choices:***  It is known as actual (or exact) amount of water vapour (gram) that found in certain volume of air m3 (unite gr/m3).  a- Absolute Humidity b- Specific Humidity c- Relative humidity  The answer : a- Absolute Humidity | | |
| **20. Extra notes: non**  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. | | |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**  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).*  ئه‌م کۆرسبووکه‌ ده‌بێت له‌لایه‌ن هاوه‌ڵێکی ئه‌کادیمیه‌وه‌ سه‌یر بکرێت و ناوه‌ڕۆکی بابه‌ته‌کانی کۆرسه‌که‌ په‌سه‌ند بکات و جه‌ند ووشه‌یه‌ک بنووسێت له‌سه‌ر شیاوی ناوه‌ڕۆکی کۆرسه‌که و واژووی له‌سه‌ر بکات.  هاوه‌ڵ ئه‌و که‌سه‌یه‌ که‌ زانیاری هه‌بێت له‌سه‌ر کۆرسه‌که‌ و ده‌بیت پله‌ی زانستی له‌ مامۆستا که‌متر نه‌بێت.‌‌ | | |