



**Food Technology Department**

**College of Agricultural Engineering Sciences**

**Salahaddin University - Erbil**

**Subject: Experimental Design**

**Course Book – (Second Year)**

**Lecturer's name Dr. Rebin Aswad Mirza (Theory)**

**Dr. Azad Shamsaddin Salih (Practical)**

**Academic Year: 2023-2024**

**\*Course Book**

<b>1. Course name</b>	<b>Experimental Design</b>
<b>2. Lecturer in charge</b>	<b>Theory: Assist Prof Dr. Rebin Aswad Mirza Practical: Dr. Azad Shamsaddin Salih</b>
<b>3. Department/ College</b>	<b>Animal Resource Department - College of Agricultural Engineering sciences</b>
<b>4. Contact</b>	e-mail: <a href="mailto:rebinaswed@yahoo.com">rebinaswed@yahoo.com</a> <a href="mailto:rebin.mirza@su.edu.krd">rebin.mirza@su.edu.krd</a> <a href="mailto:azad.salih2@su.edu.krd">azad.salih2@su.edu.krd</a> Tel: (optional) 07504703477
<b>5. Time (in hours) per week</b>	<b>Theory: 2 Practical: 2</b>
<b>6. Office hours</b>	<b>5 day a week</b>
<b>7. Course code</b>	--
<b>8. Teacher's academic profile</b> <b>Theory:</b>  <b>Dr Rebin Aswad Mirza</b>          <b>Practical:</b>  <b>Dr. Azad Shamsaddin Salih</b>	<b>I gained a Ph.D. degree in July 2015 in Poultry Production and Technology at the University of Plymouth in the UK. I have MSc Degree in Poultry Production and Technology in 2008 at Salahaddin University. I have got a BSc in 2003 in Animal Resources Agriculture College Salahaddin University - Erbil, Kurdistan Region of Iraq. I employed in 2003 at the Animal Resources Department in Agriculture College. In 2010 I started to work as a Lecturer in Animal Resources Department and gave a lecture to undergraduate students and now to the postgraduate students. Now, I am a head of Fish Resources and Aquatic Animals department.  I have got a BSc in 2000 in Animal Resources department – College of Agricultural Engineering sciences – Salahaddin university- Erbil, Kurdistan Region of Iraq. I employed in 2001 at the Animal Resources department – College of Agricultural Engineering sciences – Salahaddin university. I have MSc degree in Animal Resources at Salahaddin university in 2006, and I gained a Ph.D. degree in September 2023 in Poultry Production in Animal Resources department – College of Agricultural Engineering sciences – Salahaddin university.</b>
<b>9. Keywords</b>	
<b>10. Course overview:</b> In this section the lecturer shall write an overview about the subject he/she is giving. The course overview must cover:  This is an introductory course that focuses on data and experimental reasoning. This course aims to give students an understanding of the main ideas of experiment design and useful	

skills for working with data. Also, students will be introduced to the major concepts and tools for collecting, analyzing and drawing conclusions from data.

A course dealing with statistical and how to setup design for their experiment, including measures of central tendency and dispersion, the Central Limit Theorem, Sampling, Estimation, Hypothesis testing, Analysis of Variance, Correlation and Regression analysis, Multiple Regression and Statistical Forecasting and the design that use in this course.

- The importance of studying the subject
- Understanding of the fundamental concepts of the course
- Principles and theories of the course
- A sound knowledge of the major areas of the subject
- Sufficient knowledge and understanding to secure employment

This should not be less than 200 words

### 11. Course objective:

This should not be less than 100 words

Students will be introduced to the basic principles of data analysis and be able to collect data from an experiment. Identify and describe some design to analyse data. By completing this course the student will learn to perform the following: 1) How to analyse data by applying suitable design to calculate data and how to test this data to find a significant difference between treatment in the appropriate design. Understand the concept of p-values.

### 12. Student's obligation

In this section the lecturer shall write the role of students and their obligations throughout the academic year, for example the attendance and completion of all tests, exams, assignments, reports, essays...etc

The role of students in the class should attend to the class weekly and I will put some points on it, every week I will do quiz for them and students participate in the class is very important.

### 13. Forms of teaching

لیره ماموستا ریگهی وانه ووتنهوه دهنوسیت، بۆ نمونه: داتاشۆ و پاوه رپۆینت، سهر تهخته رهش، تهخته سی، سمارتپورد یان مهلهمه... هتد

We need to write all information on white board to clarify it. Sometimes I use the projector to display my objectives by power point, I will give all my objectives on the word paper to my students.

### 14. Assessment scheme

Breakdown of overall assessment and examination

لیره ماموستا جۆری ههلسهنگاندن (تاقیکردنهوهکان یان ئەزمونهکان) دهنوسیت بۆ نمونه تاقیکردنهوهی مانگانه، کویزهکان، بیرکردنهوهی رهنهگرانه (پریزهنتهیشن)، راپۆرت نووسین، ووتار نووسین یان نامادهنبهونی خۆیندکار له پۆلدا... هتد. نامانه چهند نمره ی لهسهردهبیت و ماموستا چۆن نمرهکان دابهشدهکات؟

First Exam after five lectures

Second Exam after ten lectures.

Mark Distribution:

<p>Monthly Exam 50% (Theoretical 15% + Practical 35%)                  Final Exam 50% (Theoretical)                  Final Mark 100%</p>	
<p><b>15. Student learning outcome:</b>                  پێکردنەوهی ئەم خانەییە زۆر گەرمگە، مامۆستا دەرنەنجامەکانی فێربوون دەنوسنیت. بۆ نمونە: پرونی ئامانجە                  سەر مەکیەکانی کۆرسەکە (بابەتەکە) بۆ خوێندکار                  گونجاندنی ناوەرۆکی کۆرسەکە بە پێویستی دەروە و بازاری کار                  قوتابی چی نوێ فێردەبێت لە ڕێگەی پێدانی ئەم کۆرسەوه؟</p> <p>This should not be less than 100 words                  The objective of this course is to provide an understanding for the graduate business student on Experimental concepts includes Complete randomized design, Randomized Complete Block Design, Latin Square Design and Factorial Design.</p>	
<p><b>16. Course Reading List and References:</b></p> <ul style="list-style-type: none"> <li>▪ Key references:</li> <li>▪ Useful references:</li> <li>▪ Magazines and review (internet):                         <ul style="list-style-type: none"> <li>- Kirk, P. (2013) Experimental Design. Fourth Edition. Sage publication, United Kingdom.</li> <li>- Thomas, P. R. (2007) Modern Experimental Design. John Wiley and Sons. Printed in United State of America.</li> </ul> </li> </ul>	
<p><b>17. The Topics: Theory</b></p> <p>In this section the lecturer shall write titles of all topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture                  Each term should include not less than 16 weeks                  The titles of the objects will be the following:</p> <p>Introduction to statistics                  Introduction of experimental design                  Complete Randomized Design                  Equal and unequal CRD                  Different type of test                  Duncan and Isd test                  Randomized Complete Block Design                  Latin Square Design                  Factorial Design                  Two and three factor with CRD and RCBD</p>	<p><b>Lecturer's name</b>                  Lecturer's name                  Dr Rebin Aswad Mirza                  ex: (2 hrs)</p> <p>24/1/2024</p>
<p><b>18. Practical Topics (If there is any)</b></p> <p>In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture</p>	<p><b>Lecturer's name</b>                  ex: (2 hrs)                  Dr. Azad Shamsaddin Salih                  ex: 24/1/2024</p>

<p>Introduction to statistics                  Introduction of experimental design                  Complete Randomized Design                  Equal and unequal CRD                  Different type of test                  Duncan and Isd test                  Randomized Complete Block Design                  Latin Square Design                  Factorial Design                  Two and three factor with CRD and RCBD</p>	
<p><b>19. Examinations:</b></p> <p><b>1. <i>Compositional:</i></b> In this type of exam the questions usually starts with Explain how, What are the reasons for...?, Why...?, How....?                  With their typical answers                  Examples should be provided</p> <p><b>2. <i>True or false type of exams:</i></b></p> <p>In this type of exam a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided</p> <p><b>3. <i>Multiple choices:</i></b></p> <p>In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided.</p>	
<p><b>20. Extra notes:</b></p> <p>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>	
<p><b>21. Peer review</b> <span style="float: right;"><b>پیداچونہوہی ھاوہل</b></span></p> <p>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.  <i>(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).</i></p> <p>ئہم کورسبووکه دهییت له لایهن ھاوہلئیکئ نهکادیمیوه سهیر بکرئیت و ناوہرؤکی بابہتہکانئ کورسکه پهسهند بکات و جهند ووشهیهک بنووسئیت لهسهر شیاوی ناوہرؤکی کورسکه و واژووی لهسهر بکات.                  ھاوہل ئهو کسهیه که زانیاری ههئیت لهسهر کورسکه و دهییت پلهی زانستی له ماموستا کهمتر نهئیت.</p>	