

Textbooks:
 1. Statistical Methods in the Atmospheric Sciences, Second Edition, D.S. Wilks, Elsevier Inc., 2006.
 2. Statistical Analysis in Climate Research by Hans von Storch, Francis W. Zwiers, Cambridge University Press, 2002.

Suggested references:
 1. Introductory statistics, ninth Edition, Neil A. Weiss, 2012.
 2. Elementary Statistics A Step by Step Approach, seventh Edition, Allan G. Bluman, 2007.
 3. Introductory statistics, seventh Edition, PREM S. MANN, John Wiley & Sons, 2010.

Marking:

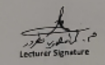
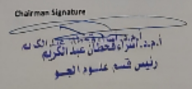
First Semester				Final Exam
1st exam	2nd exam	Practical	Activity	
12	12	7	5	20

Assignments and/or Projects:

Assignment/Project	Description	Due Date	Marking
H.W	answering a series of questions with the end of each a weeks semester	During the course	1
Quizzes	Two or more quizzes	During the course	1

Instructor information:
 Lecture Room No.: 4
 Instructor's Name A. L. Luma Mahdi matrood
 Time: Sunday
 Office hour: (8:30,10:30)

luma.atmsc@uomustansiriyah.edu.iq
NOTES:
 • Office Hours: Other office hours are available by appointment.
 • The content of this syllabus not be changed during the current semester.

 Lecturer Signature
 Chairman Signature
 أ.م.د. أمراء قحطان عبد الكريم
 رئيس قسم علوم الجو

Course No.: 2
 Course Name: meteorological data analysis
 Academic Year: 2022-2023
 Time Division: 2hr Practical

Course Description :
 In this second course, students are introduced to the topic of analyzing anatomical data through topics that explain the relationship between two or more variables (anatomical data) and the application of this data in statistical laws and in the local program with topic-specific functions to verify the validity of the application and draw these relationships graphically, which through the results We can predict a specific weather phenomenon.
Course Intended Outcomes :

- At the end of the course, students are expected to learn:
- develop statistical thinking in atmospheric science.
 - Use real and raw data in meteorological statistics.
 - understanding and analyzing atmospheric data.

Course Outline:

Week	Description depend on the Timing table (Practical)
1	Correlation coefficient : linear relation , correlation scale , multiple correlation coefficient
2	Spearman correlation
3	Regression analysis , simple linear regression , multiple linear regression , non- linear regression
4	The Coefficient of Determination (R2)
5	Standard Error of Estimate:
6	EXAM 1
7	Hypothesis Test : 1- The null hypothesis, 2- Alternative Hypothesis
8	Z-test, T-test
9	Time Series, Time series components,
10	Models used in time series, Moving Average Model,
11	Probability
12	Permutation and Combination
13	EXAM 2

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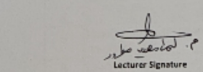
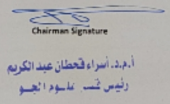
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 Lecturer Signature
 Chairman Signature
 أ.م.د. أمراء قحطان عبد الكريم
 رئيس قسم علوم الجو

Course No.: 1
 Course Name: meteorological statistics
 Academic Year: 2022-2023
 Time Division: 2hr Practical

Course Description :
 In this course, the Students are introduced to fundamental concepts of meteorological statistic, which include described and inferential statistic, data organized. Measures of central tendency and Measures of variation or dispersion. These topics are covered broadly but in depth to introduce students to the methods atmospheric scientists use to describe and the atmospheric phenomena.
Course Intended Outcomes :

- At the end of the course, students are expected to learn:
- develop statistical thinking in atmospheric science.
 - Use real and raw data in meteorological statistics.
 - understanding and analyzing atmospheric data.

Course Outline:

Week	Description depend on the Timing table (Practical)
1	Basics of Statistics, Tabular display , Frequency distribution of frequency table , Construction of a frequency table
2	Measures of Central Tendency The arithmetic mean for (unclassified data and classified data)
3	Median for (unclassified data and classified data)
4	Mode for (unclassified data and classified data)
5	The harmonic mean , The geometric mean, The weighted mean for (unclassified data and classified data)
6	EXAM 1
7	Measures of dispersion and Variability : Range , Mean deviation for (unclassified data and classified data)
8	The Standard deviation , The Variance for (unclassified data and classified data)
9	Metrics of Skewness and kurtosis
10	Mean center
11	EXAM 2