# Course Description Form

| 1. Course Name | |
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| Applied Statistics | |
| 2. Course Code | |
| SESS26F2021 | |
| 3. Semester/Year | |
| 2025/2026 | |
| 4. Date of preparation of this description | |
| February/ 2026 | |
| 5. Available Attendance Forms | |
| Classroom attendance (theoretical–practical) | |
| 6. Number of credit hours (total) / number of units (total) | |
| 2 hours per week / 4 units | |
| 7. Course administrator's name (if more than one name is mentioned) | |
| Asst.Salwa salah aldeen Qasim | salwa.kasim@uomosul.edu.iq |
| 8. Course Objectives | |
| Course Objectives | 1. Learn the basics of statistics.<br>2. Understand the concepts and laws of statistical principles.<br>3. Students can benefit from the course in analyzing data that can be used in graduation projects.<br>4. Employ statistics to analyze data with minimal effort and at the lowest possible cost. |
| 9. Teaching and learning strategies | |

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| Strategy | Learning and teaching strategies in faculties of physical education and sports sciences are diverse, encompassing both theoretical and practical aspects, and aim to develop students' knowledge, motor skills, and personal development.<br>These strategies typically include the following:<br>1. Student-Centered Strategies:<br>• Cooperative Learning: Students work in small groups to achieve a common goal, fostering mutual responsibility and positive interaction.<br>• Problem Solving: Presenting educational problems or challenges that require students to apply prior concepts and knowledge to arrive at solutions, encouraging critical and creative thinking.<br>• Guided Discovery: Directing students to discover skills or concepts on their own through a series of questions or tasks, rather than through direct instruction.<br>• Peer Teaching: Students teach their peers under the supervision of a professor, enhancing their understanding of the material and developing their leadership and teaching skills.<br>• Self-Instruction/Self-Check: Allows students to learn independently and evaluate their performance against a specific standard for improvement.<br>2. Traditional and Modern Strategies:<br>• Lectures: Used to convey theoretical knowledge and scientific concepts (such as statistics).<br>• Interactive Teaching: Encourages interaction between professors and students through discussions and questioning. |

## 10. Course Structure

| Evaluation method | Learning method | Unit or subject name | Required Learning Outcomes | Hours | The week |
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| Group Assessment | Lecture | Introduction and Data Description Introduction to Statistics | Explain what statistics is and its importance | 6 hours | 1 |
| Group | Lecture | Introduction to Statistics - | Explain the concept of | 6 hours | 2 |

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| Assessment | | Preparing Data Files | statistics and how to obtain data | | |
| Comprehensive exam and review | | | | | |
| Group Assessment | Lecture | Display and organize statistical data | Explain how to collect and organize data | 6 hours | 3 |
| Group Assessment | Lecture | Frequency distributions (univariate analysis) | Explain what frequency distributions are | 6 hours | 4 |
| Group Assessment | Lecture | Graphical representation of frequency distributions | Explain how to represent data graphically | 6 hours | 5 |
| First semester theoretical exam / 1 | | | | | |
| Group Assessment | Lecture | Measures of central tendency and measures of dispersion | Explanation of the most important measures of central tendency and dispersion | 6 hours | 6 |
| Group Assessment | Lecture | Measures of dispersion | Explanation of the most important absolute and relative dispersion measures | 6 hours | 7 |
| Comprehensive review exam | | | | | |
| Group Assessment | Lecture | Skewness and flatness measures | Explanation of measures of skewness and flatness using the mode, median, and moments method | 6 hours | 8 |
| Group Assessment | Lecture | Linkage and types of linkage | Explain the types of correlation | 6 hours | 9 |
| Group Assessment | Lecture | Simple correlation (Pearson) | Explanation of how to calculate simple correlation (Pearson) | 6 hours | 10 |
| Group Assessment | Lecture | Spearman's rank correlation | Explanation of how to calculate the rank correlation (Spearman) | 6 hours | 11 |
| First semester theoretical exam/2 | | | | | |
| Half year holiday | | | | | |
| Group Assessment | Lecture | Test of significance of differences between means | Explain the meaning of the significance test of differences between means | 6 hours | 12 |
| Group Assessment | Lecture | t-test for the significance of differences between means | Using the rules of the t-test | 6 hours | 13 |

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| Group Assessment | Lecture | Significance of differences for two unrelated means and two equal samples | Use the rules for differences and for each paragraph. | 6 hours | 14 |
| Comprehensive exam and review | | | | | |
| Group Assessment | Lecture | Analysis of variance (ANOVA) | Explaining the concept of analysis of variance, mentioning its most important laws | 6 hours | 15 |
| Group Assessment | Lecture | Multiple comparisons | Explanation of multiple comparison methods | 6 hours | 16 |
| Group Assessment | Lecture | Least significant difference (L.S.D) method | Explain what the least significant difference method is and how we calculate the F value. | 6 hours | ١٧ |
| Comprehensive exam and review | | | | | |
| Theoretical exam, second semester / 1 | | | | | |
| Group Assessment | Lecture | Downie's t-test | Explanation of Downey's t-test concepts | 6 hours | 18 |
| Group Assessment | Lecture | Dunkin' test | Duncan Test Concepts Explained | 6 hours | 19 |
| Group Assessment | Lecture | Hypothesis tests for independent data for two samples | Explain how to test hypotheses for data with independent samples. | 6 hours | 20 |
| Group Assessment | Lecture | Chi-square test | Explain the importance of the chi-square test and its use | 6 hours | 21 |
| Theoretical exam, second semester / 2 | | | | | |
| Group Assessment | Lecture | | Two-factor X test | 6 hours | 22 |

## 11. Course Evaluation

The grade is distributed as follows:

1. First semester exam, worth (25) marks
2. Second semester exam, worth (25) marks
3. End of academic year exam, worth (50) marks

## 12. Learning and Teaching Resources

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| **Required textbooks (methodology, if any)** | Statistics by Dr. Mahmoud Hassan Al-Mashhadani and Amir Hanna Hormuz<br>Introduction to statistics by Dr. khasha Al-Rawi |
| **Key references (sources)** | Statistics Booklet /Second Stage (prof.Aida younis Al-Murad ,Asst. Dr.Ziad yahya) |
| **Recommended supporting books and references (scientific journals, reports...)** | |
| **Electronic references, websites** | |

**Name and signature of the course holder**

Asst. Lect. Salwa Salah El-Din

**Name and signature of the head of the department or branch**

**Prof. Dr. Nawfal Fadel Rashid**