# Module (Course Syllabus) Catalogue

# 2023-2024

| | | |
|---|---|---|
| **College/ Institute** | **Erbil Technical Health College** | |
| **Department** | **Physiotherapy** | |
| **Module Name** | **Research Methodology and Biostatistics** | |
| **Module Code** | **REM504** | |
| **Degree** | **Technical Diploma** ☐ **Bachelor** ■<br>**High Diploma** ☐ **Master** ☐ **PhD** ☐ | |
| **Semester** | **4th** | |
| **Qualification** | **M.A. In Educational Psychology, and Ph.D. in Curriculum and Education** | |
| **Scientific Title** | **Lecturer** | |
| **ECTS (Credits)** | | |
| **Module type** | **Prerequisite** ☐ **Core** ■ **Assist.** ☐ | |
| **Weekly hours** | **4hr** | |
| **Weekly hours (Theory)** | **( 2 )hr Class** | **( 60 )Total hrs Workload** |
| **Number of Weeks** | **12** | |
| **1st Lecturer** | **Dr. Zhwan Dalshad Abdullah** | |
| **E-Mail & Mobile NO.** | **Zhwan.dlshad@epu.edu.iq** | |
| **2nd Lecturer** | **Ghariba Ali** | |
| **Websites** | **Ghariba.ali@epu.edu.iq** | |

# Course Book

<table>
<tr><td>Course<br><br>Description</td><td colspan="5">The goal of this course is for students to acquire knowledge regarding what is research methodology and biostatistics, what are the types of research designs, steps in the research process: Identifying a research problem, Reviewing the literature, Specifying a purpose and research questions or hypotheses, Collecting either quantitative or qualitative data, Analysing and interpreting either quantitative or qualitative data, Reporting and evaluating the research.</td></tr>
<tr><td>Course objectives</td><td colspan="5">The main objective of the Research methodology and Biostatistics course would be that students will be able to:<br>- begin to conduct research.<br>- input data in SPSS program.<br>- read and evaluate research studies.<br>- Identify the type of research designs associated with quantitative and qualitative, and Identify the characteristics of quantitative and qualitative research.<br>- Distinguish between the types of research Variables.<br>- Identify a problem that defines the goal of research<br>- Gather data relevant to the research using the appropriate research instrument.<br>-Identify the population and using sampling techniques to determine the sample size of the study.<br>- Analyse and interpret the data via SPSS techniques to see if it supports the prediction and resolves the question that initiated the research.</td></tr>
<tr><td>Student's obligation</td><td colspan="5">• Reading and understanding of study notes<br>• Participation in forum, lab and class exercise and discussions<br>• Seminar presentation<br>• Participation in active communication with the lecturer<br>• Regular assignment submission</td></tr>
<tr><td>Required Learning Materials</td><td colspan="5">Lectures notes, videos, audios, homework exercises, self-study, Hall, projector.</td></tr>
<tr><td rowspan="6">Evaluation</td><td colspan="2">Task</td><td>Weight (Marks)</td><td>Due Week</td><td>Relevant Learning Outcome</td></tr>
<tr><td colspan="2">Paper Review</td><td></td><td></td><td></td></tr>
<tr><td rowspan="4">Assignme</td><td>Homework</td><td>%14</td><td>3rd & 7th</td><td>2,6,7&,9</td></tr>
<tr><td>Class Activity</td><td>%2</td><td>All</td><td>All</td></tr>
<tr><td>Report</td><td>%8</td><td>12th</td><td>From 2- to 9</td></tr>
<tr><td>Seminar</td><td>%8</td><td>11nd</td><td>9</td></tr>
</table>

| | | | | | |
|---|---|---|---|---|---|
| | | Essay | %8 | 6th | 2&7 |
| | | | | | |
| | Quiz | | 4% | All | All |
| | Midterm Exam | | 16% | | |
| | Final Exam | | 40% | | |
| | Total | | 100% | | |

| | |
|---|---|
| **Specific learning outcome:** | **1**-Ability to develop general knowledge in Research Methodology & Biostatistics, and understand the subjects of the module.<br><br>**2-** Ability to write problem statement using the keys.<br><br>**3**- Ability to locate the database and research studies to write a literature review, and following the appropriate writing style for citation and referencing.<br><br>**4**- Ability to adapt or adopt the appropriate instrument to collect the data.<br><br>**5-** Ability to determine the appropriate sampling techniques based on research design.<br><br>**6**- Ability to input data and analyze based on SPSS program, and interpret the outcome of the data.<br><br>**7-** Ability to write the research objectives, questions, and hypothesis based on the purpose of research.<br>**8-** Ability to use the Descriptive Statistics or Inferential Statistics based on research design.<br>**9-** Ability to write a discussion and conclusion of the study findings and the citations with referencing. |
| **Course References:** | • Main textbook - Study notes<br>• References textbook and data (Journal, report, website and ETC.)<br>• John W. Creswell, Planning, Conducting, and Evaluating Quantitative and Qualitative Research, 2012<br>• http://repository.unmas.ac.id/medias/journal/EBK-00121.pdf<br><br>• Indrayan, Abhaya. 2012. Medical Biostatistics, Third Edition<br>• CHAP T. LE. 2003. INTRODUCTORY BIOSTATISTICS, John Wiley & Sons http://www.hstathome.com/tjziyuan/Introductory%20Biostatistics%20Le%20C.T.%20%20(Wiley,%202003)(T)(551s).pdf<br><br>**Additional Materials**<br><br>• YK Singh · 2006. Fundamental of Research Methodology and Statistics<br><br>• https://mfs.mkcl.org/images/ebook/Fundamental%20of%20Research%20Methodology%20and%20Statistics%20by%20Yogesh%20Kumar%20Singh.pdf |

| Course topics (Theory) | Week | Learning Outcome |
|---|---|---|
| **L01: Definition of Biostatistics, General Purposes of statistics, Populations and Samples, What are they?** | 1st | 1 & 2 |
| **L02: Sampling Techniques, Types of Variables, and Types of research design.** | 2nd | 2 |
| **L03: Descriptive Statistics Vs. Inferential Statistics,** **Frequency Distribution** | 3rd | 3 |
| **L04: Class midpoint, and Class Boundaries** | 4th | 4 & 5 |
| **L05: Central tendency** **Mean, Median, and Mode I** | 5th | 7 |
| **L06 Central tendency** **Mean, Median, and Mode II** | 6th | 3,4,6&8 |
| **Midterm Exam** | | |
| **L07: Three measures of variability** Variation, Range, Standard deviation. | 7th | 5 |
| **L08: Pilot study, Types of Reliability. Internal consistency and Test retest** | 8th | 6&8 |
| **L09: Normal distribution and Z-score** | 9th | 6 |
| **L10: T. test and Correlation** | 10th | 9 |
| **L11: Reporting the findings** | 11th | 3 |
| **L12: Seminar presentation** | 12th | From 2- to 9 |
| **Final exam** | | |

## Questions Example Design

Q.1)

| |
|---|
| **Extra Note** |
| **External evaluator** |