**ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD**

***(Department of Home and Health Sciences)***

**Course: Biostatistics (7510) Semester: Spring, 2011**

**Level: Post Graduate Credit: 3(2+1)**

**CONTENT LIST**

1. Course Book (Unit 1–9)
2. Theory Assignment One
3. Practical Assignment One
4. Assignments forms Eight
5. Schedule for submitting the assignments and tutorial meetings.

***Note: If any one item of the above-mentioned content list is missing from your study pack kindly contact:***

***Mailing Officer***

***Mailing Section***

***Services & Operational Block***

***Allama Iqbal Open University,***

***Sector H-8, Islamabad***

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**WARNING**

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE’S OWN WILL BE PENALIZED AS DEFINED IN “AIOU PLAGIARISM POLICY”.**

**Course: Biostatistics (7510) Semester: Spring, 2011**

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**Total Marks: 100**

**ASSIGNMENT No. 1**

***Note: All questions are compulsory. Distribution of marks is given against each.***

Q.1 Enlist different methods to present statistical data. Describe advantages and disadvantages of Graphical method in detail. (10)

Q.2 Define Epidemiology, Biostatistics, Bioinformatics and Demography. Discuss similarities and differences among these disciplines. (10)

Q.3 What is the importance of hypothesis testing? Elaborate the type-I error, type-II error, confidence interval and confidence limit of interval estimate. (10)

Q.4 Differentiate between incidence, and prevalence, percentage, proportion, odd-ratio, q-value, Illustrate with practical example. (10)

Q.5 Differentiate between Independent factors, dependent factors, confounding factors and effect modification. Give examples where necessary. (10)

Q.6 a) Differentiate between normal distribution and standard normal distribution. (10)

b) What will the standardized score for a student obtaining 80 marks in test where average of the total students are x=50 and standard deviation 15. (10)

Q.7 Enlist various test of statistical significance used for different type of data, differentiate between parametric and non parametric statistical tests? (10)

Q.8 a) Differentiate between correlation and regression. (10)

b) What do you know about analysis of variance (ANOVA)? (10)

**ASSIGNMENT No. 2**

***Note: This assignment will be completed during the workshop under the close supervision of your tutor.***

1. Develop a data sheet on SPSS (Statistical Package for Social Sciences). You can enter data related to Nutritional indicators of the countries. (25)

*Source: World population data sheet by population reference bureau available on net. Website: www: prb.org* OR as advised by the tutor in the workshop.

2. Analyse the data related to health and nutrition, making frequency distribution, measure of central tendency, measure of dispersion, cross tabulation, chi square test (non parametric, parametric test) and regression analysis. (25)

3. Write a report on your findings. (50)

**Course Outline: BIOSTATISTICS (7510)**

**Level: M.Sc Credit Hours: 3(2+1)**

**Unit–1: BIOLOGICAL VARIABILITY**

**Unit–2: PROBABILITY**

**Unit­–3: SCREENING**

**Unit–4: STATISTICAL SIGNIFICANCE**

**Unit–5: SAMPLING**

**Unit–6: CORRELATION**

**Unit–7: MULTIPLE REGRESSIONS**

**Unit–8: RANDOMIZED CLINICAL TRIALS**

**Unit–9: ASSOCIATION AND CAUSATION**

***Recommended Books:***

*1) A Study Guide to Epidemiology and biostatistics; J. Richard Hebel and Robert J. Mc Carter (2006) Jones & Bertlett Publishers*

*2) Basic Biostatistics (Statistics for Public Health Practices; B Burt Geretman (2008) Jones An) Bartlett Publishers.*

*3) Bio-Statistics for health Students with Manual on Software Application by M. Hanif, Munir Ahmed and Aftab Ahmed published by ISOSS, Lahore.*