Safety & Laboratory Management	
Course No.	Saf.1202
Credit hour	2 (Theoretical)
Prerequisite	None

Aims & objectives

This course introduces some of the statistical skills necessary for scientific research. Topics include: measures of central tendency and dispersion; probability; probability distributions; quality control; interval estimation; Z, t, F and chi-square hypothesis tests.

An introduction to the principles of management as they apply to clinical laboratories. Subject matter will include the management process in small and large clinical laboratories, performance appraisals and setting priorities for laboratory services.

The course will also cover the skills required for management roles, with a complete overview of methods used to ensure quality patient management, quality assurance and quality control techniques.

Syllabus

The management section should cover:

1. **Planning.**
   a. Objectives in planning.
   b. Forecasting Needs for Staff Personal.
   c. Planning the use of Instruments and Procedures.
   d. Planning Space Utilization.
   e. The Time Factor.
   f. Implementing the Plan.
2. **Organization and supervision.**
3. **Organization of specimen collection and delivery.**
   a. The volume.
   b. The procedure.
   c. The scheduling.
4. **Space Utilization.**
5. **Workload measurements and personal requirements.**
6. **Productivity.**
   a. Factors affecting productivity and personal requirements.
   b. Determining personal requirements.
   c. Choosing the type of employee for the job.

7. **Problem solving.**
    a. Recognizing the problem.
    b. Examining the problem.
    c. Evaluating the system and developing a plan.
    d. Implementing the plan.
8. **Monitoring quality control in clinical laboratory.**
    a. Specimen collection (containers, amounts and techniques).
    b. Specimen identification and information check.
    c. Quality control of methods and test results (Accuracy; Precisions; Sensitivity; Specificity; Ruggedness).
9. **Implementing a quality control program.**
    a. Internal quality control program.
    b. External quality control program.

In the Biostatistics part, students will cover:

1. Introduction to probability.
2. Measures of dispersion.
3. Samples and population parameters.
4. Estimators and population parameters.
5. Introduction to computers use in medical sciences.
6. Basic statistics: organization of data.
7. Creation of a data file.
8. Frequency distributions.
9. Measures of central tendency.
10. Measures of dispersion.
11. Inference.
12. Clinical reference values.
13. Clinical decision making.

Instructional Methods

- Lecture.
- Discussion.
- Demonstration.
- Case studies.
- Tutorials.

Suggested Method of Evaluation

In-term examinations	50 Marks.
Attendance and participations	10 Marks.
Final examinations	40 Marks.
Total Marks	100 Marks.

Instructional and Resource Materials

1. Internally prepared and produced Handouts.
2. Corresponding home work exercises.
3. Corresponding practical exercises.

Textbooks & References

- Textbook of Clinical Laboratory Supervision By: K. Becan-McBride.
- Medical Laboratory Statistics By: W. Strike.