



NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF ECONOMICS AND STATISTICAL ENGINEERING
STATISTICAL ENGINEERING PROGRAM

ES814 – QUALITY STATISTICAL CONTROL II

I. GENERAL INFORMATION

CODE	: ES814 Quality statistical control II
SEMESTER	: 8
CREDITS	: 3
HOURS PER WEEK	: 6 (Theory, Practice, Laboratory)
PREREQUISITES	: ES714 Quality statistical control I
CONDITION	: Mandatory

II. COURSE INTRODUCTION

The quality of management helps us reduce improvisation within our processes, so that our first objective is to carry out fully planned processes in which we know, at any time, how to act during normal operating situations or conditions Optimal functioning or, conversely, how to act in the event of a deviation from the established requirements. In the same way, quality management provides a key opportunity, not only to plan processes, but also to establish mechanisms for monitoring and improving them. This course presents and analyzes concepts, models associated with the administration and management of quality as a vehicle to control and improve the processes of an organization.

III. COURSE OUTCOMES

The student:

1. Understands the importance of Process statistical control in industry.
2. Understands the concepts associated with quality.
3. Increases his capacity of analysis to choose the models of management of quality more suitable for the organization.
4. Understands the importance of leadership in quality management.
5. Understands the meaning of process management.
6. Increases his capacity to analyze and solve the problems that arise when designing, implementing and improving processes.
7. Applies the concept of flow in the process design.
8. Understands how the value can increase or decrease in a company with the correct design of processes.

IV. LEARNING UNITS

1. INTRODUCTION TO QUALITY MANAGEMENT / 8 HOURS

Introduction to quality management / Continuous improvement cycle / Principles of quality management / ISO 9001

2. CUSTOMER FOCUS / 8 HOURS

Identification of customer needs / Client satisfaction measurement mechanisms / Customer satisfaction surveys / Measurement model SERVQUAL / Client complaints management.

3. PROCESS MANAGEMENT / 8 HOURS

Process map / SIPOC diagram / Process types / Description of a process.

4. MANAGEMENT BY INDICATORS / 4 HOURS

Types of indicators / Efficiency indicators / Efficiency indicators. Applications.

5. PROCESS ENHANCEMENT / 8 HOURS

Improvement of processes with PHVA approach / Process improvement with Six Sigma approach / Management review. Applications.

6. QUALITY MANAGEMENT SYSTEMS / 12 HOURS

Family of standard ISO 9000 / Certification of systems of management / Standard ISO 9001 version 2015

7. OTHER MANAGEMENT SYSTEMS / 4 HOURS

Environmental management systems / Occupational health and safety management systems / Social responsibility management systems.

V. PRACTICAL AND LABORATORY EXPERIENCES

Workshop 1: Identification of Management Principles.

Workshop 2: Development of Customer Satisfaction Surveys.

Workshop 3: Elaboration of process map and SIPOC of an organization.

Workshop 4: Elaboration of efficiency and process efficiency indices.

Workshop 5: Elaboration of Improvement Project.

Workshop 6: Elaboration of Quality Policy with ISO 9001 approach.

Workshop 7: Elaboration of Environmental Policy with focus of ISO 14001.

Workshop 8: Elaboration of Social Responsibility Projects.

VI. METHODOLOGY

The course is developed in sessions of theory, practice and workshops of application. In theory sessions, the teacher presents concepts, theory and applications. In the practical sessions, problems of the application issues are solved and their solution and implication in the industry is analyzed. In the sessions of the workshops they solve problems and analyze their solution. In all the sessions the active participation of the student is promoted.

VII. GRADING SYSTEM

Evaluating System "I". Calculating the final average: $PF = (EP + EF + 2PP) / 4$

Four graded practices are applied, the lowest grade is deleted.

EP: Mid-term Exam, EF: Final Exam, PP: Average of qualified practices.

VIII. BIBLIOGRAPHY

Juran J.M. ; Gryna Frank "Quality control manual" 4th Edition. Volume I. Editorial Mc Graw Hill.

ISO 9001. Quality Management Systems - Requirements. 2015.

ISO 10014. Quality management - Guidelines for obtaining financial and economic benefits. 2006.