



NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF CHEMICAL AND TEXTILE ENGINEERING
CHEMICAL ENGINEERING PROGRAM

PI911 – TECHNOLOGY AND BUSINESS MANAGEMENT

I. GENERAL INFORMATION

CODE	: PI911 Technology and Business Management
SEMESTER	: 9
CREDITS	: 4
HOURS PER WEEK	: 5 (Theory, Practice)
PREREQUISITES	: EP818 Costs and Budgets
CONDITION	: Compulsory

II. COURSE DESCRIPTION

The course prepares students for the understanding of the fundamentals of business organizations required for successfully attaining proposed goals and objectives. Students formulate strategic plans after completing the SOWT analysis of the organization, analyze the information systems requirements, understand the importance of technological innovation, creativity and knowledge management, as well as the importance of marketing and team work for orderly completing small-scale and large-scale projects.

III. COURSE OUTCOMES

At the end of the course, students:

1. Formulate strategic plans for the proactive management of organizations attaining goals and objectives.
2. Understand the legal issues of industrial property and intellectual property rights applicable to business management and technical information.
3. Analyze information systems and formulate the requirements to structure them for a proper management of data in organizations.
4. Understand the concepts of technological innovation, creativity and knowledge management.
5. Appraise the importance of marketing for the attainment of expected results in market penetration of a good or service.
6. Appraise the importance of teamwork for completing large-scale projects.

IV. LEARNING UNITS

1. ORGANIZATIONAL CHANGES AND PARADIGMS

Good and service production companies / Changes in companies / Business model changes / Technology changes / Paradigms./

2. STRATEGIC PLANNING

Strategic planning cycle / Mission, vision, values, policies / Internal and external analysis of an organization / SWOT analysis / Business objectives / Indicators of strategic objectives / Balance score card.

3. TECHNOLOGICAL RESEARCH AND INNOVATION

Scientific research / Technological innovation and creativity / Research stages / Use of technological information / Technological information sources.

4. TECHNOLOGY LEGAL PROTECTION

Invention patents and utility models / Industrial design / Brands / Commercial lemmas / Origin denomination / Intellectual property rights / Patenting.

5. INFORMATION SYSTEMS

Information systems / Transactional analysis / Information systems projects / Data generation and management / Physical flow diagrams / Logical flow diagrams / Aggregation levels / Business intelligence.

6. BUSINESS MARKETING

Marketing / Markets and their segmentation / Marketing techniques / Analysis of 5 P's of marketing mixture / Technology marketing.

7. TOTAL QUALITY

Concepts / Total quality philosophy / Quality circles / Quality tools / Quality and continuous improvement

8. RE-ENGINEERING

Concepts / Technology influence on organizational changes / Redesigns / Structural improvements / Differences between re-engineering and total quality.

V. METHODOLOGY

The course takes place in theory and practice sessions. In theory sessions, faculty presents the concepts and methods. In practice sessions, students analyze different actual cases related strategic planning, information systems, total quality and re-engineering. Student's active participation is promoted throughout the course.

VI. GRADING FORMULA

The Final Grade PF is calculated as follow:

$$PF = (EP + EF + PL) / 3$$

EP: Mid-term Exam.

EF: Final Exam.

PL: Average grade of Practice Works.

VII. BIBLIOGRAPHY

1. LUTHANS Fred

Organizational Behavior

Mc Graw Hill, 2008

2. PORTER Michael

Competitive Strategy

The Press, New York, 1980.

3. KAPLAN Robert

Balance Scorecard

John Wiley and Sons, Inc., 1996.