



**NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF INDUSTRIAL AND SYSTEMS ENGINEERING
SYSTEMS ENGINEERING PROGRAM**

ST285 – ELECTRONIC BUSINESS APPLICATIONS

I. GENERAL INFORMATION

CODE	: ST285 Electronic Business Applications
SEMESTER	: 10
CREDITS	: 3
HOURS PER WEEK	: 5 (Theory–Practice)
PREREQUISITES	: ST205 Special Topics in Systems Engineering
CONDITION	: Compulsory
DEPARTMENT	: Systems and Telematics

II. COURSE DESCRIPTION

The course prepares students for the application of business management principles to technology enterprises, as well as for the formulation of business models for their own technology-based startup proposals. For that, students apply strategic management and competitive advantage models together with methodologies such as Blue Ocean and CANVAS business models. The course points to students linking engineering and management principles for formulating and developing information technology based innovative business

III. COURSE OUTCOMES

At the end of the course, students:

1. Understand the management fundamentals of an information technology business.
2. Understand and apply the methodologies for the strategic management of an information technology business.
3. Formulate and assess technology based enterprises and startups.

IV. LEARNING UNITS

1. CONCEPTS: STRATEGY, STRATEGICAL MANAGEMENT AND DIRECTION IN INFORMATION TECHNOLOGY BASED BUSINESS

Strategy / Management and strategic direction / Difference between leader and director / Scope of strategic management in the field of information technologies / Definition and scope of information technology businesses / Framework for the development and management information technology businesses.

2. LAUNCHING OF INFORMATION TECHNOLOGY BUSINESS BASED ON INNOVATION

Innovation, value of innovation / Blue Ocean framework for the formulation of IT businesses based on innovation / Workshop for applying Blue Ocean framework for value innovation.

3. GENERATION AND LAUNCHING OF TECHNOLOGY BASED START-UPS

Importance of technology based startups / Business models for the generation and launching of technology-based startups / CANVAS Business model for the formulation of technology-based startups / Applications.

4. STRATEGIC MANAGEMENT OF MATURE IT BUSINESSES

Strategic management / Strategic management processes / Porter models for analyzing mature technology sectors / Workshop on application of Porter models for strategic management.

V. LABORATORY AND PRACTICAL EXPERIENCES

Since the second week of the semester, students work in teams for developing and completing the application of methodological frameworks for developing technology-based business. Four reports and defenses are graded

VI. METHODOLOGY

The course is carried out in theory and practice sessions. In theory sessions, the instructor presents the concepts, methods and techniques. In practice sessions, instructor and students analyze and solve diverse problems and issues related to the formulation, launching and development of information technology based enterprises. Students work in teams for completing four reports regarding the application of proper methodologies for strategic promotion and development of IT based innovation startups. In all sessions, students' active participation is encouraged and graded.

VII. EVALUATION FORMULA

The Final Grade PF is calculated as follows (evaluation system: F):

$$PF = (EP + 2 EF + PP)/4$$

EP: Mid-term exam

EF: Final exam

PP: Average of quizzes and reports (four quizzes and reports, the report with the lowest grade is eliminated)

VIII. BIBLIOGRAPHY

1. **Don TAPSCOTT**
Harvard Business school, 2000
2. **Arnoldo HAX, Nicolas MAJLUF**
Strategies for Competitive Leadership
Granica Editions
3. **Alexander OSTERWALDER, Yves PIGNEUR**
Generation of Business Models, 2010
4. **W. CHAN KIM, Renee MAUBORGNE**
Strategy of Blue Ocean, HBS 2005
Generation of Business Models, 2010