

ENMA 4010: Entrepreneurship and Intellectual Property

This course is required for all Engineering majors with an Engineering Management concentration.

Course Coordinator:

Gene Dixon

Catalog Description:

Understanding of the new technological product development process the role of engineering entrepreneurship in managing the process. Emphasis on technological opportunity recognition and evaluation, and the early technological and marketing stages.

Course Structure:

Three 50 minute lectures per week (three credits).

Prerequisites:

MATH 3307, ENMA 3000

Required Materials:

1. R. C. Dorf and T. H. Byers (2008) *Technology Ventures*, Second Edition, McGraw-Hill, ISBN978-0-07-335043-1
2. Course will require students to review content appropriate articles from the media available from the ECU Student Newspaper Readership Program.

Course Outcomes:

Upon completion of this course, student will be able to:

1. Analyze the complexity of the new venture development process
2. Define and develop an appropriate business plan
3. Analyze risks and opportunities of a new venture
4. Develop technical entrepreneur role models
5. Apply analytical models to the steps of creating a new venture.
6. Develop an understanding of the new venture development process.

Lecture Topics:

- Capitalism and the Technology Entrepreneur (1 class)
- Opportunity and the Business Summary (1 class)
- Building a Competitive Advantage: benchmarking and conceptual mapping (1 class)
- Creating a Strategy (1 class)
- Innovation Strategies (1 class)
- Risk and Return (1 class)
- Venture Creation, the Business Plan and Feasibility (1 class)
- Independent Versus Corporate Ventures (1 class)
- Knowledge, Learning, and Design (1 class)
- Legal Formation and Intellectual Property; patent law and non-disclosure agreements (1 class)
- The Marketing and Sales Plan (1 class)
- The New Enterprise Organization (1 class)
- Acquiring, Organizing, and Managing Resources (1 class)
- The Management of Operations, Forecasting Models (1 class)

- Acquisitions, Mergers, and Global Business (1 class)
- The Profit and Harvest Plan (1 class)
- The Financial Plan (1 class)
- Sources of Capital (1 class)
- Presenting the Plan and Negotiating the Deal (1 class)
- Leading a New Technology Venture to Success (1 class)
- How to Read Financial Statements (1 class)
- Opportunity Screening (1 class)
- Business Plan Revisited (1 class)
- Entrepreneurial Manager (1 class)
- The Venture Capital Deal (1 class)
- Creativity in Business (1 class)

Relevant Program Outcomes

Graduates of the engineering program will demonstrate

- c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
- h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- i) a recognition of the need for, and an ability to engage in life-long learning.
- j) a knowledge of contemporary issues.
- l) an ability to apply engineering concepts to engineering management.

Professional Component Content:

Math/Science: 0: Engineering: 3 credits; General Education: 0

Assessment Requirements:

Student Work Samples

- Case study student to examine recent technology ventures and importance of technological currency (outcome i).
- Case study considering the role of integrated management systems in different entrepreneurial technological environments (outcome l).

Exam Questions

- Exam questions to evaluate student skills in financial analysis and business planning (outcome l and j).

Student Course Survey

Last review:

February 19, 2008 by Gene Dixon