

UNIVERSIDAD AUTÓNOMA DE BAJA CALIFORNIA

COORDINACIÓN DE FORMACIÓN BÁSICA
COORDINACIÓN DE FORMACIÓN PROFESIONAL Y VINCULACIÓN UNIVERSITARIA
PROGRAMA DE UNIDAD DE APRENDIZAJE

I. DATOS DE IDENTIFICACIÓN

- 1. Unidad Académica:** Facultad de Ciencias
- 2. Programa Educativo:** Licenciatura en Ciencias Computacionales, Licenciatura en Matemáticas Aplicadas, Licenciatura en Física, Licenciatura en Biología
- 3. Plan de Estudios:** 2017-2
- 4. Nombre de la Unidad de Aprendizaje:** Technology Enterprise
- 5. Clave:** 023875
- 6. HC:** 02 **HL:** 00 **HT:** 03 **HPC:** 00 **HCL:** 00 **HE:** 02 **CR:** 07
- 7. Etapa de Formación a la que Pertenece:** Terminal
- 8. Carácter de la Unidad de Aprendizaje:** Optativa
- 9. Requisitos para Cursar la Unidad de Aprendizaje:** Ninguno

UNIVERSIDAD AUTÓNOMA
DE BAJA CALIFORNIA
REGISTRADO
22 MAR 2018
REGISTRADO
COORDINACIÓN GENERAL
DE FORMACIÓN BÁSICA

Equipo de diseño de PUA

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Firma

Vo.Bo. Subdirector

Alberto Leopoldo Morán y Solares

Firma

Fecha: 24 de febrero de 2016



II. PROPÓSITO DE LA UNIDAD DE APRENDIZAJE

The learning unit Technology Enterprise is a terminal stage, elective course available for all programmers within the Faculty of Sciences. It aims to support students in setting up technology-based start-up companies by providing legal, technical, commercial and financial evaluation strategies that will allow them to assess the feasibility of the venture.

Students need to be fluent in English

III. COMPETENCIA DE LA UNIDAD DE APRENDIZAJE

To prepare a feasibility study based on the technical, commercial and financial evaluation of the proposed project and to design the business strategies required by a technology-based start-up company in order to justify the use of human and financial resources to add value to a technological product or service. Doing so in a professional and disciplined manner with respect for the environment and applicable regulations.

IV. EVIDENCIA(S) DE DESEMPEÑO

1 minute Elevator pitch where the business opportunity and competitive advantage is presented in a clear and concise manner
Poster presentation before a panel of judges. The poster should clearly show the business idea.
15 minute oral presentation where detail is provided on the business opportunity, market size, barriers to entry, competitive advantage and market strategy for the proposed venture.
Feasibility study containing the market, technical, financial and intellectual property analysis

V. DESARROLLO POR UNIDADES

UNIDAD I. *Knowledge transfer*

Competencia:

To analyze the importance of developing technology-based products and services based on an analysis of the technology industry in order to comprehend its impact as a source of knowledge transfer towards society, doing so in a professional and disciplined manner.

Contenido:**Duración: 6 horas**

- 1.1 Importance of knowledge transfer
- 1.2 Means of transferring knowledge
- 1.3 Science and society
- 1.4 Tech industry in México and abroad

UNIDAD II. *Business opportunity*

Competencia:

To evaluate the pertinence of a technology-based product or service based of identifying gaps in the market aimed at evaluating a business opportunity, doing so in a professional and disciplined manner.

Contenido:

Duración: 6 horas

- 2.1 The market
- 2.2 Gaps in the market
- 2.3 Market size
- 2.4 Competitive advantage
- 2.5 Barriers to entry
- 2.6 Evaluating opportunity

UNIDAD III. *Legal environment and intellectual property*

Competencia:

To evaluate the pertinence of a technology-based product or service based on the strength of the intellectual property and legal environment aimed at establishing its technical novelty, doing so in a professional and disciplined manner.

Contenido:

Duración: 6 horas

- 3.1 Types of intellectual property and types of protection
 - 3.1.1 Patents
 - 3.1.2 Trademarks
 - 3.1.3 Know-how
 - 3.1.4 Industrial secret

UNIDAD IV. *Commercialization*

Competencia:

To plan the commercialization strategy for a technology-based product or service based on cost-analysis aimed at evaluating the financial feasibility of the venture, doing so in a professional and disciplined manner.

Contenido:

Duración: 6 horas

- 4.1 Product chain
 - 4.1.1 Suppliers
 - 4.1.2 Distributors
- 4.2 Costs
- 4.3 Market studies and marketing
- 4.4 Profit margin and price setting

UNIDAD V. *Financing*

Competencia:

To discern between the different available sources of financing by means of cost-benefit analysis aimed at deciding the financial structure of the new company, doing so in a professional and disciplined manner.

Contenido:

Duración: 6 horas

- 5.1 Types of companies
- 5.2 Corporate structure
- 5.3 Sources of financing
- 5.4 Profitability
- 5.5 Exit strategies

UNIDAD VI. *Evaluating feasibility*

Competencia:

To justify the feasibility of a project by integrating market, IP, cost and financial analyses aimed at effectively securing the necessary resources, doing so in a professional and disciplined manner.

Contenido:

Duración: 2 horas

- 6.1 Elevator pitch
- 6.2 Feasibility study
- 6.3 Prototyping and testing

VI. ESTRUCTURA DE LAS PRÁCTICAS

| No. de Práctica | Competencia | Descripción | Material de Apoyo | Duración |
|-----------------|--|--|-------------------|----------|
| 1 | To evaluate market space for a technology-based product or service by means of case studies and a proposed project aimed at assessing business opportunity, doing so with professionalism, discipline and disposition for team work. | Case study analysis to identify gaps in the market, market size, competitive advantages, barriers to entry and evaluating a business opportunity. The student-proposed project will be evaluated in a similar way. | Projector and PC | 6 horas |
| 2 | To evaluate intellectual property and legal environment of a technology-based product or service by means of case studies and a proposed project aimed at determining its technical novelty, doing so with professionalism, discipline and disposition for teamwork. | Case study analysis to identify different types of IP. The student-proposed project will be evaluated in a similar fashion. | Projector and PC | 6 horas |
| 3 | To develop a commercialization strategy of a technology-based product or service by means of case studies and a proposed project aimed at assessing its financial feasibility, doing so with professionalism, discipline and disposition for team work. | Case study analysis in order to identify the components of a value chain. The student-proposed project will be evaluated in a similar way. | Projector and PC | 6 horas |
| 4 | To decide on the best-suited sources of financing for a technology-based venture by means of case studies and a proposed project aimed at deciding on the structure of the start-up, doing so with | Case study analysis to identify relevant sources of financing and cost-benefit analysis. The student-proposed project will be evaluated in a similar way. | Projector and PC | 6 horas |

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|---|---|---|------------------|-----------------|
| | professionalism, discipline and disposition for team work. | | | |
| 5 | To analyze the market, IP, cost and sources of financing for the proposed venture in order to prepare a feasibility study, doing so with professionalism, discipline and disposition for team work. | Production of a feasibility study for the student-proposed project. | Projector and PC | <i>24 horas</i> |

VII. MÉTODO DE TRABAJO

- Oral presentations of subjects by the teacher
- Case study analysis
- Oral presentations by students
- Team work
- Elevator pitch
- Poster presentation before a business panel
- Feasibility study in writing

VIII. CRITERIOS DE EVALUACIÓN

| Criterios de evaluación | <u>CRITERIA</u> | Percentage of final evaluation |
|--------------------------------|-----------------|--------------------------------|
| Evaluation | | 15% |
| Elevator pitch | | 30% |
| Poster presentation | | 30% |
| Feasibility study | | 25% |
| Team work | | |

PASS REQUIREMENTS

To be exempt of term examination students must obtain an 80% overall mark and must have at least a pass mark in all subjects. Final examination consists in students presenting all subjects appropriately corrected.

IX. BIBLIOGRAFÍA

Básica

1. Breznitz, Shiri M. 2014. The Fountain of Knowledge: The Role of Universities in Economic Development. Innovation and Technology in the World Economy. Stanford, California: Stanford Business Books, an imprint of Stanford University Press.
2. Dorf, Richard C., Thomas Byers, and Andrew J. Nelson. 2015. Technology Ventures: From Idea to Enterprise. 4e. ed. New York, NY: McGraw-Hill Education
3. Duening, Thomas N., Robert A. Hisrich, and Michael A. Lechter. 2014. Technology Entrepreneurship: Taking Innovation to the Marketplace. 2nd ed. Burlington: Elsevier Science
4. Osterwalder, Alexander, Yves Pigneur, Greg Bernarda, and Alan Smith. 2014. Value Proposition Design: How to Create Products and Services Customers Want. Strategyzer Series. Hoboken: John Wiley & Sons.

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5. Aulet, Bill. 2013. Disciplined Entrepreneurship: 24 Steps to Help Entrepreneurs Launch Successful New Ventures. Hoboken, New Jersey: John Wiley & Sons, Inc.
6. Lyons, Daniel. 2016. Disrupted: My Misadventure in the Start-Up Bubble. New York: Hachette Books.
7. Ries, Eric. 2011. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses. New York: Crown Business.
8. Thiel, Peter A., and Blake Masters. 2014. Zero to One: Notes On Startups, or How to Build the Future. New York: Crown Business.
9. Consejo Nacional de Ciencia y Tecnología
<http://www.conacyt.mx/index.php/fondos-y-apoyos>
10. Instituto Nacional de Emprendedor
<https://www.inadem.gob.mx/>
11. Secretaría de Desarrollo Económico Baja California
<http://www.bajacalifornia.gob.mx/sedeco/>
12. Science-Business eXhange
<http://www.nature.com/scibx/index.html>
13. Strategyzer
<https://strategyzer.com/>

X. PERFIL DEL DOCENTE

Natural sciences graduate with proven experience in the subject