



INTERNATIONAL **B**ACHELOR **C**ERTIFICATE

IN

ANIMAL **S**CIENCES & **F**OOD **S**CIENCE

2015-2016

Ecole d'Ingénieurs de PURPAN
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TOTAL CREDITS		20	

CODE	ANIMAL SCIENCES	ECTS	PAGE
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TOTAL CREDITS		13	

CODE	FOOD SCIENCES	ECTS	PAGE
IBSTA01	FOOD SCIENCES FOOD TECHNOLOGY & MICROBIOLOGICAL QUALITY OF FOOD PROCESSES IN FOOD TECHNOLOGY / QUALITY PROCESS	11	11
TOTAL CREDITS		11	

CODE	ENOLOGY	ECTS	PAGE
IBSTA02	WINEMAKING, ENOLOGY & WINE BUSINESS INDUSTRY	6	12
TOTAL CREDITS		6	

CODE	INTERNSHIP	ECTS	PAGE
IBMOS01	INTERNSHIP	10	13
TOTAL CREDITS		10	

TOTAL FOR THE YEAR OF STUDIES		60 ECTS	
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FRENCH LANGUAGE

Credits: 4 ECTS

Learning outcomes:

To give students a knowledge of French in order to enable them to deal with simple, everyday situations.

Content:

From introducing things to people, to providing information, conducting a debate and recounting a situation or story, students will learn how to formulate their ideas & express them in a way that is both logical and adapted to their audience.

Pedagogy – terms and conditions:

- Role playing, always focusing on the abovementioned notions & based on everyday situations.
- Television extracts like the News so as to build oral comprehension, interaction & fluidity in expression.

Evaluation – terms and conditions:

Oral and written exam

Prerequisite:

Minimum 1 year of French language taken at BUA

Literature:

- A. BERTHET et al., Alter Ego 1 and 2, méthode de français, 2006, éd. Hachette FLE
- M. GREGOIRE, Grammaire progressive du français, 1997, éd. Clé international

ENGLISH LANGUAGE

Credits: 4 ECTS

Learning outcomes:

To reinforce the knowledge of the English language in order to communicate in general and professional English.

Objective: level B2

Content:

From introducing things to people, to providing information, conducting a debate and recounting a situation or story, students will learn how to formulate their ideas & express them in a way that is both logical and adapted to their audience.

Pedagogy – terms and conditions:

- Role playing, always focusing on the abovementioned notions & based on everyday situations
- Television extracts like the News so as to build oral comprehension, interaction & fluidity in expression

Evaluation – terms and conditions:

Oral and written exam

Prerequisite:

TOEFL IBT 80, TOEIC 700, IELTS 6 (TOEIC 750 recommended)

RURAL SOCIOLOGY

Credits: 3 ECTS

Educational objectives:

Become familiar with the sociological approach and its basic concepts.

Apply this approach and these concepts to the observation and understanding of rural and agricultural worlds.

Content:

- The sociological approach: What is sociology? What were the conditions for the emergence of sociology in general and rural sociology in particular? What factors influenced the transformation of rural areas over the last 50 years?
- Social influence: what social influence? How is it possible to live in society? What mechanisms influence the adoption of new practices by farmers?
- How to learn the rules of life in society: what bind individuals together in a society? How people learn the rules of living in society?

Tutorial:

The evolution of farmer's families; the characteristics of farmer's families; the transformation of rural communities.

MICRO & MACRO ECONOMY

Credits: 6 ECTS

Educational objectives:

Through lecture, class discussions, team consultations, oral and written reports, and examinations, students should demonstrate the following:

1. Introduce students to the nature of agribusiness firms and the role of the agribusiness manager.
2. Introduce students to the principles and practices used in the management of agribusiness industries.
3. Provide students with management tools that may be applied to the types of problems they are likely to encounter in an agribusiness management career.
4. Improve the student's ability to discuss agribusiness management ideas and concepts in both oral and written forms.

Content:

- Management principles relevant to agribusiness firms. In short, what does a manager need to know and do? The course will focus on the following topics:
- Agricultural productivity
- The key players of the agri-food system
- Understanding Customer Needs to Make Money
- The Agribusiness Manager (3 Es, 4 management functions, 6 steps of decision-making)
- The Role of Marketing (marketing mission, nine functions of marketers, 5 utilities)
- The need for competition and its monitoring
- Marketing Management (the business plan, estimating market potential)
- Understanding Consumer Demand (demand elasticity, cross-elasticity, income elasticity)
- Staying Competitive, Strategic Plan
- Forecasting
- Budgeting
- Organizational Structure

Teaching methods:

Lectures, videos, class discussion, homeworks, projects, and tutorials

Literature:

Principles of Agribusiness Management, 4th ed. by Beierlein, Schneeberger, and Osburn.

Assessment methods:

Written examination

AGRICULTURAL POLICIES

Credits: 3 ECTS

Educational objectives:

- Understand the ongoing globalization of the economy
- Highlight the main agricultural policies in the presence of the WTO and the reform process (particularly in France and Europe)
- Measuring the consequences of these policies for rural areas and territories
- Consider strategies for the future of agriculture

Content:

- Consumption or demand
- Production or supply
- The world grain market
- World trade and exporting countries
- World trade and importing countries
- Concept of Stocks
- Analysis of world prices, and price trends
- Concepts of food security
- The CAP. Why and how supporting agriculture
- Evolutions of the CAP in Europe
- Agriculture : from the GATT of 1948 to the WTO today
- Definition of strategies for agriculture and the rural world

Teaching methods:

Lectures

Assessment methods:

Written examination

ANIMAL PRODUCTIONS

Credits: 9 ECTS

Educational objectives:

- Knowing the different techniques and systems of animal production.
- Managing the techno-economic diagnosis of farms.

Content:

UNIT 1 : INTRODUCTION TO ANIMAL PRODUCTION SCIENCE

- **Domestic animals and productions**
 - Ruminants
 - Monogastrics
 - Housing/Farm stalls
 - Animal welfare
- **French breeds - characteristics and performances**
- **Farm visits**
 - dairy cow and laying hens
 - Pork: traditional and non-traditional farming systems
 - Meat chickens: traditional and free range systems

UNIT 2 : REPRODUCTION

- **Reproduction physiology**
 - Reproduction of beef cattle
- **Reproduction management (**
 - Reproduction management in pig production
 - Use of hormones
- **Group work + presentations**
 - One species/group (dairy cows, pigs, chickens, etc)
 - Reproductive physiology of the species
 - Reproductive cycle
 - Specificities/Technologies

UNIT 3 : ANIMAL NUTRITION

- **Digestion and metabolism**
 - Digestive system : monogastrics and ruminants
 - Digestion : monogastric and ruminants
 - Nitrogen and energy metabolism in ruminants
- **Feedstuffs**
 - Concentrates, co-products and minerals ; Grass (pasture, silage, hay)
- **Monogastric feeding**
 - Pork, poultry
- **Ruminants feeding**
 - Dairy cattle, beef cattle
 - French feeding systems
 - Introduction to software : INRAtion and PrévAlim
 - Practical use of diet formulation software

UNIT 4 : PRODUCT QUALITY

- Dairy products
- Meat products
- Egg products
- Product quality

UNIT 5 : ANIMAL INDUSTRIES

- General introduction
- Bibliography Report
- Dairy cattle, beef cattle, pork, or poultry industry

Teaching methods:

Lectures, Self-learning, Case-study, Field visits.

Assessment methods:

Written tests, oral presentation

ANIMAL MARKET CHAINS

TUTORED WORK IN EUROPEAN MARKET CHAINS

Credits: 4 ECTS (Including the tutored work)

Educational objectives:

- Being able to analyze the European diversity of the main animal market chains and feed industries and their international evolutions.

Content of the EU:

- Concept and method for the market chains
- Future international market types
- Feed industry markets in Europe
- Dairy products chains in Europe
- Beef meat chains in Europe
- Pork meat chains in Europe
- Poultry meat chains in Europe
- Fish chains in the world

Teaching methods:

Lectures, Visits,

Assessment methods:

Report

FOOD SCIENCES

Credits: 11 ECTS (Including tutored works)

Educational objectives:

Learning the mechanisms involved in technological processes of food. Learning the management of food quality and food safety.

Content:

1 - MICROBIAL QUALITY OF FOOD

Starting from the biochemical and nutritional composition of some solid foods (dairy and meat products) and liquid (fruit juice for example), detailing the physico-chemical mechanisms involved in the technological process (Practical Lab. works: Food biochemistry and microbiology).

Study of the micro-organisms usually found in food processing.

Pathogenic and spoilage micro-flora.

Microorganisms useful in food technology.

2 - PROCESSES IN FOOD TECHNOLOGY / QUALITY PROCESS

Study of different food processes (dairy products, meat, vegetables and bakery).

HACCP Method. Application to the products developed during the Lab. works.

Teaching methods:

Lectures, Visits, Tutored projects of food manufacturing.

Support: lab. works based on 2 or 3 different products.

Assessment methods:

Written exam, Projects evaluation

WINEMAKING, ENOLOGY & WINE BUSINESS INDUSTRY

Credits: 6 ECTS

Educational objectives:

- To appreciate the complex nature of wine;
- To develop knowledge of the chemical, microbiological and technological aspects of red and white winemaking;
- To develop basic knowledge of sensory analysis of grapes and wine and to familiarize with the major wine faults;
- Developing the ability to interact and work in all areas of the business (R & D, production, logistics, purchasing, marketing, sales ...).

Content:

- Chemical composition of grapes during ripening. Parameters used to assess maturity.
- Soluble Solids, Ethanol, pH Acids in Grapes & Wines
- Basic concepts of chemical analysis of grapes and wine: Equivalents, Normality & Titrations
- Red and white wine processing.
- Post fermentation process: fining agents, wine blending and wine aging
- Wine color and its stability
- Wine aroma and sulfur compounds
- Students are placed in a situation of business consultant (winery, cooperative, trader, exporter, ...).
- Solutions to implement the specific business advice approach

Teaching methods:

Lectures, tutored works, visits.

Assessment methods:

Tests, Lab. Reports, Quizzes

INTERNSHIP

Credits: 10 ECTS

Teacher:

Professor-tutor designated for each student

Learning outcomes:

Increase student's comprehension of the role and the functioning of companies or professional organizations. Experience work environment with its constraints and stimulations. Increase student's capacity to analyze the problem within the company and to present solution(s) based on; an in-depth bibliographical search, the choice of an adapted methodology and a procedure leading to propositions adjusted to the context of the company.

Pedagogy – terms and conditions:

Pedagogical team will find an adapted internship for the student. Internship agreement will need to be signed between the student and the company, defining objectives and responsibilities of both parties. A professor – Tutor will be designated for each student and will be the reference of the student during its internship.

Evaluation – terms and conditions:

Students will be assessed by their trainee superior on their general behaviour; adaptability, sociability, ability to communicate effectively, their dependability, and on their work behaviour; interest taken in the work, ability to listen and to follow instructions, work quality and output, sense of observation, personal initiative, practical common sense (20%).
Report (and oral presentation if needed) at the end of the internship (80%).

Language:

French and English

Number of hours:

8 weeks