Course guide 2014-2015

Economics of Animal Health and Food Safety

Business Economics

Leeuwenborch,
Hollandseweg 1,
Wageningen.

Secretary: Room 6013
Tel. 0317 484065

Course:	BEC-52806
Credits:	6
Lecturers:	Helmut Saatkamp and Monique Mourits
Contact person:	Helmut Saatkamp, tel. 0317 48 2232 Leeuwenborch, Room 6039
Period:	2
First lecture:	Tuesday October 28th 2014
Examination date:	Wednesday December 17th 2014
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WAGENINGEN UNIVERSITY
SOCIAL SCIENCES

1. Scope and aims

Animal health and food safety issues play an important role in animal production, as well as in society as a whole. This course aims at obtaining qualitative and quantitative insight in decision making in these fields, primarily from the economic point of view. Basic economic and decision making skills needed to study and support decision making problems in the field of animal health and food safety are studied and practiced during the course. However, other aspects related to this decision making process are included as well, such as animal welfare, consumer protection and ethics.

After successfully completing this course, the student is able to:
- Conceptualize and rationlize animal disease and food safety problems from a decision making point of view, particularly the economic and societal aspects hereof;
- Identify and apply quantitative methods and modelling approaches to provide a quantitative economic base for the decision making problem;
- Succesfully conduct a Major or Minor Thesis research in the field of Economics of Animal Health and Food Safety.

2. BSc Minor Biology of Infectious Diseases of Humans and Animals

BEC-52806 is part of the BSc Minor Biology of Infectious Diseases of Humans and Animals (co-ordinaor: M. Dicke). For Animal Science students that want to complete this Minor, this course is mandatory. For other students, this course is optional. The study schem of the Minor is as follows:
Period 1: NEM-20806 Basics of Infectious Diseases
Period 2: QVE-20306 Veterinary Epidemiology and Economics (for non-Animal Science students) or
BEC-50806 Economics of Animal Health and Food Safety (for Animal Science students)
Period 2: HMI-50306 Host-microbe interactomics
Period 3: ENT-51306 Frontiers of Medical and Veterinary Biology

3. Intended audience and prerequisites

Participants preferably should have basic knowledge of business economics and mathematics, preferably BEC-20806 Financial Management in Agriculture, MST-21806 Accounting (for Management, Economics and Consumer studies) or BEC-20306 Agricultural Business Economics (for students from other programmes). The course is thaught in English, therefore an average knowledge of this language is required. The course is particularly set up for four categories of participants:
- Students from the programme Management, Economics and Consumer studies;
- Students from the programme Animal Science with some basic knowledge of economics;
- Students from the programme Food Technology with some basic knowledge of economics;
- Other interested students with some background in economics.

4. Contents of the course

The course includes six broad topics, each studied in a separate week:
1. General economic principles of animal diseases and basic economic methods;
2. Applications at the level of the individual animal and the farm level;

3. Economic decision making at the national level;
4. Extention of economic decision making on livestock diseases;
5. Economics of Food Safety;
6. Case studies.

In topic 1 the general economic aspects and principles of animal disease are explained. Moreover, a few basic economic calculation/modelling methods are studied and practiced. Particularly attention is paid to: (1) a framework for economic impact of diseases, (2) categorisation of different diseases, and (3) production function theory (general and applied to animal diseases).
In topic 2, examples of applications of Animal Health Economic research are presented: both the methodology and the results.
In topic 3, important issues in economic decision making are added to the basic framework, which are particularly of interest in decision making at the national level: risk, uncertainty and social welfare economics. Furthermore, an integrated application is presented.
In topic 4, a further extention is presented, including the impact of livestock diseases for other economic sectors, animal welfare aspects and human health aspects associated with livestock diseases.
In topic 5, the main aspects related to Food Safety Economics are presented and studied. Attention is paid to (1) consumer perception, (2) food safety regulation, (3) costs and benefits of food safety improvements for the different stakeholders and (4) risk analysis. The entire chain of food production from primary production to consumer is considered and economic concepts used in food safety research are introduced and discussed.
Topic 6 includes a case studie, in which various aspects will be studied and applied in an integrated way, focused on the elaboration of an integrated research proposal/project.

A guest lecture will be given by Dr.ir. H. Maurice, policy officer Food Safety and Animal Health of the Dutch Ministry of Economic Affairs (formerly: Agriculture). In this lecture, emphasis will be put on (1) the organization and making of policy and regulations in the field of Animal Health and Food Safety and (2) the use of research results and scientific knowledge in these processes.

5. Activities

During the whole period, lectures will be given and PC-practicals. The latter is partly aimed as an illustration of the theory presented, and partly aimed as a way to acquire some basic modelling skills. Students are adviced to read in advance the relevant parts of the reader or practical instructions. Furthermore, in some occasions additional literature will be handed out, which should be studied also.
From week 13 (the 5th week of the course) on, students will work in small groups of 3-5 persons on a specific integrated case; in week 14 (the 6th week of the course), the emphasis is on this case study. This is a mandatory part of the course. A small essay should be written to report. Subjects will be allocated in consultation with the students.

6. Course material

A reader of relevant scientific literature can be bought at the WUR-Shop in the Forum building.
At every lecture, handouts will be provided through Eduweb regarding the contents of this specific lecture.
At some occasions, additional scientific literature will be distributed.

All this course material should be studied for the examination.

7. Examination

The final written exam (open questions, multiple choice questions and statements) covers material from the reader, the lectures and the practicals.
The work for the case study has to be finalized before the end of the course period, so that the marks for this part can be determined in time.
The assessment strategy is explained in the table below.

Learning outcome	Case-study	Written exam
Conceptualization of the decision problems	X	X
Identification and application of quantitative methods	X	X
Relative weights in the final mark	25%	75%

8. Course outline and study scheme

Week	Day	Date	Time	Room	Topic		Lecturer
9	Tue	28/10/14	10.30-13.00	C0076	L1	Introduction, Basic Economics, Economic impact	Saatkamp
	Wed	29/10/14	08.30-10.15	C0076	L2	Replacement, Dynamic Programming, Markov Chains	Saatkamp
	Thu	30/11/14	08.30-12.15	PC0077	P1	Idem	Mourits/Saatkamp
10	Tue	04/11/14	10.30-13.00	C0076	L3	Basic Economic Methods, Ex-Parasites, Ex-Broiler/AW	Saatkamp
	Wed	05/11/14	08.30-10.15	C0076	L4	Ex-Broiler/AW, Ex-BVDV	Saatkamp
	Thu	06/11/14	08.30-12.15	PC0077	P2	Partial Budgetting, CBA, Decision Tree	Mourits/Saatkamp
11	Tue	11/11/14	10.30-13.00	C0076	L5	HCLD-1: Model/rational, Introduction and Prevention	Saatkamp
	Wed	12/11/14	08.30-10.15	C0076	L6	Risk/Uncertainty and Economic Welfare Analysis	Saatkamp
	Thu	13/11/14	08.30-12.15	PC0077	P3	Stochastic programming in @Risk	Mourits/Saatkamp
12	Mon	Cancelled					
	Tue	Cancelled					
	Wed	19/11/14	08.30-10.15	C0076	L7	HCLD-2: Monitoring of diseases	Saatkamp
	Thu	20/11/14	08.30-12.15	C0076	P4	Multi-Criteria Analysis	Mourits
13	Mon	Cancelled					
	Tue	25/11/14	10.30-13.00	C0070	L8	HCLD-3: Control, Costs, Ex-HPAI	Saatkamp
	Wed	26/11/14	08.30-10.15	C0076	L9	HCLD-4: Ex-CSF, Ex-FMD	Saatkamp
	Thu	27/11/14	08.30-12.15	PC0077	C1	Case Study	Saatkamp
14	Mon	01/12/14	08.30-12.15	PC0077	C2	Case Study	Saatkamp
	Tue	02/12/14	10.30-13.00	C0076	L10	Special topics	Saatkamp
	Wed	03/12/14	08.30-12.15	PC0077	C3	Case Study	Saatkamp
	Thu	04/12/14	08.30-12.15	C0076	C4	Case Study presentation	Saatkamp
15					Study week		
16	Mon	16/12/13	09.00-12.00	C75	Examination		

Note:
L=Lecture, P=Practical, C=Case study

C0070, C0075, C0076 and PC0077: Leeuwenborch Building, Hollandseweg 1, 6706 KN Wageningen