



Veterinary Continuous Education in Europe  
International non-profit association

Competences for  
the VETCEE accredited pig health & production programmes

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Approved by  
The VETCEE Board

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# Competences for the VETCEE accredited pig health & production programs

## ‘Dossier of competences and module descriptors for VETCEE accredited porcine programmes, drafted by the porcine sub-committee of the VETCEE’

This draft was developed by representatives of the European Association of Porcine Health Management (EAPHM) in conjunction with representatives of the European College of Porcine Health Management (ECPHM).

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This draft has been approved by the Executive Committee of the EAPHM (date of approval: 22. NOV 2013) and the Board of the ECPHM (date of approval: 22. NOV 2013) following a discussion with members of both organisations.

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## **Introduction**

The aim of this document is to provide minimum standards that should be met by national postgraduate programmes, which are intended to certify high level of knowledge, skills and competences (KSC) in the field of pig health & production. It is anticipated that programmes meeting the standards and having been accredited by VETCEE will instantly step into mutual recognition. In case of accreditation of national programmes or courses delivered by European bodies it is also expected that ECTS-credits (European Credit Transfer and Accumulation System Credits) can be transferred into other programmes (e.g. an accredited course in epidemiology with 2 ECTS delivered by a university in Denmark would be accepted as sufficient training in epidemiology worth 2 ECTS by any national body awarding a postgraduate certificate in ‘pig health & production’ [or equivalent] in another country than Denmark).

According to the “Standards & Dossier of Competencies” of the VETCEE committee, all courses/modules shall be headed (at least jointly organized) by EAEVE accredited or approved institutions and shall have a quality assurance programme. The qualification level of the programme should correspond to EQF Level 7 that recognise highly developed and complex levels of knowledge which enable the development of in-depth and original responses to complicated and unpredictable problems and situations.

## **Education in the programmes**

Before starting the structured programme of postgraduate training in pig health, colleagues should work in the corresponding field for at least one year, i.e. in a practice dedicated in advising pig farms. The colleagues must have the equivalent of one year full time experience in the area of pig health & pig production. The programmes themselves should be based on modules (Table 1), which can be combined individually and can be taken on students’ convenience within three to nine years (minimum time after graduation in Veterinary medicine to sit the exam: four years (minimum one year of practical experience before starting a minimum of three years of structured programme; the program should be preferably 3 years, but the minimum is one year; maximum time: ten years after starting the structured course). Each module should be specified at a certain amount of ECTS and the whole programme should cover 30 ECTS (approximately 750 hours of blended learning, including contact hours, thesis writing, presentation of case reports, study time, etc.)

The programme providers are encouraged to use a variety of teaching methods in order to address the different learning styles. It is expected that classical lectures are accompanied by / accomplished with

self-direct learning sessions, practical sessions, tutorials, case studies, workshops, written assignments, e-learning etc.

**Table 1: Overview of different modules that comprise the whole course of standardised postgraduate training in pig health & production as accredited by the VETCEE**

Module	Percent of time*	ECTS credits	Hours
<b>Professional skills</b>	3.33%	1.0	25.0
<b>Practice management and communication</b>	3.33%	1.0	25.0
<b>Herd investigation</b>	3.33%	1.0	25.0
<b>Infectious and non-infectious diseases</b>	20.0%	6.0	150.0
<b>Reproduction</b>	10.0%	3.0	75.0
<b>Epidemiology</b>	10.0%	3.0	75.0
<b>Animal production</b>	13.33%	4.0	100.0
<b>Animal welfare and ethics</b>	5.0%	1.5	37.5
<b>Food safety</b>	6.66%	2.0	50.0
<b>Drugs</b>	10.0%	3.0	75.0
<b>Surgery and anaesthesia</b>	1.66%	0.5	12.5
<b>Reporting and communication (ICT)</b>	6.66%	2.0	50.0
<b>Other**</b>	6.66%	2.0	50.0
<b>TOTAL</b>	100.0%	30.0	750.0

\*20% of the teaching time should be confrontation (face to face teaching)

\*\*in order to allow inclusion of recent and emerging topics in the field of porcine health and production, it is suggested to set aside 2 ECTS of the time for these innovative subjects..

## Assignments and examination

Continuous examination is strongly recommended in order to stimulate learning throughout the whole studying period. There should be at least some formative (if not summative) assignments, which prepare the candidates for their final exam.

At the end of the whole course, it is mandatory for the successful candidate

- a) **to have passed a core exam of ‘general knowledge and skills in pig health & production’**  
  
(this exam can be conducted in oral or in written format and should consider all knowledge, skills and competences)
- b) **to have submitted at least two deliveries in written form**, i.e. a case report, research/trial report, thesis or an integrative essay on a topic of own choice that finally reflects the EQF level 7

The organization, documentation and quality assurance of the assignment and examination is in the responsibility of the programme providers.

## Basic competencies

### Professional skills

About this unit:

This module is intended to equip candidates with general key skills that are required for an experienced pig practitioner acting independently or in a leadership role, who may be in charge of the delivery of high quality first opinion veterinary care.

Candidates should be aware of welfare and ethical issues relevant to pig husbandry. There should be inclusion of personnel development skills including the philosophy of life-long learning. Also the candidates should be able to search for information and be familiar with the evaluation of the quality of different sources of information. The principles and purpose of accurate record keeping should be taught and demonstrated through verification of practical experience and skills e.g. case logs and reports. Awareness and practical knowledge of implementing compliance to national requirements for the safe handling and disposal of relevant hazardous waste is required.

### Main topics

This module should include the following topics:

- Educational theories and hands-on skills for CPD (continuous professional development)
- Literature & literature search for gathering information (e.g. CAB, Medline, pub med, etc.); use of social media, blogs and other WEB 2.0 sources (e.g. Facebook, LinkedIn, etc. to strengthen the networks)
- Welfare and ethics
- Accurate, legible and complete keeping of records
- Knowledge on safe and correct disposal of waste
- Knowledge on effective infection control measures and hygiene in practice.
- Health and safety

**Quantum: 1.0 ECTS / 25 hours**

## **Practise management and communication**

About this unit:

The purpose of this module is to equip candidates with the necessary communication and practise management skills required in the pig practice.

Practice business skills in the areas outlined above to a level that may be required by a senior clinician in charge of a practice or branch to a level that allows for the sustainable delivery of high quality veterinary care in a professional environment. Communication with the client should be emphasized. Key communications skills should include those required to obtain a comprehensive clinical history, to report treatment plans and results and to handle difficult situations such as outbreak of notifiable diseases, breakdown of a whole population, economic crisis and complaints. Team communications should be known and candidates should be capable of fostering good team work, delegating tasks, constructively criticizing and praising. Presentation skills need to be developed to a level that enables the candidate presenting clinical cases and simple clinical trials to colleagues in the surrounding of a workshop or a scientific meeting. Candidates have to acquire competence of communicating history to another colleague and of reporting on progress and results to owners. They should also be familiar with state-of-the-art continuity of case management.

### **Main topics**

This unit includes the following areas:

- Understanding of the principles of good communication and good case and client management. There should be some provision for practical training in communication skills.
- Understanding of the communications issues that arise when offering referral for specialist investigation and treatment and continuity in case management.

**Quantum: 1.0 ECTS / 25 hours**

## **Herd investigation**

The aim of this section is to define the minimum needed knowledge and skills, which combine to the competencies, that practitioner should be familiar with when performing herd visits for the purpose of improving pig health, public health, animal welfare, food safety, as well as preventing disease outbreaks.

### **Main topics:**

- Herd record evaluation
- Disease profiling
- Herd diagnosis
- Risk analysis
- Preventive Medicine

**Quantum: 1.0 ECTS / 25 hours**

## Specific competencies

The aim of this section is to define the minimum needed knowledge and skills, which combine to competencies, that practitioner should be familiar with before successful finishing the course.

The fields of knowledge are specified below and described in detail in Table 2. It is in the responsibility of the national programme team to define the actual content, which is expected to be biased by the country, where the training takes place.

## Infectious and non-infectious diseases

In first opinion practice competence in diagnosing, treating and preventing infectious and non-infectious diseases is essential. This unit will cover the knowledge and skills required to undertake diagnosis on group and herd level, planning and applying treatment as well as designing prevention plans. Practical knowledge of herd examination and performance of pathological examinations are included in this module.

### Main topics:

- Management and knowledge of viral, bacterial, parasitical and other syndromes of pigs in Europe and bordering countries (incl. knowledge of spread & transmission of infectious diseases)
- Zoonoses
- Diagnostic methods at individual and herd levels (incl. necropsy and gross pathology and laboratory technique)
- Passive & active / innate & acquired immunity and vaccination programmes
- Appropriate EU legislation and notifiable diseases
- Biosecurity and infectious/non-infectious disease control methods (incl. cleaning and disinfection)

**Quantum: 6.0 ECTS / 150 hours**

## Reproduction

In first opinion practice competence in diagnosing, treating and preventing reproductive problems is essential. This module will cover the knowledge and skills required to undertake reproduction analysis on group and herd level, planning and applying intervention as well as designing reproduction plans.

### Main topics:

- Physiology of reproduction
- Reproductive management, technology and husbandry
- Interpretation of reproductive records
- Diagnosis of reproductive disorders, intervention & prevention
- Neonatology

**Quantum: 3.0 ECTS / 75 hours**

## Epidemiology

The purpose of this module is to equip the candidate with a deep understanding of epidemiology and statistics on the operational level. This unit will cover the application of epidemiological techniques, e.g. sample size calculation, the design and interpretation of trials in particular herds / production systems and the statistical analysis of data.

### Main topics:

- Clinical trials
- Epidemiological principles, techniques and methods
- Biostatistics (basic knowledge) incl. monitoring & surveillance
- Information and communication technology (ICT)
- Evidence based herd intervention

**Quantum: 3.0 ECTS / 75 hours**

## **Animal production**

This module is designed to facilitate a deep understanding of factors in the production system that is affecting productivity, welfare and health. Candidates will be able to identify deviations and weaknesses in the production systems and correct the settings together with appropriate specialists (e.g. nutritionist, economist, etc.).

### **Main topics:**

- Herd Economics on different levels
- Genetics
- Housing & climate
- Nutrition
- Management procedures

**Quantum: 4.0 ECTS / 100 hours**

## **Animal welfare and ethics**

The aim of this module is preparing the candidate for evaluating and improving animal welfare in farm conditions, during transport of pigs, at slaughtering, etc. Moreover, the different ethical views on industrial pig production have to be discussed.

### **Main topics:**

- Care and welfare of sick, stressed or injured pigs and improving welfare in general
- Slaughtering and transport methods
- Related national & EU legislation and standards

**Quantum: 1.5 ECTS / 37.5 hours**

## **Food safety & public health**

This module aims to equip the candidates with knowledge and skills necessary for preventing transmission of zoonoses, reducing the risk of exposing consumers to threats from animals and animal products (e.g. drug residuals, antimicrobial resistance, needle in the neck, etc.).

### **Main topics:**

- Pre-harvest food safety measures
- Meat inspection data and slaughter checks
- One Health principle
- Quality assurance schemes

**Quantum: 2.0 ECTS / 50 hours**

## **Drugs**

In first opinion practice competence in treating diseases with drugs is essential. This module will cover the knowledge and skills required to correctly and prudently prescribing and applying medicines based on a clear diagnosis including resistance testing in case of bacterial infection. Practical knowledge of application of drugs in herds is included in this module in order to provide efficacious treatment strategies.

### **Main topics:**

- Therapeutics and medicines control; prudent use of antibiotics and NSAIDs
- Resistance to antimicrobials and anthelmintics
- EU medicine legislation
- Administration of medicines (including herd health management programmes)
- Integration of knowledge about pharmacokinetic and pharmacodynamics

**Quantum: 3.0 ECTS / 75 hours**

## **Surgery and anaesthesia**

This module shall give the candidate knowledge on pain relief, sedation and anaesthesia as used in pig practice. Advanced surgical procedures are very rare in pig production. Methods for handling of hernia, prolapses and claw disorders in order to ascertain health and welfare are described.

### **Main topics:**

- Pain relief / sedation/ anaesthesia
- Castration
- Hernia, prolapses and claw handling

**Quantum: 0.5 ECTS / 12.5 hours**

## **Reporting and communication (ICT)**

In first opinion practice competences in reporting and communication to clients and colleagues is essential. Dialogue techniques as well as concise, clear and understandable written and oral communication are trained hereunder presentation techniques for bigger groups of clients and colleagues should be trained.

### **Main topics:**

- Report presentations
- Report writing for clients

**Quantum: 2.0 ECTS / 50 hours**

## **Other**

This module shall be reserved for recent and emerging topics in the field of porcine health and production. It is important that subject of local relevance is dealt with in the programme.

### **Main topics:**

- Emerging and re-emerging diseases
- Recent innovative developments in e.g. production methods and control strategies
- Local topics related to regional differences in pig health and production
- Global challenges related to pig health and production

**Quantum: 2.0 ECTS / 50 hours**

**Table 2: Detailed description of fields of knowledge in the course of standardised programmes of “pig health & production” as accredited by the VETCEE**

Generic contents	Specific contents
Infectious and non-infectious diseases	Management and knowledge of viral, bacterial, parasitical and other syndromes of pigs in Europe and bordering countries (incl. knowledge of spread & transmission of infectious diseases)
	Zoonoses
	Diagnostic methods at individual and herd levels (incl. necropsy and gross pathology and laboratory technique)
	Passive & active / innate & acquired immunity and vaccination programmes
	Appropriate EU legislation and notifiable diseases
Reproduction	Biosecurity and infectious/non-infectious disease control methods (incl. cleaning and disinfection)
	Physiology of reproduction
	Reproductive management, technology and husbandry
	Interpretation of reproductive records
	Reproductive failure
Epidemiology	Neonatology
	Clinical trials
	Epidemiological principles, techniques and methods
	Biostatistics (basic knowledge)
	Information and communication technology (ICT)
Animal production	Evidence based herd intervention
	Herd Economics on different levels
	Genetics
	Housing & climate
	Nutrition
Animal welfare & ethics	Management procedures
	Care and welfare of sick, stressed or injured pigs and improving welfare in general
	Slaughtering and transport methods
Food safety & public health	Related national & EU legislation and standards
	Pre-harvest food safety measures
	Meat inspection data and slaughter checks
	One Health
Drugs	Quality assurance schemes
	Therapeutics and medicines control; prudent use of antibiotics
	Resistance to antimicrobials and anthelmintics

	EU medicine legislation
	Administration of medicines (including herd health management programmes)
	Integration of knowledge about pharmacokinetic and pharmacodynamics
Surgery & anesthesia	Basic knowledge of methods and procedures
Reporting and communication	HR-management
	Report presentations
	Report writing for clients
Others	

## List of skills

Moreover to the fields of knowledge, a list of skills (techniques) has been developed defining the minimum activities a candidate has to go through before finishing the programme:

- Communication
- Clinical examination
  - Condition scoring
  - Ultrasound
- Environmental examination
- Post mortem diagnostics
- Sampling (physiological and pathological matrices , feed, water, etc.) incl. preservation
- Laboratory techniques
- Epidemiology / statistics
  - Sample size determination
  - Test evaluation
  - Farm record interpretation / monitoring
  - Trail evaluation / trial interpretation
  - Data management

- Surgical procedures
  - Sedation
  - Castration
  - Prolapses
  - Pain relief / sedation
- Medication methods
- Reporting of findings, diagnosis, intervention measures
- Welfare evaluation (animal / system)
- Euthanasia
- Slaughter check
- Internet competencies

The assignment testing the fulfilment of this requirement (or continuous participation of the candidate in an appropriate workshops, etc.) is in the responsibility of the programme provider.