Appendix F

Importance, sorted high to low

Competency	Importance
01.7 Calf and youngstock health	3.55
07.1 Common diseases	3.44
07.5 Diseases relevant to herd health	3.42
06.4 Principles of infectious disease management	3.42
01.4 Infectious disease	3.41
01.3 Lameness	3.41
01.2 Mastitis	3.41
13.1 Knowledge of current recommendation of the prudent use of drugs	3.36
01.1 Reproduction	3.34
09.1 Principles of pain detection and management	3.32
02.3 Manage and interpret data	3.32
15.2 Select most appropriate test(s)	3.31
15.1 Take appropriate samples	3.28
01.5 Metabolic disorders	3.28
03.1 Dairy	3.27
04.7 Knowledge of commonly seen diseases with nutritional causes	3.22
22.3 Effectively communicate with veterinary specialists, first line practitioners, farmers, farm advisers, consumers and stakeholders from the cattle industry	3.19
13.5 Knowledge of application of drugs to minimize development of resistance	3.19
14.4 Appropriate tests available for common diseases (including principles of sensitivity and specificity)	3.18
18.1 Understand the impact of herd health, diseases and animal welfare on farm finances, productivity and public health	3.17
04.2 Knowledge of basic nutritional requirements of the cow at different ages and stages of production	3.15
09.5 Procedures of regional and local anaesthesia	3.14
04.1 Knowledge of anatomy, physiology and principles of normal digestion	3.14
02.2 Obtain relevant data	3.12
21.1 Evaluate a scientific paper on quality of evidence and translate its content to field applications	3.09
11.5 Interpretation of tests results (Se, SP, PPV, NPV)	3.09
18.2 Understand financial implications of intervention measures and prevention	3.09
10.1 Legislation and codes of practice affecting cattle welfare	3.09
13.2 Basic knowledge of potential for residues in animal products and the environment	3.09
12.2 Define appropriate research questions, search literature for evidence, summarize findings based on level of evidence and advise accordingly	3.08
11.1 Frequency data, incidence and prevalence	3.04
10.3 Normal behavioural patterns and their alteration by stress, pain and disease	3.03
10.4 Welfare in relation to stockmanship, housing nutrition and breeding	3.01
09.2 Effects and side effects of NSAID, GCS, sedatives, anesthetics	3.01
06.3 Purchase management and quarantine	3.01
02.1 Define key outcomes	2.99
19.2 Relevant legislation for zoonotic diseases	2.99
04.3 Understand common feeding concepts and principles of diet formulation	2.98
04.8 Knowledge of nutritional deficiencies - signs, epidemiology, diagnosis, correction and prevention	2.98
20.5 Biosecurity and regulated animal diseases	2.97
19.1 Knowledge of public health dangers related to cattle and their products: meat, milk, animal contact	2.97
08.9 Reproductive surgery (i.e. caesarean section)	2.97
05.5 Knowledge of vaccination programs for important diseases	2.96
20.4 Drug use	2.95
20.1 Cattle health and welfare	2.95
21.2 Effectively communicate results of paper	2.94
07.2 Novel diseases	2.87
15.4 Interpret routine laboratory diagnostics (haematology and clinical pathology)	2.87
09.3 Sedation of calves and adult cattle	2.87
15.3 Describe tests strengths and weaknesses	2.86
07.4 (Re)emerging diseases	2.84
17.3 Understand the biohazard/public health implications of necropsies	2.83
08.2 Abomasal surgery (conventional and via laparoscopy)	2.82
05.6 Design/evaluate vaccination protocols in an evidence-based manner	2.81
15.5 Interpret routine analysis of different body fluids (peritoneal fluid, milk, synovial fluid, cerebrospinal fluid, urine, rumen fluid)	2.81
10.2 Interaction with stakeholders involved in cattle welfare	2.81
08.1 Laparotomy	2.81
12.1 Understand the principles of and the reasons for conducting clinical audits at the farm practice level	2.81
20.3 Slaughter and euthanasia	2.81
03.2 Cow/calf/suckler herds	2.80
17.2 Identify gross pathologies	2.79
04.6 Collect and interpret appropriate samples related to nutrition and metabolism	2.78
06.1 Cleaning and disinfection (including spectra of disinfectants)	2.76
22.1 Define appropriate communication strategies for different circumstances	2.76
11.2 Sample size, association vs causation, confounding, bias, odds ratios, relative risk, attributable risk, sampling strategies	2.76
13.3 Understand the basics of bacterial culturing, microbial identification and antimicrobial susceptibility testing	2.76
04.5 Analyze basic nutrition parameters, identify problems and improve rations	2.75
05.1 Knowledge of vaccine types, advantages/disadvantages	2.74
21.3 Demonstrate knowledge of recent literature	2.73
17.1 Perform a protocolized field necropsy, including appropriate sampling	2.73
09.6 Legal requirements (EU)	2.69
18.3 Perform a cost-benefit analysis, economic analysis of production results	2.68
19.3 Basic knowledge of the clinical signs of zoonotic diseases (from cattle) in humans	2.67
16.1 Understand imaging techniques which are typically available on farm	2.65
13.6 Knowledge of methods of quantification of antimicrobial use (dose based vs. mass based)	2.65
13.8 Basic knowledge of the potential role of the cattle sector in resistance selection in humans	2.64
16.2 Perform and interpret advanced but not specialized imaging	2.60
13.4 Understand the basics of efficacy testing of antiparasitic drugs	2.60
10.5 Design tailored monitoring programs	2.59
08.6 Dehorning and castration	2.56

20.2 Rearing	2.55
04.4 Knowledge of common dietary constituents used in compounding rations and commonly used methods of conservation	2.54
22.2 Knowledge of factors affecting human behaviour and strategies for influencing behaviour change	2.54
06.2 Control of human and animal trade/movement	2.53
03.3 Beef fattening units	2.53
11.3 Study design	2.50
06.5 Transportation of samples	2.46
03.5 Veal	2.44
05.3 Calculate a cost-benefit analysis of implementing vaccination programmes	2.44
11.4 Statistical tests - choosing an appropriate test	2.44
08.3 Umbilical surgery	2.41
14.2 Pharmacology / pharmacokinetics	2.40
08.8 Claw and limb surgery (tenotomy, amputation, fracture repair, management of tendon and joint diseases)	2.38
14.1 Microbiology	2.29
02.4 Use of sensor technology and artificial intelligence	2.28
03.4 Feedlots	2.23
07.3 Rare diseases	2.23
08.7 Udder and teat surgery	2.22
23.1 Genetic improvement of stock	2.18
05.4 Knowledge of EU regulation of vaccines	2.13
08.4 Intestinal surgery	2.12
01.6 Toxicology	2.07
09.4 General anaesthesia in calves and adult cattle	2.06
05.7 Knowledge of existing immunomodulative products, especially those marketed	2.03
23.2 Hereditary and congenital diseases	2.01
10.6 Impact of biotechnology on welfare	1.99
05.2 Basic insights in immune response depending on vaccine type used: Th1 vs Th2	1.96
14.3 Biochemistry (e.g. water analysis)	1.81
08.5 Enucleation	1.81
13.7 Knowledge of variations in antimicrobial use in different cattle industries and different EU countries	1.73