

Epidemiology, infectious diseases

The subject "Infectious diseases" is taught from the foundation of the school. Since infectious diseases have always been very important in Hungary the subject receives a special emphasis in the curriculum. It comprises general epidemiology, infectious diseases of animals caused by bacteria, viruses and prions. In the case of the different infectious diseases the history, occurrence, etiology, epidemiology, symptoms, pathologic lesions, diagnostic methods, differential diagnostics, treatment, prevention, control, food hygienic and public health significance are discussed. Teaching is carried out in the form of lectures and practicals.

Language:	English, Hungarian
Year	5 th
Term (semester)	9 th , 10 th
Lectures	75 lectures/semester (9 th semester) 60 lectures/semester (10 th semester)
Practicals	15 h/semester (9 th semester) 20 h/semester (10 th semester)
Credits	2+1
Examination	final examination
Teaching staff	L. Fodor, T. Tuboly, J. Varga

2.1. Requirements

- Lectures serve as the basis of the subject, active participation at the lectures is precondition of a successful examination.
- Two written tests will be organised in both semesters.
- Completing the semesters is acknowledged by signature of the teacher. The semester can be accepted if both written tests are written at least a satisfactory (Note 2) level. If a student missed the test or failed, an extra test occasion is given by the department.
- After completing both semesters students have to have an extramural 3-week-long diagnostic practical at the Central Veterinary Institute Budapest or at a similar institute abroad. A summary has to be written at the practical and a responsible person has to declare the successful completing the practical.
- The subject of Epidemiology, infectious diseases is part of the final examination.
- Completing the extramural diagnostic practical is precondition of the examination.

2.2. Teaching environment

The computer aided lectures are given in one of the lecture theatres of the campus. Clinical signs and lesions of certain diseases are shown on video film or slides.

2.3. Topics of the subject

9th semester

- General epidemiology (4 lectures)
- Anthrax (2 lectures)
- Diseases caused by Clostridia (6 lectures)
- Staphylococcus and Streptococcus infections (2 lectures)
- Listeriosis, swine erysipelas (2 lectures)
- Diseases caused by mycobacteria (4 lectures)

- Corynebacterium, Actinomyces, Nocardia, Dermatophilus and Rhodococcus equi infections (2 lectures)
- Diseases caused by Escherichia coli (4 lectures)
- Salmonella infections (4 lectures)
- Necrobacillosis, foot-rot (1 lecture)
- Pasteurella infections (haemorrhagic septicemia, fowl cholera, shipping fever, atrophic rhinitis) (4 lectures)
- Yersinia infections, tularemia (2 lectures)
- Brucellosis (4 lectures)
- Haemophilus infections, contagious equine metritis (3 lectures)
- Bordetella and Actinobacillus infections (2 lectures)
- Infectious keratoconjunctivitis of cattle, malleus, melioidosis (2 lectures)
- Diseases caused by campylobacters (2 lectures)
- Diseases caused by spirochetes, borreliosis (avian borreliosis, Lyme disease) (1 lecture)
- Swine dysentery (1 lecture)
- Leptospirosis (3 lectures)
- Mycoplasma and Ureaplasma infections (contagious bovine pleuropneumonia, contagious agalactica of sheep and goats, mycoplasma pneumonia of pigs, chronic respiratory disease of poultry (5 lectures)
- Diseases caused by chlamydiae (2 lectures)
- Diseases caused by rickettsias (Q-fever, heartwater, ehrlichiosis, anaplasmosis, Haemobartonella and Bartonella infections (2 lectures)
- Diseases caused by parvoviruses, circovirus infections (5 lectures)
- Papillomatosis (2 lectures)
- Adenovirus infections (4 lectures)
- Diseases caused by herpesviruses (8 lectures)
- Pox diseases (5 lectures)
- African swine fever (2 lectures)

10th semester

- Enterovirus encephalomyelitis of swine, swine vesicular disease (3 lectures)
- Foot-and-mouth disease, encephalomyocarditis (5 lectures)
- Avian encephalomyelitis, duck viral hepatitis (2 lectures)
- Vesicular exanthema of swine, feline calicivirus infection, rabbit hemorrhagic disease (2 lectures)
- Bluetongue, African horse sickness, rotavirus infection of animals (2 lectures)
- Reovirus infections of chicken (1 lecture)
- Infectious bursitis (2 lectures)
- Viral encephalomyelitis of horses (1 lecture)
- Infectious equine arteritis, PRRS (3 lectures)
- Tick borne encephalomyelitis, bovine virus diarrhoea, border disease (4 lectures)
- Swine fever (5 lectures)
- Bunyavirus infections, Rift Valley fever, Nairobi sheep disease, Akabane disease (1 lecture)
- Equine influenza, hog flu, avian influenza (3 lectures)
- Rinderpest, PPR (2 lectures)
- Parainfluenza-3 and respiratory syncytial virus infections of cattle, canine distemper (2 lectures)

- Newcastle disease, turkey rhinotracheitis (3 lectures)
- Rabies, vesicular stomatitis, ephemeral fever (4 lectures)
- Transmissible gastroenteritis of pigs, porcine epidemic diarrhoea (2 lectures)
- Feline infectious peritonitis, infectious bronchitis of chicken, bluecomb disease (2 lectures)
- Retrovirus infections of domestic animals, enzootic bovine leukosis, infectious lung adenomatosis of sheep (2 lectures)
- Feline leukosis, avian leukosis, reticuloendotheliosis (2 lectures)
- Equine infectious anaemia, maedi-visna, caprine arthritis-encephalitis (2 lectures)
- Borna disease, transmissible encephalopathies (BSE, scrapie etc.) (3 lectures)

2.4. Recommended literature

- Quinn, P.J., Markey, B.K., Carter, M.E., Donnelly, W.J.C., Leonard, F.C.: Veterinary Microbiology and Microbial Disease. Blackwell. Oxford 2002. ISBN 0-632-05525-1
- Rotle – Mayler: Medizinische mikrobiologie, Infektions und Seuchenlehre. 7. kiadás Stuttgart: Enke Verlag, 2002
- Timoney, J. F. et al.: Hagan and Brunner's microbiology and infectious diseases of domesticated animals 8. kiad. Ithaca: Cornell Univ. Press, 1988

2.5. Examination

- The subject of Epidemiology, infectious diseases is part of the final examination. The procedure and the conditions are defined by the rules of the final examination.
- The date of the examination is given by the Department of Education.
- The exam is an oral one; it has to be taken in front of an Examination Committee. The student will draw three questions and after a 30-minute-long preparation time she/he has to summarise her/his knowledge on the topics asked. The teacher or the members of the Examination Committee can have questions, which have to be answered as well.
- The examination is successful if the student proves at least satisfactory (Note 2) knowledge regarding each question.
- The result of the examination is made public every day by the Chairperson of the Examination Committee at the end of the examinations.

2.6. Questions of the Epidemiology, infectious diseases

1. Anthrax, etiology, pathogenesis, clinical signs (Zoon.)
2. Anthrax, diagnosis, treatment, prevention (Zoon.)
3. Clostridia. General characteristics of clostridial diseases
4. Malignant oedema in ruminants and pigs
5. Blackleg in ruminants
6. Enterotoxaemia in sheep
7. Necrotic enteritis in pigs
8. Necrotic and ulcerative enteritis in chicken
9. Tetanus
10. Botulism
11. Staphylococcus infections in domestic animal (especially in pigs and chicken)
12. Streptococcus infections in pigs and ruminants
13. Strangles
14. Erysipelas in swine and other animals (sheep, cattle, birds) (Zoon.)
15. Listeriosis (Zoon.)

16. *Corynebacterium* infections in mammals (caseous lymphadenitis of sheep, pyelonephritis of cattle)
17. Bovine tuberculosis (occurrence, etiology, pathogenesis, clinical signs) (Zoon.)
18. Diagnosis of bovine tuberculosis. Evaluation of intradermal skin test. Paraallergic reactions, eradication. Maintenance and control of freedom from bovine tuberculosis, risks of reinfection (Zoon.)
19. Tuberculosis in swine, dog and wild animals (Zoon.)
20. Avian tuberculosis
21. Paratuberculosis. *Rhodococcus equi* infection in foals. Dermatophilosis.
22. Salmonellosis of pig (*S. Typhisuis* infection and paratyphoid) (Zoon.)
23. Salmonellosis of cattle, sheep, horse and other mammals
24. *Salmonella* infections in poultry (*S. Pullorum* and *S. Gallinarum* infections and fowl typhoid caused by other salmonellae) (Zoon.)
25. Diseases caused by *Escherichia coli* in calves
26. *E. coli* diseases in swine (*E. coli* diarrhoea of piglets and odema disease)
27. *E. coli* diseases in poultry
28. Necrobacillosis, foot-rot in ruminants
29. Pasteurellosis (haemorrhagic septicaemia, *P. multocida* and *P. haemolytica* infections in ruminants and other domestic animals)
30. Atrophic rhinitis of pigs
31. Fowl cholera
32. Respiratory infections in rabbits caused by *Staphylococci*, *Pasteurella multocida* and *Bordetella bronchiseptica*
33. Tularemia (Zoon.)
34. *Yersinia* infections, rodentiosis (*Y. pseudotuberculosis*) and diseases caused by *Y. enterocolitica* (Zoon.)
35. General characteristics of brucellae and brucellosis
36. Bovine brucellosis (Zoon.)
37. Eradication of bovine brucellosis, maintenance of freedom, risks of reinfection
38. Brucellosis in swine (Zoon.)
39. Brucellosis in sheep and goats (Zoon.)
40. Infectious epididymitis in rams (*Brucella ovis* infection)
41. Brucellosis in dogs (Zoon.)
42. Polyserositis in pig caused by *Haemophilus parasuis*, fowl coryza
43. Pleuropneumonia in pigs caused by *Actinobacillus pleuropneumoniae*
44. Diseases caused by *Haemophilus somnus* in cattle and sheep
45. Contagious equine metritis
46. Diseases caused by *Bordetella bronchiseptica* in pig, dog, cat and rodents
47. *A. lignieresii* caused diseases in cattle and sheep, and *A. equuli* infections in foals and adult horses
48. Infectious keratoconjunctivitis of cattle and sheep
49. Glanders and melioidosis
50. *Campylobacter* infections cattle, sheep, dog and poultry (Zoon.)
51. General characteristics of spirochaetes and the diseases caused by them
52. Avian spirochaetosis, Lyme borreliosis
53. Swine dysentery
54. Epidemiology of leptospiroses (Zoon.)
55. Leptospirosis in cattle (Zoon.)
56. Leptospirosis in swine. Eradication (Zoon.)
57. Leptospirosis in horses and dogs

58. General characteristics of Mycoplasma and Ureaplasma infections
59. Mycoplasmosis of cattle (contagious bovine pleuropneumonia and other infections)
60. Mycoplasma infections in sheep and goat (contagious agalactia of sheep and goats, contagious pleuropneumonia etc.)
61. Mycoplasmosis in pigs (mycoplasma pneumonia etc.)
62. Mycoplasmosis in poultry (chronic respiratory disease etc.)
63. Mycoplasma infections in turkey (infectious synovitis, M. meleagridis infection)
64. General characteristics of chlamydiae. Diseases caused by Chlamydia psittaci in cattle (Zoon.)
65. Chlamydiosis in sheep and goat and other domestic animals (horse, cat, poultry) (Zoon.)
66. General characteristics of rickettsiae. Q-fever (Zoon.)
67. Heartwater, canine ehrlichiosis
68. Bovine anaplasmosis, Eperythrozoon suis infection in swine
69. Parvovirus infection in pigs
70. Feline panleukopenia
71. Parvovirus diarrhoea in dogs
72. Parvovirus caused diseases in mink (mink enteritis and Aleutian disease)
73. Derzsy's disease (parvovirus disease of geese)
74. Infectious chicken anaemia, circovirus infection
75. Papillomatosis
76. Pneumoenteritis of cattle caused by bovine adenoviruses
77. Pneumoenteritis in sheep caused by adenoviruses
78. Infections by adenoviruses in dogs (canine hepatitis, fox encephalitis, canine laryngotracheitis)
79. Adenovirus infections in poultry, egg drop syndrome
80. General characteristics of herpesviruses and their significance
81. Infectious bovine rhinotracheitis, infectious pustular vulvovaginitis, herpes mamillitis
82. Malignant catarrhal fever
83. Aujeszky's disease (occurrence, etiology, epidemiology, pathogenesis, clinical signs)
84. Diagnosis, prevention and control of Aujeszky's disease, eradication
85. Equine rhinopneumonitis
86. Diseases caused by EHV2 and EHV3
87. Feline rhinotracheitis, canine herpesvirus infection
88. Avian infectious laryngotracheitis
89. Marek's disease
90. Duck plaque (duck viral enteritis)
91. Pox infections of cattle (cowpox, pseudocowpox, bovine papular stomatitis, lumpy skin disease) (Zoon.)
92. Sheep and goatpox
93. Contagious pustular dermatitis of sheep and goat (Zoon.)
94. Swine pox
95. Myxomatosis
96. Fowlpox
97. African swine fever
98. Enterovirus encephalitis of pig (Teschin, Talfan diseases etc.)
99. Swine vesicular disease (SVD)
100. Foot and mouth disease (occurrence, etiology, epidemiology, clinical signs, diagnosis)

101. Prevention and control of foot and mouth disease
102. Avian encephalomyelitis
103. Duck viral hepatitis
104. Vesicular exanthema of swine (VES)
105. Feline calicivirus infection
106. Rabbit haemorrhagic disease
107. Bluetongue
108. African horse sickness
109. Avian reovirus infections
110. Infections bursitis (Gumboro disease)
111. Equine viral encephalomyelitis (Eastern, Western and Venezuelan serotypes) (Zoon.)
112. European tick borne encephalitis, louping ill (Zoon.)
113. Swine fever occurrence, etiology, epidemiology, pathogenesis, clinical signs
diagnosis
114. Prevention and control of swine fever
115. Bovine virus diarrhoea, eradication, border disease
116. Equine arteritis
117. Reproductive and respiratory syndrome of pigs (PPRS)
118. Rift valley fever, Nairobi disease (Zoon.)
119. General characteristic of influenza viruses, swine influenza
120. Equine influenza
121. Avian influenza
122. Parainfluenza (PI2 and PI3) infections in domestic animals, respiratory syntitial virus
infection of cattle, turkey rhinotracheitis
123. Rinderpest, PPR.
124. Distemper
125. Newcastle disease (occurrence, etiology, epidemiology, clinical signs, diagnosis)
126. Prevention and control of Newcastle disease
127. Rabies (occurrence, etiology, epidemiology, pathogenesis, clinical signs, diagnosis)
(Zoon.)
128. Prevention and control of rabies (Zoon.)
129. Vesicular stomatitis (VS), ephemeral fever
130. Transmissible gastroenteritis of pigs, porcine epidemic diarrhoea
131. Feline infectious peritonitis
132. Avian infectious bronchitis, coronaviral enteritis of turkeys
133. General characteristics of retroviruses, enzootic bovine leukosis, ovine pulmonary
adenomatosis
134. Feline leukosis-sarcomatosis
135. Avian leukosis, reticuloendotheliosis
136. Maedi-visna
137. Caprine arthritis encephalitis
138. Equine infectious anaemia
139. Transmissible encephalopathies, scrapie, mink encephalopathy
140. Bovine spongiform encephalopathy, and BSE in other animals, public health aspects.