I. General Pathology

1. Biopsy and cytology: techniques of obtaining tissue samples, various kinds of bioptical/cytological specimens incl. clinical implications, tissue processing, frozen sections
2. Histological methods, stainings, light and electron microscopy, histochemistry, immunohistochemistry, molecular pathology and other special techniques
3. Autopsy, its importance, the autopsy protocol and its parts
4. Disease, pathogenesis and structural manifestations, complications, sequelae
5. Death and postmortal changes
6. Necrosis - types, causes and further evolution. Apoptosis.
7. Atrophy - types, causes and further evolution. Hypoplasia.
8. Inborn and acquired disorders of protein, carbohydrate and lipid metabolism
9. Amyloidosis
10. Pathology of pigments and pigmentations
11. Icterus, types and causes
12. Pathological calcifications, concrements.
13. Pathology of nutrition
14. Hypertrophy, hyperplasia
15. Regeneration, repair
16. Metaplasia, dysplasia
17. Edema, its types, causes and consequences.
18. Focal disorders of blood supply, ischemia, infarction, hyperemia, venous congestion
19. Haemorrhage
20. Thrombosis incl. DIC
21. Embolisation, metastasis
22. Shock, its causes and shock changes in the organs
23. Heart failure - types, causes, complications
24. Inflammation - microscopic and macroscopic changes, mediators of inflammation, classification and morphologic patterns of inflammation
25. Granulomatous inflammation and its examples (leprosy, sarcoidosis, rhinoscleroma, etc.)
26. Tuberculosis: general morphology, preimmune type
27. Tuberculosis: organ tuberculosis of adult type
28. Syphilis
29. Pathological immune reactions and their morphological manifestations
30. Autoimmune diseases
31. Transplantations, incl. posttransplantation reactions
32. Immunodeficiency, causes and morphological manifestations
33. HIV, AIDS
34. Bacteriemia, sepsis, pyemia
35. Skin infections
36. Respiratory system infections
37. Gastrointestinal system infections
38. Genitourinary system infections
39. Nervous system infections
40. Staphylococcal infections
41. Streptococcal infections
42. Infectious hepatitis
43. Injury by physical agents, esp. radiation disease
44. Injury by chemical agents

II. Oncology

1. Definitions, preneoplastic lesions, pseudotumors
2. Classifications of tumors
3. Structure, growth of tumors + invasion and metastases
4. Characteristics of benign and malignant tumors
5. Intraepithelial neoplasia, carcinoma in situ (+ examples)
6. Carcinogenesis, etiology of tumors
7. Effects of tumor on host
8. Grading and staging of tumors, tumor prognosis
9. Fibroma, fibromatoses, synovial sarcoma, myxoma, lipoma, (+ sarcomas).
10. Chondroma, osteoma (+sarcomas, incl. clinical characteristics)
11. Leiomyoma, leiomyosarcoma, rhabdomyoma, rhabdomyosarcoma
12. Myeloproliferative disordes (CML and Ph negative disorders)
13. Myelodysplastic syndome (MDS) and acute leukemias.
14. Hodgkin lymphoma
15. Non-Hodgkin‘s lymphomas of B lineage (incl. precursor lymphoma/leukemia) excl. plasma cells
16. Plasma cell tumors, esp. plasma cell myeloma incl. clinical characteristics
17. Non Hodgkin ´s lymphomas of T lineage (incl. precursor lymphoma/leukemia)
18. Tumors of the squamous stratified epithelium
19. Benign tumors of the glandular epithelium + malignant tumors of the glandular epithelium (+ examples)
20. Neuroendocrine tumors
21. Tumors of the CNS: specific features and symptoms
22. Tumors of the CNS: astrocytic, oligodendroglial tumors and ependymal tumors
23. Tumors of the CNS of childhood (embryonal tumors, esp. medulloblastoma). Chordoma.
24. Tumors of the meninges, tumors of the peripheral nervous system
25. Tumors of melanocytes
26. Germinal tumors. Choriocarcinoma
27. Mesothelial tumors, tumors of the heart
28. Tumors of the blood and lymphatic vessels
29. Tumors of the lymph nodes
30. Tumors of the upper respiratory tract
31. Bronchopulmonary tumors
32. Tumors of the oral cavity, incl. salivary glands and odontogenic tumors
33. Tumors of the esophagus and stomach
34. Neoplasms of the small and large intestine
35. Tumors of the liver and biliary tract
36. Tumors of the pancreas
37. Tumors of the kidney
38. Tumors of the urinary tract
39. Testicular tumors
40. Tumors of the prostate
41. Tumors of the penis, vulva and vagina
42. Tumors of the uterine cervix
43. Tumors of the uterine body
44. Tumors of the ovary
45. Tumors of the breast
46. Tumors of the hypophysis and adrenal glands
47. Tumors of the thyroid gland
48. Tumors of the parathyroid glands and endocrine pancreas
49. Epithelial skin tumors.
50. Mesenchymal skin tumors
51. Tumors of the childhood

III. Systematic Pathology

1. Congenital heart disease
2. Pericardial disease
3. Endocarditis
4. Acquired valvular heart disease
5. Myocarditis, cardiomyopathy, heart transplanation
6. Ischemic heart disease – acute coronary syndromes
7. Chronic ischemic heart disease
8. Hypertension and its impact on organs
9. Atherosclerosis and other arterial regressive changes
10. Vascular inflammatory diseases
11. Aneurysms
12. Pathology of the veins and lymphatic vessels
13. Posthemorrhagic and hemolytic anemia
14. Anemias of diminished erythropoesis, polycytemia
15. Disorders of blood coagulation and haemostasis
16. Pathology of the spleen
17. Nonneoplastic lymphadenopathy
18. Pathology of the thymus
19. Pathology of the nose and paranasal cavities
20. Pathology of the larynx and trachea
21. Pediatric respiratory tract diseases
22. Bronchiectasis, localised obstructive airways disease
23. COPD. Emphysema. Lung collapse.
24. Bronchitis – acute, chronic. Asthma
25. Venous congestion and pulmonary edema
26. Pulmonary embolism
27. Pulmonary hypertension
28. Acute and chronic interstitial lung diseases
29. Classification of pulmonary infections incl. bronchiolitis, lobar pneumonia
30. Bronchopneumonia
31. Primary atypical (interstitial) pneumonias incl. non-infective, fungal infections
32. Pulmonary tuberculosis
33. Pathology of pleura
34. Diseases of the oral cavity incl. teeth
35. Pathology of salivary glands
36. Pathology of the esophagus
37. Gastritis
38. Peptic ulcers
39. Intestinal developmental disorders, diverticulosis
40. Intestinal vascular disorders, obstructive GIT disease, ileus
41. Inflammatory bowel disease
42. Acute enteritis, appendicitis, colitis incl. infections
43. Malabsorption syndromes
44. Pathology of the peritoneum, hernias
45. Hereditary metabolic disorders (hemochromatosis, Wilson‘s disease, alpha-1-antitrypsin deficiency), pediatric liver disease
46. Circulatory disorders of the liver, liver in systemic diseases
47. Chronic hepatitis incl. viral
48. Drug- and toxin-induced liver disease + acute liver failure
49. Liver cirrhosis, chronic liver failure, liver transplantation
50. Autoimmune liver and biliary tract diseases
51. Cholangitis and liver abscess
52. Cholecystitis, cholelithiasis, cholesterolosis
53. Congenital disorders of exocrine pancreas, cystic fibrosis
54. Acute and chronic pancreatitis
55. Kidney – congenital diseases, renal cysts
56. Blood supply disorders of the kidney
57. Glomerular diseases, pathogenesis and classification

58. Glomerular diseases with nephritic syndrome
59. Glomerular diseases with proteinuria and nephrotic syndrome
60. Pyelonephritis
61. Acute tubular necrosis, renal failure, renal transplantation
62. Hydronephrosis, renal stones, metabolic nephropathy
63. Pathology of the renal pelvis, ureter and urinary bladder
64. Pathology of the penis, scrotum and prostate
65. Pathology of the testis, epididymis and cord. Male infertility.
66. Pathology of the vulva and vagina
67. Pathology of the cervix uteri, endometritis, adenomyosis
68. Causes of dysfunctional uterine bleeding, endometrial hyperplasia
69. Pathology of Fallopian tubes and ovaries incl. ectopic pregnancy
70. Pathology of the intrauterine pregnancy
71. Inflammatory and proliferative conditions of the breast
72. Congenital abnormalities of the CNS, hydrocephalus
73. Intracranial nontraumatic hemorrhage. Intracranial hypertension, cerebral edema
74. Intracranial trauma
75. Cerebrovascular hypoxic/ischemic disease
76. Demyelinating conditions. Epilepsy.
77. Meningitis
78. Brain infections incl. encephalitis, prion diseases
79. Metabolic disorders. Degenerative diseases - classification, motor neurone and Parkinson‘s disease
80. Dementias incl. Alzheimer‘s disease
81. Pathology of the pituitary
82. Pathology of the thyroid gland
83. Pathology of the parathyroid glands
84. Pathology of the endocrine pancreas, diabetes mellitus
85. Pathology of the adrenal glands
86. Peripheral nervous system pathology. Skeletal muscle pathology
87. Hereditary and metabolic diseases of the osteoarticular system
88. Osteomyelitis, bone tuberculosis, m. Paget, fibrous dysplasia, hypertrophic osteoathropathy. Fractures.
89. Osteoarthritis, suppurative arthritis, rheumatoid disease, spondyloarthropathias
90. Pathology of the eye and ear
91. Infections and non-infectious inflammatory lesions of the skin
92. Bullous skin disorders. Adnexal, vascular lesions of the skin
93. Pathology of the connective tissues, esp. SLE.