



SEKOLAH TINGGI ILMU KESEHATAN MADANI

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REKAP MATERI KULIAH

Semester : Gasal 2023/2024

Program Studi : ILMU KEPERAWATAN - S1 Reguler
Mata Kuliah : Ilmu Biomedik Dasar (KEP103)
Nama Kelas : KEP1
Dosen : Ns. IGNASIA NILA SIWI, M.Kep,
Ns. PANCA UMAR SAPUTRA, S.Kep.,M.Sc.

Pertemuan Ke	Tanggal	Isi Pertemuan
1	Rencana: 2023-09-14 Pelaksanaan: 2023-09-14	Tema: Dasar-dasar anatomi dan fisiologi Pokok Bahasan: 1.1 define anatomy and physiology, and name several branches of these sciences 1.2 identify the organ systems and major organs of the human body and describe their locations and functions 1.3 define the important life processes of the human body 1.4 understand the importance of homeostatic feedback systems and how imbalances are related to disorders 1.5 describe the human body using the anatomical position and specific anatomical terminology 1.6 describe the principles and importance of medical imaging procedures in the evaluation of organ functions and the diagnosis of disease. Keterangan: terlaksana sesuai jadwal
2	Rencana: 2023-09-21 Pelaksanaan: 2023-09-25	Tema: The chemical level of organisation Pokok Bahasan: 2.1 How matter is organised 1) Chemical elements 2) Structure of atoms 3) Atomic number and mass number 4) Atomic mass 5) Ions, molecules, and compounds 2.2 Chemical bonds 1) Ionic bonds 2) Covalent bonds 3) Hydrogen bonds 2.3 Chemical reactions 1) Forms of energy and chemical reactions 2) Energy transfer in chemical reactions 3) Types of chemical reactions 2.4 Inorganic compounds and solutions 1) Water 2) Solutions, colloids, and suspensions 3) Inorganic acids, bases, and salts 4) Acid-base balance: the concept of pH 5) Maintaining pH: buffer systems 2.5 Organic compounds 1) Carbon and its functional groups 2) Carbohydrates 3) Lipids 4) Proteins 5) Nucleic acids: deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) 6) Adenosine triphosphate Keterangan: penugasan rangkuman materi dengan tulisan tangan dan dikumpulkan hari yang sama jam 10.50
3	Rencana: 2023-09-28 Pelaksanaan: 2023-10-03	Tema: The cellular level of organisation Pokok Bahasan: The cellular level of organisation 95 3.1 Parts of a cell 96 3.2 The plasma membrane 97 Structure of the plasma membrane 97 Functions of membrane proteins 99 Membrane fluidity 100 Membrane permeability 101 Gradients across the plasma membrane 101 3.3 Transport across the plasma membrane 102 Passive processes 102 Active processes 110 3.4 Cytoplasm 119 Cytosol 119 Organelles 120 3.5 Nucleus 132 3.6 Protein synthesis 136 Transcription 136 Translation 139 3.7 Cell division 142 Somatic cell division 142 Control of cell destiny 147 Reproductive cell division 148 3.8 Cellular diversity 152 3.9 Ageing and cells 153 Keterangan: terlaksana sesuai jadwal
4	Rencana: 2023-10-05 Pelaksanaan: 2023-10-05	Tema: -sistem kardiovaskuler Pokok Bahasan: The cardiovascular system: the blood 978 19.1 Functions and properties of blood 979 Functions of blood 979 Physical characteristics of blood 979 Components of blood 980 19.2 Formation of blood cells 984 19.3 Red blood cells 987 RBC anatomy 987 RBC physiology 988 RBC life cycle 990 Erythropoiesis: production of RBCs 991 19.4 White blood cells 994 Types of white blood cells 994 Functions of white blood cells 995 19.5 Platelets 998 19.6 Stem cell transplants from bone marrow and cord blood 1000 19.7 Haemostasis 1001 Vascular spasm 1001 Platelet plug formation 1002 Blood clotting 1002 Role of vitamin K in clotting 1006 Homeostatic control mechanisms 1006 Intravascular clotting 1007 19.8 Blood groups and blood types 1008 ABO blood group 1008 Transfusions 1009 Rh blood group 1010 Typing and cross-matching blood for transfusion 1010 The cardiovascular system: the heart 1023 20.1 Anatomy of the heart 1024 Location of the heart 1024 Pericardium 1024 Layers of the heart wall 1027 Chambers of the heart 1028 Myocardial thickness and function 1032 Fibrous

		<p>skeleton of the heart 1033 20.2 Heart valves and circulation of blood 1034 Operation of the atrioventricular valves 1034 Operation of the semilunar valves 1034 Systemic and pulmonary circulations 1037 Coronary circulation 1037 20.3 Cardiac muscle tissue and the cardiac conduction system 1041 Histology of cardiac muscle tissue 1041 Autorhythmic fibres: the conduction system 1041 Action potential and contraction of contractile fibres 1045 ATP production in cardiac muscle 1046 Electrocardiogram 1047 Correlation of ECG waves with atrial and ventricular systole 1048 20.4 The cardiac cycle 1050 Pressure and volume changes during the cardiac cycle 1050 Heart sounds 1053 20.5 Cardiac output 1054 Regulation of stroke volume 1055 Regulation of heart rate 1056 20.6 Exercise and the heart 1060 20.7 Help for failing hearts 1061 20.8 Development of the heart 1065 Chapter review 1075 Key terms 1077 Critical thinking questions 1081 Answers to figure questions 1081 Websites 1082 Endnotes 1082 Acknowledgements 1082 CHAPTER 21 The cardiovascular system: blood vessels and haemodynamics 1084 21.1 Structure and function of blood vessels 1085 Basic structure of a blood vessel 1085 Arteries 1087 Anastomoses 1089 Arterioles 1089 Capillaries 1090 Venules 1092 Veins 1093 Blood distribution 1096 21.2 Capillary exchange 1097 Diffusion 1097 Transcytosis 1098 Bulk flow: filtration and reabsorption 1098 21.3 Haemodynamics: factors affecting blood flow 1100 Blood pressure 1101 Vascular resistance 1102 Venous return 1102 Velocity of blood flow 1105 21.4 Control of blood pressure and blood flow 1106 Role of the cardiovascular centre 1106 Neural regulation of blood pressure 1107 Hormonal regulation of blood pressure 1110 Autoregulation of blood flow 1111 21.5 Checking circulation 1112 Pulse 1112 Measuring blood pressure 1113 21.6 Shock and homeostasis 1114 Types of shock 1114 Homeostatic responses to shock 1115 Signs and symptoms of shock 1117 21.7 Circulatory routes 1117 The systemic circulation 1119 The hepatic portal circulation 1158 The pulmonary circulation 1161 The foetal circulation 1161 21.8 Development of blood vessels and blood 1165 21.9 Ageing and the cardiovascular system 1166</p> <p>Keterangan: terlaksana sesuai jadwal</p>
5	<p>Rencana: 2023-10-12 Pelaksanaan: 2023-10-24</p>	<p>Tema: Anatomi fisiologi System respirasi Pokok Bahasan: Anatomi fisiologi System respirasi Keterangan:</p>
6	<p>Rencana: 2023-10-19 Pelaksanaan: 2023-10-31</p>	<p>Tema: Sistem Reproduksi Manusia Pokok Bahasan: Sistem reproduksi wanita, sistem reproduksi pria, hubungan seksualitas pria dan wanita dalam perkembangan Keterangan: Keunikan sistem reproduksi Fisiologi reproduksi pria Fisiologi reproduksi wanita Hormon yang berperan dalam sisitem reproduksi</p>
7	<p>Rencana: 2023-10-26 Pelaksanaan: 2023-10-31</p>	<p>Tema: Sistem Kemih Pokok Bahasan: Fungsi ginjal, anatomi dan proses dasar Keterangan: Filtrasi glomerulus Reabsorbsi Sekresi tubulus Eksresi urine dan bersihan plasma</p>
8	<p>Rencana: 2023-11-02 Pelaksanaan: 2023-10-31</p>	<p>Tema: Ujian Tengah Semester Pokok Bahasan: Pertemuan ke 1 sampai 7 Keterangan:</p>
9	<p>Rencana: 2023-11-09 Pelaksanaan: 2023-12-09</p>	<p>Tema: THE INTEGUMENTARY SYSTEM Pokok Bahasan: STRUCTURE OF THE SKIN, ACCESSORY STRUCTURES OF THE SKIN, TYPES OF SKIN, FUNCTIONS OF THE SKIN, MAINTAINING HOMEOSTASIS, SKIN WOUND HEALING, DEVELOPMENT OF THE INTEGUMENTARY SYSTEM, AGING AND THE INTEGUMENTARY SYSTEM Keterangan: Penugasan membuat rangkuman dan diskusikan saat jam mata kuliah</p>
10	<p>Rencana: 2023-11-16 Pelaksanaan: 2023-12-09</p>	<p>Tema: THE SKELETAL SYSTEM: BONE TISSUE, AXIAL SKELETON, APPENDICULAR SKELETON, JOINTS THE MUSCULAR SYSTEM</p>

		<p>Pokok Bahasan: FUNCTIONS OF BONE AND THE SKELETAL SYSTEM, STRUCTURE OF BONE, BLOOD AND NERVE SUPPLY OF BONE, BONE FORMATION, FRACTURE AND REPAIR OF BONE, BONE'S ROLE IN CALCIUM HOMEOSTASIS, DIVISIONS OF THE SKELETAL SYSTEM, DIVISIONS OF THE SKELETAL SYSTEM, BONE SURFACE MARKINGS, SKUL, HYOID BONE, VERTEBRAL COLUMN, THORAX, PECTORAL (SHOULDER) GIRDLE, UPPER LIMB (EXTREMITY), PELVIC (HIP) GIRDLE, FALSE AND TRUE Pelves, COMPARISON OF FEMALE AND MALE Pelves, LOWER LIMB (EXTREMITY), DEVELOPMENT OF THE SKELETAL SYSTEM, JOINT CLASSIFICATIONS, FACTORS AFFECTING CONTACT AND RANGE OF MOTION AT SYNOVIAL JOINTS, HOW SKELETAL MUSCLES PRODUCE MOVEMENTS, PRINCIPAL SKELETAL MUSCLES</p> <p>Keterangan: Membuat rangkuman materi dan diskusi saat jam mata kuliah</p>
11	<p>Rencana: 2023-11-23 Pelaksanaan: 2023-12-09</p>	<p>Tema: NERVOUS TISSUE, THE SPINAL CORD AND SPINAL NERVES, THE BRAIN AND CRANIAL NERVES, THE AUTONOMIC NERVOUS SYSTEM, SENSORY, MOTOR, AND INTEGRATIVE SYSTEMS, THE SPECIAL SENSES</p> <p>Pokok Bahasan: OVERVIEW OF THE NERVOUS SYSTEM, HISTOLOGY OF NERVOUS TISSUE, ELECTRICAL SIGNALS IN NEURONS, SIGNAL TRANSMISSION AT SYNAPSES, NEUROTRANSMITTERS, NEURAL CIRCUITS, REGENERATION AND REPAIR OF NERVOUS TISSUE, SPINAL CORD ANATOMY, SPINAL NERVES, SPINAL CORD PHYSIOLOGY, BRAIN ORGANIZATION, PROTECTION, AND BLOOD SUPPLY, CEREBROSPINAL FLUID, THE BRAIN STEM AND RETICULAR FORMATION, THE CEREBELLUM, THE CEREBRUM, FUNCTIONAL ORGANIZATION OF THE CEREBRAL CORTEX, CRANIAL NERVE, DEVELOPMENT OF THE NERVOUS SYSTEM, COMPARISON OF SOMATIC AND AUTONOMIC NERVOUS SYSTEMS, ANATOMY OF AUTONOMIC MOTOR PATHWAYS, ANS NEUROTRANSMITTERS AND RECEPTORS, PHYSIOLOGY OF THE ANS, SOMATIC SENSATIONS, SOMATIC SENSORY PATHWAYS, SOMATIC MOTOR PATHWAYS, INTEGRATIVE FUNCTIONS OF THE CEREBRUM, OLFACTION: SENSE OF SMEL, GUSTATION: SENSE OF TASTE, VISION, HEARING AND EQUILIBRIUM</p> <p>Keterangan: Tugas membuat rangkuman dan diskusi saat jam mata kuliah</p>
12	<p>Rencana: 2023-11-30 Pelaksanaan: 2023-12-09</p>	<p>Tema: THE ENDOCRINE SYSTEM</p> <p>Pokok Bahasan: COMPARISON OF CONTROL BY THE NERVOUS AND ENDOCRINE SYSTEMS, ENDOCRINE GLANDS, HORMONE ACTIVITY, MECHANISMS OF HORMONE ACTION, CONTROL OF HORMONE SECRETION, HYPOTHALAMUS AND PITUITARY GLAND, THYROID GLAND, PARATHYROID GLANDS, ADRENAL GLANDS, PANCREATIC ISLETS, OVARIES AND TESTES, PINEAL GLAN, THE STRESS RESPONSE</p> <p>Keterangan: Tugas membuat rangkuman dan didiskusikan saat jam mata kuliah</p>
13	<p>Rencana: 2023-12-07 Pelaksanaan: 2023-12-09</p>	<p>Tema: THE DIGESTIVE SYSTEM, METABOLISM AND NUTRITION</p> <p>Pokok Bahasan: LAYERS OF THE GI TRACT, NEURAL INNERVATION OF THE GI TRAC, PERITONEUM, MOUTH, PHARYNX, ESOPHAGUS, STOMACH, PANCREAS, LIVER AND GALLBLADDER, SMALL INTESTINE, LARGE INTESTINE, PHASES OF DIGESTION, METABOLIC REACTIONS, ENERGY TRANSFER, CARBOHYDRATE, LIPID METABOLISM, PROTEIN METABOLISM, METABOLIC ADAPTATIONS METABOLISM, HEAT AND ENERGY BALANCE, NUTRITION</p> <p>Keterangan: Tugas membuat rangkuman dan diskusi saat jam mata kuliah</p>
14	<p>Rencana: 2023-12-14 Pelaksanaan: 2023-12-09</p>	<p>Tema: THE LYMPHATIC SYSTEM AND IMMUNITY</p> <p>Pokok Bahasan: LYMPHATIC SYSTEM STRUCTURE AND FUNCTION, INNATE IMMUNITY, ADAPTIVE IMMUNITY, CELL-MEDIATED IMMUNITY, ANTIBODY-MEDIATED IMMUNITY,</p> <p>Keterangan: Tugas membuat rangkuman dan diskusi saat jam mata kuliah</p>
15	<p>Rencana: 2023-12-21 Pelaksanaan: 2023-12-23</p>	<p>Tema: Membran Plasma dan Potensial Membran, Prinsip Komunikasi Saraf dan Hormon</p> <p>Pokok Bahasan: Struktur Membran dan Fungsinya, Perlekatan Antarsel, Transport Membran, Potensial Membran, Pengenalan Komunikasi Saraf, Potensial Berjenjang, Potensial Aksi, Komunikasi Antarsel dan Transduksi Sinyal, Pengenalan Komunikasi Hormon, Perbandingan Sistem Saraf dan Endokrin</p> <p>Keterangan:</p>
16	<p>Rencana: 2023-12-28 Pelaksanaan: 2024-01-16</p>	<p>Tema: UAS</p> <p>Pokok Bahasan: UAS</p> <p>Keterangan:</p>

Dosen Pengampu

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