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| 1. Course title: Physiology II. | | | | | |
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| 2. Code: | | 3. Type (lecture, practice etc.): lecture + practice | | | |
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| 4. Contact hours: 2+2 hoursper week | | 5. Number of credits (ECTS): 4 | | | |
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| 6. Preliminary conditions (max. 3): | | | | | |
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| 7. Announced:fall semester, spring semester, both | | | | | |
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| 8. Limit for participants: 150 | | | | | |
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| 10. Responsible teacher (faculty, institute and department):  Tamas Atlasz PhD (Faculty of Science, Institute of Sport Sciences and Physical Education, Dept of. Sportbiology) | | | | | |
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| 11. Teacher(s) and percentage: | | Dr. Tamas ATLASZ (lecture) | | 100 % | |
| Dr. Tamas ATLASZ (practice) | | 50% | |
| Dr. Tamas Tekus (practice) | | 50% | |
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| 12. Language:English | | | | | |
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| 13. Course objectives and/or learning outcomes:  Physiology II is the second part of a two-semester subject. This course provides the student with an introduction to each of the major physiological organ systems (cardiovascular, respiratory, renal, gastrointestinal and endocrine). This course will examine the integrated physiological response to exercise and the adaptation to special environments. | | | | | |
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| 14. Course outline  Lecture  1. The structure and function of cardiac muscle.  2. Electrocardiography (ECG). Cardiac cycle.  3. The blood circulation. blood pressure. Cardiovascular system in exercise. cardiac output, venous return. The circulation. Overview of the circulation. Regulation of circulation, circulation of different organs. Blod flow regulation in skeletal muscle at rest and during exercise. Heartsroke.  4. Arterial blood pressure, The regulation of blood pressure. Hypertonic pressure.  5. Respiratory system, respiration. PTX. Pulmonary volumes and capacities.  6. Changes in respiration during exercise.  7. Aerob capacity. Oxygen consumption in exercise. Effect of training on VO2max.  8. Multiple functions of the kidneys. Physiologic anatomy of the kidneys. Glomerular filtration and tubular reabsorption and secretion.  9. Regulation of extracellular fluid osmolarity and sodium concentration. Isoosmosis.  10. Gastrointestinal physiology. The digestive system. Secretion of saliva. Esophageal secretion. Motor and secretory function of the stomach.  11. The gastrointestinal tract. digestion and absorption in the gastrointestinal tract. Liver. Pancreas. Metabolism of carbohydrates. Regulation of blood sugar level and its function in short and long term exercise. diabetes mellitus.  12. The endocrine system I. Pituitary hormones and their control by the hypothalamus. Stress theory. Stress and its physiological consequences  13. The endocrine system II. Thyroid hormones. Adrenocortical hormones, the adrenal medulla. The pancreas . Reproductive and hormonal functions of the male and female. Monthly ovarian cycle. Hormones and sports. The autonomic nervous system.  **Practice**   1. Fire protection, accident protection. Anthropometric measurement. 2. Body fat calculation. BMI, hip/waist ratio. 3. Body shape assessment: Heath-Carter anthropometric method of somatotyping. Conrad growth type method. 4. Monitoring of heart rate and blood pressure 5. Measuring of lung capacity. 6. Written exam I. 7. Stretch reflex. Reaction-time test. 8. range of motion test 9. Force test 10. Measuring of maximum oxygen capacity, VO2max 11. Blood test 12. Electrocardiography (ECG) measurement. 13. Written test II. | | | | | |
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| 15. Mid-semester works  Attending practices is recommended. | | | | | |
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| 16. Course requirements and grading  Lecture  Written exam is based on lectures, accessible electronic sources and lecture materials.  2 written tests during the term (the satisfactory level is at least 50%)  Written examination.  Grades:  0–50% fail  51–65% acceptable  66–75% average  76–90% good  91–100% excellent    **Practice**  laboratory record. 33%, two written test: 67%  0–49% fail  50–65% acceptable  66–75% average  76–85% good  86–100% excellent | | | | | |
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| 17. List of readings  1. Guyton and Hall (2012): Medical Physiology, Elsevier  2. Pocock G and Richard C.D. (2006) Human Physiology (Third edition), Oxford University press  3. Berne RM. and Levy MN (2000): Principles of Physiology (Third edition) Mosby  4. Wilmore JH, Costill DL, Kenney WL (2008): Physiology of Sport and Exercise (Fourth Edition) | | | | | |
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| 18. Recommended texts, further readings   1. McComas AJ (1996) Skeletal muscle. Form and Function | | | | | |
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| **Date** | 10 May, 2017 | **Prepared by** |  | | |
| Dr. Tamas Atlasz  responsible teacher | | |
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| **Endorsed by** | | |  | | |
| Dr. Mark Vaczi program supervisor | | |