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Creating teaching materials to ensure the educational process within the biomedical engineering master's program: the textbook of physiology and functional anatomy

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Rezumat

Within the implementation of TEMPUS BME-ENA Project a new curriculum for master's course students in biomedical engineering specialty has developed. An important component of this curriculum represents syllabi for biomedical disciplines: functional anatomy and physiology, biophysics, methods of medical diagnostics and treatment [1]. The existence of teaching materials for students: textbooks, compendia, mentoring etc. is essential for the successful implementation of a new curriculum. Proceeding from this we set the task of creating and publishing a textbook of physiology and functional anatomy for students master's course in biomedical engineering from the Technical University of Moldova implemented within the Project TEMPUS BME-ENA. The handbook "Physiology and Functional Anatomy" is mainly geared towards students of Technical University of Moldova which are involved in cycle of undergraduate or master's degree in biomedical engineering. This interdisciplinary specialization is designed, according to modern requirements connected to European standards, in the field of training engineers who will design, build and service the medical devices. Herein news specialization in biomedical engineering curricula include the basic knowledge in biology, anatomy, histology and physiology - biomedical disciplines for understanding the construction and normal functioning of the human organism. Taking into account the incipient knowledge of medico-biologic subjects by the university students of technical profile, authors had a more difficult task to present the material in a mixed and compressed form, but full from didactic point of view for good understanding of main physiological mechanisms of the functioning of the human organism. We keep in mind the fact that it was necessary to synthesize and present the material in one context from at least three medico-biologic core subjects: anatomy, histology and physiology. The manual was called "Functional anatomy and physiology" due to the predominance in its content of teaching material from human physiology. The book consists of 11 chapters; it was reviewed and received a positive opinion from leading experts in the field of physiology and preclinical medicine of the Republic of Moldova. The textbook was edited with the European Commission's financial support (TEMPUS Project BME-ENA). The next stage envisages the edition of the guide for laboratory work to discipline Physiology and functional anatomy.

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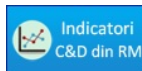
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In the biomedical engineering program. Zahra Moussavi and Brian Lithgow. Department of Electrical & Computer Engineering. University of Manitoba, Winnipeg, MB Canada. Abstract – The merger of natural sciences with engineering and creation of biomedical engineering. (BME) has brought innovation to the practice of medicine that could only be dreamed about a decade ago. as they often have a bottom-up approach in teaching the materials. This paper discusses the top-down. approach in teaching anatomy and physiology to engineering students, and offers some insights for. teaching BME courses. References. [1] Ullman D.G. “Issues critical to the development of design history, design rationale and design intent systems,” in Proc. Anatomy and Physiology - To appreciate Biomedical Engineering you need to have basic knowledge about various organ system and their functionality. Biomedical Devices work really closely to them. You can find lot of mooc courses relevant to the same. BIOMEDICAL SIGNALS- This course will help you understand various signals available in the body which are used to detect and diagnose the problems. You can read articles and watch YouTube videos regarding them. Biomaterials- This course will cover the basics you need to understand the core of tissue engineering, biomechanics and how physically our b Biomedical engineers can bridge between the engineering and the medical worlds, and are trained to combine analytical and engineering thinking with integrative capacities, with a considerable degree of innovation and creativity. What is developed in the Biomedical Engineering Industry. The biomedical engineering program equips students with a solid and in-depth background in basic sciences, together with extensive knowledge in Biomedical Engineering, Life Sciences and Medicine. This diverse basis qualifies graduates to take on key positions in the various hi-tech industries, in biomedical research institutions, in hospitals, and in government and international health organizations.