development plays an important role in different fields of real estate management such as real estate valuation, project development or building theory.

We see a huge interest from the students in sustainable development and most of the students consider sustainable development as an important issue in their future working area in real estate management. In the future, we need to think if more profound changes in the study programme are necessary such as the development of the subjects of study, further cooperation with companies already active in sustainable real estate (such as companies realising timber construction). One important future challenge for our study programme is the question of how to include the (besides sustainability) second major societal trend, digitalisation in our teaching. Contents such as Sustainable Smart Cities, Smart Homes and digitalization of buildings will therefore need to play a more important role in the study programme real estate management at HTW Berlin.

DEVELOPMENT OF DUAL EDUCATION SYSTEM OF MEDICAL PHYSICISTS IN REPUBLIC OF BELARUS

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The medical physicist is a new profession in the twenty-first century. Its appearance is caused by the development of a high-tech branch of medicine - medical radiology. The profession "medical physicist" was included in the International Standard Classification of Occupations ISCO-08 in 2008. Currently, the world medical community numbers about 25,000 medical physicists. Medical physicists are highly skilled professionals in the application of the methods and concepts of physics to medicine. They work in clinical, research and academic institutions.

In the Republic of Belarus, the profession "medical physicist" received an official status in 2018. The training of medical physicists began in 2013 at the Department of General and Medical Physics of the International State Ecological Institute named after A.D. Sakharov Belarusian State University. The first graduation of specialists took place in 2018. During the period 2018-2021, 74 medical physics of the first and second stages of higher education were trained, while the needs of medical centers equipped with sophisticated modern equipment, the park of which is constantly growing, in the near future is about 400 specialists.

Approaches to the training of medical physicists and its methodological support in different countries of the world are very different. The International Organization for Medical Physics (IOMP) and the International Atomic Energy Agency (IAEA) summarize international experience and coordinate the search for innovative ways to improve higher education in medical physics.

According to the IAEA recommendations, the education of a qualified medical physicist should include three components: basic higher education for at least 4 years, postgraduate education for one to three years, and clinical internship for at least two years in one of the specialties of medical physics under the guidance of a senior medical physics. Academic education must necessarily include in-depth study of optics, atomic and nuclear physics, biological and medical physics, the basics of medicine, physical methods of diagnosis and treatment used in nuclear medicine.

Postgraduate education consists of performing research work and culminating in the award of a master's degree in medical physics. A specialist who has mastered the content of an educational program in the specialty "Medical Physics" must have universal, in-depth professional and specialized competencies. Academic competencies include knowledge and skills in the studied academic disciplines and the ability to learn. Professional competencies involve the development of the ability to solve problems, develop plans and ensure their implementation in the chosen field of professional activity.

The duties of a medical physicist of clinical qualification include the organization of technical equipment and maintenance of structural units of medical organizations that use physical radiation in diagnostics and treatment. It calibrates medical and physical equipment, ensures the accuracy and safety of physical methods used in clinical practice. Under the guidance of a doctor, plans, organizes and conducts a treatment and diagnostic process. Maintains the necessary medical, physical and technical documentation.

The IAEA recommendations on the training of medical physicists, as well as the requirements for their competencies and responsibilities, indicate that the goal of training highly qualified specialists can be realized within the framework of the dual education system. The dual education system combines, within one course, a student's acquisition of academic knowledge at the university and professional skills at a potential workplace. As the analysis of international experience shows, a theoretical course with classroom lessons, as a rule, makes up 30-40% of the total amount of study time, a practical training course in a specialized organization - 60% - 70%.

With this training, a specialist with the qualification of "medical physicist" during his studies at the university masters the base of scientific knowledge and practical professional skills and abilities that allow to quickly and effectively master new complex high-tech diagnostic and treatment equipment, innovative technologies of treatment and diagnostic procedures.

He is developing the ability to independently improve the known and develop new methods of physical and technical support for medical and laboratory activities of healthcare organizations. Dual education is designed to prepare educated, creative,

qualified specialists who are able to start working in their specialty in full force immediately after graduating from a higher educational institution.

International State Ecological Institute named after A.D. Sakharov of the Belarusian State University in close cooperation with the customer of personnel, the Republican Scientific and Practical Center for Oncology and Medical Radiology named after N.N. Aleksandrova are developing a system of dual training for medical physicists within the ERASMUS program "Promoting Development of Dual Study in Belarusian Higher Education" (DUALBEL).

The concept of the system of dual education being developed is based on the following principles:

– practice-oriented teaching - immersion of students in a professional environment in the learning process;

– unity of theoretical and practical training of future specialists;

– formation of the necessary clinical qualifications on the basis of intersubject connections;

– flexibility and variability of the content and technologies of the educational process;

– development of the abilities of future specialists to socialize in a changing production situation as a result of the modernization of high-tech medical equipment.

The main components of the system being developed for the dual training of medical physicists:

– development of a unified regulatory framework for the functioning of the production and educational environment, which ensures collegial decision-making and the division of functions between the state, the institution of higher education and the institution of health care-customer of personnel.

– establishment of contractual relations between an educational institution and a health care institution on the basis of an equal partnership;

– harmonization of educational standards of the first and second stages of higher education, curricula, curricula, subjects of coursework and diploma theses with professional standards, job descriptions and the needs of a real employer-partner.

– designing training content;

– methodological support for training specialists and equipping with modern teaching aids;

– creation of subdivisions and structures to ensure the implementation of dual education;

– training of teachers of the educational institution and the development of the institute of mentoring in a specialized health care institution.

It is necessary to create effectively functioning educational, research and production clusters and move to a system of licensing and accreditation of practice-oriented educational programs in the specialty "medical physics".

All aspects of the training process for medical physicists benefit from the introduction of a dual training system. The educational institution increases the variety of professional educational programs offered to students and undergraduates,

due to the constant technological modernization of medical and diagnostic departments of clinical medical centers.

The maximum approximation of the professional training of future specialists to the requests of employers provides specialized medical institutions with qualified personnel that do not require professional adaptation. The opportunity for university graduates to get a job in the organization where they are trained creates a high motivation to acquire knowledge.

ЕКОЛОГІЧНА СКЛАДОВА ПІДГОТОВКИ СТУДЕНТІВ ТЕХНІЧНИХ ЗВО

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В даний час людство вступило в епоху, що вимагає формування нової шкали моральних цінностей, нової моралі і гуманістичних ідей. Перехід світової спільноти на модель сталого розвитку вимагає кардинальних змін у свідомості і діяльності людей і, перш за все, - в науці і освіті. Світовою спільнотою визначена роль екологічної освіти як одного з найважливіших чинників подолання глобальної екологічної кризи.

Сьогодні наука екологія надає потужний вплив на освіту, що виявляється в переорієнтації цілей і зміні споживацького ставлення до природи на нову систему екологічних цінностей. Необхідною стає не система засвоєних екологічних знань, а готовність людини до еколого-орієнтовної практичної діяльності і сформованість наукового світогляду, який проявляється в подоланні відчуженості людини від природи і соціуму.

У сучасну епоху тільки біосферний, глобально орієнтоване світогляд, при якому акценти переносяться на розуміння зв'язків живої та неживої природи, природи і суспільства, на умови їх стійкості, має істотне значення, що диктує необхідність формування наукового світогляду на основі цілісної наукової картини світу і необхідності професійної спеціалізації освіти.

Узагальнення соціально-педагогічних і методичних особливостей сучасного етапу розвитку екологічної освіти для сталого розвитку дозволяє сформулювати його мету як освоєння екологічної компетенції, результатом чого буде, відповідно, екологічна компетентність учнів.

Аналіз підходів до екологізації освітньої галузі показує, що існують різні способи здійснення даного процесу, кожен з яких в реальній практиці, як правило, спрямований на пріоритетне формування тих чи інших компонентів екологічної культури і компетентності.