Lectures

L10.1

Biochemistry teaching at the Faculty of Health Sciences, Medical University of Warsaw

Hanna Czeczot, Anna Barańczyk-Kuźma

Chair and Department of Biochemistry, Medical University of Warsaw, Warsaw, Poland; e-mail: hanna.czeczot@up.pl

The Faculty of Health Sciences at the Medical University of Warsaw was created in 2000. It involves Nursing, Dentistry Hygiene, Obstetrics and Public Health with the speciality of Dietetics and the Medical First-Aid. The biochemistry courses are prepared and performed by the didactic team of the Chair and Department of Biochemistry, the First Faculty of Medicine. The biochemistry course is carried out during the first year of the 3-year BSc program. The program is based on the minimum curriculum of the Ministry of Education and contains lectures, seminars and practical classes. This presentation addresses the biochemistry curriculum, teaching and assessment, as well as organization of the didactic process with respect to different specialities offered by the Faculty of Health Sciences.

L10.2

Biochemistry as an auxiliary narrowed course integrated into a lecture on microevolution

Grzegorz Nowak

Department of Biochemistry, Maria Curie-Skłodowska University, Lublin, Poland; e-mail: Grzegorz.Nowak@unlub.pl

Biochemistry is present in academic syllabuses both as a primary and as an auxiliary course, often in an extended form. Being helpful for better understanding of the life processes at their molecular basis biochemical knowledge is also present in narrowed and/or specialised form in many other courses of life sciences. Two forms of presentation of biochemistry science are encountered during non-biochemistry lectures: first, as a small portions of biochemical information interlinked to particular problems of the main course, and second, as a specialised minicourse of biochemistry integrated into the main course of lecture in appropriate proportion. The second form of presentation allows to take a maximal advantage of biochemical science explanatory power for understanding the broad spectrum of life sciences matters. The course of biological evolution could be considered as an example. It usually involves three parts: macroevolution, microevolution and theory of evolution in most general sense. For understanding of microevolution an explanation at the biochemical level is necessary. The explanation demands selected biochemical information on the metabolism of nucleic acids, the protein metabolism and biochemical adaptations being provided. A proposition of such a narrowed biochemistry course integrated into the lecture on microevolution is presented and discussed during this lecture.

L10.3

Biochemistry and molecular pathology for students of the Intercollegiate Faculty of Biotechnology UG-MUG

Andrzej Cezary Składanowski

Intercollegiate Faculty of Biotechnology UG-MUG, Medical University of Gdańsk, Gdańsk, Poland; e-mail: acskla@amg.gda.pl

Molecular pathology of (genetic) diseases for students of biotechnology has been usually involved in the general course of biochemistry. Metabolic disorders are presented then in comparison to normal physiological situations. Such integration often is well justified but sometimes is hard to achieve when additional information on genomic analysis, clinical genetics or gene engineering should be added on top of the others. Such knowledge seems indispensable for the future specialists in the medical biotechnology. The integrated course would be extended and not easy to digest for students. The Intercollegiate Faculty of Biotechnology UG-MUG aims to educate the students interdisciplinary. Lectures on biochemical basis of diseases scheduled after the general biochemistry aim to describe also specific gene function and structure (if data is available). This obligatory course is taught during the 2nd year of 5-yrs studies. The discussion on changing this time for the 1st year of the MSc supplementary studies (4th year of the uniformed MSc studies) has just started in the Faculty. The key to the proper understanding the knowledge on molecular pathology is the case-based learning and interdisciplinary approach. 60-hrs lecture course integrated with 15-hrs laboratory experience may be a solution to materialize this aim. This course is an introductory one to the following ones like gene therapy and targeted pharmacotherapy. Our course is available also for medicine and pharmacy graduates.
Oral Presentations

OP10.1
Teaching on the threats of bioterrorism using an e-learning platform
Anna-Karina Kaczorowska
University of Gdańsk, Department of Microbiology, Gdańsk, Poland; e-mail: bioakk@univ.gda.pl

Information Technology (IT) and World Wide Web transformed everyday life; we search through and retrieve information from huge databases, buy and bank via internet. IT revolutionized communication within scientific community. Also, students now have access to a range of sources that would have been unimaginable only a decade before. However, our academic community still does not embrace the opportunities offered by internet technologies and strategy of developing e-learning environment unfortunately falls far outside the mainstream of university education. My presentation focuses on my experience in designing an e-learning course on the emerging threats of bioterrorism. The original lectures, introduced at the University of Gdańsk after the bioterrorist attacks in the Unites States, met with the great interest from students of Biology and Biotechnology. Creating an interactive and student-friendly e-learning module requires, however, more than reproducing traditional lectures based primarily on passive transfer of knowledge. To actively engage students in the learning process, students are asked to interact with dynamic content of the course e.g. follow step by step multimedia animations (of e.g. anthrax toxin binding) or given tasks to carry out. They also have a possibility to test their knowledge and evaluate the course itself. The e-course is composed of several separate units which introduce learners to the possible bioa/g308ack scenarios, characteristics of toxins, bacteria and viruses which can be potentially used as biological warfare, modes of their transmission and methods of their identification. It also covers molecular mechanisms of the pathogenesis of selected agents, triage, decontamination and isolation procedures and recommendations for pre- and postexposure prophylaxis. I hope that in real life my students will never be forced to use their knowledge gained during the course. On the other hand, familiarizing students with e-learning will help them in the future and prepare them for continuing lifelong education which sooner or later will be web-based.

OP10.2
The preparation of foreign students to study molecular biology and biochemistry
Wiesława Ogrodnik, Marta Stryjecka-Zimmer
Chair and Department of Biochemistry and Molecular Biology, Medical University of Lublin, Poland; e-mail: w.ogrodnik@amu.lublin.pl

Since 1995 our Department started with biochemistry lectures and practical laboratory for students from the and. We teach them in English language. The students were and are transferred from these countries through out the American institution named Hope Medical Institute (HMI) according to the agreement signed with authorities of our University. This Institution recruits students to the Four Year English Program. Each student begining the program has to finish at least three years of college in her/his country. Biochemistry lectures and practical laboratory start at the first year of this program. Since 2001 authorities our University signed with HMI the new agreement about transfer of student into the Six Year English Program. Each student must be the alumnus of the high school. Our Department teaches molecular biology and biochemistry to the students of this program. Molecular biology lectures and practical laboratory start at the second year of the program. Biochemistry lectures and practical laboratory start at the third year of the program. The students have 60 hours of biochemistry lectures and 60 hours of practical laboratory. During the academic year they take 8 partial exams and at the end of year they take the final exam in the test form. Molecular biology activities contain 16 hours of lecture and 24 hours of practical laboratory. The students receive credit a/g286er passing the test. Since when we started with these two programs, we have observed differences in preparation of students to study at Medical University, especially to study molecular biology and biochemistry. In most cases the alumni of colleges are better prepared to understanding and study of biochemistry. On the contrary, the first contact with alumni of high schools during molecular biology lectures and practical laboratory shows great deficiencies in preparation of our students. Special kind of complications are deficiencies of chemistry, which make it difficult to teach this subject. We have observed these difficulties during biochemistry.