Basic information:

Course name: “ **Proteomics and mass spectrometry – methods and applications** ”

Lecturer: ... Prof. Pavlina Dolashka
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Horarium: .....

Abstract (up to 150 words):

The course “Proteomics and Mass Spectrometry – Methods and Applications” aims to expand the knowledge of doctoral students in the field of modern methods and techniques related to the study of the structural and functional features of microorganisms, metabolism and its regulation. The main part of the course is devoted to familiarization with mass spectrometry and the principles of proteomics. The course will provide a more detailed introduction to the various equipment (2 D -electrophoresis, LC , mass spectrometry (MS), tandem mass spectrometry (MS / MS) and the approaches that are applied. The possibilities for their use in various areas of ecology will also be considered .

Thematic content of the course (brief description by topics or modules) **:**

Topic / Module 1: . Basic principles of mass spectrometry ..

Topic / Module 2: Equipment for mass spectrometric research – types of mass spectrometers, device and method of operation

Topic / Module 3: Mass spectrometry and proteomics , metabolomics and glycomics .

Topic / Module 4 : Areas of application of mass spectrometry

Forms of training and assessment:

Forms of training: Lectures and practical exercises .....

Exam : Written test and practical .....

Competencies acquired as a result of the training (3-5 points):

1. Introduction to the principle of mass spectrometry and areas of application. …
2. Introduction to the types of equipment for mass spectrometric analysis ...
3. Conducting analyses

Literature:

1. P. Dolashka, “ Scientific collection “Essence and application of mass spectrometry”, 2012
2. Jeevan K. Prasain “ Tandem ” Mass Spectrometry - Applications and Principles” , ISBN 978-953-51-0141-3, 2012 .
3. Monograph: “ Natural peptides with antibacterial and antifungal activity from mollusc organisms ” Pavlina Dolashka, Yana Topalova, Maria Angelova, Lyudmila Velkova, Alexander Dolashki, Michaela Belukhova, Ekaterina Krumova

Additional information (optional) *(* e.g. special requirements, laboratory equipment, prior knowledge *):*