

Course Structure:

Each course is alternately hosted by JLU and KFU:



During the winter term 2020/2021 there will be online-only-formats.

Contact Info:

Kazan:

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Your Chance for Exchange to
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Register at:

SciTecMed.org

Kazan



State of Hesse



DAAD

Deutscher Akademischer Austauschdienst
German Academic Exchange Service

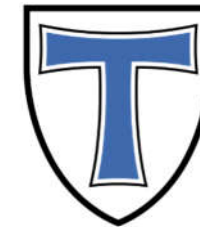
Sci Tec Med

(Natural) Science and Technique in Medicine

- Bilateral Module -
3 Credit Points (ECTS)

For Students of Natural Sciences,
Engineering and Medicine

Start 2020



Justus-Liebig-
University
Giessen JLU



Kazan Federal
University
KFU











30 Years of University Partnership

“This joint master module shall foster the university partnership of JLU and KFU in the field of (natural) sciences and technique in medicine.”

Schedule:

The module includes 4 courses with seminar and lab practice. Due to recent restrictions these will be realized as online-seminar and virtual lab practice. The hosting institution alternates, so that 2 courses will be held from Giessen and 2 courses will be held from Kazan. There will be joint discussions at the end of the term to exchange ideas and to give rise on common research activities.

Schedule	Giessen	Kazan
1 st Course	Host 	Guest 
2 nd Course	Guest 	Host 
3 rd Course	Host 	Guest 
4 th Course	Guest 	Host 

Joint Discussion 1

Joint Discussion 2

JLU Topics 2020/2021:

Mass Spectrometry in Life Sciences (Prof. Spengler)

“Revealing the identity, quantity and location of biomolecules in biological samples is of utmost importance in life science research and is a major aspect of bioanalytical research activities. One of the bioanalytic tools that dominate this research field is mass spectrometry. Mass spectrometry enables compound identification and quantification of small molecular weight compounds such as amino acids as well as characterization of biomolecular complexes encountered in virus particles. This course will introduce the basics of mass spectrometry, enable hands-on experience for hyphenated chromatographic methods and outlines the capabilities of novel mass spectrometry imaging technologies.”

Plasma Sterilization of Microbes (Prof. Thoma)

“The prevalence of microbes is a challenge in daily life and clinical care. If these microbes are resistant to ordinary disinfection methods, new options for hygiene and sterilization are needed. The application of cold atmospheric plasma is one promising technique. Cold atmospheric plasma is generated by RF voltage and can be directed to various surfaces or media. An introduction to the technical implementations of plasma will be presented as well as an overview of the fields of application in industry or medicine. Virtual experiments for the sterilization of microbes are also part of the course.”

KFU Topics 2020/2021:

Lasers and optical spectroscopy in biomedical applications

“The course consists of three parts:

1. Light-matter interaction and laser principles
2. Spectroscopy of rare-earth and transition metal ions and molecules
3. Laser related biomedical applications and devices

Including fundamentals on physics, description of optical properties in biomedical application and light-matter interactions in analytics and therapy.”

Advanced Therapeutics in Cancer (E. Dudkina, V Ulyanova)

“Cancer maintains one of the leading positions among human noncommunicable diseases. Over recent decades, the direction in cancer treatment has been shifted from traditional cytotoxic drugs to the targeted therapy. This course is created for those who would like to get knowledge on current anticancer technologies and understanding of molecular modelling techniques to design anticancer drugs. In the course, you will obtain an introduction to the key aspects of cancer initiation; learn about advanced anticancer approaches, involving application of monoclonal antibodies, anticancer peptides, extracellular vesicles; explore the properties and molecular mechanisms of action of advanced anticancer therapeutics and get basic skills in drug design.”