**osh state university**

**international medical faculty**

**Department of Public Health**

APPROVED

Head of Public Health Department,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A.K. Turusbekova

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2023

**COURSE SYLLABUS**

**Medical mycology**

2024-2025

For students of medical faculty

3rd year 6- semester

2 credits (60 h., including 30 class hours, 30 h. of independent study)

|  |  |
| --- | --- |
| **Сompilers:**  **Lecturer** |  |
| 6 semester, all groups  **Teacher** | **Turusbekova A.K.**  **Manas kyzy M.** |

**Lecture Sessions**: according timetable

**Location**: zoom\ whatsApp\ Google classroom\

**Class Sessions**: Monday- Saturday according timetable

**Location**: IMF 2, according to the room № above

**Purpose of the discipline:** The main goal of mycology is to understand the patterns of structure and functioning of fungi, as well as the fundamental principles of their interaction with the human body. Formation of students' knowledge about the role of fungi in human infectious pathology, the development of mycological diseases in somatic patients, the role of mycology in solving the problem of reducing and eliminating infectious diseases.

**Objectives of the course of mycology:**

* to study the features of morphological and anatomical structure of fungi,
* features of ecological adaptation to habitat conditions, the role of fungi in the biosphere and human life
* **t**o reveal the understanding of the role of knowledge on the subject in the subsequent general medical and professional training of a specialist.

**Pre-requisites**:

Before this course, it is recommended to complete the courses of Biology, Biochemistry and Physiology,General Microbiology.

**Post-requisites**:

Before this course, it helps to complete the courses of Infectious deseases,Epidemiology,Public Health and other clinical disciplines.

Mycology is the study of fungi, which are eukaryotic organisms that evolved in tandem with the animal kingdom. However, unlike animals, most fungi are nonmotile and possess a rigid cell wall. Unlike plants, fungi are nonphotosynthetic. Approximately 80,000 species of fungi have been described, but only about 400 are medically important, and less than 50 are responsible for more than 90% of the fungal infections of humans and other animals. Rather, most species of fungi are beneficial to humankind. They reside in nature and are essential in breaking down and recycling organic matter.Some fungi greatly enhance our quality of life by contributing to the production of food and spirits, including cheese, bread, and beer. Other fungi have served medicine by providing useful bioactive secondary metabolites, such as antibiotics (eg, penicillin) and immunosuppressive drugs (eg, cyclosporine).

|  |  |  |
| --- | --- | --- |
| **Код РО ООП и его формулировка** | **Компетенции ООП** | **Код РО дисциплины (РОд и его формулировка** |
|  |  |  |
| **РО4 -** Способен решать стандартные задачи с использованием медико-технической аппаратуры, информационно-коммуникационных ресурсов и технологий | **ПК-7** - способен и готов к работе с медико-технической аппаратурой, используемой в  работе с пациентами, применять возможности современных информационных технологий для решения профессиональных задач; | **Знает:** методы исследования грибов с помощью микроскопа, ИФА анализаторов, амплификаторов для ПЦР.  **Умеет и владеет** навыками пользования микроскопом, ИФА анализаторов, амплификаторов для ПЦР. |
| **РО7 –** Умеет применить базовые знания в области диагностической деятельности для решения профессиональных задач | **ПК-14** - способен и готов к постановке диагноза на основании и результатов биохимических и клинических исследований с yчетом течения патологии по органам, системам и в целом; | **Знает** морфологию и физиологию грибов и методы их выявления.  **Владеет** навыками интерпретации и идентификации результатов серологических анализов.  На их основании умеет поставить предварительный диагноз. |
| **ПК-15 -** способен и готов анализировать закономерности функционирования отдельных органов и систем, использовать знания анатомо-физиологических особенностей, основные методики клинико-лабораторного обследования и оценки функционального состояния организма взрослого человека и детей, для своевременной диагностики заболеваний и патологических процессов; | **Знает** патогенез, клиническую картину болезней, вызываемыми патогенными грибами.  **Владеет** навыкамиопределения методики клинико-лабораторного исследования в зависимости от клинических симптомов больного. |

|  |  |
| --- | --- |
| Виды учебной деятельности  Отчетность Экзамен | Лекционные и практические занятия, СРС |
|  |  |
|  | Course Policies and Procedures: |

1. Writing assignments must be presented on each classes. Projects and presentations must be completed or turned in on the assigned due date. **Late assignments will be not accepted.** If you know in advance that you will have to miss a class in which an assignment is due, you may make arrangements with the instructors to turn the assignment early. You should submit self-works before module week**. On module week any projects will be not accepted.**

2. *Academic Conduct*. Students at IMF are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity. IMF is committed to upholding standards of academic behavior consistent with the academic and professional communities of which it is a part. **Plagiarism, cheating, and other misconduct are serious violations of the IMF Student Conduct Code.** We expect you to know and follow the faculty policies on cheating and plagiarism. Any suspected cases of academic misconduct will be handled according to IMF regulations.

3. Students must be ready for offline classes, not distracted by conversations with each other, must wear uniform. Mobile phones must be switched off. **Any disturbance and delay are expected as an absence on the classes.**

4. *Students with disabilities (with special needs):* Qualified students with disabilities needing appropriate academic adjustments should contact the dean and the lecturer as soon as possible to ensure your needs are met in a timely manner. Students must inform the lecturer of the disability early in the class so appropriate accommodations can be met. Handouts are available in alternative accessible formats upon request.

**Grading:**

* **Grading for each practical classes**

Class activity **15 points**

Test **5 points**

Home assignments **5 points**

Album **5 points**

**Total**

**30 points**

* **Evaluation criteria for the discipline "Microbiology, Immunology and Virology" (1 lecture session)**

**Students in order to receive 30 lecture points must comply with the following rules:**

* **Timely arrival: for being late for a lecture by 1 or more minutes minus 5 points;**
* **Uniform (classic uniform and robe), in case of absence of uniform minus 5 points;**
* **Behavior: the student must not speak loudly or laugh loudly, nor interfere with the lecturer in any other way. If a student interferes with the lecturer with his bad behavior, in this case the student will receive NB and will have to work out (to independently study the topic and tell the lecturer).**
* **Abstract - will be checked in a practical lesson.**
* **Willingness to answer the lecturer's questions, to assess the comprehensibility of the topic - kahoot test or mcq test.**
* **Grading for individual work of student (self-work)**

**Assessment criteria for ISW of the discipline "Medical mycology:**

**According to the subject of the ISW, the student must choose 10 topics and submit on time.**

**The student must answer the following questions:**

**1. Morphology, structure, epidemiology, pathogenesis and clinic, immunity.**

**2. Laboratory diagnostics, specific prevention and treatment.**

**Choose one of the option**

1. 2 students 1 **article** 30 points

2. **PPT(** min 20 slides for each topic) : 1 topic= 6 points

5 topics=30 points

3.1 student 1 video presentation 30 points

***Lectures:***

|  |  |  |
| --- | --- | --- |
| **№** | **Lectures** | **Hours** |
| 1 | Introduction. Subject and tasks of medical mycology. History of formation of medical mycology, main stages of its development. Classification. | 2 |
| 2 | Physiology of fungi. Environments used to secrete pathogens of mycosеs. Mycological method. Factors of pathogenicity of fungi. | 2 |
| 3 | Ecology of fungi. Importance of parasitic fungi. | 2 |
| 4 | The causative agents of human mycoses. | 2 |
| 5 | Mycologic toxicoses. | 2 |
| 6 | Fungal Allergies. Antifungal drugs. | 2 |
|  | **Total** | **12** |

[**Topics of practical lessons for III semester**](https://context.reverso.net/%D0%BF%D0%B5%D1%80%D0%B5%D0%B2%D0%BE%D0%B4/%D0%B0%D0%BD%D0%B3%D0%BB%D0%B8%D0%B9%D1%81%D0%BA%D0%B8%D0%B9-%D1%80%D1%83%D1%81%D1%81%D0%BA%D0%B8%D0%B9/practical+lessons)

|  |  |  |
| --- | --- | --- |
| **№** | **Topics of practical classes** | **hours** |
| 1 | OVERVIEW OF MYCOLOGY. Subject and tasks of general mycology. Fundamentals of systematics of fungi. | 2 |
| 2 | Morphology and physiology of fungi. General characterization of fungi of medical importance | 2 |
| 3 | Laboratory Methods in Medical Mycology. Techniques for Identification of Fungi & Laboratory ID. | 2 |
| *4* | Mycoses. Microbiological diagnosis of superficial mycoses. | 2 |
| 5 | Microbiological diagnosis of subcutaneous mycoses. | 2 |
| 6 | Microbiological diagnosis of systemic mycoses. | 2 |
| 7 | Microbiological diagnosis of opportunistic mycoses. | 2 |
| 8 | Microbiological diagnostics of mycologic toxicoses | 2 |
| 9 | Microbiological diagnostics of fungal allergies. Antifungal drugs. | *2* |
|  | **Module** |  |
| **Total** | | **18** |

**THEMES IWS FOR 3 SEMESTERS**

**1 module**

|  |  |  |
| --- | --- | --- |
| 1 | Definitions - basic terms as they relate to mycology | *3* |
| 2 | Bacteria - Like Fungi | *3* |
| 3 | Microbiological diagnostics of Black lichen | *3* |
| 4 | General Aspects of Fungal Immunology and Pathology | *3* |
| 5 | Microbiological diagnosis of Dermatomycosis of the beard and moustache (beard ringworm - tinea barbae) | *3* |
| 6 | Microbiological diagnosis of Trichosporosis (white piedra) | *3* |
| 7 | Microbiological diagnosis of Favus | *3* |
| 8 | Microbiological diagnosis of Eumycotic mycetoma | *3* |
| 9 | Microbiological diagnosis of Penicilliosis | *3* |
| 10 | Microbiological diagnosis of Pneumocystis pneumonia | *3* |
|  | **Total** | ***30*** |

***Readings:***

1. **General Microbiology/ Arvind Arora.- Pulse Publications.- 2010.- 513 p.**
2. **Medical Microbiology and Immunology 6th.Warren Levinson,Ernest Jawetz Med. Books 2000, 550p.**
3. **Medical Microbiology. 4th edition.Baron S, Galveston (TX):**[**University of Texas**](http://www.utmb.edu/) **; 1996.**

**ISBN-10: 0-9631172-1-1**

1. **Microbiology for the Health Sciences. Fifth edition. By prof. Gwendolyn R.W. Burton, Paul.G.Endelkirk.- Lippincott.- Philadephia, New York, 1996, 444 p.**
2. **Microbiology Laboratory Manual/ Cain et al.- Collin County Community College District, McKinney, TX.- 2 Revised Spring, 2013**
3. **Review of Medical Microbiology and Immunology. Tenth edition. Genetics. / Warren Levinson.- a LANGE medical book**
4. **Textbook of Microbiology. Third edition. By prof. C.P.Baveja/ Arya Publications.-2010.-**
5. **Textbook of Microbiology. 10th edition. By Ananthanarayan and Paniker`s/ Orient Longman Private Limited.- India, 2006.-657 p.**
6. **The Microbiology coloring book by I. Edward Alcamo Lawrence M. Elson.- Benjamin Cummings, New York,1996.**
7. **Medical Microbiology. 28th Ed. Jawetz, Melnick, &Adelberg’s.- LANGE medical book.- 2016**
8. **MEDICAL MYCOLOGY WITH A BASE MYCOTOXICOLOGY** **edited by Candidate of Biological Sciences Leontiev D.V., Prof., Doctor of Pharmacy A.G. Serbin.**
9. **Internet resources corresponding to the subject of the discipline, including:**

[**http://gsbs.utmb.edu/microbook**](http://gsbs.utmb.edu/microbook) **http://www. jmicrobiol.com http://www. escmid.org/sites/index.asp**