MED 2009 - Basic Microbiology

| Course Name | Code | Semester | Type of course | Theory (hours) | Work in group(hours) | ECTS |
|---|---|---|---|---|---|---|
| Basic Microbiology | MED 2009 | III | Mandatory | 20 | 36 | 4 |

| | |
|---|---|
| **Faculty, the educational program and education level** | Faculty of Medicine, one-cycle Educational Program "Medicine" |
| **Author (s)** | Professor **Leila Akhvlediani**, "Bau International University, Batumi", Medical Faculty, Department of Basic Scienses.<br>Mob: 593537072; T: +995422212535; Fax:+995422212537<br>Email: Leila.akhvlediani@bauinternational-uni.ge<br>**Filiz Yarimcan Saglam** - Invited teacher, Doctor of Medicine<br>Mob: 0541 761 04 34E-mail: filiz.yarimcam@med.bahcesehir.edu.tr<br>Consultation day -individually |
| **Educatıonal course format** | LECTURE, LABORATORY WORK, WORK İN GROUP |
| **Educatıonal course volume** | **Total:** 120 hours<br>**Contact hours**: 60 h<br>1. Lecture – 20 h<br>2. Laboratory -10 h<br>3. Application -6 h<br>4. Team work – 20 h<br>5. Midterm Exam – 2 h<br>6. Final Exam -2 h<br>**Independent work** – 60 h |
| **Prerequisites** | MED 1001- Molecular Bases of Cells |
| **The purpose (s) of tutorial course/modules** | The aim of the course is to review the macroscopic and microscopic features of the microorganisms. Students have to learn structure and physiology of bacteria, viruses, fungy. How to use nutrient medium, staining methods and some other methods of microbes identification. |
| **Teaching and learning strategy** | **Lectures will be conducted** based on the application of verbal explanation method, demonstration- the method of visual presentation of the information.<br>**Laboratory work** foresees doing experiments by the students themselves under the teacher's supervision that aims at elaboration of practical clinical skills; the students will also analyze the obtained results.<br>In order to develop the skills of making conclusions supported by the arguments the students, during the **group work,** will defend and justify their opinions, when dealing with situation analysis, and analyze critically the situation created by their course mate. The students will also carry out the |

| | |
|---|---|
| | analysis of the clinical cases, interpret, classify, assess the data and make synthesis by means of connecting and confluencing of the components comprising the separate issues. During the group working students will prepare poster in unknowing topics, then they will rate each other.<br>**Practical work** foresees tutoring considers teaching in the clinical environment.<br>**When working on the abstract** the student will use the method of working on the book**.** Besides he/she has to get familiarized with publications, process the literature, search for the additional material and present the project in slideshow format. |
| **Assessment criteria** | **Maximum score- 100**<br>**Midterm assessment - 40**<br>• Attendance on lectures - 0.25 points (0,25X20=5points)<br>• Activity on Laboratory – 5 points:<br>• Activity on Group work -10 points;<br>• Abstract preparation and presentation - 10 points<br>• Poster - 10 points:<br>**Midterm Exam – 20 points**<br>Is held in the written test form (test consists of 40 multiple-choice questions, each question is rated as 0.5 score).<br>**Laboratory Work is Assessed Based on the Following Criteria (**maximum 5 point):<br>**5 points**: Laboratory method is planned correctly, the usage of the laboratory equipment and devices by the student is accurate. The student is able to make method recording correctly, can easily identify the mistakes made and plan the way of correction. The student is able to analyze the method exercised and interpret the results. Laboratory work is carried out accurately and completely;<br>**4 points:** Laboratory method is planned correctly. The student reveals the relevant knowledge when applying laboratory equipment and devices. The student is able to make method recording correctly, easily identify the mistakes made and plan the way of correction, however, has difficulties in analyzing the results. Laboratory work is performed with minor faults.<br>**3 points:** Laboratory method is planned correctly. The student is not able to reveal the relevant knowledge when using the laboratory equipment since he/she makes minor mistakes when applying laboratory devices; The student can make method recording correctly but is not able to detect the mistakes made and experiences difficulties in looking for the ways of correction. Laboratory work is carried out with minor faults.<br>**2 points:** Minor mistakes are made in planning of the laboratory method; the student is not able to reveal the relevant knowledge when using laboratory equipment and devices, is able to make method recording correctly but is not able to detect the mistakes made and relevantly has difficulties in finding the way of correction. Laboratory work is carried out with essential faults.<br>**1 point**: Essential mistakes are made in planning laboratory method; the student is hardly familiar with the rules of usage of laboratory equipment and devices; the student is able to make method recording but is unable to detect the mistakes made and relevantly has difficulties in finding the ways of correction. Laboratory work is carried out with essential faults.<br>**0 point:** the student is absolutely unaware of laboratory method and equipment and devices. The task is not fulfilled.<br>**Application and Group Work are Assessed Based on the Following Criteria** (maximum 10 point)<br>10 points - Student has been able to present complete and thorough knowledge of the subject, a substantial amount of detailed and relevant information. Demonstrate considerable depth of understanding of the studied main and additional literature. Bring forward a balanced view of the |

main arguments on the issues.

9 points - Student has been able to bring forward a consistent number of deductions on most of the topics tackled. make very good comments on the different perspectives on most of the issues. Demonstrates knowledge of the main readers.

8 points - Student has been able to bring forward a consistent knowledge, Has properly developed terminology. Demonstrates knowledge of the main readers.

7 points - Student has been able to present some factual information sufficiently linked with the topic. demonstrate a good understanding of the topics selected. make a good attempt to bring forward a balanced view of some arguments on the issues. Terminology is partially developed.

6 points - Student has been able to make some good comments on the different perspectives on some of the issues. Make poor deductions on most of the topics tackled. analyse some causes and results of human interactivity related to the issues.

5 points - Student has been able to demonstrate inconsistent comments on the different perspectives on some of the issues. Terminology is partially developed. Present mediocre level of knowledge. Make poor deductions.

4 points - Student demonstrates general overview of the topics. Terminology is not developed. Information sufficiently linked with the topic. Demonstrate irrelevant understanding of the literature.

3 points – Student demonstrates general/superficial and inconsistent knowledge of the subject. No sufficient knowledge of the literature.

2 points - Student demonstrates general comments, no knowledge of the terminology, no consistency.

1 point – Student demonstrates insufficient answer, not terminology awareness, chronologic manner of the answer, mostly wrong, no knowledge of literature.

0 point: Student demonstrates not even elementary knowledge of the topics.

**Abstract Grading – Maximum 10 points**

1. Problem actuality - 2;
2. Review of the researched literature on the issue -2;
3. Deductions accuracy and correlation with the main text - 2;
4. Visual and technical parts of the material - 1;
5. Accuracy and reliability of the cited literature - 1;
6. Language and style accuracy- 2.

**Poster Grading – Maximum 10 points**

1. Time-limit - 2;
2. Academism -2;
3. Visual and technical parts of the material - 2;
4. Discussion culture- 2;
5. Language and style accuracy- 2.

**Midterm Exam – 20 points**

Written test -40 question, 0,5 point; total: 20 points)

**Minimal points of midterm assessment (for final exam) – is 11**.

Students are admitted to the final examination if they score no less than 51 points through the midterm exam and final examinations.

| | |
|---|---|
| | **Final Exam – 40**<br>Is held in the written test form (test consists of 60 multiple-choice close questions, each question is rated as 0.5 point and 10 open questions each question is rated as 1point).<br>Students have to score equal or more than 70% from final exam maximum score (40X70/100=28 maximum 28 points from the overall 40) to pass the final examination.<br>Credit will be given to the student if he has collected at minimum 51 points out of 100.<br>The students' assessment has to be done in the following way:<br>**Positive rate:**<br>• (A) Excellent- 91 or more points;<br>• (B) Very Good- 81-90 points;<br>• (C) Good- 71-80 points;<br>• (D) Satisfactory- 61-70 point;<br>• (E) Enough- 51-60 points;<br>**Negative rate**:<br>• (FX) Failure - 41-50 points, which means that a student needs to work more and an independent and considerable further work is required to pass the exam once again to be re-awarded;<br>• (F) Fail - 40 points or less, which means that the student's diligence is not sufficient and student has to learn the subject all over again.<br>Student can pass the additional exam during the same semester.<br>The time interval between the final and the additional exams should be not less than 10 days. |
| **The basic literature** | 1. Patrick R.Murray; Ken S.Rosenthal; Michael A. Pfaller. **Medical Microbiology.** Elsevier Saunders. 7th ed, 2013;<br>2. Patricia M. Tille. **Bailey & Scott's Diagnostic Microbiology.** Elsevier. 12th ed, 2014; |
| **The auxiliary literature** | 1. LEVISON, W. **REVIEW OF MEDICAL MICROBIOLOGY &IMMUNOLOGY**, 2010<br>2. **CLINICAL MICROBIOLOGY AND INFECTION DISEASE**. SPISER W. JOHN. EDINBURGH. 2008 |

**The tutorial/learning course content (week by week)**

| Week | Topics | Lecture (hour) | Work in group Appl. (hour) | Lab |
|---|---|---|---|---|
| 1 | Structure of bacterial cells, bacterial biochemistry, physiology, nutrient mediums. | 5 | 1 | |
| | Structure of viruses, life cycle, identification methods | 5 | 1 | |
| | Structure of protozoa, identification, life cycle; Parasitology | 5 | 1 | |
| | Structure of fungy, identification, life cycle | 5 | 1 | |
| | Project | 6 | | |
| | Identification of Bacteria | 3 | 3 | |

| | | | | |
|---|---|---|---|---|
| 2 | Identification of Viruses | 3 | 3 | |
| | Identification of Fungy | 4 | 2 | |
| | Identification of Protozoa | 4 | 2 | |
| | Poster preparation | | 2 | |
| | **Midterm Exam** | | 2 | |
| 16-19 | **Final Exam** | | 2 | |

## Learning Outcomes

| Criteria | Competences |
|---|---|
| **Knowledge and understanding** | Possesses knowledge about macroscopic and microscopic features and virulence bacteria, viruses, fungy, protozoa. |
| **Applying knowledge** | Will be able to identify microbes by cultural methods and microscope and identification by API-tests. |
| **Making Judgment** | Is able to compare different bacterial colony and make conclusion. |
| **Communication Skills** | Is able to discuss conclusions, arguments and research results with the specialist in the field of microbiology, writing communication with academic and professional community. To present information by effective use communication technologies |