

# TEACHING TOPICS

## 1. Date despre program

1.1 University	"VICTOR BABES" UNIVERSITY OF MEDICIN AND PHARMACY TIMISO
1.2 Faculty	DENTAL MEDICINE ENGLISH SECTION
1.3 Departament	XIV Microbiology
1.4 Study domain ..... <sup>1)</sup>	Bachelor
1.5 Study cycle <sup>2)</sup>	Bachelor
1.6 Study program/ Calification	Dental Medicine

## 2. Date despre disciplină

2.1. Discipline name	Microbiology-Virusology-Parazitology							
2.2 Course lecturer	Horhat Florin-George							
2.3 Laboratory lecturer	Bagiu Iulia-Cristina Brehar-Cioflec Dana-Sanziana							
2.4 Study year	II	2.5 Semester	II	2.6 Evaluation type	Examen	2.7Disciplin e regime DI	Content <sup>3)</sup> Mandatory <sup>3)</sup>	DF X

## 3. Total time (hours of didactic activity per semester)

3.1 Number of hours per week	3	3.2 course	2	3.3 laboratory	1
3.4 Total hours of the curriculum	42	3.5 course	28	3.6 laboratory	14
Distribution of time					hours
Study after manual, course support, bibliography and notes					50
Additional documentatin in the library, on the specialized electronic platforms and on the field					12
Training seminars/laboratories/projects, themes, papers,portofolios and essays					14
Tutoring					-
Examination					2
Other activities					-
3.7 Individual study hours	76				
3.8 Total hours per semester	120				
3.9 Credit number <sup>5)</sup>	4				

## 4. Preconditions (where applicable)

4.1 curriculum	no
4.2 skills	no

## 5. Conditions (where applicable)

5.1 course progress	<ul style="list-style-type: none"> <li>Mobile phones will be closed during classes, telephone conversations are not tolerated during the course, nor do students leaving the classroom for personal phone calls;</li> <li>The students' tardiness at the course will not be tolerated as it proves to be disruptive to the educational process;</li> </ul>
5.2 laboratory progress	<ul style="list-style-type: none"> <li>Mobile phones will be closed throughout the lab, with no telephone conversations being tolerated during the lab nor students leaving the classroom to take personal phone calls;</li> <li>The students' tardiness will not be tolerated as it proves disruptive to the educational process;</li> <li>The lab attendance is mandatory, with a maximum of 15% of the total absences being accepted.</li> <li>Recuperations are allowed for up to 15% of the total number of lab hours, in the last week of the semester (except for medical cases that will require individual approval of the Dean's).</li> <li>The date of the interim lab exam will announced at the beginning of the semester. Applications for postponement will not be accepted for reasons other than a legitimate objective reasons;</li> <li>The practical exam will be held during the last week of the semester or in the regular session, from the subject of the practical works / laboratories / traineeships previously displayed</li> </ul>

## 6. Specific skills accumulated

Professional skills	<ol style="list-style-type: none"> <li>1. Attaining a properly medical speech.</li> <li>2. Exploring oral microbiology as an intuitive, explanatory and applicative discipline, essentially for future knowledge accumulation of the next dentist.</li> <li>3. Attainment of practical skills regarding collection of specimens from oral cavity infections</li> <li>4. Knowing smear obtaining technique and Gram stain procedure.</li> <li>5. Knowing the theoretical concepts and their correct application on the application of disinfectants, antiseptics and sterilization methods used in dental practice.</li> </ol>
Transversal skills	<ol style="list-style-type: none"> <li>1. development of the clinical sense for choosing the necessary tests for the diagnosis</li> <li>2. Understanding the minimal knowledge about treatment and its management</li> </ol>

## 7. Objectives of the discipline (based on the specific competences accumulated)

7.1 The general objectives of the discipline	Knowing general informations about microbiology
7.2 Specific objectives	<ol style="list-style-type: none"> <li>1. Knowing the bacterial cell structure and antibacterial chemotherapies targets.</li> <li>2. Knowing main antibacterial chemotherapies classes and basic concepts about action, range of activity, resistance and adverse reactions.</li> <li>3. Profound study of natural and acquired immunity</li> <li>4. Knowing the role of microorganisms in the etiology of the oral cavity infectious diseases</li> <li>5. Knowledge of the clinical symptomatology, treatment and prophylaxis in the most important oral cavity infections with bacterial, viral, fungal and parasitic etiology.</li> </ol>

## 8. Content

8.1 Course	Teaching methods	Hours/week	Observation
1. Introduction to Microbiology, definition, taxonomy. Bacterial morphology. Bacterial cell versus eukaryotic cell. Shape, size, disposition, staining methods. Bacterial physiology. Classification according with type of respiration and nutrition. Growth and multiplication.	Lectures are exposed as power point slides, systematic structured and associated by explanatory diagrams, animated images and detailed explanation on the blackboard. Presentation material is continuously renewed so it will be in accord with the newest knowledge in oral microbiology.	2	-
2. Bacterial genetics. Variability: mutation, transformation, transduction, transposons. Control of microorganisms- generalities, physical methods, chemical methods. Ecological relationship between microorganisms. Antimicrobial chemotherapy: definition, mode of action, mechanisms of antibiotic resistance. General principles of antimicrobial therapy,		2	
3. Infection and antimicrobial resistance, Typical stages of infection and manifestations of infection. Determinants of bacterial pathogenesis: toxin production. Normal flora. Natural and acquired immunity. Antigens, definition, properties, immunogenicity. Antibodies-immunoglobulin structure, classes, function.		2	
4. Basics of cellular immune response. The anatomy of immune response. Origin of immune cells. Major histocompatibility complex. Cellular and humoral mediated immunity. Primary and secondary immune response. Hypersensitivity reactions: definition, classification. Type I (immediate-anaphylactic), Type II (cytotoxic), Type III		2	

(immune complex), and Type IV (delayed-cell-mediated) hypersensitivity reactions.			
5. Gram positive and gram negative cocci.		2	
6. Gram-positive sporulated and non-sporulated bacilli.		2	
7. Gram negative aerobic and anaerobic bacilli.		2	
8. <i>Mycobacterium</i> and <i>Spirochaetes</i> .		2	
9. Fungi with medical interest. Classification and human mycoses.		2	
10. Overview of medical parasitology. Parasitic protozoa of the oral cavity.		2	
11. General characteristics of viruses. Viruses of relevance to dentistry. Hepatitis viruses, <i>Retroviridae</i> family.		2	
12. Infection control procedures in dentistry. Normal oral flora. The oral ecosystem. Dental plaque biofilm.		2	
13. Microbiology of dental caries. Microbiology of periodontal disease.		2	
14. Dentoalveolar infections. Oral mucosal and salivary gland infections.		2	

#### References

1. Curs de Microbiologie specială Vol I, Bacteriologie, Licker Monica, Moldovan Roxana, Lito UMF, Timișoara 2013
2. Curs de Microbiologie specială Vol II, Micologie și Virusologie, Roxana Moldovan, Monica Licker, Lito UMF, Timișoara 2013
3. Medical Microbiology: with student consult online access., Patrick R. Murray, Ph.D., Ken S. Rosenthal, Ph.D., Michael A Pfaller, MD, 8th edition, 2015., ISBN-10: 0323299563, ISBN-13: 9780323299565.
4. Essential Microbiology for Dentistry, Lakshman Samaranayake, 4 th edition, 2011, Churchill Livingstone Elsevier, ISBN-13: 978-0-702034848
5. Oral Microbiology, Philip D. Marsh, Michael V. Martin, fifth edition, 2009, Churchill Livingstone Elsevier, ISBN: 0443101442
6. General microbiology, Lecture notes for internal use for medicine students, Monica Licker, Roxana Moldovan, et al, Lito UMF, Timișoara, 2014
7. Clinical Microbiology-lecture notes for internal use for medicine students, Prof. Licker M, et al, Lito UMF 2017

8.2 Laboratory	Teaching methods	Hours/week	Observation
1. General principles in Microbiology laboratory. Protection rules. The role of Clinical Microbiology lab.	PRELIGATION, DEBATE, CASE PRESENTATIONS	1	
2. Sterilization. Antiseptics and disinfectants. Culture media.		1	
3. Steps in bacteriological diagnosis: Microscopical and macroscopical examination collection of specimens, culture methods and identification of bacteria in pathological samples.		1	
4. Antimicrobial sensitivity tests. Immunological reactions in bacteriological diagnosis.		1	

5. Laboratory diagnosis in infections produced by Gram positive cocci.		1	
6. Laboratory diagnosis in infections produced by Gram negative cocci and Gram positive rods.		1	
7. Laboratory diagnosis in infections produced by enterobacteria		1	
8. Laboratory diagnosis in infections produced by non fermenting Gram negative rods and anaerobic bacteria		1	
9..Laboratory diagnosis in infections produced by <i>Treponema</i> , <i>Leptospira</i> , <i>Mycobacterium</i> .		1	
10.Laboratory diagnosis in infections produced by fungi with medical importance.		1	
11. Isolation of viruses on embryonated eggs and culture cells. Virusological diagnosis.		1	
12 Laboratory diagnosis of viral hepatitis. Laboratory diagnosis of AIDS.		1	
13. Laboratory diagnosis of parasitic disease .		1	
14. <b>Practical exam.</b>		1	
<b>References</b> 1. Curs de Microbiologie specială Vol I, Bacteriologie, Licker Monica, Moldovan Roxana, Lito UMF, Timișoara 2013 2. Curs de Microbiologie specială Vol II, Micologie și Virusologie, Roxana Moldovan, Monica Licker, Lito UMF, Timișoara 2013 3. Lucrări practice de Microbiologie, Moldovan Roxana și colab., Editura Victor Babes Timisoara 2013, ISBN 978-606-6456-19-5 4. Medical Microbiology: with student consult online access., Patrick R. Murray, Ph.D., Ken S. Rosenthal, Ph.D., Michael A Pfaller, MD, 8th edition, 2015., ISBN-10: 0323299563, ISBN-13: 9780323299565. 5. Essential Microbiology for Dentistry, Lakshman Samaranayake, 4 th edition, 2011, Churchill Livingstone Elsevier, ISBN-13:978-0-702034848 6. Oral .Microbiology, Philip D. Marsh, Michael V. Martin, fifth edition, 2009, Churchill Livingstone Elsevier, ISBN:0443101442. 7. General microbiology, Lecture notes for internal use for medicine students, Monica Licker, Roxana Moldovan, et al, Lito UMF, Timișoara, 2014 8. Clinical Microbiology-lecture notes for internal use for medicine students, Prof. Licker M, et all, Lito UMF 2017			

**9. Corroborating the contents of the discipline with the expectations of the representatives of the epistemic communities, professional associations and representatives employers in the field related to the program**

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**10. Evaluation**

Activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 % of the final grade
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10.4 Course	<p><i>Knowledge for 5:</i> correct resolution of 50% of the MCQ</p> <p><i>Knowledge for 10:</i> correct resolution of 90% of the MCQ</p>	<p><b>Written theoretical examination</b> take the form of multiple choice questions. Topic consists of 250 questions (five sets of 50 questions). The examination board consists of five members and will be communicated to the Dean office two weeks before the session begins. On the day of the exam, students will extract two sets of MCQ. The duration of theoretical examination is 60 minutes.</p> <p>Presentation of the exam is subject to a minimum 70% participation of students in lectures and at least 85% in practical works. MCQ are corrected according with second version (exemplified on the UMFT site).</p> <p>The share for guidance scoring: active participation in lectures and grades received during the semester- up to 10%, practical exam - 40%, theoretical exam mark- 50%.</p>	50%
10.5 Laboratory	<ul style="list-style-type: none"> <li><i>Knowledge for 5:</i> Definition of key concepts that relate to the subject of examination and the correct answer to a simple question of the general subject.</li> <li><i>Knowledge for 10:</i> details on the subject of examination and integration of these concepts. It is also necessary that the student can respond to specific questions concerning the notion of subject.</li> </ul>	<b>Practical exam</b> includes the correct answer to a theoretical topics related to the laboratory practice followed by the execution of a practical work.	40%
10.6 Seminar	Active participation in lectures and grades received during the semester		10%

Date	Course lecturer signature Conf. Univ. Horhat Florin-George	Laboratory lecturer signature 1 Bagiu Iulia-Cristina 2. Brehar-Cioflec Dana-Sanziana
Discipline coordinator signature Prof. Univ. Licker Monica		
Department approval date	Department director signature Prof. Univ. Vlaicu Brighita	

Notă:

- 1) Domeniul de studii - *se alege una din variantele:* Licență/ Masterat/ Doctorat (**se completează conform cu Nomenclatorul domeniilor și al specializărilor/ programelor de studii universitare în vigoare**) ;
- 2) Ciclul de studii - *se alege una din variantele:* Licență/ Master/ Doctorat;

- 3) Regimul disciplinei (conținut) - *se alege una din variantele:* **DF** (disciplină fundamentală)/ **DD** (disciplină din domeniu)/ **DS** (disciplină de specialitate)/ **DC** (disciplină complementară) - *pentru nivelul de licență;* **DAP** (disciplină de aprofundare)/ **DSI** (disciplină de sinteză)/ **DCA** (disciplină de cunoaștere avansată) - *pentru nivelul de masterat;*
- 4) Regimul disciplinei (obligativitate) - *se alege una din variantele:* **DI** (disciplină obligatorie)/ **DO** (disciplină opțională)/ **DFac** (disciplină facultativă);
- 5) Un credit este echivalent cu 25 – 30 de ore de studiu (activități didactice și studiu individual).
- 6) Pentru specializările și/sau disciplinele a căror tematică se regăsește în bibliografia de rezidențiat, aceasta devine obligatorie.