KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

Medical Bacteriology Lab Syllabus			
Course Title	**Medical Bacteriology Lab**		
Course Code	**MLS3230L**	**No. of Credits**	**2**
Department	**Medical Laboratory Science (MLS)**	**College**	**Science**
Pre-requisites Course Code	**Introduction to Microbiology and LabMLS2405C**	**Co-requisites Course Code**	**MLS3330-Theory**
Course Coordinator(s)	**Dr Sirwan M Muhammed**		
Email	**sirwan.muhammed@komar.edu.iq**	**IP No.**	**116**
Other Course Teacher(s)/Tutor(s)	**Alan Ahmed [alan.ahmed@komar.edu.iq]**		
Learning Hours	**Sunday: 15:00 – 18:00 S1 Chemistry Lab** **Wednesday: 15:00 – 18:00 S2 Chemistry Lab**		
Contact Hours	**To be arranged by email [234]**		
Course Type	**Departmental course**		
Offer in Academic Year	**Spring 2016**		

COURSE DESCRIPTION

This course is designed to provide the students with potential skills and knowledge to conduct Bacteriological experiments in an efficient way. Diagnostic approach is the core of the lab sessions starting from very basic morphologies of bacteria and their colonies to advanced metabolic and enzymatic activity differences among them.

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COURSE LEARNING OUTCOMES (NAACLS)

After participating in the course, students would be able to:

1. Apply methods of safety in the modern microbiological laboratories. (A, D)
2. Differentiate between bacteria on the basis of sample's source, morphology, metabolism, enzymatic activity as well as susceptibility to specific antibiotics. (D, E)
3. Design proper method for identification of unknown bacterial samples on the basis of its source (E).
4. Relate scattered pieces of information to come with an ideal answer[conclusion]. (E, F)
5. Evaluate and criticize the result accuracy. (D)
6. Communicate professionally with physicians, patients and staffs; considering the importance of patients' confidentiality. (B, C, F)

GUIDELINES ON GRADING POLICY

Points	*Percentage Scores*	*Grade*
A	*95–100*	*4.0*
A-	*90-94*	*3.7*
B+	*87–89*	*3.3*
B	*83-86*	*3.0*
B-	*80-82*	*2.7*
C+	*75–79*	*2.3*
C	*70-74*	*2.0*
C-	*65-69*	*1.7*
D+	*60–64*	*1.3*
D	*55-59*	*1.0*
D-	*50-54*	*0.7*
F	*0–49*	*0*
I	*Incomplete Course Work*	
W	*Official Withdrawal*	

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COURSE TEACHING AND LEARNING ACTIVITIES

Course Teaching and Learning Activities: (short description)

This course is carried out once a week. Allocated duration is 3 hours to be spent in Lab. Within the first 10-15 minutes, students might take a quiz. Reports will be submitted by the students, then the instructor will explain the idea, principle, and procedure of the experiment which can last for about an hour.

Instruction of the course will include:

- Utilization of power point presentation
- Board space usage when more explanation is required
- Laboratory exercises; using available Lab equipment, tools and facility

There will be in Lab group presentation, where students are requested to present a relevant interesting topic of their choice the audience.

COURSE ASSESSMENT Tools

Assessment Method	Assessment Weight
Quizzes	10%
Presentation	10%
Homework	5%
In-Class Activities	10%
Midterm Exam	20%
Reports	15%
Final Exam	30%
Total	**100%**

Grading: Passing Grade: 65%

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ESSENTIAL READINGS: (Journals, textbooks, website addresses etc.)

Textbooks:

Laboratory Manual of Medical Bacteriology by Sirwan Muhammed & Alan Ahmed, 2016.

References:

Harley & Prescott, **Laboratory Exercises in Microbiology**, Fifth Edition, 2002

Morello *et al.*, **Laboratory Manual and Workbook in Microbiology**, Seventh Edition, 2003

Kayser *et al.*, **Medical Microbiology**, 2005

Gillespie & Bamford, **Medical Microbiology and Infection at a Glance**, Fourth Edition, 2012

COURSE POLICY *(including plagiarism, academic honesty, attendance etc)*

Attendance:

- Students are expected to attend all lectures, tests, quizzes, and practical exercises.
- Student must arrange with the faculty to make-up the missed lab, if he/she has an official leave.
- Students are subject to the regulation and policies mentioned in the **KUST Student Handbook.**
- KUST guidelines for lateness are as follows: Three occasions of lateness count as one absence. (You can be considered late after the first 5 minutes of the Lab).

GUIDELINES FOR SUCCESS

1. Read the experiments in your manual before you attend the lab and don't depend on your mate to explain the experiment steps for you.
2. Do the task at home before you attend the lab (show your work to your instructor) that will help you not to spend a lot of time during the lab.
3. Students will work as a group of 2 which will help them to distribute the tasks equally.
4. Pay a full attention in the lab when your instructor explains the exercise.
5. Ask questions when something is not clear.
6. Follow up the results of your exercise and collect the data on time, this will help you write and submit your report in a proper way.
7. Attend every lab, discussion, and lab actively.
8. Spend at least 2-3 hours each day for studying and doing homework.

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Course Schedule

W	Due Date	Chapter/ Section	Assignments	
1	28/2 & 2/3	Professionalism, Lab Safety & Aseptic Techniques		1
2	6/3 & 9/3	Microscope & Stainings + Culture Media Preparation & Colony Isolation (exercising)		1, 5
3	13/3 & 16/3	Microscope & Stainings + Culture Media Preparation & Colony Isolation (exercising)		1, 5
4	27/3 & 30/3	Spore-Forming Gram-Positive Bacilli: *Bacillus* & *Clostridium* Species	**Report-1 W-2&3**	**1, 2, 3, 4, 5, 6**
5	3/4 & 6/4	Non-Spore-Forming Gram-Positive Bacilli: *Corynebacterium*, Propionibacterium *Corynebacterium diphtheria*	**Report-2 W-4**	**1, 2, 3, 4, 5, 6**
6	10/4 & 13/4	The Staphylococci and the Streptococci (Enzymatic Activities to be done in addition to the colony and bacterial morphology)	**Report-3 W-5**	**1, 2, 3, 4, 5, 6**
7	24/4 & 27/4	Enteric Gram-Negative Rodes (Enterobacteriaceae) I: *E coli*, *Shigella* and Others (Biochemical tests to be done in addition to the colony and bacterial morphology)	**Report-4 W-6**	**1, 2, 3, 4, 5, 6**
		Midterm Exam		**1, 2, 3, 4, 5, 6**
8	[→7]/5 & 4/5	*Enteric Gram-Negative Rodes (Enterobacteriaceae)* II*: Salmonella* (Biochemical tests to be done in addition to the colony and bacterial morphology)	**Report-5 W-7**	**1, 2, 3, 4, 5, 6**

9	8/5 & 11/5	Vibrios, Campylobacters, Helicobacter & Associated Bacteria (Immunological examination to be done)	**Report-6 W-8**	**1, 2, 3, 4, 5, 6**
			Presentation 1	**4, 6**
10	15/5 & 18/5	Pseudomonads & Anaerobic Bacteria (Biochemical tests to be done in addition to the colony and bacterial morphology)		**1, 2, 3, 4, 5, 6**
11	22/5 & 25/5	Haemophilus, Bordetelia & Legioneliae Haemophilus genus (Immunological examination to be done)	**Report-7 W-10**	**1, 2, 3, 4, 5, 6**
12	29/5 & 1/6	*Brucelia, Yersinia, Franciselia & Pasteurelia Brucella* genus (Immunological examination to be done)	**Report-8 W-11**	**1, 2, 3, 4, 5, 6**
			Presentation 2	**4, 6**
13	5/6 & 8/6	The Neisseriae & Unusual Bacterial Pathogens *Neisseriae* genus & Mycobacteria		**1, 2, 3, 4, 5, 6**
14	12/6 & 15/6	API & AST tests + Lab Automation	**Report-9 W-13**	**1, 2, 3, 4, 5, 6**
15	19/6 & 22/6	**Revision week**		
16		**Final Exam**		**1, 2, 3, 4, 5, 6**