Course Title	Microbiology				
Course Code	DES200				
Course Type	Compulsory				
Level	Bachelor (1st Cycle)				
Year / Semester	2nd year / 3rd semester				
Teacher's Name	TBA				
ECTS	6	Lectures / week	3 hrs / 14 weeks	Laboratories / week	3 hrs / 13 weeks
Course Purpose and Objectives	The objective of this course is to provide a basic knowledge of Medical Microbiology, the way the Laboratory functions and Laboratory techniques. Basic teaching of pathogenic bacteria, fungi and parasites. Knowledge of antimicrobials [antibacterials, antifungals and anti-parasitic] agents and their use in Dentistry.				
Learning Outcomes	Upon successful completion of this course students should be able to: • Describe the basic principles of Medical Microbiology and familiarization with the various microbes that make up the resident oral microflora. • Distinguish the different bacteria families and the way to identify them and understand the biological and clinical significance of the oral microbial flora in the form of a biofilm on dental and mucosal surfaces. • Describe the basic mechanisms of bacterial pathogenicity and understand the biological and clinical significance of the oral microbial flora in the form of a biofilm on dental and mucosal surfaces. • Describe the various antimicrobial agents, antibacterials, antifungals, antivirals, antiparasitic and disinfectants, with emphasis to those used to treat and prevent infections related to Dental Surgery. • Describe the basics of viral, fungal and parasite pathogenicity and their treatment				
Prerequisites	None	Co-requisites	None		
Course Content	• Lecture: Introduction to Microbiology; History and Terminology of Oral Microbiology; Introduction to Basic Immunology & Vaccines; Microbial Classification Microscopy and *In-Vitro* Culture & Laboratory Safety Lab: Visit to Microbiology Laboratory: Laboratory				

	Familiarization- Microscopes, Cabinets, Autoclaves; Reagents and other Equipment & Microbial Cultures • Lecture: Routes of Transmission; Biofilms, Dental plaque [calculus], Oral Biofilms; The role of the Microbiology Laboratory Lab: Culturing and Direct Microscopic Examination of specimens and Cultured bacteria • Lecture: Antimicrobial Agents- Antimicrobial Agents therapy choices and Prophylaxis in Dentistry; Sterilization, Disinfection & Antiseptics Lab: Examination of Cultures from Previous week [Lab 2]- Laboratory ID Methods; How to Identify Bacteria • Lecture: Hospital Acquired Infections & Infection Control; Staphylococci; Streptococci and Enterococcus & Orofacial Bacterial Infections Lab: Conventional Laboratory Techniques: Susceptibility: Plate, Dilution & Automated; Basic Identification Tests • Lecture: Metabolism, Genetics & Mutation; Enterobacteriaceae & Nonfermenting Gram Negative Rods Lab: Identification of Gram Positive Bacteria • Lecture: Miscellaneous Gram Positive & Negative Bacteria; Fastidious & Pleomorphic Bacteria & Mycoplasma, Chlamydia & Non-Sporing Anaerobes Lab: Urinalysis & Identification of Gram Negative Bacteria • Lecture: Foodborne & Waterborne Bacterial Infections; Intoxications; Bacterial Zoonoses & Prions; Acid Fast Bacteria & Filamentous Bacteria Lab: Identification of Acid Fast Bacteria; Filamentous Bacteria & Control of Hygiene procedures • Lecture: Tick-borne Diseases; Cat Scratch & Rat Bite Fever Diseases; Microbiology of the Oral Cavity; How to prevent Infection- Dental caries Microbiology & Microbiology of Periodontal diseases Lab: Identification of Anaerobic and Other Bacteria; Oral Cavity- Anaerobic flora & Dental Plaque in-vivo evaluation & Chair-side tests for carries risk assessment • Lecture: Introduction to Virology; Viral Classification, Structure & Replication; Mechanism of Viral Pathogenesis; Role of Viruses in Disease; Laboratory Diagnosis of Viral Disease & Antiviral Agents; Papillomaviruses, Polyomaviruses; Adenoviruses; Retroviruses Lab: Interpretation & Recording of the data from Lab 8; The Oral Cavity & Saliva- Microbiology & Cultures

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Lecture: Hepatitis Viruses: HAV, HBV, HDV & HEV; Human Herpes Virus: HSV, VZV, EBV & CMV; Orthomixoviruse; Influenza A, B & C; Coronaviruses [H1N1, SARS, MERS]; Noroviruses; Rabies; ZIKA, HANTA, EBOLA & Others
Lab: Interpretation & Recording of the data from Lab 9; Saliva- Microbiology, Secretion Rate and pH [Normal & Stimulated], Buffering Capacity
Lecture: Introduction to Medical Mycology & Phylogenetic Classification of Fungi; Yeasts [the role of Candida in Dental disease] & Filamentous Fungi of Medical Importance; Mycotoxins; Superficial and Systemic Mycoses
Lab: Cases Presented by Students including Lab Data; Each Student Sub-Group will present: A case from Literature & Data collected during the Lab Sessions
Lecture: Antifungals; Parasitic Classification; Intestinal Urogenital Protozoa; Nematodes; Trematodes; Cestodes; Laboratory Diagnosis of Parasitic Diseases & Revision of Everything that will be included in the written & Lab Exams
Lab: Identification of Yeasts & Filamentous Fungi; Macroscopy & Microscopy; Endo & Ecto-Parasites under the Microscope- Protozoa, Worms & Mites
Lecture and Lab: Review

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<tr><td>Teaching Methodology</td><td>Face-to-face</td></tr>
<tr><td>Bibliography</td><td>Murray P, Rosenthal K, Pfaller M. Medical Microbiology. St. Louis: Elsevier, 2016.

Gillespie S, Bamford K. Medical Microbiology and Infection at a Glance. Oxford: Wiley-Blackwell, 2012.

March P, Lewis M, Rogers H, Williams D, Wilson M. Oral Microbiology. St. Louis: Elsevier, 2016.</td></tr>
<tr><td>Assessment</td><td>
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<tr><td>Examinations</td><td>60%</td></tr>
<tr><td>Laboratory / Clinical Work / Oral presentations</td><td>30%</td></tr>
<tr><td>Class participation and attendance</td><td>10%</td></tr>
<tr><td>Total</td><td>100%</td></tr>
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<tr><td>Language</td><td>English</td></tr>
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