INFLAMMATION, INFECTION & AUXILIARY DENTAL MATERIALS MODULE

2nd Year BDS

Table 1: Themes

S.NO	Theme	Duration in Weeks/hours
1.	Pain and fever	1.5 weeks (54 hours)
2.	Inflammation of Oral Tissues	1.5 weeks (52 hours)
3.	Ulcers, Vesicle and Discoloration	2.5 weeks (80 hours)
4.	Lymphadenopathy and generalized malaise	0.5 week (14 hours)
	Total	6 weeks (199 hours)

Teaching Hours Allocation

Table 2: Hours allocation for different subjects

S. No	Subject	Hours
1.	Physiology	1
2.	General Pathology	46
3.	Pharmacology	34
4.	Community & Preventive dentistry	28
5.	Science of Dental Materials	46
6.	Periodontology	09
7.	Oral Pathology	16
8.	Oral Medicine	13
9.	Pre-Clinical Operative Dentistry	03
10.	Pre-Clinical Prosthodontics	03
	Total	**199**

***7 Hours per day for 5 days (Monday to Friday) = 35 hours/ week**

Learning Objectives

By the end of this Module, 2nd year BDS students will be able to:

1. Define inflammation, describe cellular and vascular events during inflammation, and differentiate between acute and chronic inflammation.
2. Discuss the various cell and plasma-derived mediators and the role they play in inflammation.
3. Explain the role of the immune system in inflammation.
4. Describe different types of hypersensitivity reactions and their clinical significance.
5. Identify different microbial agents through various lab techniques including staining, culture, and biochemical tests.
6. Discuss the pathogenesis and histo-pathological features of different types of infections including bacteria, virus & fungi, and their oral manifestations
7. Discuss the initiation and progression of dental caries, etiological factors, classification, and diagnosis.
8. Distinguish between reversible and irreversible pulpitis based on clinical and histological features
9. Classify and discuss different periodontal diseases.
10. Classify and describe the mechanism of action, uses, adverse effects, indications, and contraindications of NSAIDs and COX inhibitor
11. Classify and describe the mechanism of action, uses, adverse effects, indications, and contraindications of antibiotics, anti-mycobacterial antivirals, and antifungals.
12. Classify and describe the mechanism of action, uses, adverse effects, indications, and contraindications of corticosteroids.
13. Classify and describe the mechanism of action, adverse effects, uses, indications, and contraindications of DMARDs.
14. Enlist the ideal properties of dental liners and bases used in treating inflamed pulpal tissues and their application.
15. Discuss various auxiliary materials used during the fabrication of prosthesis.
16. Explain the different concepts of Biostatistics
17. Describe screening of diseases
18. Describe prevention of infection and methods of sterilization and disinfection
19. Discuss waste disposal methods.
20. Describe the epidemiology of Dental caries with risk assessment
21. Describe the epidemiology and prevention of periodontal disease

22. Discuss various polymers used in dentistry.
23. Define and explain factors related to common oral diseases and their prevention.
24. Explain the infection control in Prosthodontics
25. Fabrication of temporary denture bases.
26. Discuss the role of commonly used medicaments in the prevention and treatment of oral infections.
27. Write prescriptions for various oral and dental infectious disease.

Table 1: Learning Objectives Theme Wise

Theme 1: Pain and Fever

S. No	Topic	Hours	Learning Objectives
Physiology			
1.	Normal Host Defense	1 hour	1.1. Describe Specific and nonspecific defense (Innate and acquired immunity. Active & passive Immunity). 1.2. Define and discuss Antigen, antibodies and complement with significance. 1.3. Discuss the role of nutrition in immunity.
General pathology			
2.	Acute Inflammation	1 hour	2.1 Define acute inflammation and its causes. 2.2 Describe the cellular events of inflammation particularly process of chemotaxis, opsonization and phagocytosis. 2.3 Describe the vascular events and morphological changes related to inflammation. 2.4 Discuss the outcomes of acute inflammation. 2.5 Discuss the systemic manifestation of inflammation.
3.	Mediators (Cell Derived and Plasma Derived)	2 hours	3.1 Describe the important chemical mediators (cell & plasma derive) of inflammation. 3.2 Describe the pathway particularly the complement & coagulation pathways, Arachidonic Acid metabolism/ Derivatives.

			3.3 Describe the mechanism for development of fever, with reference to exogenous and endogenous pyrogens.
4.	Major Histocompatibility Complex	1 hour	4.1 Describe MHC Class 1 and MHC Class 2. 4.2 Describe Transplants and transplant rejection.
5.	Hypersensitivity	1 hour	5.1 Define Hypersensitivity reactions. 5.2 Describe its Type and examples. 5.3 Enlist common food allergies and intolerances.
6.	Immunodeficiency and autoimmunity disorders	1 hour	6.1 Define and Classify immunodeficiency disorders. 6.2 Define Autoimmunity & self-tolerance. 6.3 Describe the role of nutrition in autoimmune disorders.
7.	Streptococcus	2 hours	7.1 Discuss each bacterium in detail in reference to, Spectrum of diseases, important properties, pathogenesis, clinical features, lab diagnosis, prevention, and treatment.
8.	Introduction to Parasitology	1 hour	8.1 Define and classify parasites in detail. 8.2 Describe different types of Hosts.
9.	Malaria	1.5 hour	9.1 Discuss Malaria in detail in reference to: Spectrum of diseases, important properties, pathogenesis, clinical features, lab diagnosis, prevention, and treatment. 9.2 Discuss the nutritional management of patients with malaria.
10.	Dengue	1.5 hour	10.1Discuss dengue in detail in reference to: Spectrum of diseases, important properties, pathogenesis, clinical features, lab diagnosis, prevention, and treatment. 10.2 Discuss the nutritional management of patients with dengue.
Pharmacology			

11.	Anti-inflammatory drugs	2 hours	11.1 Classify anti-inflammatory drugs. 11.2 Describe the role of DMARDs and glucocorticoids as anti-inflammatory agents. 11.3 Classify DMARDS 11.4 Discuss uses, adverse effects and MOA of DMARDS. 11.5 Classify anti-inflammatory drugs. 11.6 Describe the role of DMARDs and glucocorticoids as anti-inflammatory agents. 11.7 Discuss the drug nutrient interaction.
12.	NSAIDs	1 hours	12.1 Classify, describe clinical uses and the adverse effects NSAIDS. 12.2 Differentiate between non-selective COX inhibitors and selectiveCOX-2 inhibitors based on mechanism of action. 12.3 Enlist the prototype non-selective COX inhibitor. 12.4 Describe the mechanism of action of aspirin. 12.5 Discuss Aspirin poisoning and its management. 12.6 Give the dose of Aspirin as anti-platelet, analgesic/antipyretic, and as anti-inflammatory drug. 12.7 Describe the pharmacokinetics of Diclofenac, Ibuprofen, Indomethacin, Mefanamic acid and Piroxicam. 12.8 Relate pharmacokinetics and pharmacodynamics of NSAIDs to their clinical applications.

13.	Selective COX-2 Inhibitors and Acetaminophen (Paracetamol)	1 hour	13.1 Describe the mechanism of action of selective COX-2 inhibitors. 13.2 Describe the clinical uses of selective COX-2 inhibitors. 13.3 Describe the adverse effects of selective COX-2 inhibitors. 13.4 Describe the merits and demerits of selective COX-2 inhibitors and non-selective COX-2 inhibitors. 13.5 Describe the pharmacokinetics of Paracetamol. 13.6 Describe the mechanism of action of Paracetamol. 13.7 Describe the clinical uses of Paracetamol. 13.8 Describe the adverse effects of Paracetamol. 13.9 Give therapeutic and fatal doses of Paracetamol. Describe the drug treatment of Paracetamol poisoning.
14.	Antihistamines	1 hour	14.1 Classify anti-histamines. 14.2 Differentiate between first- and second-generation anti-histamines – 14.3 Describe the pharmacologic effects of H1-receptor antagonists. 14.4 Describe the clinical uses of H1-receptor antagonists. 14.5 Enlist the adverse effects of H1-receptor antagonists. 14.6 Enlist anti-histamines antagonists.
15.	Serotonin agonist and antagonist	1 hour	15.1 Enlist serotonin agonists. 15.2 Classify serotonin antagonists. 15.3 Describe the mechanism of action of serotonin. 15.4 Describe the organ system effects of serotonin. 15.5 Describe the clinical uses of serotonin agonists and antagonists.

			15.6 Enlist the drugs used for migraine.
16.	Opioids	1 hours	16.1 Identify common opioids used in dentistry. 16.2 Classify opiods. 16.3 Explain opioid mechanisms of action in pain relief. 16.4 Recognize adverse effects like sedation, constipation, and addiction risk. 16.5 Discuss safe prescribing practices, including dosage and duration. 16.6 Identify alternatives to opioids (e.g., NSAIDs, acetaminophen). 16.7 Discuss safe opioid use, storage, and disposal with patients. 16.8 Recognize signs of opioid misuse or dependence. 16.9 Monitor and adjust opioid use to minimize risks.
Community & Preventive Dentistry			
17.	Prevention of Infection	1.5 hour	17.1 Describe the Dynamics of Disease Transmission. 17.2 Explain Different Modes of Disease Transmission. 17.3 Describe Different Stages of Infectious Diseases. 17.4 Explain the infectious diseases terms (Epidemic, endemic, pandemic). 17.5 Describe the role of nutrition in strengthening immune system and infection prevention.
18.	Screening of Diseases	2 hours	18.1 Define Screening. 18.2 Differentiate between screening and diagnostic test. 18.3 Distinguish between the types of screening. 18.4 Describe the uses of screening. 18.5 Outline the principles of screening. 18.6 Describe The Criteria for Screening Tests. 18.7 Differentiate between specificity and sensitivity of screening tests. 18.8 Evaluate the Screening Tests. 18.9 Describe the types of biases in screening.

19.	Introduction to Biostatistics	1 hour	19.1 Define Biostatistics. 19.2 Define description statistics and inferential statistics 19.3 Classify types of data 19.4 Classify types of variables 19.5 Differentiate between data and variable 19.6 List the uses of biostatistics in community dentistry
20.	Descriptive Statistics	2 hour	20.1 Explain measures of central tendency (mean, median and mode), and measures of dispersion (range, mean deviation, variance, standard deviation) 20.2 Explain normal distribution curve.
21.	Inferential statistics	1 hour	21.1 Briefly discuss correlation and regression models. 21.2 Explain standard error 21.3 Explain rules of probability Confidence level, Confidence interval and p value 21.4 Briefly discuss Chi Square, T test and Anova. 21.5 Define hypothesis and discuss its types. 21.6 Differentiate between types of errors in hypothesis. 21.7
22.	Data Presentation	1 hour	22.1 Discuss types of data. 22.2 State the different methods to depict quantitative and qualitative data. 22.3 Describe pie chart, bar chart and histogram.
23.	Sampling Technique	2 hours	23.1 Define sampling technique. 23.2 Describe sampling techniques namely simple random, systematic, stratified, cluster, multistage, quota, snowball, convenience, consecutive, purposive. 23.3 Classify sampling techniques. 23.4 Differentiate between probability and non-probability techniques.
Science of Dental Material			

24.	Composition, setting and manipulation of gypsum products	2 hours	24.1 Discuss • Composition of gypsum products • Setting Reaction of gypsum in dentistry • Manipulation and Setting characteristics • Water/Powder ratio • Gauging water • Fluidity tests

			• Setting process • Initial and final setting time • Setting expansion • Factors affecting setting time
25.	Properties and applications of gypsum products	1 hour	25.1 Describe • Properties of set material • Applications • Advantages and Disadvantages • Differentiate between alpha and beta hemihydrate
26.	Introduction to dental waxes	1 hour	26.1 Define wax and wax pattern 26.2 Explain role of blending various waxes for dental applications 26.3 Explain various methods of softening dental waxes 26.4 Describe Lost wax technique Direct and indirect wax patterns. 26.5 Discuss ideal requirements of wax pattern materials 26.6 Discuss composition of waxes 26.7 Classify dental waxes 26.8 Discuss applications of various dental waxes
27.	Properties and applications of dental waxes	1 hour	27.1 Discuss • Thermal properties • Mechanical properties 27.2 Describe 27.2.1 Denture modelling waxes 27.2.2 Inlay waxes 27.3 Differentiate between direct and indirect techniques
Oral Pathology			
28.	Periapical Abscess	1 hour	28.1 Describe periapical abscess its clinical features, histopathology, and complications. 28.2 Describe progression of pulpitis to periapical abscess.

29.	Spread of Infection	1 hour	29.1 Identify the facial planes involved in the spread of infections. 29.2 Describe routes of spread of infection. 29.3 Define cellulitis and describe its complications. 29.4 Differentiate between abscess and cellulitis. 29.5 Discuss the nutritional management of patients with severe facial space infection.
Oral Medicine			
30.	Orofacial pain	1 hour	30.1 Enumerate conditions that can cause facial pain 30.2 Briefly discuss referred and projected pain. 30.3 Define important neurological terms such as allogenic, allodynia, analgesia, anesthesia, dysesthesia, hyperalgesia, neuropathic pain
Junior Operative (Operative Dentistry and Endodontics)			
31.	Hypersensitivity and pain	1 hour	31.1 Discuss hypersensitivity and pulpal pain.
Junior Prosthodontics			
32.	Basics of infection control in prosthodontics	1hr	32.1 Discuss infection control in prosthodontics. 32.2 Identify Potential Hazards in Prosthodontic department. 32.3 Describe Standard Precautions. 32.4 Enlist steps to disinfect impressions, laboratory tools, dental chairs, countertops, and other surfaces in the prosthodontics ward
Lab Work			
Science of Dental Materials			

33.	Fabrication of model/ cast using gypsum products	2 hours	33.1 Manipulate hard plaster and soft plaster for pouring into impression/silicon mold. 33.2 Perform mixing of soft plaster and make base of the model.
34.	Making of C- clasp	4 hours	34.1 Perform making of C- clasp over the model using stainless steel wire.
35.	Manipulation of Modelling wax	3 hours	35.1 Perform making of wax pattern for partial denture.
General Pathology			
36.	Bacterial motility	1 hour	36.1 Identify motile bacteria.
37.	Plasmodium	2 hours	37.1 Identify the different species of Plasmodium.
38.	Acute inflammation	2 hours	38.1 Identify the cells involved in acute inflammation under the microscope.
THEME 2: INFLAMMATION OF ORAL TISSUES			
Oral Pathology			
39.	Dental Caries	2 hours	39.1 Discuss in detail the role of Dental Plaque, Microorganisms, Carbohydrates, and other variables in the development of dental caries. 39.2 Classify dental caries. 39.3 Describe the enamel and dentin caries. 39.4 Explain the clinical and histopathological features of enamel and dentin caries.
40.	Pulpitis	1 hour	40.1 Describe and distinguish between reversible and irreversible pulpitis. 40.2 Discuss pulp necrosis.

41.	Periapical Periodontitis	1 hour	41.1 Define periapical Periodontitis, its clinical features and histopathology. 41.2 Describe the complications of acute and chronic periapical periodontitis.
Periodontology			
42.	Classification of periodontal diseases	2 hours	42.1 Recall the Classification of Periodontal Diseases and Conditions from the 1999 International Workshop for a Classification of Periodontal Diseases and Conditions. 42.2 Describe the types of Gingival Diseases. 42.3 Differentiate between Chronic and Aggressive forms of periodontitis with respect to history, clinical and radiographic findings. 42.4 Identify Periodontitis as a Manifestation of Systemic Diseases. 42.5 Enlist types of abscesses of periodontium. 42.6 Classify Periodontitis Associated with Endodontic Lesions. 42.7 Explain Developmental or Acquired Deformities and Conditions.
43.	Gingival inflammation and pathogenesis	3 hours	43.1 Define a Biofilm. 43.2 Describe dental plaque as biofilm. 43.3 Appraise the clinical significance of Dental Plaque in the initiation of gingivitis. 43.4 Explain salient features of the initial, early, established, advanced lesion of gingivitis. 43.5 Classify different types of Gingivitis. 43.6 Describe gingival bleeding on probing.

44.	Acute Gingival conditions & Abscesses of periodontium	4 hours	44.1 Explain the clinical features, pathogens involved, diagnosis, treatment, and complications of peri-coronitis. 44.2 Explain the clinical features, microbiology involved, diagnosis and treatment of Primary Herpetic Gingivostomatitis. 44.3 Explain the etiology, clinical features, pathogens involved, diagnosis and treatment of Necrotizing ulcerative Gingivitis. 44.4 Explain etiology, clinical features, pathogen involved, diagnosis and treatment of Necrotizing ulcerative periodontitis. 44.5 Identify and distinguish between gingival, periapical, and peri-coronal abscess. 44.6 Describe the effect of compromised nutritional well-being on disorders of oral mucosa and periodontium
Community & Preventive Dentistry			
46.	Dental Caries	1 hour	46.1 Define and classify dental caries. 46.2 Explain Theories of Dental Carries
47.	Epidemiology of Dental caries	1 hour	47.1 Discuss Epidemiological factors Of Dental Caries.
48.	Role of saliva and Diet in dental Caries	2 hours	48.1 Explain the Role of Saliva and diet In Dental Caries. 48.2 Discuss Stephan curve. 48.3 Discuss various interventions in dietary practices to prevent dental caries. 48.4 Discuss factors affecting cariogenicity of food.

49.	Caries Risk Assessment	1.5 hours	49.1 Define Caries Risk Assessment. 49.2 Enlist Factors Relevant Assessment of Caries Risk. 49.3 Enlist oral nutrition risk assessment tools.

50.	Carioghram	1 hour	50.1 Discuss components and uses of cariogram.
51.	Caries Activity Tests	1 hour	51.1 Classify Caries Activity Tests. 51.2 Explain Different Types of Caries Activity Tests.
52.	Epidemiology of periodontal diseases.	1 hour	52.1 Discuss the epidemiology of periodontal diseases. 52.2 Explain local and systemic factors for periodontal diseases. 52.3 Discuss the chemical and mechanical plaque control.
53.	Prevention Of Periodontal Diseases	1 hour	53.1 Discuss the prevention of periodontal diseases. 53.2 Discuss chemical and mechanical plaque control.
General Pathology			
54.	Sterilization and disinfection	1 hour	54.1 Define sterilization 54.2 Define disinfection 54.3 Discuss the various methods of sterilization and disinfection.
Pharmacology			
55.	Local anesthetics	1 hour	55.1 Explain mechanism of action of Local anesthetics 55.2 Differentiate types of local anesthetics (e.g., esters and amides) based on properties and applications. 55.3 Identify clinical indications for local anesthetic use in dental procedures. 55.4 Determine appropriate dosages and routes of administration for patients. 55.5 Recognize potential side effects and complications of local anesthetics.

56.	Antiseptics antimicrobials & Disinfectants	1 hour	56.1 Define common terms related to chemical and physical killing of microorganisms including antisepsis, decontamination, disinfection, Sanitization, sterilization. 56.2 Identify commonly used antiseptics (e.g., chlorhexidine) and antimicrobials (e.g., metronidazole). 56.3 Recognize their clinical indications (e.g., infections, periodontal disease) and prescribe its dosage. 56.4 Identify potential side effects and resistance risks. 56.5 Identify common disinfectants (e.g., alcohol, bleach, iodine). 56.6 Explain the role of disinfectants in clinical and laboratory settings 56.7 Explain proper dilution, application, and safety practices. 56.8 Recognize microbial resistance and how to reduce it.
57.	Desensitizing agents	1 hour	57.1 Describe mechanism of action. 57.2 Describe different types of commonly used agents e.g, potassium nitrate, calcium phosphate, glut aldehyde, NaF Compounds, acidulated phosphate fluoride. 57.3 Enlist indications and contraindications.
58.	Mouth rinses and mouth washes	1 hour	58.1 Enlist different types of Mouth rinses and mouthwashes. 58.2 Describe their mechanism of action. 58.3 Discuss their dosage and clinical indications for use. 58.4 Discuss Adverse effects of mouth washes
59.	Dentifrices	1 hour	59.1 Define dentrifice. 59.2 Discuss the composition and ideal properties of dentrifices. 59.3 Discuss the pharmacological role of each component in oral health. 59.4 Discuss recommendations for choosing appropriate dentifrices based on patient needs (e.g. caries risk, sensitivity, inflamed oral tissues, tooth whitening).
Science of Dental Materials			
60.	Introduction to investment materials	1 hour	60.1 Define • Investment • Refractory die material

			60.2 Discuss ideal requirements of investments for alloy casting procedures
61.	Gypsum bonded and silica bonded investment material	2 hours	61.1 Discuss • Composition of gypsum bonded investments • Types of gypsum bonded investments • Silica • Inversion phenomena • Hygroscopic expansion • Setting reaction of gypsum bonded investments • Properties of gypsum bonded investments • Applications of gypsum bonded investments • Advantages/ disadvantages of gypsum bonded investments 61.2 Discuss • Composition of silica bonded investment material • Setting reaction of silica bonded investment material • Properties of silica bonded investment material • Applications of silica bonded investment material • Advantages/ disadvantages of silica bonded investment material
62.	Phosphate bonded investment material	1 hour	62.1 Discuss • Composition of Phosphate bonded investment material • Setting reaction of Phosphate bonded investment material • Colloidal solution • Types of phosphate bonded investment of Phosphate bonded investment material • Applications of Phosphate bonded investment material • Advantages and disadvantages of Phosphate bonded investment material 62.2 Explain:

			• Curing Investment • Sagging Investment • Casting Investment • Soldering Investment
Junior Operative (Operative Dentistry and Endodontics)			
63.	Caries classification	1 hours	63.1 Define caries classification based on the location and activity. 63.2 Differentiate between affected and infected dentin. 63.3 Discuss the diagnosis of Dental Caries. 63.4 Differentiate between caries white spots and idiopathic white spots.
64.	Principles of cavity prep	1 hour	64.1 Discuss line angles, point angles, cavity walls and floors. 64.2 Describe the outline form and steps required to achieve it. 64.3 Discuss the resistance form and retention form and how both can be achieved. 64.4 Describe the convenience form. 64.5 Describe how to eliminate infected and softened dentin 64.6 Describe how to finish cavity walls. 64.7 Describe how to clean the cavity.
Junior Prosthodontics			
65.	Dental cast	1hr	65.1 Define dental cast. 65.2 Discuss the parts of dental cast. 65.3 Explain different types of dental cast. 65.4 Discuss step by step pouring of impressions for fabricating dental cast.

Lab Work			
Oral Pathology			
66.	Dental caries	2 hours	66.1 Interpret histopathological section of dental caries.
Community & Preventive Dentistry			
67.	Brushing techniques	2 hours	67.1 Perform brushing techniques in skill lab on a given model.
68.	Flossing techniques	2 hours	68.1 Perform flossing techniques in skill lab.
69.	Disinfection and sterilization	2 hours	69.1 Describe the infection control procedure in a dental care setting. 69.2 Describe disinfection and sterilization in dental care setting.
70.	Waste segregation and disposal	2 hours	70.1 Describe the various types of waste in health care. 70.2 Categorize the biomedical waste according to the color-coding system. 70.3 Discuss the management of mercury spill.
Pharmacology			
71.	Gingivitis	2 hours	71.1 Prescription writing for gingivitis, acute odontogenic infection (periapical abscess), periodontitis, Postoperative Pain, and Inflammation Following Tooth Extraction.

General pathology			
72.	Sterilization and disinfection	2 hours	72.1 Identify various means of sterilization and Disinfection 72.2 Recognize the methods to detect their efficacy
Science of Dental Material			
73.	Articulation	3 hours	73.1 Perform articulation of waxed dental models using hinge/hanau articulator.
THEME 3: ULCERS, VESICLE AND DISCOLORATION			
General pathology			
74.	Staphylococci	1 hour	74.1 Explain the pathogenesis of the bacterium. 74.2 Explain clinical features, lab diagnosis and prevention of bacteria.
75.	Spore forming gram positive rods	1 hour	75.1 Enumerate spore forming GP rods 75.2 Describe the important properties, pathophysiology, clinical features, and lab diagnosis of spore forming GP rods
76.	Non spore forming gram positive rods	1 hour	76.1 Enumerate non-spore forming GP rods 76.2 Describe the important properties, pathophysiology, clinical features and lab diagnosis of non-spore forming GP rods
77.	Treponema Pallidum	1 hour	77.1 Explain the pathogenesis of the bacterium. 77.2 Explain clinical features, lab diagnosis and prevention of bacteria.

78.	Actinomycosis	1 hour	78.1 Explain the pathogenesis of the bacterium. 78.2 Explain clinical features, lab diagnosis and prevention of bacteria.
79.	Human Herpes virus Human papilloma virus, Ebstain barr virus.	1 hour	79.1 Explain the pathogenesis of the virus. 79.2 Explain clinical features, lab diagnosis and prevention of virus.
80.	Measles Mumps	1 hour	80.1 Discuss Spectrum of diseases, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention and treatment.
81.	Rubella Rabies	1 hour	81. 1 Discuss Spectrum of diseases, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention and treatment.
82.	HIV	1 hour	82.1 Discuss Spectrum of disease, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention and treatment.
83.	CMV	1 hour	83.1 Discuss Spectrum of disease, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention and treatment.
84.	Leshmania	1 hour	84.1 Discuss Spectrum of diseases, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention, and treatment.
85.	Toxoplasma	1 hour	85.1 Discuss Spectrum of diseases, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention, and treatment.
86.	Mycology	1 hour	86.1 Discuss the general characteristics, pathogenesis & lab diagnosis of fungi. 86.2 Discuss candida spp general characteristics, pathogenesis & lab diagnosis. Aspergillus, Mucor and Rhizopus
Pharmacology			

87.	Introduction to chemotherapeutics	1 hour	87.1 Define basic terms like chemotherapy, antibiotic, antimicrobial, MIC, MBC, chemoprophylaxis, empirical therapy and post-antibiotic effect, bacteriostatic and bactericidal antimicrobials. 87.2 Explain advantages of drug combinations. 87.3 Describe various mechanisms of bacterial resistance against antibiotics. 87.4 Differentiate between concentration and time dependent killing with examples. 87.5 Classify antimicrobials on the basis of mechanism of action (MOA).
88.	Penicillin	1 hours	88.1 Classify beta-lactam antibiotics. 88.2 Enlist narrow and broad-spectrum Penicillin. 88.3 Enlist anti-pseudomonal, anti- staphylococcal/ beta lactamase resistant Penicillin. 88.4 Enlist long- and short-acting Penicillin. 88.5 Describe anti-bacterial spectrum of Penicillin. 88.6 Describe pharmacokinetics in respect of emphasis on route of administration and excretion of Penicillin. 88.7 Describe mechanism of action and resistance of Penicillin. 88.8 Describe clinical uses of Penicillin. 88.9 Describe adverse effects of Penicillin. 88.10 Describe contraindications of Penicillin. 88.11 Describe principal mechanism of bacterial resistance to Penicillin. 88.12 Describe drug interactions of Penicillin.

			88.13 Apply formula for interconversion of milligrams and units of Penicillin G. 88.14 Relate pharmacokinetics and pharmacodynamics of Penicillin with their clinical applications / uses.
89.	Cephalosporins	1 hour	89.1 Classify Cephalosporins. 89.2 Discuss MOA and MOR of cephalosporins 89.3 Describe anti-bacterial spectrum of Cephalosporins. 89.4 Describe pharmacokinetics of Cephalosporins with special emphasis on route of administration and excretion. 89.5 Describe clinical uses of Cephalosporins. 89.6 Describe the adverse effects of Cephalosporins. 89.7 Describe drug interactions of Cephalosporins with Ethanol. 89.8 Describe the principal bacterial mechanism of resistance to Cephalosporins. 89.9 Relate pharmacokinetics and pharmacodynamics of Cephalosporin with their clinical applications / uses.
90.	Beta lactamase inhibitors, Monobactams & Carbapanem	1 hour	90.1 Enlist beta-lactamase inhibitors. 90.2 Explain the rationale for using beta lactamase inhibitors in combination withß-lactam antibiotics. 90.3Describe the antibacterial spectrum of Monobactams and Carbapanem. 90.4Describe the clinical uses of Monobactams and Carbapanem.

91.	Vancomycin, Fosfomycin Bacitracin & Cycloserine	1 hour	91.1 Describe the MOA and resistance of Vancomycin. 91.2 Describe clinical uses of Vancomycin. 91.3 Describe the use of vancomycin in MRSA (Methicillin-resistant Staph aureus). 91.4 Describe adverse effects of Vancomycin 5. Describe "Red man/Red neck" syndrome. 91.5 Enlist clinical uses of Fosfomycin, Bacitracin & Cycloserine.
92.	Protein Synthesis Inhibitors & Tetracycline	1 hour	92.1 Classify bacterial protein synthesis inhibitors. 92.2 Classify Tetracyclines. 92.3 Describe anti-bacterial spectrum of Tetracyclines. 92.4 Describe the pharmacokinetics of Tetracycline with special emphasis on absorption of Tetracyclines. 92.5 Describe mechanism of action and resistance of Tetracyclines. 92.6 Describe the principal mechanism of resistance to Tetracyclines. 92.7 Describe clinical uses of Tetracyclines. 92.8 Describe adverse effects of Tetracyclines. 92.9 Describe the teratogenic effects of Tetracyclines. 92.10 Describe drug interactions of Tetracyclines. 92.11 Describe the adverse effect related to the use of outdated (expired) Tetracycline products. 92.12 Relate pharmacokinetics and pharmacodynamics of Tetracycline with their clinical applications.

93.	Aminoglycosides	1 hour	93.1 Enlist Aminoglycosides. 93.2 Describe anti-bacterial spectrum of Aminoglycosides. 93.3 Describe the pharmacokinetics of Aminoglycosides with special emphasis on route of administration, concentration-dependent killing, and post-antibiotic effect. 93.4 Describe mechanism of action of Aminoglycosides. 93.5 Describe the principal mechanism of resistance to Aminoglycosides. 93.6 Describe clinical uses of Aminoglycosides. 93.7 Describe adverse effects of Aminoglycosides. 93.8 Describe the drug interactions of Aminoglycosides. 93.9 Relate pharmacokinetics and pharmacodynamics of Aminoglycosides with their clinical applications / uses.
94.	Macrolides	1 hour	94.1 Enlist Macrolides. 94.2 Describe anti-microbial spectrum of Macrolides. 94.3 Describe pharmacokinetics of Macrolides. 94.4 Describe the mechanism of action of Macrolides. 94.5 Describe the principal mechanism of resistance to Macrolides. 94.6 Describe clinical uses of Macrolides. 94.7 Describe adverse effects of Macrolides. 94.8 Describe drug interactions of Macrolides. 94.9 Differentiate the salient features of Erythromycin, Clarithromycin and Azithromycin in respect of dosing and clinical use. 94.10 Relate pharmacokinetics and pharmacodynamics of Macrolides with their clinical applications / uses.

95.	Linezolid and clindamycin	1 hour	95.1 Describe mechanism of action of Linezolid. 95.2 Describe clinical uses of Linezolid with special emphasis on methicillin-resistant staphylococci and vancomycin-resistant enterococci. 95.3 Describe mechanism of action of Clindamycin. 95.4 Enumerate clinical uses of Clindamycin. 95.5 Describe antibiotic-associated (pseudomembranous) colitis.
96.	Streptogramins and Chloramphenicol	1 hour	96.1 Enumerate Streptogramins. 96.2 Describe clinical use of Quinupristin- Dalfopristin in VRE (Vancomycin-resistant enterococci. 96.3 Describe anti-microbial spectrum and mechanism of action of action of Chloramphenicol. 96.4 Enlist clinical uses of Chloramphenicol and reason for obsoleting the systemic use. 96.5 Enlist adverse effects of Chloramphenicol.
97.	Quinolones	1 hour	97.1 Classify Quinolones. 97.2 Describe the pharmacokinetics of Fluroquinolones with special emphasis on half-life of Moxifloxacin. 97.3 Enlist respiratory Quinolones. 97.4 Describe anti-microbial spectrum of Fluoroquinolones. 97.5 Describe mechanism of action and resistance of Fluoroquinolones. 97.6 Describe clinical uses of Fluroquinolones. 97.7 Describe adverse effects of Fluroquinolones. 97.8 Describe drug interactions of Fluroquinolones.

			97.9 Relate pharmacokinetics and pharmacodynamics of Fluoroquinolones with their clinical applications / use.

98.	Sulfonamides	1 hour	98.1 Classify Sulfonamides. 98.2 Describe anti-microbial spectrum of Sulfonamides. 98.3 Describe mechanism of action of Sulfonamides and Trimethoprim. 98.4 Describe mechanism of resistance to Sulfonamides. 98.5 Describe clinical uses of Sulfonamides and Trimethoprim. 98.6 Describe adverse effects of Sulfonamides and Trimethoprim. 98.7 Describe the advantages of combining sulfamethoxazole with trimethoprim (Co-Trimoxazole). 98.8 Describe the drug interaction of Sulphonamides with Phenytoin.
99.	Antifungals	1 hour	99.1 Classify Antifungal drugs. 99.2 Describe the pharmacokinetics of Amphotericin B and Ketoconazole. 99.3 Describe the advantages of liposomal preparation of Amphotericin B. 99.4 Describe mechanism of action of Azoles, Amphotericin B, Griseofulvin, Turbinafine, and Nystatin. 99.5 Describe clinical uses of Azoles, Amphotericin B, Griseofulvin, Turbinafine, and Nystatin. 99.6 Describe adverse effects of Azoles,Amphotericin B, Griseofulvin, Turbinafine, and Nystatin. 99.7 Describe drug interactions of Ketoconazole and Amphotericin B. 99.8 Recognize clinical indications of antifungals in dental practice (e.g., oral candidiasis). 99.9 Follow appropriate dosing regimens for oral fungal infections. 99.10 Identify potential adverse effects and drug interactions relevant to

			dental care.

100	Antivirals	2 hours	100.1	Classify antivirals.
			100.2	Describe the role of antiviral drugs in managing oral viral infections (e.g., herpes simplex, varicella-zoster).
			100.3	Identify key antiviral agents used in dentistry (acyclovir, valacyclovir, famciclovir).
			100.4	Explain antiviral mechanisms of action in inhibiting viral replication in oral tissues.
			100.5	Recognize clinical indications and dosage for prescribing antivirals in dental practice (e.g., oral herpes, herpetic gingivostomatitis).
			100.6	Identify potential adverse effects and drug interactions relevant to dental care.
			100.7	Describe antiviral prophylaxis for immunocompromised dental patients.
			100.8	Apply evidence-based antiviral therapy for managing oral health in dentistry

Oral Pathology			
101.	Oral Ulcers	1 hour	101.1 Classify the different types of oral ulcers based on their etiology and differentiate between different ulcers (aphthous ulcers and herpetic ulcers). 101.2 Discuss the role of B-complex and other nutrients in oral ulcers.
102.	Viral Infections	4 hours	102.1 5Describe the histopathology, oral manifestation, and laboratory diagnosis of Herpes Simplex virus infection. 102.2 Describe the pathogenesis, oral manifestation, and laboratory diagnosis of Varicella Zoster virus infection. 102.3 Describe the oral manifestation, and laboratory diagnosis Epstein-bar virus infection. 102.4 Describe the oral manifestation and laboratory diagnosis and clinical features of Cytomegalovirus infection. 102.5 Describe the oral manifestation, and laboratory diagnosis Paramyxovirus infection. 102.6 Describe the oral manifestation, and laboratory diagnosis Coxsackie virus infection. 102.7 Describe the histopathology, oral manifestation, and laboratory diagnosis of Human Papilloma virus infection. 102.8 Describe the histopathology, oral manifestation, and laboratory diagnosis of Retrovirus (HIV) infections.

103.	Bacterial Infections	2 hours	103.1Define, classify & identify the virulent organism's, interpret the histopathology of Necrotizing Ulcerative gingivitis and Noma. 103.2Define, classify & identify the virulent organism's, interpret the histopathology of Tuberculosis. 103.3Define, classify & identify the virulent organism's, interpret the histopathology and laboratory diagnosis of Syphilis. 103.4 Define, classify & identify the virulent organism's, interpret the histopathology of oral cervicofacial Actinomycosis.
104.	Fungal Infections	1 hour	104.1 Define, classify & identify the virulent organism's, interpret the histopathology of Oral Candidiasis.
Oral Medicine			
105.	Oral Ulcer	1 hour	105.1Define ulcer. 105.2Enlist principal causes of oral ulcer 105.3Define traumatic ulcer 105.4Discuss etiology of traumatic ulcer
106.	Viral, Fungal and Bacterial Infections	11 hour	106.1Define vesiculoulcerative lesions. 106.2Enumerate vesiculoulcerative lesions of oral cavity 106.3Enumerate bacterial infections of oral cavity 106.4Describe in detail the mode of spread, clinical features, complications, diagnosis and management of tuberculosis. 106.5Describe in detail the mode of spread, clinical features, complications, diagnosis and management of actinomycosis. 106.6Describe in detail the mode of spread, clinical features, complications, diagnosis and management of syphilis. 106.7Describe in detail the mode of spread, clinical features, complications, diagnosis and management of gonorrhoea.

			106.8 Enumerate STI (sexually transmitted infections) of oral cavity 106.9 Enumerate viral infections of oral cavity 106.10 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of primary and secondary herpes simplex virus infection. 106.11 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of varicella-zooster virus infection. 106.12 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of herpes zoster, postherpetic neuralgia and Ramsay Hunt syndrome. 106.13 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of Epstein-Barr virus infection. 106.14 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of cytomegalovirus infection. 106.15 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of HIV and AIDS. 106.16 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of paramyxovirus infection. 106.17 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of Coxsackie virus infection (herpangina and hand, foot and mouth disease) 106.18 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of measles and herpangina. 106.19 Enlist common oral fungal infections. 106.20 Discuss predisposing conditions that can lead to oral fungal infections. 106.21 Describe in detail the mode of spread, clinical features, complications, diagnosis and management of primary oral candidiasis (acute and chronic) 106.22 Discuss secondary oral candidiasis as oral manifestation of systemic candidiasis. 106.23 Discuss in detail the clinical features, diagnosis and management of Candida-associated lesions: Candida-associated denture-induced

			stomatitis, angular cheilitis and median rhomboid glossitis.

Science of Dental Materials			
107.	Denture Base Polymers	1 hour	107.1 Describe • Denture base polymers • Dough molding technique • Requirements of denture base polymers 107.2 Classify Acrylic denture base materials 107.3 Discuss Composition of type 1 and 2 materials
108.	Manipulation of acrylic resin	1 hour	108.1 Discuss Suspension polymerization 108.2 Describe • Mixing • P/L ratio • Stages through acrylic material pass • Doughing time • Dough time • Working time • Trial closure • Bench curing • Flash • Different curing cycles
109.	Porosities in acrylic	1 hour	109.1 Describe • Granular porosity • Contraction porosity • Gasesous porosity
110.	Properties, uses and modifications	1 hour	110.1 Discuss • Properties of acrylic resin • Applications of acrylic resin • Advantages/ disadvantages of acrylic resin 110.2 Define Fatigue and differentiate between static and dynamic fatigue

			110.3 Discuss significance of fatigue with respect to denture base materials 110.4 Enlist Modifications • Acrylic elastomer • Carbon fibers • Aramid fibers • Kevlar • Glass fibers • Bromine containing monomers 110.5 Enlist Alternative polymers
111.	Finishing and polishing of acrylic resin	1 hour	111.1 Define finishing and polishing 111.2 Discuss the significance of finishing and polishing of materials 111.3 Describe abrasives and factors affecting abrasives 111.4 Enlist different materials that are used for finishing and polishing of acrylic resins
112.	Denture Lining Materials	1 hour	112.1Discuss the Uses of Denture Lining Materials 112.2Classify Denture Lining Materials 112.3Differentiate between relining and rebasing 112.4Describe Hard reline materials P/L auto polymerizing system in in terms of their composition, manipulation and properties.
113.	Tissue conditioners	1 hour	113.1 Discuss • Tissue conditioner • Applications of tissue conditioners • Functional impression materials • Requirements of tissue conditioners • Composition of tissue conditioners • Manipulation of tissue conditioners • Properties of tissue conditioners • Permanent soft lining materials • Temporary soft lining materials

			• Self-administered relining materials
114.	Artificial Teeth	1 hour	114.1 Discuss • Artificial teeth • Requirements of artificial teeth • Available materials • Acrylic resins • Porcelain • Properties of artificial teeth 114.2 Compare properties of acrylic and porcelain artificial teeth
115.	Temporary crown and bridge resins	1 hour	115.1 Discuss the use of Temporary crown and bridge 115.2 Enlist the ideal requirements for the temporary crown and bridge material 115.3 Explain in detail acrylic crown and bridge resins
Junior Prosthodontics			
116.	Temporary denture bases	1hr	116.1Define temporary denture bases. 116.2List the materials commonly used for making temporary denture bases. 116.3Discuss a step-by-step protocol for the fabrication of temporary denture bases. 116.4Discuss fabrication of wax occlusal rims on temporary denture bases
Lab work			
Pharmacology			
117.	Oral ulcer and candidiasis	1 hour	117.1 Prescription writing for oral ulcer and candidiasis.
General pathology			

118.	Parasites Leshmaniasis	2 hours	118.1 Identify eggs under microscope. 118.2 Identify the slide of leshmania under light microscope.
119.	Biochemical tests (Catalase, coagulase, oxidase)	2 hours	119.1 Differentiate between streptococcus and staphylococcus.
Science of Dental Materials			
120.	Teeth Setup	2 hours	120.1 Perform teeth setup on the articulated models
121.	Packing and dewaxing	2 hours	121.1 Perform the making of split mold by using dental flask. 121.2 Perform dewaxing
122.	Separating Media	2 hours	122.1 Identification and application of separating media over the model
123.	Acrylic packing	2 hours	123.1 Perform mixing of heat cure acrylic resin 123.2 Identify different physical stages through which acrylic resin passes 123.3 Perform packing of acrylic resin into the mold as per compression molding technique

124.	Acrylic curing	3 hours	124.1 Perform curing of the heat cure acrylic in water
125.	Deflasking	2 hours	125.1 Retrieve the cured acrylic partial denture from the flask
126.	Finishing and polishing of denture	3 hours	126.1 Perform finishing and polishing of the acrylic partial denture
THEME 4: LYMPHADENOPATHY AND GENERALIZED MALAISE			
General Pathology			

127.	Chronic inflammation/Granuloma	2 hours	127.1 Describe causes and morphological features of chronic inflammation. 127.2 Define granuloma, its type, and causes. 127.3 Discuss the relationship between nutrition and chronic inflammation.
128.	TB/Leprosy	2 hours	128.1 Discuss Mycobacteria in detail in reference to: Spectrum of diseases, Important properties, Pathogenesis, Clinical features, Lab diagnosis, Prevention, and treatment. 128.2 Discuss the role of nutrition in prevention and management of TB.
129.	Trichomonas Tenax parasite	1 hour	129.1 Discuss the parasite in detail in reference to: Spectrum of diseases, Important properties, Pathogenesis, Clinical features, Lab diagnosis and its Prevention
Pharmacology			
130.	Antituberculosis drugs	1 hour	130.1 Identify first-line anti-TB drugs and their mechanisms of action and mechanism of resistance (e.g., Isoniazid, Rifampin). 130.2 Identify 2nd-line anti-TB drugs and their mechanisms of actions and mechanism of resistance 130.3 Recognize key adverse effects of TB drugs, such as hepatotoxicity and neurotoxicity. 130.4 Describe the importance of drug regimens for preventing drug resistance. 130.5 Enlist drug nutrient interactions of ATT.
131.	Corticosteroids	1 hour	131.1 Explain the mechanism of action of corticosteroids in reducing inflammation. 131.2 Identify clinical indications for corticosteroid use in dentistry (e.g., oral lesions, allergic reactions). 131.3 Enlist drug nutrient interactions of Corticosteroids.

			131.4	Differentiate between types of corticosteroids (e.g., hydrocortisone, prednisone) and their formulations.
			131.5	Discuss appropriate dosing regimens for acute vs. chronic corticosteroid use.
			131.6	Recognize potential local and systemic adverse effects, including delayed healing and systemic effects.
			131.7	Develop strategies to manage complications associated with corticosteroid therapy.
			131.8	Identify contraindications and precautions for corticosteroid use in dental patients.
			131.9	Formulate treatment plans incorporating corticosteroids for anti- inflammatory therapy.
			131.10	Explain the benefits and risks of corticosteroid therapy to patients

Lab work			
General Pathology			
132.	ZN staining	2 hours	132.1 Stain and differentiate acid fast bacilli.
133.	Chronic Inflammation	2 hours	133.1 Identify the cells of chronic inflammation under Light microscope
134.	Granuloma	2 hours	134.1 Identify the granuloma under Light microscope.
Pharmacology			
135.	Tuberculosis	1 hour	135.1 Prescription writing for Tuberculosis.