D Y PATIL DENTAL SCHOOL

Dr. D Y Patil Knowledge City, Charholi Bk, Via Lohegaon, Pune 412105

Affiliated to Maharashtra University of Health Sciences, Nashik

Recognized by Dental Council of India

SELF STUDY REPORT (CYCLE 1) 2018-2023

Criteria 2: Teacher Learning and Evaluation

Key Indicator: 2.6 Student Performance and Learning

Metric: 2.6.3: The teaching learning and assessment process of institution are aligned with the stated learning outcome

Programme specific learning outcome

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Ref No: DYPDS/1736 **Date: 24/08/2021**

Program Outcomes

By the conclusion of the program, the dental graduate will possess the following qualities and skills:

PO1- Knowledge and understanding

PO2- Skills

PO3- Attitudes.

PO1- KNOWLEDGE AND UNDERSTANDING

The student after graduation should have:

Key Elements.

1. Possessing a thorough understanding of the scientific foundations underlying dentistry, along with a solid grasp of relevant scientific methods and principles of biological functions, is essential. Additionally, one should be capable of scientifically evaluating and analysing various established facts and data.

2. Possessing sufficient expertise in clinical disciplines and methodologies that offer a comprehensive understanding of abnormalities, lesions, and diseases affecting the teeth, mouth, and jaws, as well as the preventive, diagnostic, and therapeutic aspects of dentistry. Relevant clinical expertise and exposure needed for regular dental practice.

3. An adequate understanding of the constitution, biological functions, and behaviours of individuals in both health and illness, as well as the impact of the natural and social environment on health, is essential, particularly as it pertains to dentistry .

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PO2- SKILLS

A graduate should possess the following competencies:

Key Elements

1. Capable of diagnosing and managing a range of common dental issues encountered in general practice, while considering the societal expectation and right to receive the highest quality treatment available whenever possible.

2. Capable of managing the complications encountered while surgical procedures.

3. Need to have the expertise to perform specific investigative procedures and the capability to analyse laboratory result and promote the oral hygiene awareness and prevention of oral maxillofacial diseases.

4. Proficient in managing pain and anxiety in patients during dental procedures.

PO3: ATTITUDES

Following attitudes should be developed by the graduate:

Key Elements

1. Eager to utilize current dental knowledge for the benefit of patients and the community.

2. Uphold a high standard of professional ethics and behaviour, consistently applying these principles in every aspect of your professional life.

3. Aim to enhance understanding and offer potential solutions for oral health issues and needs within the community.

4. Show readiness to engage in CPED Programs to regularly update professional knowledge and skills.

5. Assist and engage in executing the national oral health policy.

Criteria for PO and CO Mapping

- Score3=Fully Met (For a particular CO, if there are ≥4 Key elements in a particular PO met)
- Score 2=Partially Met (For a particular CO, if there are ≥2 Key elements <4 Key Elements in a particular PO met)
- Score1=Poorly Met (For a particular CO, if there is 1 key element in a particular PO met)
- NA-Not Applicable

COURSE OUTCOMES

Dental Anatomy, Histology Embryology and Oral Physiology

Post completion of the course, the student would be able to:

CO1: Ability to identify deciduous and permanent teeth and to skilfully carve permanent teeth using wax.

CO2: Comprehensive microscopic analysis and application (both clinical and forensic) of oral and related tissues, including histological aspects.

CO3: Understanding and appreciating the normal anatomy, morphology, physiology, and function of oral tissues, along with recognizing variations in different physiological and non-pathological states.

CO4: Comprehending the physiological aging process in dental hard and soft tissues, and estimating age based on patterns of teeth eruption using plaster casts from various age groups.

CO5: Understanding the development, growth, and age-related changes in oral and related tissues, with a focus on practical applications.

PO-CO Mapping

Year	Course name	PO CO	PO1	PO2	PO3
I year	DENTAL ANATOMY, Histology EMBRYOLOGY AND ORAL PHYSIOLOGY	CO1	3	2	2
		CO2	3	2	2
		CO3	3	2	2
		CO4	3	2	2
		CO5	3	2	2
Average		CO	3	2	2

HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY & MEDICAL GENETICS

CO1. A dental student is equipped with an understanding of the normal arrangement of tissue structures, including the nervous system, enabling them to pinpoint lesion locations. Additionally, they are knowledgeable about the sectional anatomy of the head, neck, and brain.

CO2. Dental students demonstrate proficiency in locating different structures within the head and neck regions of the body. They are adept at identifying various tissues under a microscope.

CO3. Dental students possess a comprehensive understanding of fundamental sciences as well as clinical subjects.

CO4. Identify and show various tissues under microscope and their correlation to health and disease.

CO5. Interpret anatomical structures on radiographs and modern imaging technique.

CO6..Outline the basis of abnormal congenital development and critical stages of development, effect of teratogens, genetic mutation and environmental hazards.

PO – CO Mapping

Year	Course name	PO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
1st yr	Human anatomy, Embryology, Histology	CO 1	3	3						3
		CO 2	2	2	2					2
		CO 3	2	2						
		CO 4	1	1						
		CO 5	2	2						2
		CO 6	2	2						2
Average			2	2	2					2

General and Dental Pharmacology & Therapeutics

Post completion of the course, the student would be able to:

CO1: Explain the pharmacodynamics and pharmacokinetics of essential and commonly used drugs, with a special focus on those utilized in dentistry.

CO2: Select and apply appropriate medications for various diseases, taking into account factors such as cost, efficacy, and safety for both individual and group treatments.

CO3: Identify the indications, contraindications, interactions, and adverse reactions of commonly used drugs, providing justifications for each.

CO4: Discuss the pathogenesis and etiology of oral diseases and systemic diseases that have oral manifestations.

CO5: Apply principles of rational drug therapy within the context of clinical pharmacology.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
2nd year	General Pharmacology and Therapeutics	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average			3	3	3

Physiology and Biochemistry

CO1. Students are expected to comprehend the distinctive functions of each organ and organ system in maintaining overall health.

CO2. Through their education, students acquire the ability to recognize bodily processes and identify any impairments therein.

CO3. They gain an understanding of the structure and composition of human blood, alongside its metabolic processes. This includes an exploration of the regulation and functions of vital organs such as the liver, kidneys, and the regulation of blood sugar levels.

CO4. Students learn the nomenclature, classification, and fundamental structure of essential nutrients, as well as their metabolism and interactions within the human body. They also delve into concepts of energy requirements, nutritional balance, malnutrition, including both energy and mineral metabolism. Moreover, they develop the capacity to read and interpret biochemical reports and establish clinical correlations.

CO5. The curriculum encompasses the structure and composition of human blood, its metabolic pathways, and the regulatory functions of critical organs like the liver and kidneys. Additionally, students explore the mechanisms underlying blood sugar level regulation

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
I year	Physiology & Biochemistry	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average			3	3	3

Dental Materials

CO1. Students are equipped with comprehensive knowledge regarding the utilization and characteristics of various dental materials.

CO2. They are proficient in selecting, handling, and applying suitable dental materials to full-fill clinical requirements and laboratory tasks effectively.

CO3. Students demonstrate readiness to embrace emerging techniques and advancements in dental material science, facilitating continuous learning and adaptation to evolving practices.

PO-CO Mapping

YEAR	COURSE NAME	PO CO	PO1	PO2	PO3
II Year	Dental Materials	CO1	3	3	3
		CO2	3	2	3
		CO3	3	3	2
Average		CO	3	2.66	2.66

Pre- Clinical Prosthodontics

CO1. Students have acquired the necessary knowledge concerning the diagnosis and treatment planning involved in providing complete denture treatment to patients.

CO2. Students have developed the skills required to perform a range of laboratory procedures essential for fabricating both complete dentures and removable partial dentures.

CO3. Students are familiar with the properties and applications of different materials utilized in the fabrication process of complete dentures and removable partial dentures

PO-CO Mapping

Year	Course name	PO CO	PO1	PO2	PO3
II Year	Pre-Clinical Prosthodontics	CO1	3	2	2
		CO2	3	3	2
		CO3	3	3	2
Average		CO	3	2.66	2

General Medicine

CO1. Possesses fundamental knowledge of diseases and medications, capable of taking general medical case histories.

CO2. Demonstrates basic understanding of general investigative procedures such as blood pressure recording.

CO3. Proficient in conducting examinations including inspection and palpation for medical cases.

CO4. Acquires basic understanding of dental management for patients with medical complications.

CO5. Applies current knowledge of general medicine to provide optimal care for patients and contribute positively to the community's health.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
III Year	General Medicine	CO1	3	3	3
		CO2	3	3	3
		CO3	2	2	3
		CO4	3	3	3
Average		CO	2.75	2.75	3

Course Outcomes General Surgery

CO1: Acquire fundamental knowledge of surgical treatments for diseases affecting the head, neck, and face.

CO2: Gain essential understanding of how to treat surgical emergencies.

CO3: Understand dental surgical procedures for patients with diabetes and hypertension.

CO4: Learn about the necessary investigations and management of medical conditions in patients undergoing dental surgery.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
III year	General Surgery	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
Average		CO	3	3	3

Oral Pathology& Microbiology

Post completion of the course, the student would be able to:

- Develop competence in oral pathology and diseases of the oral cavity, including the ability to practice within the community, document clinical presentations with histopathological features, and list diagnostic methods and treatment options.
- Explain the pathogenesis and etiology of oral diseases and systemic diseases with oral manifestations, while acquiring skills to handle soft and hard tissue specimens and dental casts.
- Communicate effectively with patients.
- Define, classify, and describe various aspects of forensic odontology and its applications, and stay informed about the latest developments in oral pathology.
- Gain knowledge and skills in human identification, age estimation, and medico-legal record keeping and presentation.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
III Year	Oral Pathology & Microbiology	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average		CO	3	3	3

Oral Medicine & Radiology

Post completion of the course, the student would be able to:

CO1: The student can identify precancerous and cancerous lesions of the oral cavity, understand their medical and surgical management, document clinical presentations with histopathological features, and list diagnostic methods and treatment options.

CO2: The student educates patients about common dental problems such as dental caries and periodontal disease, including their sequelae.

CO3: The student is knowledgeable about oral manifestations of systemic diseases and potential medical complications during treatment of systemically compromised patients, takes necessary precautions and consents from relevant medical specialists, and communicates effectively with patients.

CO4: The student can record a detailed case history, perform clinical examinations to arrive at a provisional diagnosis, and formulate an investigation plan to seek expert consultation.

CO5: The student stays informed about the latest developments in oral pathology.

CO6: The student handles patients with compassion, explains required treatment options, and educates them about preventive aspects of oral diseases and orofacial pain.

CO7: The student learns the basics of radiation physics and understands radiation hazards, safety, and protection measures.

CO8: The student is knowledgeable about intraoral and extraoral radiographic techniques, their interpretations, and applications in managing oral lesions and trauma.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
III Year	ORAL MEDICINE AND RADIOLOGY	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
		CO6	3	3	3
		CO7	3	3	3
		CO8	3	3	3
Average		CO	3	3	3

Public Health Dentistry

CO1. Demonstrate understanding and analysis of health problems in dentistry and medicine through comprehensive planning, implementation, administration, and evaluation techniques.

CO2. Design and assess community health programs aimed at promoting oral and overall health within populations.

CO3. Embrace and adhere to ethical practices throughout the process of conducting research studies in the field of healthcare.

CO4. Conduct health surveys to assess the utilization of manpower effectively, identify met and unmet needs, and analyse data to improve health service delivery.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
IV Year	Public Health Dentistry	CO1	3	3	3
		CO2	3	3	3
		CO3	2	2	3
		CO4	3	3	3
Average		CO	2.75	2.75	3

Prosthodontics

Post completion of the course, the student would be able to:

CO1: The student possesses knowledge of dental materials, their uses, and clinical applications across various fields of dentistry. The student also acquires the skills necessary to properly handle these materials.

CO2: The student is able to use dental materials safely and efficiently, minimizing waste. The student understands personal hygiene, infection control, and prevention of cross-infection, and is aware of recent advancements in dental materials.

CO3: The student is knowledgeable about ethics, laws, jurisprudence, and forensic odontology in prosthodontics. The student demonstrates professional honesty, integrity, and effective communication with patients.

CO4: The student is willing to share knowledge and clinical experience with peers and adopt new methods, recent advances, and techniques in prosthodontics, grounded in scientific research and in the best interest of the patient.

CO5: The student can diagnose and develop treatment plans for patients requiring basic prosthodontic therapy. The student is capable of interpreting radiographs and other investigations for diagnosis and treatment planning, can identify failed restorations, provide prosthodontic care and aftercare, and refer complex cases to specialists.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
IV Year	Prosthodontic	CO1	3		3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	2	2
Average		CO	3	2.8	2.8

Orthodontics and Dentofacial Orthopaedics

CO1: Understand the normal growth and development of the facial skeleton and dentition.

CO2: Identify abnormalities in dental and skeletal growth, diagnose various categories of malocclusion, and plan appropriate treatments.

CO3: Motivate and educate patients and their parents about the need for treatment. Plan and implement preventive orthodontics (such as space maintainers or space regainers) and interceptive orthodontics (such as habit-breaking appliances).

CO4: Manage simple malocclusions, such as anterior spacing, using removable appliances, including the delivery and activation of these appliances.

CO5: Diagnose complex malocclusions and refer patients to specialists as needed.
Understand the role of dentofacial growth in the development and treatment of malocclusion.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
IV Year	Orthodontic & Dentofacial Orthopaedics	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average		CO	3	3	3

Conservative Dentistry and Endodontics

Post completion of the course, the student would be able to:

CO1: Develop the knowledge, skills, and attitude necessary to practice dentistry, including the prevention, diagnosis, and treatment of anomalies and diseases affecting teeth and the associated hard and soft tissues.

CO2: Define and classify diseases of the teeth and adjacent tissues, and plan appropriate treatment strategies.

CO3: Understand and explain the etiology, pathophysiology, and clinical manifestations of diseases affecting the teeth and surrounding hard and soft tissues.

CO4: Gain foundational knowledge of the causes, biology, prevention, interception, and management of carious and non-carious lesions. Learn to identify the disease process at various stages and determine suitable treatment options.

CO5: Acquire basic knowledge of the biological principles of endodontics and manage various endodontic scenarios, including diagnosis, treatment planning, and treatment approaches. Understand and perform root canal therapy on anterior teeth.

PO-CO Mapping

Year	Course Name	PO CO	PO1	PO2	PO3
III Year	Conservative dentistry & Endodontic	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average		CO	3	3	3

Oral & Maxillofacial Surgery

Post completion of the course, the student would be able to:

CO1: Develop competency in administering local anesthesia and performing exodontia procedures.

CO2: Document clinical presentations, diagnostic methods, and treatment modalities for cases requiring surgical intervention in the maxillofacial region.

CO3: Understand the pathogenesis and etiology of oral diseases as well as systemic diseases with oral manifestations.

CO4: Acquire skills in various oral surgical procedures, including pre-prosthetic procedures, alveoloplasty, surgical extraction of impacted teeth, management of dentoalveolar infections, and apicectomy. Gain knowledge and skills in managing basic maxillofacial trauma.

CO5: Communicate effectively with patients while maintaining high professional ethics. Understand advanced oral and maxillofacial surgical interventions and protocols for referring complex cases to specialists. Stay updated on the latest developments and advances in the field of oral and maxillofacial surgery.

PO-CO Mapping

Year	Course name	PO CO	PO1	PO2	PO3
IV Year	Oral And Maxillofacial surgery	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average		CO	3	3	3

Paediatric & Preventive Dentistry

Post completion of the course, the student would be able to:

CO1: General Skills and Communication: Develop the ability to cultivate a positive attitude and behaviour toward oral health in children. Understand and apply preventive dentistry principles from infancy through adolescence. Provide guidance and counselling to parents or guardians regarding various treatment options.

CO2: Practice Management: Acquire knowledge of organizational structures and community dynamics, and implement principles of health promotion and disease prevention in dental practice.

CO3: Patient Care - Diagnosis and Treatment: Diagnose and treat dental diseases in paediatric patients. Develop and implement plans for caries control, surgical interventions, preventive orthodontics, and interceptive orthodontics.

CO4: Patient Care - Special Children: Effectively manage physically and mentally challenged or medically compromised children, tailoring treatment to their specific needs and conditions.

PO-CO Mapping

Year	Course	PO CO	PO1	PO2	PO3
4th year	Pediatric and preventive dentistry	CO1	3	3	3
		CO2	2	2	2
		CO3	3	3	3
		CO4	3	3	3
Average		CO5	2.75	2.75	2.75

Periodontology

Post completion of the course, the student would be able to:

CO1: The student understands the normal anatomy of the oral mucosa, gingiva, and supporting structures of the teeth, and can differentiate between normal and diseased periodontium structures.

CO2: The student recognizes periodontal conditions that may indicate systemic conditions and knows when to refer patients to specialists and physicians.

CO3: The student is capable of conducting statistical analyses of common and rare conditions in various populations.

CO4: The student diagnoses conditions based on risk factors and formulates treatment plans to mitigate those risks.

CO5: The student identifies social, economic, environmental, and emotional factors influencing periodontal health and disease and incorporates them into treatment planning. The student is also prepared to implement preventive programs within the community.

PO-CO Mapping

YEAR	Course name	PO CO	PO1	PO2	PO3
4th Year	Periodontology	CO1	3	3	3
		CO2	3	3	3
		CO3	3	3	3
		CO4	3	3	3
		CO5	3	3	3
Average		CO	3	3	3

MASTER OF DENTAL SURGERY (MDS) CONSERVATIVE DENTISTRY AND ENDODONTICS

Programme Outcome:

PO1: Demonstrate an understanding of fundamental sciences relevant to conservative/restorative dentistry and Endodontics.

PO2: Conduct thorough physical and oral examinations, including the identification of normal and abnormal functioning of various body systems. Collect comprehensive chairside history, perform medical and dental diagnostic procedures, and interpret test results for dental conditions.

PO3: Recognize conditions requiring a multidisciplinary approach or specialized care beyond the scope of the specialty and refer patients appropriately.

PO4: Implement infection control measures in dental clinical and laboratory settings.

PO5: Apply ethical principles in all aspects of restorative and contemporary Endodontics, encompassing non-surgical and surgical procedures.

PO6: Perform a wide range of restorative procedures, including aesthetic treatments and management of complex restorative cases.

PO7: Describe and manage the etiology, pathophysiology, periapical diagnosis, and treatment of common endodontic conditions, including trauma and pulpal pathosis, with consideration of endodontic-periodontic interactions.

PO8: Diagnose, plan, and execute comprehensive management strategies for challenging clinical cases in conservative dentistry and endodontics, utilizing contemporary materials and techniques.

PO9: Demonstrate effective communication skills, particularly in explaining treatment options and obtaining informed consent from patients.

PO10: Adhere to moral and ethical standards when conducting research involving humans or animals.

Paper-1

Part 1

1. Students would be able to demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics

2. Students would demonstrate infection control measures in the dental clinical environment and laboratories.

3. Student would adopt ethical principles in all aspects of restorative and contemporary Endodontics including non-surgical and surgical Endodontics

4. Students would be able to demonstrate communication skills in particular to explain various options available management and to obtain a true informed consent from the patient

5. Students would be able to apply high moral and ethical standards while carrying on human or animal research.

Mapping of COs to POs

Program: MDS in Conservative Dentistry and Endodontics

Course: **Part I**: Applied basic sciences

	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Applied Basic Science	CO1	✓									
	CO2	✓					✓				
	CO3			✓			✓			✓	✓
	CO4		✓	✓		✓	✓	✓	✓	✓	
	CO5					✓					✓

Paper-1

Part-2

COURSE OUTCOMES:

Absolutely, here are the rephrased objectives:

1. Students will be capable of explaining the causes, pathophysiology, diagnosis, and treatment of prevalent restorative scenarios, encompassing contemporary approaches to managing dental caries, non-carious lesions, and hypersensitivity.

2. Students will demonstrate proficiency in obtaining chairside histories, conducting patient examinations, performing medical and dental diagnostic procedures, conducting relevant tests, and interpreting findings to reach a logical diagnosis regarding the dental condition.

3. Students will proficiently execute various levels of restorative dental work, including aesthetic procedures and the management of complex restorative cases.

Mapping of COs to POs

Program: MDS in Conservative Dentistry and Endodontics

Course: Part II:

Paper I: Conservative Dentistry

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓		✓		✓		
CO2	✓	✓	✓		✓	✓		✓	✓	
CO3	✓	✓	✓			✓		✓		✓

Paper-2

Part-2

Course Outcome:

1. Students would be able to describe etiology, pathophysiology, periapical diagnosis and management of common endodontic situations that will include contemporary management of trauma and pulpal pathoses including endo-periodontal.

2. Students would be able to master differential diagnosis and recognize conditions that may require multidisciplinary approach or a clinical situation outside the realm of the specialty, which he or she should be able to recognize and refer to appropriate specialist

3. Students would undertake complete patient monitoring including preoperative as well as post-operative care of the patient.

4. Students would perform all levels of surgical and non -surgical Endodontics including endodontic endo-osseous implants, retreatment as well as endodontic –periodontal surgical procedures as part of multidisciplinary approach to clinical condition

5. Students would be able to manage acute pulpal and pulpo- periodontal situations.

Mapping of COs to POs

Program: MDS in Conservative Dentistry and Endodontics

Course: Part II:

Paper II: Endodontics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1		✓		✓			✓	✓		
CO2	✓	✓	✓				✓	✓		
CO3								✓	✓	✓
CO4	✓				✓	✓	✓			
CO5					✓	✓				

Paper-3

Part-2

COURSE OUTCOMES:

1. Students would diagnose, plan and execute challenging clinical cases requiring comprehensive management strategies using contemporary materials and techniques in the specialty of conservative dentistry and endodontics

2. Should be able to analyse various clinical scenarios and apply their knowledge accordingly.

Mapping of COs to POs

Program: MDS in Conservative and Endodontics

Course: Part II:

Paper III: Descriptive Analysing Type Question

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓		✓	✓	✓	✓	✓
CO2			✓	✓	✓	✓	✓	

MASTER OF DENTAL SURGERY ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

PROGRAM OUTCOMES:

This includes the list of objectives a post graduate student in Orthodontics is expected to know at the end of three years of training.

PO1: Understand the impact of biological processes and mechanical forces on the stomatognathic system throughout orthodontic treatment.

PO2: Develop an understanding of the causes, pathophysiology, diagnosis, and treatment planning for various common malocclusions.

PO3: Acquire competency in orthodontic prevention, interception, and correction methods.

PO4: Gather relevant basic science knowledge pertinent to orthodontics.

PO5: Gain proficiency in recognizing and addressing the interaction between social, cultural, economic, genetic, and environmental factors in the management of oro-facial deformities.

PO6: Comprehend the factors influencing the long-term stability of orthodontic corrections and strategies for their management.

PO7: Demonstrate an in-depth understanding of personal hygiene, infection control, prevention of cross-infection, and safe disposal of hospital waste.

PAPER -1 (Applied basic science)

COURSE OUTCOME: Part – 1

CO1: Applied Anatomy: Students will study prenatal and postnatal growth of the head, bone growth, assessment of growth and development, muscles of mastication, and the development of dentition and occlusion.

CO2: Applied Physiology: Students will learn about endocrinology and its disorders, calcium metabolism, nutrition and metabolism disorders, muscle physiology, craniofacial biology, and bleeding disorders.

CO3: Dental Materials: Students will explore various dental materials such as gypsum products, impression materials, acrylics, composites, banding and bonding cements, wrought metal alloys, orthodontic arch wires, elastics, and applied physics. They will also gain knowledge in specification and testing methods, as well as recent advancements in dental materials.

CO4: Genetics: Students will delve into cell structure, DNA, RNA, protein synthesis, cell division, chromosomal abnormalities, principles of orofacial genetics, genetics in malocclusion, molecular basis of genetics, studies related to malocclusion, recent advances in genetics related to malocclusion, genetic counselling, bioethics, and their relationship to orthodontic patient management.

CO5: Physical Anthropology: Students will explore the evolutionary development of dentition and jaws.

CO6: Pathology: Students will study inflammation and necrosis.

CO7: Biostatistics: Students will learn about statistical principles, sampling techniques, experimental models, design and interpretation, and develop skills for preparing clear, concise, and cogent scientific abstracts and publications.

CO8: Applied Research Methodology in Orthodontics: Students will gain knowledge in experimental design, animal experimental protocols, principles in the development, execution, and interpretation of methodologies in orthodontics, and critical scientific appraisal of literature.

Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part I - Applied Basic Sciences

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓	✓	✓	✓		✓	
CO2		✓		✓	✓		
CO3	✓		✓	✓		✓	
CO4	✓	✓	✓	✓	✓	✓	✓
CO5	✓	✓		✓		✓	
CO6			✓	✓	✓	✓	✓
CO7	✓	✓	✓	✓			✓
CO8	✓	✓		✓	✓	✓	✓

COURSE OUTCOME:

Part – 2

Mapping of COs to POs Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part II

Paper-I: Basic Orthodontics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓	✓	✓	✓		✓	✓
CO2		✓	✓		✓	✓	
CO3	✓	✓	✓	✓		✓	✓
CO4	✓	✓		✓	✓		

CO5	✓		✓	✓	✓	✓	✓
CO6	✓	✓		✓	✓	✓	
CO7		✓	✓	✓	✓	✓	✓
CO8	✓	✓	✓	✓			✓

PAPER - 2

COURSE OUTCOME:

Part – 2

CO1: Myofunctional Appliances: Students will develop the skills to diagnose and treat developing malocclusion at a younger age using myofunctional appliances.

CO2: Dentofacial Orthopaedics: Students will acquire the ability to identify and apply treatment regimens using orthodontic appliances to appropriate cases.

CO3: Cleft Lip & Palate Rehabilitation: Students will be trained to treat cleft lip and palate cases with empathy, beginning with nasoalveolar molding in infancy and progressing to systematic malocclusion treatment using removable and fixed orthodontics during mixed and permanent dentition, while collaborating with other members of the multidisciplinary cleft team.

CO4: Biology of Tooth Movement: Students will gain a basic understanding of applied anatomy and physiology related to teeth and surrounding structures, enabling them to comprehend and clinically utilize the results of orthodontic force application.

CO5: Orthodontics/Orthognathic Surgery: Students will receive comprehensive training in diagnosing and planning treatment for cases requiring surgical intervention.

CO6: Ortho/Perio/Prostho Interrelationship: Students will be trained in treating complex cases requiring a multidisciplinary approach to patient management.

CO7: Basic Principles of Mechanotherapy: Students will learn to design, construct, fabricate, and manage cases using both removable and fixed orthodontic appliances.

CO8: Applied Preventive Aspects in Orthodontics: Students will gain a comprehensive understanding of diagnosing and preventing caries and periodontal diseases to maintain proper interarch relationships.

CO9: Interceptive Orthodontics: Students will receive training in growth guidance and in diagnosing and planning treatment for early malocclusions in both mixed and permanent dentition.

CO10: Retention & Relapse: Students will develop the ability to analyse post-treatment stability to prevent relapse.

Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part II

Paper-II: Clinical Orthodontics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓		✓			✓	✓
CO2	✓	✓			✓		
CO3	✓		✓	✓	✓	✓	✓
CO4	✓	✓	✓		✓	✓	✓
CO5	✓	✓		✓	✓		
CO6		✓	✓	✓		✓	
CO7	✓			✓	✓		✓
CO8	✓	✓	✓	✓	✓	✓	
CO9	✓						✓
CO10		✓	✓	✓	✓	✓	

Paper III

Essays (descriptive and analyzing type questions)

COURSE OUTCOME:

Part – 2

CO1. Recent Advances : The students would be trained in above mentioned topics in detail, so that the student would know the recent advances along with the previous literature available

Mapping of Cos and POs

Program – MDS in Orthodontics and Dentofacial Orthopaedics

Course : part 2

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7
CO 1	✓	✓	✓	✓	✓	✓	✓

Dr. Paulami Bagchi
(Head, Academic Planning Committee)

D.Y. PATIL DENTAL SCHOOL PUNE

Dr. Anand Shigli
(DEAN)

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