



# SRI AUROBINDO COLLEGE OF DENTISTRY, INDORE



## Programme **BDS & MDS**

- ▶ *Graduate Attributes* ▶ *Learning Outcomes*
- ▶ *Assessment Methods*





## CONTENTS

Sl No.	PARTICULARS	Page No.
<b>1</b>	Introduction	3
<b>2</b>	Definitions & Meanings	5
<b>3</b>	Graduate Attributes	8
<b>4</b>	Programme : Bachelor of Dental Surgery (BDS)	9
	4.1 Programme Goal - BDS	9
	4.2 Programme Objective	9
	4.3 Programme Competencies	9
	4.4 Learning Outcome : BDS (Bachelor of Dental Surgery) UG	11
	4.4.1 Programme Specific Outcome	11
	4.5 Course Competencies	13
	4.6 Course Outcomes and Method of Assessment	17
<b>5</b>	Method of Assessment of learning outcomes	30
	5.1 Examinations	30
	5.2 Marks Distribution in Subject	33
	5.3 Criteria for a Pass	33
<b>6</b>	Programme : Master of Dental Surgery (MDS)	35
	6.1 Programme Goal - MDS	35
	6.2 Programme Objective	35
	6.3 Programme Outcomes : MDS	35
<b>7</b>	Learning Outcome : MDS (Masters of Dental Surgery) PG	37
	<ul style="list-style-type: none"> <li>• Programme Specific outcome &amp; assessment</li> <li>• Course outcome</li> <li>• Examinations</li> </ul>	
	7.1 MDS - Oral Medicine & Radiology	37
	7.2 MDS - Oral & Maxillofacial Surgery	40
	7.3 MDS - Periodontology	48
	7.4 MDS - Paediatric & Preventive Dentistry	53
	7.5 MDS - Prosthodontics and Crown & Bridge	58
	7.6 MDS - Conservative Dentistry & Endodontics	67
	7.7 MDS - Orthodontics & Dentofacial Orthopedics	72
	7.8 MDS - Oral Pathology & Oral Microbiology	79
	7.9 MDS - Public Health Dentistry	82



## PREFACE

Sri Aurobindo College of Dentistry bears the responsibility for both undergraduate and postgraduate education and assessment standards of specialist training. Following the introduction of training, the institute is now undertaking a major overhaul of the programmes offered, the training delivered, their accreditation and finally and very importantly the testing of candidates.

There are many challenges in ensuring the right standards of care given by our newly certified specialists and future consultants. In this respect institute would like to acknowledge the enormously important roles that all our professional colleagues contribute with.

It is no secret that there is no one absolute process that can and should be applied to the process of assessment. In this manual often several different solutions are offered for the same purpose and in these cases the individual exam departments will be free to choose their own solutions. The manual's role is to provide the overall policies and regulations set out in the General Examination Rules and Regulations handbook which is updated and published periodically. We would commend all those who read this manual to read those regulations.

The institute has built learning outcomes and it is hoped this will encourage all those participating in the important task of examining clinical competence.



## 1.0 INTRODUCTION

This manual describes how to plan, construct and deliver good learning outcomes.

Good learning outcomes emphasize the application and integration of knowledge. Instead of focusing on coverage of material, learning outcomes articulate how students will be able to employ the material, both in the context of the class and more broadly.

There is no clear agreement in the literature as to the specific difference between terms such as learning outcomes, objectives, and goals. Given the lack of clarity and utility of these distinctions, from now on we will only refer to the term learning outcomes in this manual. There are multiple definitions of learning outcomes.

Hounsell and Anderson (2008) use the phrase “ways of thinking and practicing” or what others refer to as “habits of mind” to describe the depth and breadth of knowledge and subject-specific skills, and know-how that students come away with from an educational experience.

Learning outcomes are direct statements that describe the knowledge, skills, and attitudes that students are expected to reliably demonstrate in successfully completing a course. They describe learning that is significant and durable– learning that really matters in the long term. Learning Outcomes should be observable, assessable in some way, and both rigorous and flexible.

Learning outcomes can be written at the lesson-, course-, program-, or degree-level and, ideally, a connection is made between the learning that is expected at each of these types. For example, a concept learned in class connects to the broader outcomes of the course, which in turn contributes to the outcomes of the program and the expectations for degree completion.

Learning outcomes are statements that describe the knowledge or skills students should acquire by the end of a particular assignment, class, course, or program, and help students understand why that knowledge and those skills will be useful to them. They focus on the context and potential applications of knowledge and skills, help students connect learning in various contexts, and help guide assessment and evaluation.

Students’ learning is enhanced when they know what is expected of them (Marsh, 2007; Trigwell & Prosser, 1991). When learning outcomes are communicated to students, they are more likely to take deep approaches to learning and tend to hold more favorable perceptions of their courses and instructors.

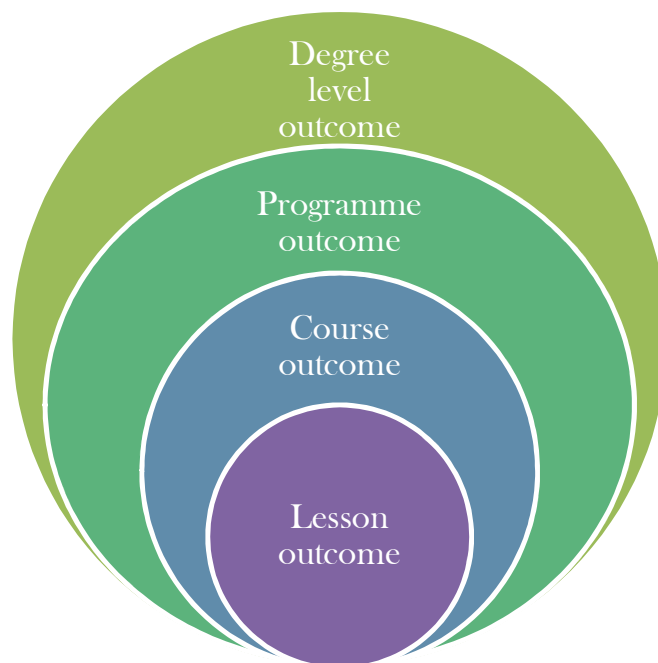


Students should see the connection between intended course outcomes and course requirements (i.e. activities and assessments). Consider taking one of the following approaches for making this clear:

- ❖ List course outcomes and assignments side-by-side to show how each outcome is to be demonstrated,
- ❖ Include a paragraph in your syllabus that articulates how students will work towards the learning outcomes,
- ❖ Explain the course's learning outcomes to students on the first day of class,
- ❖ Revisit learning outcomes regularly throughout the course to show students how course concepts connect to one another.

Finally, it will be appreciated by reading this manual is to create and deliver a successful LEARNING OUTCOMES which may requires many administrative duties and so those responsible must have these resources to ensure success.

### **LEARNING OUTCOME**





## 2.0 DEFINITIONS & MEANINGS

### Learning outcome –

Are any measurable skills, abilities, knowledge or values that the student demonstrates as a result of completing a given course or class. Effective learning outcomes can be articulated at several levels, including lesson, course, program, degree, etc. It is completely student-oriented and describes what both the students have to learn and what the instructor will teach.



### Programme outcome

Are statements about the knowledge, skills and attitudes (attributes) the graduate of a formal dental program should have... PROGRAMME OUTCOMES deal with the general aspect of graduation for a particular program, and the competencies and expertise a graduate will possess after completion of the program.

### Programme Specific Outcomes:

Programme specific outcomes are statements that describe what the graduates of a specific educational Programme should be able to do.

### Course outcome

Course Outcomes are statements that describe what students should be able to do at the end of a course

### Competencies –

A Proper definition of clinical competence and its components is important to serve as a criterion for validating educational programs and to assure a minimum level of competency at the end of graduation and post graduation.

Webster's dictionary defines being competent as the quality of having sufficient knowledge, judgment, skill, or experience for some purpose. A distinction between competence and performance is often made in the literature. Competence is the possession of the requisite or adequate ability, having acquired the knowledge and skills necessary to perform those tasks that reflect the scope of professional practice. It may be different from performance, which describes what someone is actually doing in a real life situation.



Senior (1976), for example, defined competence as what a physician is capable of doing and performance as what a physician actually does.

Competencies are a set of professional abilities that includes elements of knowledge, skill, attitudes and experience.

### **Clinical Competence**

The ability to provide total care of patients by those charged with their care. Clinical competence may be further defined according to level of training and experience. Clinical competence is not usually considered completely measurable, rather only certain abilities such as knowledge or psychomotor skills

### **Graduate Attributes:**

The disciplinary expertise or technical knowledge that has traditionally formed the core of most university courses. They are the qualities that also prepare graduate as agents for social good in an unknown future.

### **Assessment**

A method to determine level of accomplishment for a specific purpose. Assessments may be formative, and be part of the learning process and characterized by feedback, or summative, in which case the results are used to make an important decision, selection, certification, promotion or graduation. Assessments may also be characterized as criterion referenced with specific competencies aligned with the assessment items, or norm referenced when the candidates are ranked in order with a cut off set at some point in the ranking, using items with a difficulty often beyond the period of study.

### **Evaluation**

A process of making comparative judgments about learners, trainees or a training program. Evaluation may be formative or summative. Formative evaluation has two components (a) diagnostic and (b) feedback. Summative evaluation measures whether specific objectives have been met.

### **Workplace-Based Assessment**

Tests of performance carried out in a clinical setting are called workplace based assessment.

### **Skill (S)**

The ability to use one's knowledge effectively and readily in execution or performance.

- **Communication skills**

These skills lead to proficiency in communication - an essential skill for clinical practitioners because of the large and varied number of people doctors must





communicate with every day and the range of circumstances, some of which might be very distressing. The idea that doctors automatically learn communication through experience or that doctors are inherently either good or bad communicators is long abandoned. It is now widely acknowledged that both students and postgraduate doctors can be educated in communication skills and their proficiency can develop to extremely high levels of expertise.

- **Physical examination skills**

These are the skills used by practitioners when they examine patients with various clinical conditions. At an early stage of medical education, learners are expected to acquire and master the techniques using basic clinical skills. Advanced physical examination techniques - Later in their training, learners and trainees are expected to be able to use physical examination skills to examine patients and be able to identify, elicit and interpret the major signs of common clinical conditions.

- **Clinical skills**

Graduates are expected to learn and acquire a certain level of mastery for some major therapeutic procedures. They are also expected to be able to operate and monitor certain therapeutic and monitoring devices and to apply a specified range of therapeutic appliances. Postgraduate trainees are expected to perform all important diagnostic procedures, as well examine results and identify and interpret those that are abnormal.

- **Cognitive skills**

#### **Data interpretation (knowledge application)**

Graduates are expected to interpret the data collected during patient interviews to guide them through the physical examination process and interpret the history and examination data to decide on a plan of management. The examinee would then be expected to interpret the pattern of all the investigations and build a picture of the condition the patient is suffering from and reach a definitive diagnosis.

#### **Decision making**

During the ordinary clinical work-up, practitioners are expected to be continually making diagnostic, therapeutic and ethical judgments. Therefore decision making abilities are of paramount importance for clinicians.

#### **Problem solving**

Through data interpretation and decision making skills, medical students acquire the ability for problem solving.





### 3.0 GRADUATE ATTRIBUTES: BDS

- To acquire Professional skills and expertise.
- Adopt ethical principles in all aspects of practice.
- Professional honesty and integrity
- Patient care irrespective of social status, caste, creed or religion
- Communication skill
- Leadership and team working
- High moral and ethical standards
- Respect for patient rights and privileges



#### 4.0 PROGRAMME: BACHELOR OF DENTAL SURGERY (BDS)

##### 4.1. PROGRAMME GOAL:

To acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out all activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues.

##### 4.2 PROGRAMME OBJECTIVES

To produce competent and skilled dental graduates who are also responsible leaders of society with entrepreneurial and managerial skills.

##### 4.3 PROGRAM COMPETENCIES: BDS

At the completion of the undergraduate training programme the graduates shall be competent in the following.-

###### General Skills

- Apply knowledge & skills in day to day practice
- Apply principles of ethics
- Analyze the outcome of treatment
- Evaluate the scientific literature and information to decide the treatment
- Participate and involve in professional bodies
- Self assessment & willingness to update the knowledge & skills from time to time
- Involvement in simple research projects
- Minimum computer proficiency to enhance knowledge and skills
- Refer patients for consultation and specialized treatment
- Basic study of forensic odontology and geriatric dental problems

###### Practice Management

- Evaluate practice location, population dynamics & reimbursement mechanism
- Co-ordinate & supervise the activities of allied dental health personnel
- Maintain all records
- Implement & monitor infection control and environmental safety programs
- Practice within the scope of one's competence

###### Communication & Community Resources

- Assess patients goals, values and concerns
- To establish rapport and guide patient care
- Able to communicate freely, orally and in writing with all concerned



- Participate in improving the oral health of the individuals through community activities.

### **Patient Care - Diagnosis**

- Obtaining patient's history in a methodical way
- Performing thorough clinical examination
- Selection and interpretation of clinical, radiological and other diagnostic information
- Obtaining appropriate consultation
- Arriving at provisional, differential and final diagnosis

### **Patient Care - Treatment Planning**

- Integrate multiple disciplines into an individual comprehensive sequence treatment plan using diagnostic and prognostic information
- Able to order appropriate investigations

### **Patient Care - Treatment**

- Recognition and initial management of medical emergencies that may occur during dental treatment
- Perform basic cardiac life support
- Management of pain including post operative
- Administration of all forms of local anaesthesia
- Administration of intra muscular and venous injections
- Prescription of drugs, pre operative, prophylactic and therapeutic requirements
- Uncomplicated extraction of teeth
- Trans-alveolar extractions and removal of simple impacted teeth Minor oral surgical procedures
- Management of Oro-facial infections Simple orthodontic appliance therapy
- Taking, processing and interpretation of various types of intra oral radiographs Various kinds of restorative procedures using different materials available Simple endodontic procedures
- Removable and fixed prosthodontics
- Various kinds of periodontal therapy.



#### 4.4 LEARNING OUTCOME : BDS (Bachelor of Dental Surgery) - UG

##### 4.4.1 PROGRAMME SPECIFIC OUTCOME

###### 4.4.1.1 Knowledge And Understanding: (KU)

The graduate should acquire the following during the period of training.

- KU.1 : Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and be able to evaluate and analyse scientifically various established facts and data.
- KU.2 : Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also bearing on physical and social well being of the patient.
- KU.3 : Adequate knowledge of clinical disciplines and methods which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of dentistry.
- KU.4 : Adequate clinical experience required for general dental practice.
- KU.5 : Adequate knowledge of the constitution, biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health in so far as it affect dentistry.

###### 4.4.1.2 Skills: (S)

A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

- S.1 : Able to diagnose and manage various common dental problems encountered in general dental practice keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
- S.2 : Acquire the skill to prevent and manage complications if encountered while carrying out various surgical and other procedures.
- S.3 : Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings.
- S.4 : Promote oral health and help prevent oral diseases where possible.
- S.5 : Competent in the control of pain and anxiety among the patients during dental treatment.



#### **4.4.1.3 Attitudes and Values: (AV)**

A graduate should develop during the training period the following attitudes.

- AV 1 : Willing to apply the current knowledge of dentistry in the best interest of the patients and the community.
- AV 2 : Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- AV 3 : Seek to improve awareness and provide possible solutions for oral health problems and needs through out the community.
- AV 4 : Willingness to participate in the CDE Programmes to update the knowledge and professional skill from time to time.
- AV 5 : To help and participate in the implementation of the national oral health policy.



## 4.5 COURSE COMPETENCIES: BDS

### 4.5.1 Oral Medicine & Radiology

- Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned speciality for their management
- Should have an adequate knowledge about common laboratory investigations and interpretation of their results.
- Should have adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions/ consent from the concerned medical specialist.
- Have adequate knowledge about radiation health hazards, radiations safety and protection.
- Competent to take intra-oral radiographs and interpret the radiographic findings
- Gain adequate knowledge of various extra-oral radiographic procedures, TMJ radiography and sialography.
- Be aware of the importance of intra- and extra-oral radiographs in forensic identification and age estimation
- Should be familiar with jurisprudence, ethics and understand the significance of dental records with respect to law

### 4.5.2 Paediatric & Preventive Dentistry

- Able to instill a positive attitude and behaviour in children towards oral health and understand the principles of prevention and preventive dentistry right from birth to adolescence.
- Able to guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry.
- Able to treat dental diseases occurring in child patient.
- Able to manage the physically and mentally challenged disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

### 4.5.3 Orthodontics & Dentofacial Orthopaedics

- Understand about normal growth and development of facial skeleton and dentition.
- Pinpoint observations in growth process both dental and skeletal and plan necessary treatment
- Diagnose the various malocclusion categories
- Able to motivate and explain to the patient (and parent) about the necessity of treatment
- Plan and execute preventive orthodontics (space maintainers or space regainers)



- Plan and execute interceptive orthodontics (habit breaking appliances)
- Manage treatment of simple malocclusion such as anterior spacing using removable appliances
- Handle delivery and activation of removable orthodontic appliances
- Diagnose and appropriately refer patients with complex malocclusion to the specialist

#### **4.5.4 Periodontology**

- Diagnose the patients periodontal problem, plan and perform appropriate periodontal treatment
- Competent to educate and motivate the patient
- Competent to perform thorough oral prophylaxis, subgingival scaling, root planning and minor periodontal surgical procedures
- Give proper post treatment instructions and do periodic recall and evaluation
- Familiar with concepts of osseointegration and basic surgical aspects of implantology

#### **4.5.5 Prosthodontics And Crown & Bridge**

- Able to understand and use various dental materials
- Competent to carry out treatment of conventional complete and partial removable dentures and fabricate fixed partial dentures
- Able to carry out treatment of routine prosthodontic procedures.
- Familiar with the concept of osseointegration and the value of implant-supported Prosthodontic procedures

#### **4.5.6 Conservative Dentistry And Endodontics**

- Competent to diagnose all carious lesions
- Competent to perform Class I and Class II cavities and their restoration with amalgam
- Restore class V and Class III cavities with glass ionomer cement
- Able to diagnose and appropriately treat pulpally involved teeth (pulp capping procedures)
- Able to perform RCT for anterior teeth
- Competent to carry out small composite restorations
- Understand the principles of aesthetic dental procedures

#### **4.5.7 Oral & Maxillofacial Surgery**

- Able to apply the knowledge gained in the basic medical and clinical subjects in the management of patients with surgical problems
- Able to diagnose, manage and treat patients with basic oral surgical problems
- Have a broad knowledge of maxillofacial surgery and oral implantology





- Should be familiar with legal, ethical and moral issues pertaining to the patient care and communication skills
- Should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner
- Understand and practice the basic principles of asepsis and sterilisation
- Should be competent in the extraction of the teeth under both local and general anaesthesia
- Competent to carry out certain minor oral surgical procedure under LA like trans-alveolar extraction, frenectomy, dento alveolar procedures, simple impaction, biopsy, etc.
- Competent to assess, prevent and manage common complications that arise during and after minor oral surgery
- Able to provide primary care and manage medical emergencies in the dental office
- Familiar with the management of major oral surgical problems and principles involved in the in- patient management

#### **4.5.8 Public Health Dentistry**

- Apply the principles of health promotion and disease prevention
- Have knowledge of the organization and provision of health care in community and in the hospital service
- Have knowledge of the prevalence of common dental conditions in India.
- Have knowledge of community based preventive measures
- Have knowledge of the social, cultural and env. Factors which contribute to health or illness.
- Administer and hygiene instructions, topical fluoride therapy and fissure sealing.
- Educate patients concerning the aetiology and prevention of oral disease and encourage them to assure responsibility for their oral health.

#### **4.5.9 Oral Pathology & Oral Microbiology**

- The different types of pathological processes that involves the oral cavity.
- The manifestations of common diseases, their diagnosis & correlation with clinical pathological processes.
- An understanding of the oral manifestations of systemic diseases should help in correlating with the systemic physical signs & laboratory findings.
- The student should understand the underlying biological principles governing treatment of oral diseases.
- Microscopic study of common lesions affecting oral tissues through microscopic slides & projection slides.
- Microscopic study of plaque pathogens.



- Study of hematological preparations (blood films) of anaemias & leukemias.
- Basic exercises in Forensic Odontology such as histological methods of age estimation and appearance of teeth in injuries.

#### **4.5.10 Dental Anatomy, Embryology And Oral Histology**

- Carving of crowns of permanent teeth in wax to aid crown build-up in clinics.
- Microscopic structure study of Oral tissues.
- Identification of Deciduous & Permanent teeth.
- Age estimation by patterns of teeth eruption from plaster casts of different age groups.
- The student is expected to appreciate the normal development, morphology, structure & functions of oral tissues & variations in different pathological/non-pathological states.
- The student should understand the histological basis of various dental treatment procedures and physiologic ageing process in the dental tissues.
- The students must know the basic knowledge of various research methodologies.



## 4.6 COURSE OUTCOME AND METHOD OF ASSESSMENT

### 4.6.1 Measurable criteria for Course outcome and assessment

<b>Domain</b>	C	Communication
	KU	Knowledge & Understanding
	A	Attitude
	S	Skill
	V	Value
<b>Level</b>	K	Know
	MK	Must Know
	E	Expertise
<b>Assessment Methods</b>	Written Exam	
	Practical Exam	
	OSCE	Objective Structured Clinical Examination
	OSPE	Objective Structured Practical Examination
	Viva Voce	
	Problem Solving	
	DOPS	Direct observation of Procedural Skills



#### 4.6.2 COURSE OUTCOME AND METHOD OF ASSESSMENT: BDS (UG)

##### 14D00101: HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY & MEDICAL GENETICS

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00101	<b>HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY &amp; MEDICAL GENETICS</b>			
14D00101.1	Normal disposition of the structures in the body.	KU	MK	Written Exam/OSPE/ Viva Voce
14D00101.2	Anatomical basis of disease and injury.	KU	MK	Viva Voce/OSPE
14D00101.3	Microscopic structure of the various tissues.	KU	K	Written Exam
14D00101.4	Nervous system to locate the site of lesions.	KU	MK	Written Exam/OSPE
14D00101.5	Idea about the basis of abnormal development, critical stages of development, effects of teratogens, genetic mutations and environmental hazards.	KU	MK	Written exam
14D00101.6	Sectional anatomy of head neck and brain to read the features in radiographs.	KU	MK	OSPE/Viva Voce
14D00101.7	Anatomy of cardio-pulmonary resuscitation.	KU	K	Written Exam/OSPE
14D00101.8	Locate various structures of the body and to mark the topography of the living anatomy.	S	K	OSPE
14D00101.9	Identify various tissues under microscope.	S	K	OSPE
14D00101.10	Identify the features in radiographs and modern imaging techniques.	S	MK	OSPE
14D00101.11	Detect various congenital abnormalities.	S	K	OSPE

**14D00103: DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00103	<b>DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY</b>			
14D00103.1	Normal development, morphology, structure & functions of oral tissues & variations.	KU	MK	Written exam
14D00103.2	Understand the histological basis of various dental treatment procedures.	KU	MK	Written exam
14D00103.3	Research methodologies.	KU	K	Written exam
14D00103.4	Carving of crowns of permanent teeth in wax.	S	MK	OSPE
14D00103.5	Microscopic study of Oral tissues.	S	MK	OSPE
14D00103.6	Identification of Deciduous & Permanent teeth.	S	MK	OSPE/Viva Voce
14D00103.7	Age estimation by patterns of teeth eruption from plaster casts of different age groups.	S	MK	OSPE

**14D00104: GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00104	<b>GENERAL HUMAN PHYSIOLOGY &amp; BIOCHEMISTRY</b>			
14D00104.1	Normal functioning of all the organ systems and their interactions.	KU	MK	Written Exam
14D00104.2	Relative contribution of each organ system.	KU	MK	Written Exam
14D00104.3	Physiological principles underlying the pathogenesis and treatment of disease.	KU	MK	Written Exam
14D00104.4	Conduct experiments designed for the study of physiological phenomena.	S	K	OSPE
14D00104.5	Interprete experimental and investigative data.	S	K	OSPE/Viva Voce
14D00104.6	Distinguish between normal and abnormal data.	S	MK	Viva Voce

**14D00105: BIOCHEMISTRY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00105	<b>BIOCHEMISTRY</b>			
<b>14D00105</b>	Biochemical basis of the life processes relevant to the human system	KU	MK	Written Exam

**14D00201: GENERAL PATHOLOGY & MICROBIOLOGY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00201	<b>GENERAL PATHOLOGY &amp; MICROBIOLOGY</b>			
14D00201.1	Basic facts, concepts and theories.	KU	MK	Written Exam
14D00201.2	Pathological changes at macroscopically and microscopical levels.	KU	MK	Written Exam
14D00201.3	Basic sciences, clinical medicine and dentistry in the study of Patho+B18logy.	KU	MK	Written Exam
14D00201.4	Capabilities and limitations of morphological Pathology in its contribution to medicine.	KU	K	Written Exam
14D00201.5	Consult resource materials outside lectures, laboratory and tutorial classes.	KU	K	Written Exam
14D00201.6	Basics of various branches of microbiology	KU	K	Written Exam
14D00201.7	Methods of Sterilisation and disinfection in dental clinics.	KU	E	Written Exam/Viva Voce
14D00201.8	Understanding of various infectious diseases and lesions in the oral cavity.	KU	MK	Written Exam
14D00201.9	Diagnose and differentiate various oral lesions.	S	MK	OSPE
14D00201.10	Collect and transport clinical specimens to the laboratory.	S	K	Practical Exam
14D00201.11	Carry out proper aseptic procedures in the dental clinic.	S	MK	Practical Exam

**14D00202: GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00202	<b>GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS</b>			
14D00202.1	Pharmacokinetics and pharmacodynamics of essential and commonly used drugs.	KU	MK	Written Exam
14D00202.2	Indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason.	KU	MK	Written Exam
14D00202.3	Use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs.	KU	MK	Written Exam
14D00202.4	Special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immuno compromised patients	KU	MK	Written Exam/Viva Voce
14D00202.5	Rational drug therapy in clinical pharmacology.	KU	MK	Written Exam/Viva Voce
14D00202.6	Principles underlying the concepts of "Essential drugs".	KU	K	Written Exam
14D00202.7	Drugs for common dental and medical ailments.	S	E	Written Exam/Viva Voce
14D00202.8	Appreciate adverse reactions and drug interactions	S	MK	Viva Voce
14D00202.9	Observe experiments designed for study of effects of drugs.	S	K	OSPE
14D00202.10	Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.	S	K	Practical exam



**14D00203: DENTAL MATERIALS**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00203	<b>DENTAL MATERIALS</b>			
14D00203.1	Evolution and development of science of dental material.	KU	K	Written exam
14D00203.2	Physical and chemical properties of dental materials.	KU	MK	Written exam/Viva voce
14D00203.3	Biomechanical requirements of particular restorative procedure.	KU	MK	Written exam/Viva voce

**14D00204: PRE CLINICAL PROSTHODONTICS**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00204	<b>PRE CLINICAL PROSTHODONTICS</b>			
14D00204.2	Marking of anatomical and marks on cast	KU/S	E	Practical Exam(OSPE)/ Viva voce
14D00204.3	Clinical & laboratory step infabrication of compete denture	KU/S	MK	Practical Exam(OSPE)/ Viva voce

**14D00205: PRE CLINICAL CONSERVATIVE DENTISTRY LABORATORY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00205	<b>PRE CLINICAL CONSERVATIVE DENTISTRY LABORATORY</b>			
14D00205.1	Handcutting instruments chisels, gingival margin trimmers, excavators and hatchet.	KU	E	Practical Exam (OSPE)
14D00205.2	Rotary cutting instruments in contra angle hand pieces burs (Micromotor)	KU	E	Practical Exam (OSPE)
14D00205.3	class I and class II and MOD's and class V mounting in plaster models.	KU/S	E	Practical Exam (OSPE)
14D00205.4	Class I and class II and MOD's and class V mounting in extracted teeth.	KU/S	E	Practical Exam (OSPE)
14D00205.5	Class I - class V on Phantom Head.	KU/S	E	Practical Exam (OSPE)



14D00205.6	Polishing and finishing of the restorations	KU/S	MK	Practical Exam (OSPE)
14D00205.7	Manipulation of varnish bases like Zinc Phosphate, Poly carboxylate, Glass Ionomers, Zinc Oxide, Eugenol cements.	KU	MK	Practical Exam (OSPE)
14D00205.8	Manipulation of various matrices, tooth separators and materials like composites and modified glassionomer cements.	KU	K	Practical Exam (OSPE)
14D00205.9	Cast Restoration - Preparation of Class II inlay cavity, Fabrication of wax pattern, Sprue for inner attachment investing, Investing of wax pattern, Finishing and cementing in extracted tooth.	KU	MK	Practical Exam (OSPE)
14D00205.10	Endodontics - Identification of basic endodontic instruments, Coronal access cavity preparation on extracted. Upper central incisors, Determination of working length, Biomechanical preparation of root canal space of central incisor, Obfuration of root canal spaces. Absens of coronal access cavity, Closure of access cavity	KU	K	Practical Exam (OSPE)

**14D00301: GENERAL MEDICINE**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00301	<b>GENERAL MEDICINE</b>			
14D00301.1	Special precautions/ contraindication of anaesthesia and various dental procedures in different systemic diseases	KU	MK	Written Exam/Viva Voce
14D00301.2	Oral manifestations of systemic diseases.	KU	MK	Written Exam/Viva Voce
14D00301.3	Medical emergencies in dental practice.	KU/S	K	Written Exam/Viva Voce

**14D00302: GENERAL SURGERY**



COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00302	<b>GENERAL SURGERY</b>			
14D00302.1	Understand the relations of various specialities in the practice of modern surgery.	KU	MK	Written Exam
14D00302.2	Surgical principles as related to Oro Dental Diseases	KU	MK	Written Exam/Viva Voce
14D00302.3	Surgical Anatomy & Development of Face.	KU	MK	Written Exam/OSPE/Viva Voce
14D00302.4	Differential Diagnosis and Management of Oro Facial Diseases	KU	MK	Written Exam/OSPE/Viva Voce
14D00302.5	Different types of Biopsies used in Surgical Practice	KU	K	Written Exam/OSPE/Viva Voce

#### 14D00303: ORAL PATHOLOGY & ORAL MICROBIOLOGY

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00303	<b>UNDER GRADUATE (BDS) - ORAL PATHOLOGY &amp; ORAL MICROBIOLOGY</b>			
14D00303.1	Different types of pathological processes, that involve the oral cavity.	KU	MK	Written Exam/Viva Voce
14D00303.2	Manifestations of common diseases, their diagnosis & correlation with clinical pathological processes.	KU	MK	Written Exam/Viva Voce/OSPE
14D00303.3	Oral manifestations of systemic diseases	KU	MK	Written Exam/Viva Voce
14D00303.4	Biological principles governing treatment of oral diseases.	KU	MK	Written Exam/Viva Voce
14D00303.5	Basic aspects of Forensic Odontology	KU	K	Written Exam/Viva Voce
14D00303.6	Microscopic study of common lesions affecting oral tissues through microscopic slides & projection slides.	S	MK	OSPE/Viva Voce
14D00303.7	Study of the disease process by surgical specimens.	S	K	OSPE/Viva Voce
14D00303.8	Study of teeth anomalies/polymorphisms through tooth specimens & plaster casts.	S	MK	OSPE/Viva Voce
14D00303.9	Microscopic study of plaque	S	K	Viva Voce



	pathogens.			
14D00303.10	Study of haematological preparations (blood films) of anaemias & leukemias.	S	K	OSPE/Viva Voce
14D00303.11	Forensic Odontology such as histological methods of age estimation and appearance of teeth in injuries.	S	K	Written Exam/OSPE/Viva Voce

#### 14D00401: ORAL MEDICINE & RADIOLOGY

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00401	<b>UNDER GRADUATES (BDS) - ORAL MEDICINE &amp; RADIOLOGY</b>			
14D00401.1	Precancerous and cancerous lesions of the oral cavity	KU	MK	Written Exam
14D00401.2	Laboratory investigations and interpretation	KU	K	Written Exam/Viva Voce
14D00401.3	Medical complications while treating systemically compromised patients prior precautions/ consent	KU	MK	Written Exam/Viva Voce
14D00401.4	Radiation health hazards, safety and protection.	KU	E	Written Exam/Viva Voce
14D00401.5	Intra-oral radiographic interpretation	KU/S	E	OSPE/Practical Exam
14D00401.6	Extra-oral radiographic procedures	KU/S	K	OSPE

#### 14D00402: PAEDIATRIC & PREVENTIVE DENTISTRY

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00402	<b>UNDER GRADUATES (BDS) - PAEDIATRIC &amp; PREVENTIVE DENTISTRY</b>			
14D00402.1	Understand the principles of prevention and preventive dentistry right from birth to adolescence	KU	K	Written Exam
14D00402.2	Guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry	KU	MK	Written Exam/OSPE

#### 14D00403: ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS



COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00403	<b>UNDER GRADUATES (BDS) - ORTHODONTICS &amp; DENTOFACIAL ORTHOPAEDICS</b>			
14D00403.1	Understand about normal growth and development of facial skeleton and dentition.	KU	MK	Written exam / Viva voce
14D00403.2	Pinpoint aberrations in growth process both dental and skeletal and plan necessary treatment	KU	K	Written exam / Viva voce
14D00403.3	Diagnose the various malocclusion categories	KU	MK	Written exam / Viva voce
14D00403.4	Able to motivate and explain to the patient (and parent) about the necessity of treatment	KU	K	Viva Voce
14D00403.5	Plan and execute preventive orthodontics (space maintainers or space regainers)	KU/S	MK	Practical Exam (OSPE)
14D00403.6	Plan and execute interceptive orthodontics (habit breaking appliances)	KU/S	MK	Practical Exam (OSPE)
14D00403.7	Manage treatment of simple malocclusion such as anterior spacing using removable appliances	KU/S	MK	Practical Exam (OSPE)
14D00403.8	Handle delivery and activation of removable orthodontic appliances	KU/S	MK	Practical Exam (OSPE)
14D00403.9	Diagnose and appropriately refer patients with complex malocclusion to the specialist	KU/S	MK	DOPS/Viva Voce

#### 14D00404: PERIODONTOLOGY

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00404	<b>UNDER GRADUATES (BDS) - PERIODONTOLOGY</b>			
14D00404.1	Perform dental scaling ,diagnostic tests of periodontal diseases; to use the instruments for periodontal therapy and maintenance of the same.	KU/S	E	Written Exam/ Practical Exam (OSPE/OSCE)
14D00404.2	Attitude to impart the preventive measures namely, the prevention of periodontal diseases and prevention of the progress of the disease, develop an attitude to perform the treatment with full aseptic precautions; shall develop an attitude to prevent iatrogenic diseases; to conserve the tooth to the maximum possible time by	A	MK	Practical Exam (OSPE/OSCE) /DOPS



	maintaining periodontal health and to refer the patients who require specialist's care.			
--	---	--	--	--

**14D00405: PROSTHODONTICS AND CROWN & BRIDGE**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00405	<b>UNDER GRADUATES (BDS) - PROSTHODONTICS AND CROWN &amp; BRIDGE</b>			
14D00405.1	Able to understand and use various dental materials	KU	MK	Written Exam/Practical Exam (OSPE)/Viva Voce
14D00405.2	Competent to carry out treatment of conventional complete and partial removable dentures and fabricate fixed partial dentures	S	MK	OSCE/Written Exam/Viva Voce
14D00405.3	Able to carry out treatment of routine prosthodontic procedures.	S	MK	OSCE/Written Exam/Viva Voce
14D00405.4	Familiar with the concept of osseointegration and the value of implant-supported Prosthodontic procedures	KU/S	K	OSCE/Written Exam/Viva Voce

**14D00406: CONSERVATIVE DENTISTRY AND ENDODONTICS**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00406	<b>UNDER GRADUATES (BDS) - CONSERVATIVE DENTISTRY AND ENDODONTICS</b>			
14D00406.1	Competent to diagnose all carious lesions	KU	E	Written Exam
14D00406.2	Competent to perform Class I and Class II cavities and their restoration with amalgam	S	E	Practical OSPE/OSCE/Viva Voce
14D00406.3	Restore class V and Class III cavities with glass ionomer cement	S	MK	Practical OSPE/OSCE/Viva Voce
14D00406.4	Able to diagnose and appropriately treat pulpally involved teeth (pulp capping procedures)	S	K	Practical OSPE
14D00406.5	Able to perform RCT for anterior teeth	S	K	Practical Exam/Viva Voce
14D00406.6	Competent to carry out small composite restorations	S	K	Practical Exam OSCE



14D00406.7	Understand the principles of aesthetic dental procedures	S	MK	Viva Voce
------------	--	---	----	-----------

**14D00407: ORAL & MAXILLOFACIAL SURGERY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00407	<b>UNDER GRADUATES (BDS) - ORAL &amp; MAXILLOFACIAL SURGERY</b>			
14D00407.1	Able to apply the knowledge gained in the related medical subjects like pathology, microbiology etc.	KU	K	Written Exam/Viva Voce
14D00407.2	General medicine in the management of patients with oral surgical problem.	KU	K	Written Exam/Problem Solving
14D00407.3	Able to diagnose, manage and treat (understand the principles of treatment of) patients with oral Surgical problems.	KU	K	Written Exam/OSPE
14D00407.4	Knowledge of range of surgical treatments.	KU	MK	Written Exam/Viva Voce/Practical Exam
14D00407.5	Ability to decide the requirement of a patient to have oral surgical specialist opinion or treatment.	KU	E	Problem Solving
14D00407.6	Understand the principles of in-patient management.	KU	K	Written Exam/Viva Voce
14D00407.7	A graduate should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner. Be able to understand requisition of various clinical and laboratory	KU	E	Written Exam/Viva Voce
14D00407.8	Investigations and is capable of formulating differential diagnosis.	KU	MK	Practical Exam /Viva Voce
14D00407.9	Should be competent in the extraction of teeth under both local and general anaesthesia.	KU	E	Practical Exam (OSCE/OSPE)
14D00407.10	Should be able to carry out certain minor oral surgical procedures under L.A. like frenectomy,	KU	MK	Practical Exam (OSCE/OSPE)
14D00407.11	Alveolar procedures & biopsy etc.	KU	MK	Practical Exam (OSCE/OSPE)



**14D00408: PUBLIC HEALTH DENTISTRY**

COURSE CODE	COURSE OUTCOMES	DOMAIN	LEVEL	ASSESSMENT METHODS
14D00408	<b>UNDER GRADUATES (BDS) - PUBLIC HEALTH DENTISTRY</b>			
14D00408.1	Basis of public health, preventive dentistry, public health problems in India, Nutrition, Environment and their role in health, basics of dental statistics, epidemiological methods, National oral health policy with emphasis on oral health policy.	KU	K	Written Exam
14D00408.2	Identifying health problems affecting the society, conducting health surveys, conducting health education classes and deciding health strategies.	S	MK	Practical Exam
14D00408.3	Communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease.	C	MK	Viva Voce



## 5.0 METHODS OF ASSESSMENT OF LEARNING OUTCOMES: UNDERGRADUATE – BDS

### 5.1 EXAMINATIONS:

The B.D.S. degree examinations shall be conducted by affiliating universities – Madhya Pradesh Medical Science Univeristy.

(A) Evaluation is a continuous process, which is based upon criteria developed by the concerned authorities with certain objectives to assess the performance of the learner. This also indirectly helps in the measurement of effectiveness and quality of the concerned B.D.S. programme.

(B) Evaluation is achieved by two processes

#### 1. Formative or internal assessment

- Formative evaluation is done through a series of tests and examinations conducted periodically by the institution.
- **Internal Assessment Examination:** The continuing assessment examinations may be held frequently at least 3 times in a particular year and the average marks of these examinations should be considered. 10% of the total marks in each subject for both theory, practical and clinical examination separately should be set aside for the internal assessment examinations.

#### 2. Summative or university examinations.

- Summative evaluation is done by the university through examination conducted at the end of the specified course.
- The examination shall be open to a candidate who satisfies the requirements of attendance, progress and other rules laid down by the University.
- Any candidate who fails in one subject in an Examination is permitted to go to the next higher class and appears for the said failed subject and complete it successfully before he is permitted to appear for the next higher examination.

#### I B.D.S. Examination:

1. General anatomy including embryology and histology
2. General human physiology and biochemistry
3. Dental Anatomy, Embryology and Oral Histology

#### II B.D.S Examination.

1. General pathology and Microbiology
2. General and dental pharmacology and therapeutics
3. Dental Materials
4. Pre Clinical Conservative – Only Practical and Viva Voce
5. Pre Clinical Prosthodontics – Only Practical and Viva Voce

**III. B.D.S. Examination:**

1. General Medicine
2. General Surgery
3. Oral Pathology and Oral Microbiology

**IV. Final BDS (Fourth Year):**

1. Public Health Dentistry
2. Periodontology
3. Orthodontics and Dentofacial Orthopaedic
4. Oral Medicine and Radiology
5. Oral & Maxillofacial Surgery
6. Conservative and Endodontics
7. Prosthodontics and Crown & Bridge
8. Paediatric and Preventive Dentistry

**Written Examination:**

1. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum marks of 70.
2. In the subjects of Physiology & Biochemistry and Pathology & Microbiology each paper will be divided into two parts, A and B of equal marks.
3. The question paper should contain different types of questions like essay, short answer and objective type / M.C.Q's.
4. The nature of questions set, should be aimed to evaluate students of different standards ranging from average to excellent.
5. The questions should cover as broad an area of the content of the course. The essay questions should be properly structured and the marks specifically allotted.
6. The University may set up a question bank

**Practical And Clinical Examination:**

1. **Objective Structured Clinical Evaluation:** The present system of conducting practical and clinical examination at several universities provide chance for unrealistic proportions of luck. Only a particular clinical procedure or experiment is usually given for the examination. The clinical and practical examination should provide a number of chances for the candidate to express one's skills. A number of examination stations with specific instructions to be provided. This can include clinical procedures, laboratory experiments, spotters etc. Evaluation must be made objective and structured. The method of objective structured clinical examinations should be followed. This will avoid examiner bias because both the examiner and the examinee are given specific instructions on what is to be observed at each station.



2. **Records/ Log Books:** The candidate should be given credit for his records based on the scores obtained in the record. The marks obtained for the record in the first appearance can be carried over to the subsequent appearances if necessary.
3. **Scheme of clinical and practical examinations:** The specific scheme of clinical and practical examinations, the type of clinical procedures/ experiments to be performed and marks allotted for each are to be discussed and finalized by the Chairman and other examiners and it is to be published prior to the conduct of the examinations along with the publication of the time table for the practical examinations. This scheme should be brought to the notice of the external examiner as and when the examiner reports. The practical and clinical examinations should be evaluated by two examiners of which one shall be an external examiner appointed from other universities preferably outside the State. Each candidate should be evaluated by each examiner independently and marks computed at the end of the examination.
4. **Viva Voce:** Viva voce is an excellent mode of assessment because it permits a fairly broad coverage and it can assess the problem solving capacity of the student. An assessment related to the affective domain is also possible through viva voce. It is desirable to conduct the viva voce independently by each examiner. In order to avoid vagueness and to maintain uniformity of standard and coverage, questions can be pre-formulated before administering them to each student. Twenty marks are exclusively allotted for viva voce and that can be divided equally amongst the examiners, i.e., 10 marks per examiner.



## 5.2 MARKS DISTRIBUTION IN EACH SUBJECT:

Each subject shall have a maximum of 200 marks.		Theory	100 marks
		Practical/ Clinical	100 marks
<b>Theory (100 marks)</b>		<b>Practicals (100 marks)</b>	
University Written exam	70 marks	University Exam	90 Marks
Viva Voce	20 marks		
Internal assessment (written)	10 marks	Internal assessment (written)	10 marks
<b>Total</b>	<b>100 Marks</b>		<b>100 marks</b>
<b>Practical and Viva Voce Only in University Examination</b>			
Pre-clinical Prosthodontics			
Pre-clinical Conservative Dentistry.....			
Internal Assessment -	20 marks		
Practical -	60 marks		
Viva Voce -	20 marks		
Total	100 Marks		

## 5.3 CRITERIA FOR A PASS:

Fifty percent of the total marks in any subject computed as aggregate for theory, i.e., written, viva voce and internal assessment and practicals including internal assessment, separately is essential for a pass in all years of study.

For declaration of pass in a subject, a candidate shall secure 50% marks in the University examination both in Theory and Practical/ Clinical examinations separately, as stipulated below:

- A candidate shall secure 50% marks in aggregate in University theory including Viva Voce and Internal assessment obtained in University written examination combined together.
- In the University Practical/ clinical examination, a candidate shall secure 50% of University practical marks and Internal Assessment combined together.
- In case of pre clinical Prosthetic Dentistry and Pre clinical conservative dentistry in II BDS, where there is no written examination, minimum for pass is 50% of marks in Practical and Viva voce combined together in University examination including Internal Assessment i.e. 50/100 marks.
- Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% and above is eligible for Distinction. Only those candidates who pass the whole



examination in the first attempt will be eligible for distinction or class.

- First Class and Distinction etc. to be awarded by the University as per their respective rules.

**Grace Marks:** Grace marks upto a maximum of 5 marks may be awarded to students who have failed only in one subject but passed in all other subjects.

**Re-evaluation:** The objective of re-evaluation is to ensure that the student receives a fair evaluation in the university examination and to minimize human error and extenuating circumstances. There shall be two mechanisms for this purpose.

1. Re-totaling: The University on application and remittance of a stipulated fee to be prescribed by the university, shall permit a recounting or opportunity to recount the marks received for various questions in an answer paper/ papers for theory of all subjects for which the candidate has appeared in the university examination. Any error in addition of the marks awarded if identified should be suitably rectified.

2. Re-evaluation: Re-evaluation of theory papers in all years of study of the BDS course may be permissible by the university on application and remittance of a prescribed fee. Such answer script shall be re-evaluated by not less than two duly qualified examiners and the average obtained shall be awarded to the candidate and the result accordingly reconsidered. However in those universities where double evaluation provision exists, this provision of re-evaluation will not be applicable.



## 6.0 PROGRAMME: MASTERS OF DENTAL SURGERY (MDS)

### 6.1 PROGRAMME GOAL: MDS

The goals of the post-graduate training in various specialities is to train the graduate in Dental Surgery who will,

- practice respective speciality efficiently and effectively, backed by scientific knowledge and skill;
- exercise empathy and a caring attitude and maintain high ethical standards;
- continue to evince keen interest in professional education in the speciality and allied specialities whether in teaching or practice;
- willing to share the knowledge and skills with any learner, junior or a colleague;
- to develop the faculty for critical analysis and evaluation of various concepts and views and to adopt the most rational approach.

### 6.2 PROGRAMME OBJECTIVES :MDS

The objective of the post-graduate training is to train a student so as to ensure higher competence in both general and special area of interest and prepare him or her for a career in teaching, research and speciality practice. A student must achieve a high degree of clinical proficiency in the subject and develop competence in research and its methodology in the concerned field.

### 6.3 PROGRAM OUTCOMES: MDS

#### 6.3.1 Knowledge And Understanding: (KU)

The graduate should acquire the following during the period of training.

KU1: demonstrate understanding of basic sciences relevant to speciality;

KU2: describe etiology, pathophysiology, principles of diagnosis and management of common problems within the speciality in adults and children;

KU3: identify social, economic, environmental and emotional determinants in a given case and take them into account for planned treatment;

KU4: recognise conditions that may be outside the area of speciality or competence and to refer them to the concerned specialist;

KU5: update knowledge by self study and by attending courses, conferences and seminars pertaining to speciality;

KU6: undertake audit, use information technology and carry out research in both basic and clinical with the aim of publishing or presenting the work at various scientific gathering





### 6.3.2 Skills: (S)

A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

S1 : Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the condition;

S2 : Acquire adequate skills and competence in performing various procedures as required in the speciality.

### 6.3.3 Human Values, Ethical Practice and Communication Abilities

Graduate should develop during the training period the following attitudes.

AV1 : adopt ethical principles in all aspects of practice;

AV2 : foster professional honesty and integrity;

AV3 : deliver patient care irrespective of social status, caste, creed, or religion of the patient;

AV4 : develop communication skills, to explain various options available and obtain a true informed consent from the patient;

AV5 : provide leadership and get the best out of his team in a congenial working atmosphere;

AV6 : apply high moral and ethical standards while carrying out human or animal research;

AV7 : be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed;

AV8 : respect patient's rights and privileges including patient's right to information and right to seek a second opinion.



## 7.0 POST GRADUATE (MDS) LEARNING OUTCOMES AND ASSESSMENT METHODS

### 7.1 POST GRADUATE (MDS) - ORAL MEDICINE & RADIOLOGY

#### 7.1.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
Oral mucosal lesions, skeletal involvement of maxillofacial region, diagnostic procedures pertaining to them and latest information of imaging modules.	KU	E	Written Exam/ Practical Exam
Diagnostic skill in recognition of oral diseases with radiographic diagnosis and their management	S	E	Written Exam/Practical Exam/OSPE/OSCE
Research skills in handling scientific problems pertaining to oral treatment	S	MK	OSPE/OSCE/ Practical Exam
Clinical and Didactic skills in encouraging younger doctors to attain learning objectives	S	K	DOPS
The positive mental attitude and the persistence of continued learning need to be inculcated	A	K	DOPS

#### 7.1.2 Course outcome

Program	MDS-Oral Medicine and Radiology	
Course Code	Name of the Course	Course outcome
14M40112	Applied Anatomy, Physiology, Pathology and Pharmacology	<b>On completion of the course</b>
		1. The student would demonstrate sound theoretical knowledge and understanding of basic relevant sciences namely, the applied anatomy of the face and oral cavity, the basic physiologic processes, pathologic processes and the basics of pharmacologic applications 2. The student would be proficient in physical examination of the patient, identification of normal and abnormal functioning of the various systems of the body.
14M40113	Diagnosis, diagnostic methods and imageology	<b>On completion of the course</b>
		1. The student would possess ample understanding and knowledge of diagnosis and diagnostic methods, ionizing radiation, its applications in dentistry and its limitations.



	and Applied Oral Pathology	2. The student would be proficient in detailed physical examination of the oral and paraoral structures, identification of pathologies and techniques involved in conventional and advanced diagnostic radiographic examination. 3. Apply high moral and ethical standards while carrying out clinical and radiographic examinations.
14M40114	Oral Medicine, therapeutic s and laboratory investigations.	<b>On completion of the course</b> 1. The student would be proficient in describing the etiology, pathophysiology, principles of diagnosis and management of common oro facial disorders. 2. The student would be proficient in formulating a differential diagnosis and investigations plan and frame the treatment strategy. 3. The student would develop communication skills and ability to explain the disease process to the patient and to obtain a informed consent from the patient.
14M40115	Essay	<b>On completion of the course</b> 1. The student would be proficient in effectively and freely analyzing the problem presented by recalling factually. 2. The student would be an expert at synthesizing ideas and rendering a suitable opinion of the problem presented.

### 7.1.3 Examinations

#### Monitoring Learning Progress:

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Section IV

#### Schemes of Examination:

A. Theory:

**Part-I: Basic Sciences Paper**

**100 Marks**

**Part-II: Paper-I, Paper-II & Paper-III**

**300 Marks(100 each paper)**

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper- III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*



**PART-I : Applied Basic Sciences:** Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics

**PART-II :**

**Paper-I** : Oral and Maxillofacial Radiology

**Paper-II** : Oral Medicine, therapeutics and laboratory investigations

**Paper-III** : Essays (descriptive and analyzing type questions)

**B. Practical / Clinical Examination : 200 Marks**

**1<sup>st</sup> Day**

Clinical Case Presentation

2 Spotters 2 x 10 = 20 Marks

2 Short Cases 2 x 15 = 30 Marks

1 Long Case 1 x 50 = 50 Marks

---

**Total = 100 Marks**

Radiology Exercise

A) One Intra Oral Radiograph : 10 Marks

B) One Occlusal Radiograph : 30 Marks

A) Two Extra Oral Radiograph : 2 x 30 = 60 Marks Including technique and interpretation

**2<sup>nd</sup> Day**

**a. Viva Voce : 100 Marks**

**i. Viva-Voce examination : 80 marks**

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

**ii. Pedagogy Exercise : 20 marks**

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.2 POST GRADUATE (MDS) - ORAL & MAXILLOFACIAL SURGERY

### 7.2.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
To have acquired adequate knowledge and understanding of the etiology, pathophysiology and diagnosis, treatment planning of various common oral and Maxillofacial surgical problems both minor and major in nature	KU	E	Written Exam/Viva Voce
To have understood the general surgical principles like pre and post surgical management, particularly evaluation, post surgical care, fluid and electrolyte management, blood transfusion and post surgical pain management.	KU	E	Written Exam/Viva Voce
Understanding of basic sciences relevant to practice of oral and maxillofacial surgery	KU	E	Written Exam/Viva Voce
Able to identify social, cultural, economic, genetic and environmental factors and their relevance to disease process management in the oral and Maxillofacial region.	KU	MK	Written Exam/Viva Voce
Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of hepatitis and HIV.	KU	E	Written Exam/Viva Voce
To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures and order relevant laboratory tests and interpret them and to arrive at a reasonable diagnosis about the surgical condition.	S	E	Practical Exam / Viva Voce
To perform with competence minor oral surgical procedures and common maxillofacial surgery. To treat both surgically and medically the problems of the oral and Maxillofacial and the related area.	S	E	Practical Exam (OSCE/OSPE)



Capable of providing care for maxillofacial surgery patients.	S	E	Viva Voce
Develop attitude to adopt ethical principles in all aspect of surgical practice, professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.	A	E	Viva Voce
Willing to share the knowledge and clinical experience with professional colleagues.	A	E	DOPS
Willing to adopt new techniques of surgical management developed from time to time based on scientific research which are in the best interest of the patient	A	E	Practical Exam/DOPS
Respect patient right and privileges, including patients right to information and right to seek a second opinion.	A	E	DOPS
Develop attitude to seek opinion from an allied medical and dental specialists as and when required.	A	E	DOPS
Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular surgical problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time	C	E	DOPS
Develop the ability to communicate with professional colleagues.	C	E	DOPS
Develop ability to teach undergraduates.	C	MK	DOPS

### 7.2.2 Course outcome

Programme	Oral & Maxillofacial Surgery	
Course Code	Name of the Course	Course outcome
14M50127	Applied basic sciences	The student would be knowledgeable about:
		Development and growth of face, teeth and jaws,
		Age changes and evaluation of mandible in detail
		1. Congenital abnormality of orofacial regions
		2. Surgical anatomy of scalp , temple and face



		3. Anatomy and its applied aspects of triangles of neck and deep structures of neck
		4. Cranial facial bones and surrounding soft tissues
		5. Cranial nerves
		6. Tongue
		7. Temporal and infratemporal region and Temporomandibular joint in detail
		9. Orbits and its contents
		10. Muscles of face and neck
		11. General consideration of the structure and function of brain and applied anatomy of intracranial venous sinuses
		12. Cavernous sinus and superior sagittal sinus
		13. Brief consideration of autonomous nervous system of head and neck
		14. Functional anatomy of mastication, Deglutition and Speech
		15. Respiration and circulation
		16. Histology of skin, oral mucosa, connective tissue, bone, cartilage, cellularelements of blood vessels, Lymphatic , Nerves, Muscles
		17. Tooth and its surrounding structures
		18. Cross - sectional Anatomy of the head and neck, as applied in CT, MRI Interpretation
		19. Salivary glands - Anatomy, Embryology and Histology
		<b>APPLIED PHYSIOLOGY</b>
		1. Nervous system - physiology of nerve conduction, pain pathway, sympathetic andparasympathetic nervous system, hypothalamus and mechanism of controlling bodytemperature.
		2. Blood - its composition hemostasis, blood dyscrasias and its management,hemorrhage and its control, blood grouping, cross matching, blood componenttherapy, complications of blood transfusion, blood substitutes, auto transfusion, cellsavers.
		3. Digestive system - composition and functions of saliva, mastication, deglutition, digestion,assimilation, urine formation, normal and abnormal constituents.
		4. Respiratory system - respiration control of ventilation, anoxia, asphyxia, artificialrespiration, hypoxia - type and management
		5. CVS - cardiac cycle, shock, heart sounds, blood pressure, hypertension
		6. Endocrinology - metabolism of calcium , endocranial activity and disorder relating tothyroid gland, parathyroid gland, adrenal gland, pituitary



		gland, pancreas and gonads.
		7. Nutrition - general principles balanced diet, effect of dietary deficiency, protein energy malnutrition, nutritional assessment, metabolic responses to stress, need for nutritional support, enteral nutrition, routes of access to GIT, parenteral nutrition, access to central veins, nutritional support
		8. Fluid and electrolytic balance / acid base metabolism - the body fluid compartment, metabolism of water and electrolytes, factors maintaining hemostasis causes for treatment of acidosis and alkalosis.
		<b>APPLIED PATHOLOGY</b>
		1. Inflammation - acute and chronic inflammation, repair and regeneration, necrosis and gangrene and role of component system in acute inflammation, role of arachidonic acid and its metabolites in acute inflammation, growth factors in acute inflammation role of NSAIDs in inflammation, cellular changes in radiation injury and its manifestations.
		2. Wound management - wound healing factors influencing healing, properties of suture materials, and appropriate uses of sutures.
		3. Hemostasis - role of endothelium in thrombogenesis, arterial and venous thrombi, disseminated intravascular coagulation.
		4. Hypersensitivity - shock and pulmonary failure, types of shock, diagnosis, resuscitation, pharmacological support, ARDS and its causes and prevention, ventilation and support
		5. Neoplasia - classification of tumours, carcinogens and carcinogenesis, spread of tumors, characteristics of benign and malignant tumors, grading and staging of tumours various laboratory investigation.
		6. Chromosomal abnormalities with oro-facial manifestations.
		7. Basics of immunology - primary and acquired immunodeficiencies.
14M50128	Minor Oral Surgery and Trauma	The students would be well trained in the assessment and management of:
		1. Basic Exodontia
		2. Complicated Exodontia
		3. Surgical management of Impacted teeth
		4. Ectopically positioned and unerupted teeth
		5. Tooth Reimplantation and Transplantation
		6. Surgical uprighting and Repositioning
		7. Principles of Endodontic Microsurgery





		8. Periodontal Considerations for Oral Surgery
		9. Procedures Involving the Dentogingival Junction
		10. Pediatric Dentoalveolar Surgery
		11. Lasers in Oral and Maxillofacial Surgery
		12. Complications of Dentoalveolar Surgery
		The students would be able to diagnose and manage
		Medical emergencies like, prevention and management of altered consciousness (syncope, orthostatic hypotension, seizures, diabetes mellitus, adrenal insufficiency), hypersensitivity reactions, chest discomfort, and respiratory difficulty
		The students would be knowledgeable about
		1. Diagnosis and Perioperative Management of Head and Neck Injuries
		2. Basic Principles of Treatment: Hard and Soft Tissue injuries
		The students would be acquainted with the knowledge and clinical skills in the management of .
		1. Dentoalveolar Injuries
		2. Mandibular Fractures
		3. Temporomandibular Joint Region Injuries
		4. Zygomatic Complex Fractures
		5. Orbital Trauma
		6. Midface Injuries
		7. Frontal Sinus Fractures and associated Injuries
		8. Nasal Injuries
		9. Soft Tissue Injuries
		10. Special Soft Tissue Injuries
		11. Avulsive Hard Tissue Injuries
		12. Maxillofacial Injuries in Children
		13. Maxillofacial Injuries in the Elderly
		14. Complex Facial Trauma Patient
14M50129	Maxillofacial Surgery	The students would be acquainted with the knowledge and clinical skills in the management of
		1. <b>Salivary gland:</b> Sialography, Salivary fistula and management
		diseases of salivary gland - developmental disturbances, cysts, inflammation and sialolithiasis, Mucocele and Ranula, Tumors of salivary gland and their management, Staging of salivary gland tumors, Parotidectomy
		2. <b>Temporomandibular Joint:</b> Etiology, history signs, symptoms, examination and diagnosis of temporomandibular joint disorders,



		Ankylosis and management of the same with different treatment modalities, MPDS and management, Condylectomy - different procedures, Various approaches to TMJ, Recurrent dislocations - Etiology and Management
		<b>Oncology:</b> Biopsy, Management of pre-malignant tumors of head and neck region, Benign and Malignant tumors of Head and Neck region, Staging of oral cancer and tumor markers
		Management of oral cancer, Radial Neck dissection, Modes of spread of tumors, Diagnosis and management of tumors of nasal, paranasal, neck, tongue, cheek, maxilla and mandible
		Radiation therapy in maxillofacial regions, Lateral neck swellings
		<b>Orthognathic surgery:</b> Diagnosis and treatment planning, Cephalometric analysis, Model surgery, Maxillary and mandibular repositioning procedures, Segmental osteotomies, Management of apertognathia, Genioplasty, Distraction osteogenesis
		<b>Cysts and tumor of oro facial region:</b> Odontogenic and non-Odonfogenic tumors and their management ,Giant lesions of jawbone, Fibro osseous lesions of jawbone, Cysts of jaw
		<b>Laser surgery:</b> The application of laser technology in surgical treatment of lesions
		<b>Cryosurgery:</b> Principles, applications of cryosurgery in surgical management
		<b>Cleft lip and palate surgery:</b> Detailed knowledge of the development of the face, head and neck, Diagnosis and treatment planning Current concepts in the management of cleft lip and palate deformity
		Knowledge of Naso endoscopy and other diagnostic techniques in the evaluation of speech and hearing
		Concept of multidisciplinary team management
		<b>Aesthetic facial surgery:</b> Detailed knowledge of the structures of the face and neck including skin and underlying soft tissue, Diagnosis and treatment planning of deformities and conditions affecting facial skin, Underlying facial muscles, bone. Eyelids external ear Surgical management of post acne scarring, facelift, blepharoplasty, otoplasty, facial bone recontouring, etc
		<b>Craniofacial surgery:</b> Basic knowledge of developmental anomalies of the face, head and neck, Basic concepts in the diagnosis and planning of various head and neck anomalies including facial clefts, craniosynostosis syndromes, etc. Current concept in the management of Craniofacial anomalies



		<b>Implantology:</b> Principles for the Surgical Placement Of Endosseous Implants, Subperiosteal Implants, The Transmandibular Implant Reconstruction System, Single-tooth Replacement in Oral Implantology, Posterior Implant Restorations For Partially Edentulous Patients, Maxillary Sinus Grafts and Implants, Surgical Implant Failures, Soft Tissue Considerations
14M50130	Essay	The students would be able to diagnose, meticulously plan and manage competently various conditions in maxillofacial surgery including challenging cases.
		They would be knowledgeable about conventional and recent advances in the diagnosis and management of oral and maxillofacial conditions.
		The students would be well versed in basic surgical techniques and knowledgeable about the advanced skills required in maxillofacial surgery.

### 7.2.3 Examinations

<b>A. Theory:</b> Part-I:	Basic Sciences Paper	-	<b>100</b>
<b>Marks</b>			
Part-II: Paper-I, Paper-II & Paper-III		-	<b>300</b>
<b>Marks</b>			
(100 Marks for each Paper)			

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*

**PART-I** : Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.

#### **PART- II**

**Paper - I** : Minor Oral Surgery and Maxillofacial Trauma

**Paper - II** : Maxillofacial Surgery

**Paper - III** : Essays (descriptive and analyzing type questions)

<b>B.</b>	<b>Practical / Clinical Examination</b>	-	<b>200 Marks</b>
<b>1.</b>	<b>Minor Oral Surgery</b>	-	<b>100 Marks</b>



Each candidate is required to perform the minor oral surgical procedures under local anaesthesia. The minor surgical cases may include removal of impacted lower thirdmolar, cyst enucleation, any similar procedure where students can exhibit their professional skills in raising the flap, removing the bone and suturing the wound.

<b>2.</b>	<b>Case presentation and discussion:</b>		<b>100 Marks</b>
(a)	One long case	-	60 Marks
(b)	Two short cases	-	40 Marks (20 marks each)
<b>C. Viva Voce</b>		-	<b>100 Marks</b>
<i>i. Viva-Voce examination:</i>			<i>80 Marks</i>

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

*ii. Pedagogy:* *20 Marks*

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.3 POST GRADUATE (MDS) - PERIODONTOLOGY

### 7.3.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
Etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population	KU	MK	Written exam/Viva Voce
Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology	KU	MK	Written exam/Viva Voce
Various preventive periodontal measures	KU	MK	Written exam/Viva Voce
Treatment modalities of periodontal disease from historical aspect to currently available ones	KU	MK	Written exam/Viva Voce
Interrelationship between periodontal disease and various systemic conditions	KU	MK	Written exam/Viva Voce
Periodontal hazards due to estrogenic causes and deleterious habits and prevention of it	KU	MK	Written exam/Viva Voce
Rarities in periodontal disease and environmental/Emotional determinates in a given case	KU	MK	Written exam/Viva Voce
Recognize conditions that may be outside the area of his/her Speciality/ competence and refer them to an appropriate Specialist	KU	K	Written exam/Viva Voce
Decide regarding non-surgical or surgical management of the case	KU	MK	Written exam/Viva Voce
Update the student by attending courses, conferences and seminars relevant to periodontics or by self-learning process.	KU	K	Written exam/Viva Voce
Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his/her work in scientific journals	KU	MK	Written exam/Viva Voce
Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated	KU	E	Written exam/Viva Voce



Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population (Region wise)	KU	K	Written exam/Viva Voce
Oral Implantology	KU/S	K	Written exam/Viva Voce
Principals of Surgery and Medical Emergencies.	KU	MK	Written exam/Viva Voce
Inter disciplinary approach towards the soft tissues of the oral cavity with the help of specialist from other departments.	KU	MK	Written exam/Viva Voce
Take a proper clinical history, thorough examination of intra oral, extra oral, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis	S	E	OSPE/Viva Voce
Effective motivation and education regarding periodontal disease maintenance after the treatment	S	MK	OSPE
Perform both non-surgical & education regarding periodontal disease, maintenance after the treatment	S	E	Practical Exam/Viva Voce/OSPE/OSCE
Perform both non-surgical and surgical procedures independently	S	E	Practical Exam/Viva Voce/OSPE/OSCE
Provide Basic Life Support Service (BLS) recognizes the need for advance life support and does the immediate need for that.	S	MK	Viva Voce
Human values, ethical practice to communication abilities	KU/S	K	Viva Voce
Adopt ethical principles in all aspects of treatment modalities	S	MK	Viva Voce
To learn the principal of lip repositioning and perio esthetics surgeries.		E	Practical Exam/Viva Voce/OSPE/OSCE



### 7.3.2 Course outcome

Programme		MDS - Periodontology
Course Code	Name of the Course	Course outcome
14M40107	Applied basic sciences	1. Should have abroad overview of the current research and methods used in studying problems in periodontal disease.
		2. Should have an understanding of the broad range of infection diseases affecting the oral cavity .
		3. Should have an understanding the clinical and biological factors to be considered in the appropriate use of antimicrobial drugs
		4. Be aware of the contemporary principles and practices of laboratory diagnostic techniques and interpretation of laboratory reports.
		5. Should have an understanding of hospital acquired infections and infections in the compromised host
		6. Should have a basic knowledge on research methodology, biostatistics and be able to apply it in various research projects as well as dissertations.
14M40108	Normal periodontal structure and etiopathogenesis and epidemiology	1. Should have a understanding on the normal structure of periodontium and the contributing etiological factors resulting in the pathogenesis of periodontal diseases and be able to apply this knowledge in the diagnosis.
		2. Should be able to record indices and plan out epidemiological survey to assess the prevalence and incidence of early onset periodontitis and adult periodontitis in Indian Population
14M40109	Periodontal Diagnosis, Therapy And Oral Implantology	1. Should have a sound knowledge of the etiopathogenesis and apply it in diagnosing various periodontal diseases and should be familiar with various periodontal therapies available to treat those cases.
		2. Should have an updated knowledge on the recent advancements and be able to modify their treatment accordingly.
		3. Develop knowledge skill and the science of oral implantology. Should be aware of the various designs and placement of oral implants and follow up of implant restorations.
14M40110	Descriptive Analysing Type Question	1. Should be knowledgeable to provide clinical care for patients with complex problems that are beyond the treatment skills of general dentist and demonstrate evaluative and judgment skills in making appropriate decision regarding prevention, correction and referral to deliver comprehensive care to patients.
		2. Should be able to analyze various clinical scenarios and apply their knowledge accordingly.





### 7.3.3 Examinations

- A. Theory:** Part-I: Basic Sciences Paper - 100 Marks Part-II:  
**B. Paper-I, Paper-II & Paper-III - 300 Marks (100 each Paper)**

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

**Part-I:** Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.

**Part-II**

**Paper I:** Normal Periodontal structure, Etiology & Pathogenesis of Periodontal diseases, epidemiology as related to Periodontics

**Paper II:** Periodontal diagnosis, therapy & Oral Implantology

**Paper III:** Essays (descriptive and analyzing type questions)

Practical / Clinical Examination : 200 Marks

The clinical examination shall be of two days duration

**1<sup>st</sup> day**

Case discussion

- Long case - One
- Short case - One
- 

Periodontal surgery – Periodontal Surgery on a previously prepared case after getting approval from the examiners

**2<sup>nd</sup> day**

Post-surgical review and discussion of the case treated on the 1<sup>st</sup> day Presentation of dissertation & discussion

All the examiners shall participate in all the aspects of clinical examinations / Viva Voce

Distribution of Marks for Clinical examination (recommended)

a) Long Case discussion	75		
b) 1 short case	25		
c) Periodontal surgery	1.	Anesthesia	10





	2.	Incision	20
	3.	Post Surgery Evaluation	25
	4.	Sutures	10
	5.	Pack (if any)	10
Post - operative review			25
	<b>Total</b>		<b>200</b>

**Viva Voce :**

**100**

**Marks**

- i. Viva-Voce examination: 80 Marks  
 All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

Pedagogy Exercise :

20

***Marks***

A topic will be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.4 POST GRADUATE (MDS) - PEADIATRIC & PREVENTIVE DENTISTRY

### 7.4.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
Understand the principles of prevention and preventive dentistry right from birth to adolescence	KU	MK	Written Exam
Guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry	KU	E	DOPS
Prevent and intercept developing malocclusion	KU/S	MK	Written Exam/OSCE
Obtain proper clinical history, methodological examination of the child patient, perform essential diagnostic procedures and interpret them. and arrive at a reasonable diagnosis and treat appropriately	S	E	Practical Exam (OSCE/OSPE)/ Viva Voce
Be competent to treat dental diseases which are occurring in child patient.	S	E	OSCE/Viva Voce
Manage to repair and restore the lost / tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.	S	E	OSCE/Viva Voce
Manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.	S	MK	OSCE/Viva Voce
To acquire skills in managing efficiently life threatening conditions with emphasis on basic life support measures.	S	MK	OSCE/Viva Voce

### 7.4.2 Course outcome

Programme	MDS- Paedodontics & Preventive Dentistry	
Course Code	Name of the Course	Course outcome
14M10102	Applied Basic Sciences	1. Student should be able to understand applied Anatomy, genetics, Applied Physiology, Applied Pathology, Nutrition, Dietics, Growth & Development, Cariology and Fluoride.



		<p>2. Student will be get acquainted with Dental health concepts, Effects of civilization and environment, Dental Health delivery system, Public Health measures related to children along with principles of Paediatric Preventive Dentistry</p> <p>3. Student should be able develop an attitude of Counselling in Paediatric Dentistry</p> <p>4. Student should be able to do Case History Recording, Outline of principles of examination, diagnosis &amp; treatment planning.</p>
14M10103	Clinical Paedodontics	<p>1. Student should be competent to treat dental diseases which are occurring in child patient. Student should be able to manage to repair and restore the lost / tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.</p> <p>2. Student should be able to manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.</p> <p>3. Student should be able to acquire skills in managing efficiency life threatening condition with emphasis on basic life support measure.</p> <p>4. Student should able to develop an attitude to adopt ethical principles in all aspects of Paediatric dental practice along with professional honesty and integrity.</p>
14M10104	Preventive and Community Dentistry as applied to Paediatric Dentistry	<p>1. Student should be able to create a good oral health in the child with Installing a positive attitude and behaviour in children</p> <p>2. Student should able to understand the principles of prevention and preventive dentistry right from birth to adolescence</p> <p>3. Student should able to guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry</p> <p>4. Student should able to deliver care irrespective of the social status, cast, creed, and religion of the patients.</p> <p>5. Student should able to share the knowledge and clinical experience with professional colleagues with own willingness.</p>
14M10105	Essay	<p>1. For a given case, the student after a critical assessment should able to adopt new methods and techniques of Paediatric dentistry that is developed time to time, based on scientific researches, which are in the best interest of the child and patient.</p> <p>2. Student should able to respect child patient's rights and privileges, including child patient's right to information and right to seek a second opinion.</p>



### 7.4.3 Examinations

#### **Monitoring Learning Progress:**

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Section IV

#### **Scheme of Examination:**

<b>A. Theory:</b> Part-I: Basic Sciences Paper-	<b>100 Marks</b>
Part-II: Paper-I, Paper-II & Paper-III	<b>300 Marks</b>
(100 Marks for each Paper)	

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper- III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*

**Part-I: Applied Basic Sciences** - Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics Growth & Development and Dental plaque, Genetics.

#### **Part-II:**

##### **Paper-I :Clinical Paedodontics**

1. Conscious sedation, Deep Sedation & General Anesthesia in Pediatric Dentistry
2. Gingival & Periodontal Diseases in Children
3. Pediatric Operative Dentistry
4. Pediatric Endodontics
5. Traumatic Injuries in Children
6. Interceptive Orthodontics
7. Oral Habits in children
8. Dental Care of Children with special needs
9. Oral Manifestations of Systemic Conditions in Children & their Management
10. Management of Minor Oral Surgical Procedures in Children
11. Dental Radiology as Related to Pediatric Dentistry
12. Pediatric Oral Medicine & Clinical Pathology
13. Congenital Abnormalities in Children
14. Dental Emergencies in Children & Their Management



15. Dental Materials Used in Pediatric Dentistry
16. Case History Recording
17. Setting up of Pedodontic & Preventive Dentistry Clinic

**Paper-II: Preventive and Community Dentistry as applied to Pediatric Dentistry**

1. Child Psychology
2. Behavior Management
3. Child Abuse & Dental Neglect
4. Preventive Pedodontics
5. Cariology
6. Preventive Dentistry
7. Dental Health Education & School Dental Health Programmes:
8. Fluorides
9. Epidemiology
10. Comprehensive Infant Oral Health Care/Comprehensive cleft care
11. Principles of Bio-Statistics & Research Methodology & Understanding of Computers and Photography

**Paper-III: Essays (descriptive and analyzing type questions)**

**B. Practical / Clinical Examination : 200  
Marks**

The Clinical / Practical and Viva-Voce Examinations are conducted for a minimum of two days.

**First Day:**

**1. Case Discussion, Pulp Therapy i.e. Pulpectomy on a Primary Molar.**

Case Discussion	: 20 marks
Rubber Dam application	: 10 marks
Working length X-ray	: 20 marks
Obturation	: <u>20 marks</u>
<b>Total</b>	<b>70 marks</b>

**2. Case Discussion, Crown preparation on a Primary Molar for Stainless steel crown and cementation of the same.**

Case discussion	: 10 marks
Crown Preparation	: 20 marks Crown selection and
Cementation	: <u>20 marks</u>
<b>Total</b>	<b>50 marks</b>

**3. Case Discussion, band adaptation for fixed type of space maintainer and impression making.**

Case discussion	: 20 marks
Band adaptation	:20 marks
Impression	: <u>20 marks</u>
<b>Total</b>	<b>60 marks</b>

**Second Day:**

1. Evaluation of Fixed Space Maintainer and Cementation : 20 marks

C. Viva Voce : 100 Marks

i. *Viva-Voce examination* : 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. *Pedagogy Exercise* : 20 marks

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.5 POST GRADUATE (MDS) - PROSTHODONTICS AND CROWN & BRIDGE

### 7.5.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
On human anatomy, embryology, histology, applied in general and particularly to head and neck, Physiology & Biochemistry, Pathology Microbiology & virology; health and diseases of various systems of the body (systemic) principles in surgery and medicine, pharmacology, nutrition, behavioral science, age changes, genetics, Immunology, Congenital defects & syndromes and Anthropology, Bioengineering, Bio-medical & Biological Principles	KU	K	Written Exam
Knowledge of various Dental Materials used in the specialty and be able to provide appropriate indication, understand the manipulation characteristics, compare with other materials available, be adept with recent advancements of the same.	KU	MK	Written Exam
Knowledge and practice of history taking, Diagnosis, treatment planning, prognosis, record maintenance of oral, craniofacial and systemic region.	KU	MK	Written Exam/Practical Exam(OSCE)/ Viva Voce
Ability for comprehensive rehabilitation concept with pre prosthetic treatment plan including surgical re-evaluation and prosthodontic treatment planning, impressions, jaw relations, utility of face bows, articulators, selection and positioning of teeth, teeth	KU	E	Written Exam/Practical Exam(OSCE)/ Viva Voce
Instructions for patients in after care and preventive Prosthodontics and management of failed restorations shall be possessed by the students.	KU	E	Written Exam/Viva Voce



Understanding of all the applied aspects of achieving physical, psychological well-being of the patients for control of diseases and / or treatment related syndromes with the patient satisfaction and restoring function of Cranio mandibular system for a quality life of a patient.	KU	MK	Written Exam/Viva Voce
Ability to diagnose and plan treatment for patients requiring Prosthodontic therapy	KU	MK	Written Exam/Practical Exam/Viva Voce
Ability to read and interpret radiographs, and other investigations for the purpose of diagnosis and treatment planning.	KU	MK	Practical Exam(OSPE/ OSCE)
The theoretical knowledge and clinical practice shall include principles involved for support, retention, stability, esthetics, phonation, mastication, occlusion, behavioral, psychological, preventive and social aspects of Prosthodontics science of Oral and Maxillofacial Prosthodontics and Implantology	KU	MK	Written Exam/Viva Voce
Tooth and tooth surface restorations, Complete denture Prosthodontics, removable partial denture Prosthodontics, fixed prosthodontics and maxillofacial and Craniofacial Prosthodontics, implants and implant supported Prosthodontics, T.M.J. and occlusion, craniofacial esthetics, and biomaterials, craniofacial disorders, problems of psychogenic origin.	KU	MK	Written Exam / Viva Voce
Should have knowledge of age changes, geriatric psychology, nutritional considerations and prosthodontic therapy in the aged population.	KU	MK	Written Exam / Viva Voce
Should have ability to diagnose failed restoration and provide prosthodontic therapy and after care.	KU	E	DOPS





Should have essential knowledge on ethics, laws, and Jurisprudence and Forensic Odontology in Prosthodontics.	KU	MK	Written Exam / Viva Voce
Should know general health conditions and emergency as related to prosthodontics treatment like allergy of various materials and first line management of aspiration of prosthesis	KU	MK	Viva Voce
Should identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.	KU	K	DOPS/Viva Voce
Should identify cases, which are outside the area of his specialty / competence, refer them to appropriate specialists and perform interdisciplinary case management.	KU	MK	DOPS
To advice regarding case management involving surgical and interim treatment	KU	K	Written Exam / Viva Voce
Should be competent in specialization of team management in craniofacial prosthesis design.	KU	K	Written Exam / Viva Voce
To have adequate acquired knowledge, and understanding of applied basic, and systemic medical science knowledge in general and in particular to head and neck regions.	KU	K	Written Exam
Should attend continuing education programmes, seminars and conferences related to Prosthodontics.	KU	MK	DOPS
To teach and guide his/her team, colleagues and other students.	KU	K	DOPS
Should be able to use information technology tools and carry out research both in basic and clinical areas, with the aim of publishing his/her work and presenting his/her work at various scientific forums.	KU	MK	DOPS



Should have an essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risk of transmission of potential communicable and transmissible infections like Hepatitis and HIV.	KU	MK	Written Exam/Viva Voce
Should have an ability to plan and establish Prosthodontics clinic/hospital teaching department and practice management.	KU	K	
Should have a sound knowledge (of the applications in pharmacology, effects of drugs on oral tissues and systems of body and in medically compromised patients.	KU	K	Written Exam
Prosthodontic therapy, investigate the patient systemically, analyze the investigation results, radiographs, diagnose the ailment, plan the treatment, communicate it with the patient and execute it.	S/C	MK	Written Exam
To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.	S	K	Written Exam
Restore lost functions of stomatognathic system like mastication, speech, appearance and psychological comforts by understanding biological, biomedical, bioengineering principles and systemic conditions of the patients to provide quality health care in the craniofacial regions.	S	E	OSCE
Demonstrate good interpersonal, communication skills and team approach in interdisciplinary care by interacting with other specialties including medical specialty for planned team management of patients for craniofacial & oral acquired and congenital defects, temporomandibular joint syndromes, esthetics, Implant supported Prosthetics and problems of	S	MK	Practical Exam (OSPE/OSCE)



Psychogenic origins.			
Should be able to demonstrate the clinical competence necessary to carry out appropriate treatment at higher level of knowledge, training and practice skills currently available in their specialty area with a patient centered approach.	S	MK	Practical Exam (OSPE/OSCE)
Should be able to interpret various radiographs like IOPA, OPG, CBCT and CT. Should and be able to plan and modify treatment plan based on radiographic findings	S	MK	Written Exam/Viva Voce
Should be able to critically appraise articles published.	S	MK	DOPS
To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy.	S	K	DOPS
To perform Clinical and Laboratory procedures with a clear understanding of biomaterials, tissue conditions related to prosthesis and have required dexterity & skill for performing clinical and laboratory all procedures in fixed, removable, implant, maxillofacial, TMJ and esthetics Prosthodontics.	S	E	Practical Exam (OSPE/OSCE)
To carry out necessary adjunctive procedures to prepare the patient before prosthesis like tissue preparation and preprosthetic surgery and to prepare the patient before prosthesis / prosthetic procedures	S	MK	Practical Exam (OSPE/OSCE)/ Viva Voce
To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontics.	S	K	Viva Voce



To adopt ethical principles in Prosthodontic practice, Professional honesty, credibility and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.	A	K	DOPS
Should be willing to share the knowledge and clinical experience with professional colleagues.	A	MK	DOPS
Should develop an attitude towards quality, excellence, non-compromising in treatment.	A	MK	DOPS
Should be able to self-evaluate, reflect and improve on their own.	A	K	DOPS
Should pursue research in a goal to contribute significant, relevant and useful information, concept or methodology to the scientific fraternity.	A	K	Viva Voce/DOPS
Should be able to demonstrate evidence-based practice while handling cases	A	K	DOPS
Should be willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which are in patient's best interest.	A	K	DOPS
Should respect patient's rights and privileges, including patient's right to information and right to seek second opinion.	A	MK	DOPS
To develop communication skills, in particular and to explain treatment options available in the management.	C	MK	DOPS
To provide leadership and get the best out of his / her group in a congenial working atmosphere.	C	K	DOPS
Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patient.	C	MK	DOPS



To develop the ability to communicate with professional colleagues through various media like Internet, e-mails, videoconferences etc. to render the best possible treatment.	C	MK	DOPS
Should demonstrate good explanatory and demonstrating ability as a teacher in order to facilitate learning among students	C	K	DOPS

### 7.5.2 Course outcome

Programme		MDS in Prosthodontics and Crown & Bridge
Course Code	Name of the course	Course outcome
14M50137	Applied Anatomy, Physiology, Pathology and Dental Materials	1.The candidate would possess knowledge about applied basic and systematic medical sciences.
		2. The candidate would be able to examine the patients requiring Prosthodontics therapy, investigate the patient systemically, analyze the investigation results.
		3.The candidate would diagnose the ailment, plan a treatment, communicate it with the patient and execute it.
14M50138	Removable Prosthodontics and Oral Implantology	1.The candidate would possess knowledge about age changes and Prosthodontic Therapy for the aged related to removable Prosthodontics and oral Implantology
		2.The candidate would be able to demonstrate the clinical competence to restore lost functions of stomatognathic system namely mastication, speech, appearance and psychological comforts by removable prosthesis.
		3.The candidate would be able to adopt ethical principles in Prosthodontic practice. Professional honesty and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.
14M50139	Fixed Prosthodontics	1.The candidate would be understand the prevalence and prevention of diseases of craniomandibular system related to fixed prosthetic dentistry.
		2.The candidate would be willing to adopt new methods and techniques in fixed prosthodontics from time to time based on scientific research, which is in patient’s best interest.



		3.The candidate would be able to communicate in simple understandable language with the patient and explain the principles of fixed prosthodontics to the patient
14M50139	Essay	1.The candidate would be able to outline the knowledge, procedural and operative skills needed in Masters Degree in Prosthodontics.
		2.The candidate would possess comprehensive knowledge and the ability to apply the same in all the sub branches of prosthodontics in toto.

### 7.5.3 Examinations

**Theory:** Part-I : Basic Sciences Paper - **100 Marks**  
 Part-II : Paper-I, Paper-II & Paper-III - **300 Marks**  
 (100 Marks for each Paper)

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part 1 examination consists of two essays of 25 marks each and 10 short answers of 5 marks each. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I , Paper-II and Paper III shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Distribution of topics for each paper will be as follows:

**Part-I** : *Applied Basic Sciences: Applied Anatomy*  
 Nutrition & Biochemistry, Pathology & Microbiology, virology, Applied  
 Dental anatomy & histology, Oral pathology & oral Microbiology, Adult  
 and geriatric psychology. Applied dental materials.

#### Part-II

*Paper-I : Removable Prosthodontics and Implant supported prosthesis (Implantology), Geriatric dentistry and Cranio facial Prosthodontics*

*Paper-II : Fixed Prosthodontics, Occlusion, TMJ and esthetics. Paper-III : Essays (descriptive and analyzing type questions)*

**A. Practical / Clinical Examination : 200 Marks**

1. **Presentation of treated patients and records during their 3 years Training period 35 Marks**
  - a. C.D. 1 mark
  - b. R. P.D. 2 marks
  - c. F.P.D. including single tooth and surface restoration 2 marks
  - d. I.S.P. 5 marks
  - e. Occlusal rehabilitation 5 marks
  - f. T.M.J. 5 marks
  - g. Maxillofacial Prosthesis 5 marks
  - h. Pre Clinic Exercises 10 marks



## 2. Presentation of Clinical Exam CD patient's prosthesis including insertion 75 Marks

1.	Discussion on treatment plan and patient review	10 marks
2.	Tentative jaw relation records	5 marks
3.	Face Bow – transfer	5 marks
4.	Transferring it on articulators	5 marks
5.	Extra oral tracing and securing centric and protrusive/lateral, record	15 marks
6.	Transferring records on articulator and programming.	5 marks
7.	Selection of teeth	5 marks
8.	Arrangement of teeth	10 marks
9.	Waxed up denture trial	10 marks
10.	Check of Fit, insertion and instruction of previously processed characterised, anatomic complete denture Prosthesis	5 marks

### ALL STEPS WILL INCLUDE CHAIRSIDE, LAB AND VIVA VOCE

#### 3. Fixed Partial Denture 35 Marks

- a. Case discussion including treatment planning and selection of Marks patient for F.P.D. 5
- b. Abutment preparation isolation and fluid control marks 15
- c. Gingival retraction and impressions (conventional/ CAD marks CAM impressions 10
- d. Cementation of provisional restoration 5 marks

#### 4. Removable Partial Denture 25 Marks

- a. Surveying and designing of partial dentate cast. 5 marks
- b. Discussion on components and material selection including occlusal schemes. 10 marks

#### 5. Implant supported prosthesis (2<sup>nd</sup> stage- protocol) 30 marks

- a. Case discussion including treatment planning and selection of patient for ISP 10 marks
- b. II stage preparation, Abutment selection, placement, evaluation 10 marks
- c. Implant impression and making of cast 10 marks

### B. Viva Voce : 100 Marks

#### I. Viva-Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expressions, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.





## 7.6 POST GRADUATE (MDS) - CONSERVATIVE DENTISTRY AND ENDODONTICS

### 7.6.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
Describe etiology, pathophysiology, periapical diagnosis and management of common restorative situations, endodontic situations that will include contemporary management of dental caries, management of trauma and pulpal pathosis including periodontal situations.	KU	E	Written Exam / Viva Voce
Demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics.	KU	E	Written Exam / Viva Voce
Identify social, economic, environmental and emotional determinants in a given case or community and take them into account for planning and execution at individual and community level.	KU	MK	Written Exam / Viva Voce
Ability to master differential diagnosis and recognize conditions that may require multi disciplinary 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.	KU	E	Written Exam / Viva Voce
Update himself by self-study and by attending basic and advanced courses, conferences, seminars, and workshops in the specialty of Conservative Dentistry-Endodontics-Dental Materials and Restorative Dentistry.	KU	E	Viva Voce/DOPS
Ability to teach/ guide, colleagues and other students.	KU	E	DOPS
Take proper chair side history, examine the patient and perform medical and dental diagnostic procedures as well as perform	S	E	Practical OSPE/OSCE





relevant tests and interpret to them to come to a reasonable diagnosis about the dental condition in general and Conservative Dentistry – Endodontics in particular. And undertake complete patient monitoring including preoperative as well as post operative care of the patient.			
Perform all levels of restorative work, surgical and non-surgical Endodontics as well as endodontic-periodontal surgical procedures as part of multidisciplinary approach to clinical condition.	S	E	Practical Exam OSPE/OSCE
Provide basic life saving support in emergency situations.	S	MK	Problem Solving
Manage acute pulpal and pulpo periodontal situations.	S	E	Practical Exam OSPE/OSCE
Have a thorough knowledge of infection control measures in the dental clinical environment and laboratories.	S	E	Practical Exam / Viva Voce
Should have proper knowledge of sterilization procedures	S	E	Practical Exam / Viva Voce
Adopt ethical principles in all aspects of restorative and contemporary Endodontics including non-surgical and surgical Endodontics.	V/C	E	DOPS/Viva Voce
Professional honesty and integrity should be the top priority.	V/C	E	DOPS
Dental care has to be provided regardless of social status, caste, creed or religion of the patient.	V/C	E	DOPS
Develop communication skills in particular to explain various options available for management and to obtain a true informed consent from the patient.	V/C	E	DOPS
Apply high moral and ethical standards while carrying on human or animal research.	V/C	MK	DOPS



He/She shall not carry out any heroic procedures and must know his limitations in performing all aspects of restorative dentistry including Endodontics.	V/C	MK	DOPS
Respect patient's rights and privileges including patients right to information.	V/C	E	DOPS

### 7.6.2 Course outcome

Programme		MDS- Conservative Dentistry & Endodontics
Course Code	Name of the Course	Course outcome
14M20122	Applied Basic Science	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
14M20123	Conservative Dentistry	1. Students would be able to describe aetiology, pathophysiology, diagnosis and management of common restorative situations, that will include contemporary management of dental caries, non-carious lesions and hypersensitivity.
		2. Students would be able to take proper chair side history, examine the patient and perform medical and dental diagnostic procedures; as well as perform relevant tests and interpret them to come to a reasonable diagnosis about the dental condition
		3. Perform all levels of restorative work including Aesthetic procedures and treatment of complicated restorative procedures
14M20124	Endodontics	1. Students would be able to describe aetiology, pathophysiology, periapical diagnosis and management of common endodontic situations that will include contemporary management of trauma and pulpal pathoses including endo-periodontal situations.



		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 endosseous 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
14M20125	Long Essay	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

### 7.6.3 Examinations

<b>A. Theory:</b> Part-I:	Basic Sciences Paper	-	<b>100</b>
<b>Marks</b>	Part-II: Paper-I, Paper-II & Paper-III	-	<b>300 Marks</b> (100 Marks for each Paper)

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper- III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*

**PART-I** : Applied Basic Sciences: Applied Anatomy, Physiology, Pathology including Oral Microbiology, Pharmacology, Biostatistics and Research Methodology and Applied Dental Materials.

#### **PART-II**

<b>Paper-I</b>	:	Conservative Dentistry
<b>Paper-II</b>	:	Endodontics
<b>Paper-III</b>	:	Essays (descriptive and analyzing type questions)



**B. Practical/ Clinical Examination : 200 Marks**

The duration of Clinical and Viva Voce examination will be 2 days for a batch of four students. If the number of candidates exceeds 4, the programme can be extended to 3<sup>rd</sup> day.

**Day 1**

**Clinical Exercise I – Random case discussion – (2) - 10+10  
(Diagnosis, Treatment, Planning & Discussion)**

Cast core preparation

- |   |           |
|---|-----------|
| (i) Tooth Preparation                   | -20 marks |
| (ii) Direct Wax Pattern                 | -10 marks |
| (iii) Casting                           | -10 marks |
| (iv) Cementation                        | -05 marks |
| (v) Retraction & Elastomeric Impression | -05 marks |

**Clinical Exercise II -30 Marks (Inlay Exercise )**

- |  |           |
|--|-----------|
| (i) Tooth preparation for Class II Inlay<br>(Gold or Esthetic) | -20 marks |
| (ii) Fabrication of Indirect Pattern                           | 10 marks  |

**Day 2**

**Clinical Exercise III - 100  
Marks (Molar Endodontics)**

- |  |          |
|--|----------|
| (i) Local Anaesthesia and Rubber Dam application | 20 marks |
| (ii) Access Cavity                               | 20 marks |
| (iii) Working length determination               | 20 marks |
| (iv) Canal Preparation                           | 20 marks |
| (v) Master cone selection                        | 20 marks |

**C. Viva Voce : 100 Marks**

***i. Viva-Voce examination : 80 marks***

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

***ii. Pedagogy Exercise : 20 marks***

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.7 POST GRADUATE (MDS) - ORTHODONTICS & DENTOFACIAL ORTHOPEDICS

### 7.7.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment	KU	E	Written Exam / Viva Voce
The etiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems	KU	E	Written Exam / Viva Voce
Various treatment modalities in Orthodontics – preventive, interceptive and corrective.	KU	E	Written Exam / Viva Voce
Basic sciences relevant to the practice of Orthodontics	KU	MK	Written Exam / Viva Voce
Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro – facial deformities	KU	MK	Written Exam / Viva Voce
Factors affecting the long-range stability of orthodontic correction and their management	KU	E	Written Exam / Viva Voce
Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.	KU	E	Written Exam / Viva Voce
To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, and interpret them and arrive at a reasonable diagnosis about the Dento-facial deformities.	S	E	Practical Exam (OSCE/OSPE)



To be competent to fabricate and manage the most appropriate appliance – intra or extra oral, removable or fixed, mechanical or functional, and active or passive – for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of oro-facial deformities.	S	E	Practical Exam (OSCE/OSPE)
Develop an attitude to adopt ethical principles in all aspects of Orthodontic practice.	A	MK	DOPS/Viva Voce
Professional honesty and integrity are to be fostered	A	E	DOPS/Viva Voce
Treatment care is to be delivered irrespective of the social status, cast, creed and religion of the patients.	A	E	DOPS/Viva Voce
Willingness to share the knowledge and clinical experience with professional colleagues	A	E	DOPS/Viva Voce
Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which are in the best interest of the patient	A	E	DOPS/Viva Voce
Respect patients' rights and privileges, including patients right to information and right to seek a second opinion	A	E	DOPS
Develop attitude to seek opinion from allied medical and dental specialists as and when required	A	E	DOPS
Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Dento-facial problem and to obtain a true informed consent from them for the most appropriate treatment available at that point of time.	C	E	DOPS



Develop the ability to communicate with professional colleagues, in Orthodontics or other specialties through various media like correspondence, Internet, e-video, conference, etc. to render the best possible treatment.	C	E	DOPS
---	---	---	------

### 7.7.2 Course outcome

Programme	MDS- Orthodontics & Dentofacial Orthopaedics	
Course Code	Name of the Course	Course outcome
14M50132	Applied Basic Sciences	<b>1. Applied Anatomy</b>
		Under anatomy they would have learnt about
		Prenatal and post natal growth of head, bone growth, assessment of growth and development, muscles of mastication, Development of dentition and occlusion.
		<b>2. Applied Physiology</b>
		Under Physiology they would have learnt about Endocrinology and its disorders, Calcium and its metabolism, Nutrition-metabolism and their disorders, Muscle physiology, craniofacial biology, bleeding disorders.
		<b>3. Dental Materials</b>
		Under Dental Materials they would have learnt about Gypsum products, impression materials, acrylics, composites, banding and bonding cements, wrought metal alloys, orthodontic arch wires, elastics, applied physics, specification and tests methods, survey of all contemporary and recent advances of above.
		<b>4. Genetics</b>
		Under Genetics they would have learnt about 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 relationship to Orthodontic management of patients
		<b>5. Physical Anthropology</b>
		Under Physical Anthropology they would have learnt about Evolutionary development of dentition, Evolutionary development of jaws
		<b>6. Pathology</b>
		Under Pathology they would have learnt about inflammation, and necrosis
<b>7. Biostatistics</b>		





		<p>Under Biostatistics they would have learnt about Statistical principles, Sampling and Sampling technique, Experimental models, design and interpretation, Development of skills for preparing clear concise and cogent scientific abstracts and Publication.</p>
		<p><b>8. Applied research methodology in Orthodontics</b></p>
		<p>Under Applied research methodology in Orthodontics they would have learnt about Experimental design, Animal experimental protocol, Principles in the development, execution and interpretation of methodologies in Orthodontics, Critical Scientific appraisal of literature.</p>
14M50133	Diagnosis & Treatment planning	<p><b>1. Orthodontic history</b></p> <p>Under Orthodontic History they would have learnt about</p> <p>Historical perspective, Evolution of orthodontic appliances, Pencil sketch history of Orthodontic peers, History of Orthodontics in India.</p> <p><b>2. Concepts of occlusion and esthetics</b></p> <p>Under this, the students would learn about Structure and function of all anatomic components of occlusion, Mechanics of articulation, Recording of masticatory function, Diagnosis of Occlusal dysfunction, Relationship of TMJ anatomy and pathology and related neuromuscular physiology.</p> <p><b>3. Etiology and Classification of malocclusion</b></p> <p>Under this, the students would learn about, a comprehensive review of the local and systemic factors in the causation of Malocclusion and Various classifications of malocclusion.</p> <p><b>4. Dentofacial Anomalies</b></p> <p>Under this, the students would learn about, anatomical, physiological and pathological characteristics of major groups of developmental defects of the orofacial structures.</p> <p><b>5. Child and Adult Psychology</b></p> <p>Under this, the students would learn about Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped child, Motivation and Psychological problems related to malocclusion / orthodontics, Adolescent psychology, Behavioral psychology and communication.</p> <p><b>6. Diagnostic procedures and treatment planning in orthodontics</b></p> <p>Under this, the students would learn about Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped child, Motivation and</p>





		Psychological problems related to malocclusion / orthodontics, Adolescent psychology, Behavioral psychology and communication.
		<b>7. Cephalometrics</b>
		Under this the student would learn about, Instrumentation, Image processing, Tracing and analysis of errors and applications, Radiation hygiene, Advanced Cephalometrics techniques, Comprehensive review of literature, Video imaging principles and application.
		<b>8. Practice management in Orthodontics</b>
		Under this the student would learn about, Economics and dynamics of solo and group practices, Personal management, Materials management, Public relations, Professional relationship, Dental ethics and jurisprudence, Office sterilization procedures, Community based Orthodontics
14M50134	Clinical Orthodontics	<b>1. Myofunctional Appliances</b>
		The students will be capable of diagnosing and interpreting the knowledge obtained to treat developing malocclusion at a younger age.
		<b>2. Dentofacial Orthopaedics</b>
		The students will develop acumen to identify and deliver treatment regimes using orthopaedic appliances to the appropriate cases.
		<b>3. Cleft Lip &amp; Palate Rehabilitation</b>
		The students will be trained to treat the CLCP cases with empathy starting with Naso alveolar moulding at the infant stage and then systematically treat the malocclusion using removable / fixed orthodontics during the mixed & permanent dentition by harmonizing the treatment plan with the other members of the multidisciplinary cleft team.
		<b>4. Biology of tooth movement</b>
		Basic understanding of the applied anatomy & physiology regarding to tooth & its surrounding structures will be inculcated into the student, so that the results of application of orthodontic forces can be understood and clinically used.
		<b>5. Orthodontics/ Orthognathic Surgery</b>
		Students will be thoroughly trained in conjoint diagnosis & treatment planning of cases requiring surgical intervention.
		<b>6. Ortho/ Perio/ Prostho inter relationship</b>
		Students will be trained in treating complicated cases requiring a multi-disciplinary approach in patient management.
		<b>7. Basic Principles of mechanotherapy</b>
		Students will be trained in designing , construction , fabrication & management of



		cases using both removable & fixed orthodontics .
		<b>8. Applied preventive aspects in Orthodontics</b>
		A comprehensive view of diagnosing & preventing caries, periodontal diseases to maintain proper inter arch relationship.
		<b>9. Interceptive orthodontics</b>
		Students will be trained in growth guidance, diagnosing & treatment planning of early malocclusion both at mixed/ permanent dentition.
		<b>10. Retention &amp; relapse</b>
		Inculcating the acumen to analyze post treatment stability to prevent any relapse.
14M50135	Essay	<b>1. Recent Advances</b>
		The Students would be trained in above mentioned topics in detail, so that the student would know the recent updates along with the previous literature available.

### 7.7.3 Examinations

**A. Theory:** Part-I: Basic Sciences Paper - 100

**Marks**

Part-II: Paper-I, Paper-II & Paper-III - 300

**Marks**

(100 Marks for each Paper)

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper- III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*

**PART-I:** Applied Basic Sciences: Applied anatomy, Physiology, Dental Materials, Genetics, Pathology, Physical Anthropology, Applied Research methodology, Bio-Statistics and Applied Pharmacology.

**PART-II**

**Paper I:** Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic procedures and treatment planning in Orthodontics, Practice management in Orthodontics



**Paper II :** Clinical Orthodontics

**Paper III :** Essays (descriptive and analyzing type questions)

**B. Practical / Clinical Examination : 200 Marks**

**Exercise No: 1 50 Marks**

**Functional Case :**

Selection of case for functional appliance and recording of construction bite.  
Fabrication and delivery of the appliance the next day.

**Exercise No: 2 : 50 Marks**

1. III stage with auxiliary springs/Wire bending of any stage of fixed orthodontics (OR)
2. Bonding of SWA brackets and construction of suitable arch wire.

**Exercise No. 3 75 Marks**

**Display of records of the treated cases (Minimum of 5 cases)**

**Exercise No: 4 25 Marks**

**Long case discussions**

**Time allotted for each exercise:**

No	Exercise	Marks allotted	Proximate Time
1	Functional appliance	50	1 hour (each day)
2	III stage mechanics / Bonding and arch wire fabrication	50	1 hr 30 min
3	Display of case records (a minimum of 5 cases to be presented along with all the patients and records)	75	1 hour
4	Long cases	25	2 hours

**Note: The complete records of all the cases should be displayed (including transferred cases)**

**C. Viva Voce : 100 Marks**

**i. Viva-Voce examination:**

*80 marks*

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

**ii. Pedagogy Exercise:**

*20 marks*

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.8 POST GRADUATE (MDS) - ORAL PATHOLOGY & ORAL MICROBIOLOGY

### 7.8.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
Nature of oral diseases, their causes, processes and effects.	S	MK	Written Exam/OSPE/ Viva Voce
To Carry out routine diagnostic procedures including hematological, cytological, microbiological, Immunological and ultra structural investigations.	S	E	Written Exam/OSPE/ Viva Voce
Understanding of current research methodology, collection and interpretation of data, ability to carry out research projects on clinical and or epidemiological aspects, a working knowledge on current databases, automated data retrieval systems, referencing and skill in writing scientific papers.	KU	MK	Written Exam/ Viva Voce
To present scientific data pertaining to the field, in conferences both as poster and verbal presentations and totake part in group discussions.	KU/C	MK	Written Exam/ Viva Voce

### 7.8.2 Course outcome

Programme	MDS- Oral Pathology & Microbiology	
Course Code	Name of the Course	Course outcome
14M40117	Applied Basic Science	1. The students should have basic knowledge of biostatistics and research methodology.
		2. They would have learnt the anatomy, histology, biochemical and physiology of oral and paraoral structure.
		3. They would have learnt the basic pathology, microbiology and basic molecular aspects of pathology.
14M40118	Oral Pathology, Microbiology,	1. The student should have to understand the pathological processes of oral diseases.



	Immunology And Forensic Odontology	<p>2. The student would have to understand the pathological processes of oral diseases, compare and diagnose based on clinical, radiographical and histopathological findings which involves the oral and paraoral structures.</p> <p>3. They would have learnt and perform the preparation of ground sections oral smears and histology slides.</p> <p>4. Student would have studied and be able to identify and diagnose the disease based on microscopy.</p>
14M40119	Labrotary Techniques , Diagnosis And Oncology	<p>1. The students should have basic knowledge of biopsy procedure and slide preparation.</p> <p>2. They would have the basic knowledge on laboratory chemicals and equipments.</p> <p>3. Student should have learnt to identify and appreciate the microscopic slide and writing a report on oral diseases /lesion.</p> <p>4. Student should have knowledge on Basic hematological tests, urine analysis and its clinical significance.</p>
14M40120	Essay	<p>1. Student should have comprehensive knowledge on oral and paraoral structures and related pathologies and also on recent advanced methodology / techniques and molecular aspect.</p>

### 7.8.3 Examinations

#### Monitoring Learning Progress:

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring should be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment is done using checklists that assess various aspects. Checklists are given in Section IV.

#### Scheme of Examination:

<b>A. Theory:</b> Part-I:	Basic Sciences Paper	-	<b>100</b>
<b>Marks</b>			
Part-II:	Paper-I, Paper-II & Paper-III	-	<b>300</b>
<b>Marks</b>			

(100 Marks for each Paper)

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25



marks each and five questions carrying 10 marks each. Paper-III will be on Essays. Three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*

**PART-I** : Applied Basic Sciences: Applied Anatomy, Physiology (General and oral), Cell Biology, General Histology, Biochemistry, General Pathology, General Pharmacology specially related to drug induced oral mucosal lesions, General and systemic Microbiology, Virology, Mycology, Basic Immunology, Oral Biology (Oral and Dental Histology), Biostatistics and Research Methodology

### **PART-II**

**Paper-I** : Oral pathology, Oral Microbiology & Immunology and Forensic Odontology

**Paper-II** : Laboratory techniques & Diagnosis and Oral Oncology

**Paper-III** : Essays (descriptive and analyzing type questions)

#### **B. Practical/Clinical Examination -200 Marks**

##### **Case Presentation**

Long case- 20 marks

Short case- 10 marks

**Clinical Hematology** (any two investigations) -20 Marks

Hb%, bleeding time, clotting time, Total WBC count, Differential WBC count and ESR

**Smear Presentation** 20 marks

Cytology or microbial smear and staining

**Paraffin sectioning and H & E Staining** - 30 Marks

**Histopathology slide discussion** - 100 Marks

**Viva Voce** - **100 Marks**

i. **Viva-Voce examination** - 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents.

ii. **Pedagogy Exercise** - 20 marks

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.



## 7.9 POST GRADUATE (MDS) - PUBLIC HEALTH DENTISTRY

### 7.9.1 Programme Specific outcome and Assessment

PROGRAMME SPECIFIC OUTCOME	DOMAIN	LEVEL	ASSESSMENT METHODS
Applied basic sciences knowledge regarding etiology, diagnosis and management of the prevention, promotion and treatment of all the oral conditions at the individual and community level.	KU	MK	Written Exam/Viva Voce
Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.	KU	MK	Written Exam/Viva Voce
Ability to conduct Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi - disciplinary approach.	KU	E	Problem Solving/Written Exam/Viva Voce
Ability to act as a consultant in community Oral Health, teach, guide and take part in research (both basic and clinical), present and publish the outcome at various scientific conferences and journals, both national and international level.	KU	MK	DOPS
Take history, conduct clinical examination including all diagnostic procedures to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis.	S	E	Practical Exam/OSPE/Viva Voce
Plan and perform all necessary treatment, prevention and promotion of Oral Health at the individual and community level.	S	MK	Prbolem Solving/OSCE/Viva Voce
Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level.	S	E	Problem Solving/OSPE/Viva Voce





Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.	S	MK	Practical Exam/OSPE/Viva Voce
Develop appropriate person power at various levels and their effective utilization.	S	K	OSPE/Viva Voce
Conduct survey and use appropriate methods to impart Oral Health Education.	S	MK	Problem Solving/OSPE/Viva Voce
Develop ways of helping the community towards easy payment plan, and followed by evaluation for their oral health care needs.	S	K	Viva Voce
Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.	S	MK	Problem Solving/OSPE/Viva Voce
Adopt ethical principles in all aspects of Community Oral Health Activities.	V	K	Viva Voce
To apply ethical and moral standards while carrying out epidemiological researches.	V	K	Viva Voce
Develop communication skills, in particular to explain the causes and prevention of oral diseases to the patient.	V	K	Viva Voce
Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed and promote teamwork approach.	V	K	Viva Voce
Respect patient's rights and privileges including patients right to information and right to seek a second opinion.	V	K	DOPS

### 7.9.2 Course outcome

Programme	MDS-Public Health Dentistry	
Course Code	Name of the Course	Course outcome
14M50142	Applied Anatomy, Physiology, Pathology, and	1 .Apply basic sciences knowledge regarding etiology, diagnosis and management of the prevention, promotion and treatment of all the





	Research methodology	<p>oral conditions at the individual and community level.</p> <p>2. Ability to Take history, conduct clinical examination including all diagnostic procedure to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis</p> <p>3. To apply ethical and moral standards while carrying out epidemiological researches.</p> <p>4. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed and promote teamwork approach.</p> <p>5. Respect patient's rights and privileges including patients right to information and right to seek a second opinion.</p>
14M50143	Public Health	<p>1. Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.</p> <p>2. Planning appropriate Community Oral Health Program conduct the program and evaluate at the community level.</p> <p>3. Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.</p> <p>4. To apply ethical and moral standards while carrying out epidemiological researches.</p>
14M50144	Dental Public Health	<p>1. Ability to conduct Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach.</p> <p>2. Develop appropriate person power at various levels and their effective utilization.</p> <p>3. Conduct survey and use appropriate methods to impart Oral Health Education.</p> <p>4. Respect patient's rights and privileges including patients right to information and right to seek a second opinion.</p>
14M50145	Essay	<p>1. Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.</p> <p>2. Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.</p> <p>3. Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.</p>



### 7.9.3 Examinations

#### Monitoring Learning Process:

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Section IV.

#### Scheme of Examination

<b>A. Theory:</b> Part-I: Basic Sciences Paper	<b>100 Marks</b>
Part-II: Paper-I, Paper-II & Paper-III (100 Marks for each Paper)	<b>300 Marks</b>

Written examination shall consist of Basic Sciences Paper (Part-I) of three hours duration and should be conducted at the end of First year of MDS course. Part-II Examination will be conducted at the end of Third year of MDS course. Part-II Examination will consist of Paper-I, Paper-II & Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper- III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: \*

**PART-I** : Applied Basic Sciences: Applied Anatomy and Histology, Applied Physiology and Biochemistry, Applied Pathology, Microbiology, Oral Pathology, Physical and Social Anthropology, Applied Pharmacology and Research Methodology and Biostatistics.

#### **PART-II** :

**Paper-I** : Public Health

**Paper-II** : Dental Public Health

**Paper-III** : Essays (descriptive and analyzing type questions)

#### **B. Practical / Clinical Examination** : 200 Marks

1. Clinical examination of at least 2 patients representing the community - includes history, main complaints, examination and recording of the findings, using indices for the assessment of oral health and presentation of the observation including diagnosis, comprehensive treatment planning. (50 Marks - 1 ½ Hrs)
2. Performing (50 Marks- 1 ½ Hrs)



- a. One of the treatment procedures as per treatment plan. (Restorative, surgical, rehabilitation)
  - b. Preventive oral health care procedure.
  - c. One of the procedures specified in the curriculum
2. Critical evaluation of a given research article published in an international journal  
(Marks – 1 Hour)
3. Problem solving – a hypothetical oral health situation existing in a community is given with sufficient data. The student as a specialist in community dentistry is expected to suggest practical solutions to the existing oral health situation of the given community.  
(50 Marks – 1 ½ Hours)

**B. Viva Voce : 100 Marks**

- i. Viva-Voce examination* : 80 marks  
All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.
- ii. Pedagogy Exercise* : 20 marks  
A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.

*Sri Aurobindo College of Dentistry*  
INDORE (M.P.)