

**Syllabus for Courses affiliated to the
Kerala University of Health Sciences
Thrissur 680596**



**Master of Dental Surgery (MDS)
Oral Medicine and Radiology
Course Code: 248**

**(2021-2022 Academic year onwards
Modified as per DCI MDS Course (3rd Amendment)
Regulations 2019)**

2. COURSE CONTENT

2.1. Title of course:

MDS ORAL MEDICINE AND RADIOLOGY

2.2. Objectives of course

1. Goals

The goals of postgraduate training in various specialities are to train the BDS graduate who will:

- Practice respective specialty 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 continuing professional education in the specialty and allied specialties irrespective of 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, to adopt the most rational approach.

2. Objectives

The objective is to train a candidate so as to ensure higher competence in both general and special area of interest and prepare him for a career in teaching, research and specialty practice. A candidate must achieve a high degree of clinical proficiency in the subject matter and develop competence in research and its methodology as related to the field concerned.

The above objectives are to be achieved by the time the candidate completes the course.

The objectives may be considered as under –

1. Knowledge (Cognitive Domain)
2. Skills (Psychomotor Domain)
3. Human values, ethical practice and communication abilities.

2.1. Knowledge

- Demonstrate understanding of basic sciences relevant to the specialty.
- Describe etiology, pathophysiology, principles of diagnosis and management of common problem within the specialty in adults and children.
- Identify social, economic, environmental and emotional determinants in a given case and take them into account for planning treatment.
- Recognize conditions that may be outside the area of specialty/competence and to refer them to an appropriate specialist.
- Update knowledge by self-study and by attending courses, conferences and seminars relevant to specialty.
- Undertake audit; use information technology and carryout research both basic and clinical with the aim of publishing or presenting the work at various scientific gatherings.

2.2. Skills

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

- Acquire adequate skills and competence in performing various procedures as required in the specialty.

2.3. Human values, ethical practice and communication abilities

- Adopt ethical principles in all aspects of practice. ▫ Foster professional honesty and integrity.
- Deliver patient care, irrespective of social status, caste, creed, or religion of the patient.
- Develop communication skills, in particular skill to explain various options available in management and to obtain a true informed consent from the patient.
- Provide leadership and get the best out of his team in congenial working atmosphere.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

2.3. Medium of instruction:

The medium of instruction for the course shall be English.

2.4. Course outline

Oral medicine is that specialty concerned with the basic diagnostic procedures and techniques useful in recognizing the diseases of the oral tissues of local and constitutional origin and their medical management. Radiology is a science dealing with x-rays and their uses in diagnosis and treatment of diseases in relation to orofacial diseases.

2.5. Duration

The course shall be of **three years** duration. All the candidates for the degree of MDS are required to pursue the recommended course for at least three academic years as full time candidates in an institution affiliated to and approved for Postgraduate studies by KUHS, observing the norms put forward by the DCI.

- i. There will be no reduction for the course duration for any of the students including service candidates, diploma holders and those who have done senior house surgery or equivalent clinical or research experience.
- ii. No student shall be permitted to complete the course by attending more than 6 continuous years.
- iii. A candidate selected for admission in a Dental College is obliged to follow the curriculum, rules and regulations as approved by the Dental Council of India and the University.

Curriculum, rules or regulations are subject to changes from time to time.

2.6. Syllabus for MDS Part I

A. Applied Basic Sciences:

Applied Anatomy:

1. Gross anatomy of the face:

- Muscles of Facial Expression and Muscles of Mastication

- Facial nerve
- Facial artery
- Facial vein
- Lymphatic drainage
- Major salivary glands and its relations
- Infratemporal fossa in detail and TMJ

2. Neck region:

- Triangles of the neck with special reference to Carotid, Digastric triangles and midline structures
- Carotid system of arteries, Vertebral Artery, and Subclavian arteries
- Jugular system
 - Internal jugular
 - External jugular
- Lymphatic drainage
- Cervical plane
- Muscles derived from Pharyngeal arches
- Endocrine glands
 - Pituitary
 - Thyroid
 - Parathyroid
- Exocrine glands
 - Parotid
 - Thyroid
 - Parathyroid
- Sympathetic chain
- Facial spaces
- Cranial nerves- V, VII, IX, XI, & XII

3. Oral Cavity:

- Vestibule and oral cavity proper
- Tongue and teeth
- Palate – soft and hard

4. Nasal Cavity

- Nasal septum
- Lateral wall of nasal cavity
- Paranasal air sinuses

5. Pharynx:

6. Gross salient features of brain and spinal cord with references to attachment of cranial nerves to the brainstem

Detailed study of the cranial nerve nuclei of V, VII, IX, X, XI, XII

7. Osteology:

- Comparative study of foetal and adult skull
- Mandible: Development, ossification, age changes and evaluation of mandible in detail

8. Embryology:

- Development of face, palate, nasal septum and nasal cavity, paranasal air sinuses

- Pharyngeal apparatus in detail including the floor of the primitive pharynx
- Development of tooth in detail and the age changes
- Development of salivary glands
- Congenital anomalies of face must be dealt in detail.

9. Histology:

- Study of epithelium of oral cavity and the respiratory tract
- Connective tissue
- Muscular tissue
- Nervous tissue
- Blood vessels
- Cartilage
- Bone and tooth
- Tongue
- Salivary glands
- Tonsil, thymus, lymph nodes

B. Physiology:

1. General Physiology:

- a. Cell
- b. Body Fluid Compartments
- c. Classification
- d. Composition
- e. Cellular transport
- f. RMP and action potential

2. Muscle Nerve Physiology:

- a. Structure of a neuron and properties of nerve fibers
- b. Structure of muscle fibers and properties of muscle fibers
- c. Neuromuscular transmission
- d. Mechanism of muscle contraction

3. Blood:

- a. RBC and Hb
- b. WBC – Structure and functions
- c. Platelets – functions and applied aspects
- d. Plasma proteins
- e. Blood Coagulation with applied aspects
- f. Blood groups
- g. Lymph and applied aspects

4. Respiratory System:

- a. Air passages, composition of air, dead space, mechanics of respiration with pressure and volume changes
- b. Lung volumes and capacities and applied aspects
- c. Oxygen and carbon dioxide transport
- d. Neural regulation of respiration
- e. Chemical regulation of respiration
- f. Hypoxia, effects of increased barometric pressure and decreased barometric pressure

5. Cardio-Vascular System:

- a. Cardiac Cycle
- b. Regulation of heart rate/ Stroke volume / cardiac output / blood flow
- c. Regulation of blood pressure
- d. Shock, hypertension, cardiac failure

6. Excretory System:

- a. Renal function tests

7. Gastro – intestinal tract:

- a. Composition, functions and regulation of:
 - Saliva
 - Gastric juice
 - Pancreatic juice
 - Bile and intestinal juice
 - Mastication and deglutition

8. Endocrine System:

- a. Hormones – classification and mechanism of action
- b. Hypothalamic and pituitary hormones
- c. Thyroid hormones
- d. Parathyroid hormones and calcium homeostasis
- e. Pancreatic hormones
- f. Adrenal hormones

9. Central Nervous System:

- a. Ascending tract with special references to pain pathway

10. Special Senses:

- a. Gustation and Olfaction

C. Biochemistry:

1. Carbohydrates – Disaccharides specifically maltose, lactose, sucroa.

- a. Digestion of starch/absorption of glucose
- b. Metabolism of glucose, specifically glycolysis, TCA cycle, gluconeogenesis
- c. Blood sugar regulation
- d. Glycogen storage regulation
- e. Glycogen storage diseases
- f. Galactosemia and fructosemia

2. Lipids

- a. Fatty acids- Essential/non essential
- b. Metabolism of fatty acids- oxidation, ketone body formation, utilization ketosis
- c. Outline of cholesterol metabolism- synthesis and products formed from cholesterol

3. Protein

- a. Amino acids- essential/non essential, complete/ incomplete proteins

- b. Transamination/ Deamination (Definition with examples)
- c. Urea cycle
- d. Tyrosine-Hormones synthesized from tyrosine
- e. In born errors of amino acid metabolism
- f. Methionine and transmethylation

4. Nucleic Acids

- a. Purines/Pyrimidines
- b. Purine analogs in medicine
- c. DNA/RNA – Outline of structure
- d. Transcription/translation
- e. Steps of protein synthesis
- f. Inhibitors of protein synthesis
- g. Regulation of gene function

5. Minerals

- a. Calcium/Phosphorus metabolism specifically regulation of serum calcium levels
- b. Iron metabolism
- c. Iodine metabolism
- d. Trace elements in nutrition

6. Energy Metabolism

- a. Basal metabolic rate
- b. Specific dynamic action (SDA) of foods

7. Vitamins

- a. Vitamins and their metabolic role- specifically vitamin A, Vitamin C, Vitamin D, Thiamin, Riboflavin, Niacin, Pyridoxine

D. Pathology :

1. Inflammation:

- a. Repair and regeneration, necrosis and gangrene
- b. Role of complement system in acute inflammation
- c. Role of arachidonic acid and its metabolites in acute inflammation
- d. Growth factors in acute inflammation
- e. Role of molecular events in cell growth and intercellular signaling cell surface receptors
- f. Role of NSAIDS in inflammation
- g. Cellular changes in radiation injury and its manifestations

2. Homeostasis:

- a. Role of Endothelium in thrombo genesis
- b. Arterial and venous thrombi
- c. Disseminated Intravascular Coagulation
- d. Shock:Pathogenesis of hemorrhagic, neurogenic, septic, cardiogenic shock, circulatory disturbances, ischemic hyperemia, venous congestion, edema, infarction

3. Chromosomal Abnormalities:

- a. Marfan's syndrome
- b. Ehler's Danlos Syndrome

c. Fragile X Syndrome

4. Hypersensitivity:

- a. Anaphylaxis
- b. Type II Hypersensitivity
- c. Type III Hypersensitivity
- d. Cell mediated Reaction and its clinical importance
- e. Systemic Lupus Erythmatosus
- f. Infection and infective granulomas

5. Neoplasia:

- a. Classification of Tumors
- b. Carcinogenesis & Carcinogens – Chemical, Viral and Microbial
- c. Grading and Staging of Cancer, tumor Angiogenesis, Paraneoplastic Syndrome
- d. Spread of tumors
- e. Characteristics of benign and malignant tumors

6. Others:

- a. Sex linked agamaglobulinemia
- b. AIDS
- c. Management of Immune deficiency patients requiring surgical procedures
- d. De George's Syndrome
- e. Ghons complex, post primary pulmonary tuberculosis – pathology and pathogenesis

E. Microbiology

Principles and Practises of infection control in dental clinics

F. Pharmacology:

1. Definition of terminologies used
2. Dosage and mode of administration of drugs
3. Action and fate of drugs in the body
4. Drugs acting on CNS
5. Drug addiction, tolerance and hypersensitive reactions
6. General and local anesthetics, hypnotics, antiepileptics and tranquilizers
7. Chemotherapeutics (anticancer drugs) and antibiotics
8. Analgesics and anti – pyretics
9. Anti – tubercular and anti – syphilitic drugs
10. Antiseptics, sialogogues, and anti – sialogogues
11. Haematinics
12. Anti – diabetics
13. Vitamins – A, B Complex, C, D, E & K
14. Steroids
15. Anti Oxidants
16. Anti Fungals
17. Antiviral drugs
18. Coagulants & anticoagulants
19. Skeletal muscle relaxants
20. Antihistamines
21. Probiotics and prebiotics

G. Research Methodology

1. Research Question
2. Epidemiological Study Designs:
 - Observational: Cross-sectional study (including Surveys), Cohort & Case control studies
 - Experimental: Clinical trials (Randomized controlled Trial & Non randomized Trials)
3. Evidence Pyramid
4. Biases and random errors in research

H. Biostatistics:

1. Introduction
2. Types of variables
3. Collection of data & Sampling methods
4. Compiling data - graphs and charts
5. Measures of central tendency (mean, median and mode), standard deviation & variability
6. Hypothesis testing & p value

Syllabus for MDS Part II

Paper I : Oral and Maxillofacial Radiology:

Study includes Seminars / lectures / Demonstrations

1. History of radiology, Radiation physics, Electromagnetic spectrum, production of x – ray & property of x – rays, Dental X-ray machine parts and factors affecting production of X-ray, Measures and units of measurement.
2. Radioactivity & radioactive materials
3. Biological effects of radiation
4. General principles, biological effects of radiation, departmental protection, protection measures, filters and filtration, personnel monitoring, dosimetry
5. Films and other image recording media
6. Design of x –ray department, dark room and use of automatic processing units
7. Projection Geometry
8. Localization by radiographic techniques
9. Faults of dental radiographs and concept of ideal radiograph
10. Quality assurance and audit in dental radiology
11. Intra oral Projections
 - Periapical
 - Bite –wing
 - Occlusal
 - Tube shift technique
 - .In endodontics
 - .In pedodontics
 - Ideal radiograph
 - Defective radiographs
12. Cephalometric imaging
13. Panoramic Imaging
14. Extra oral radiography – All routine, modified and special views
 - of TMJ

- of maxillary sinus
 - of Salivary glands
 - In oral and maxillofacial injuries
 - Localization technique
15. Advanced imaging techniques like CBCT, CT Scan, MRI, Ultrasound
 16. Basic Anatomy of sectional imaging with case interpretations of CT / CBCT / MRI
 17. Radio nucleotide imaging techniques
 18. Xeroradiography - Process of xeroradiography, Dental Application of xeroradiography
 19. Contrast radiography
 20. Prescribing Diagnostic Imaging
 21. Principles of radiographic interpretation
 22. Radiographic anatomy of teeth, Facial bones, skull and airway
 23. Radiographic interpretation of various pathologies affecting teeth and bones of Maxillofacial region
 24. Art of radiographic report, writing and descriptors preferred in reports
 25. Radiograph differential diagnosis of radiolucent, radio opaque and mixed lesions
 26. Digital radiology- Principle, types, applications, storage & archival of images & errors
 27. Implant imaging
 28. Radiotherapy: Physical principles of radiotherapy, types of therapy source, patient dosage, beam modification, collimations, beam direction devices and advances in Radiotherapy
 29. Application in Forensics Odontology
 30. Teleradiography, Telemedicine
 31. Recent advances in
 - Radiology
 - Digital radiology
 - Computed tomography
 - Radio-isotopes & Radionuclide Imaging
 - PET.
 - Radiation Therapy

Paper II : Oral Medicine, Therapeutics and Laboratory Investigations

Study includes seminars / lectures / discussion

1. General principles of patient examination, systems review, procedures for diagnosis and examination of specific lesions.
2. Methods of clinical diagnosis of oral and systemic diseases as applicable to oral tissues including modern diagnostic techniques
3. Laboratory investigations including special investigations (Microbiology, Immunology, Histology, Cytology) of oral and oro – facial diseases
4. Primary and secondary mucosal lesions
5. Red and white lesions, ulcerative & vesiculobullous lesions
6. Teeth in local and systemic diseases, congenital, and hereditary disorders
7. Diseases of pulp and periapical tissues
8. Diseases of periodontium
9. Orofacial pain
10. Management of medically compromised patients

11. Congenital and Hereditary disorders involving tissues of oro facial region
12. Acute and chronic infections of oral and paraoral structures: Bacterial, viral and Mycotic infection;
13. Systemic diseases due to oral foci of infection
14. Pigmentary disturbances of oral and paraoral region
15. Bleeding and clotting disorders
16. Salivary gland disorders
17. Tongue in oral and systemic diseases
18. TMJ dysfunction and diseases
19. General principles of patient care in admitted cases and hospital dentistry
20. Concept of immunity as related to oro – facial lesions, including AIDS
21. Cysts, Neoplasms, Odontomes, and fibro – osseous lesions
22. Oral changes in Osteodystrophies and chondrodystrophies
23. Pre malignant and malignant lesions of orofacial region
24. Allergy and other miscellaneous conditions
25. Systemic disease: Oral manifestations and management of
 - Diseases of the respiratory system
 - Dermatologic diseases
 - Hematological diseases
 - Immunologic diseases
 - Endocrine disease
 - Neurologic disease
 - Cardiovascular diseases
 - Hepatic disease
 - Renal disease
 - G.I.T diseases
 - Reproductive diseases
 - Muscular disease
 - Urogenital diseases
 - Psychological disease
 - Geriatric diseases
 - Nutritional diseases
 - Ophthalmologic disease
 - E.N.T. diseases
 - Metabolic diseases
26. Therapeutics in oral medicine
 - Medical management of oral disease
 - Drugs commonly used in Dentistry – analgesics, anti inflammatory drugs, antibiotic, steroids, vitamins, minerals, topically used drugs, mouth washes, dentifrices, and desensitizing agents
 - Drugs commonly used for medical problems
 - Drug interactions
 - Oral manifestations of drug reactions and their management
 - Medical emergencies in dentistry
27. Occupational Hazards
28. General principles of patient care in admitted cases and hospital dentistry
29. Legal considerations in Dentistry
30. Forensic odontology
31. Computers in oral diagnosis and imaging

32. Evidence based oral care in treatment planning
33. Molecular Biology

Paper-III: Essay- Descriptive and analysing type question with emphasis on recent advances

A 3 hour essay paper, consisting of three descriptive and analyzing type of questions, on any of the major topics in Oral Medicine and Radiology with emphasis on recent advances.

Essential Knowledge:

Basic medical subjects, Oral Medicine, Clinical Dentistry, Management of Medical Emergencies, Oral Radiology techniques and Interpretation, Diagnosis of Oro – facial disorders

Procedural and Operative Skills:

(The numbers mentioned are minimum to be performed by each candidate)

1st Year:

1. Examination of Patient - Case history recordings – 100
 - FNAC – 50
 - Biopsy – 50
 - (Observe, Assist, & Perform under supervision)
2. Intra – oral radiographs: (Perform and interpretation) – 500
3. Full mouth intra oral radiograph tracings – 3
4. Age estimation using radiographs – 10
5. Seminars - 5
6. Journal Clubs -5
7. Clinical case presentations - 4
8. Library Dissertation: Topic for the library dissertation should be finalized and approved by the end of the first six months and the same to be submitted at the end of the first year. It should be approved by the guide and certified by the Head of the Department.

2nd Year:

1. Dental treatment to medically compromised patients – 2
 - (Observe, assist, and perform under supervision)
2. Extra oral radiographs, digital radiography – 20
 - (Observe, assist and perform under supervision, Interpretation)
3. Extra Oral radiographs tracings – 3
4. CBCT Interpretations – 5
5. **Operative skills:**
 - 5.1. Giving intra muscular and intravenous injections
 - 5.2. Administration of oxygen and life saving drugs to the patients
 - 5.3. Performing basic CPR and certification by Red Cross or similar authorized organization
6. Should have attended a minimum of 15 days posting in the following departments.
 - 6.1. Dermatology and Venereal disease
 - 6.2. General Radiology
 - 6.3. Radiation Oncology / Imageology
 - 6.4. General Medicine
 - 6.5. ENT
 - 6.6. Forensic
7. Five (5) seminars in Specialty.
8. Taking lectures for BDS students on selected topics-10 hours.
9. Five (5) Journal Clubs.

10. Clinical case presentation: 4
11. Attending CDE/Workshops/Advanced Courses
12. Attending National Conference and presentation of scientific papers/posters.
13. Publication of a scientific paper

3rd Year

- | | |
|--|-------|
| 1. Performed independently – Case history: Routine cases | – 100 |
| 2. Interesting Cases | – 25 |
| 3. OPG | – 50 |
| 4. Periapical view | – 100 |
| 5. Bitewing view | – 50 |
| 6. Occlusal view | – 50 |
| 7. Extra – oral radiographs of different views | – 25 |
| 8. CBCT Interpretations | – 10 |
| 9. Treatment of mucosal lesions with LASER | – 3 |
| 10. Seminars on Recent Advances in Dentistry. | -5 |
| 11. Journal Clubs | -5 |
| 12. Clinical case presentation | -4 |
| 13. Completion and Submission of Dissertation. | |
| 14. Attending CDE/Workshops/Advanced Courses | |
| 15. Attending National Conference and presentation of scientific papers/posters. | |
| 16. Publication of second scientific paper. | |

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.

- A. **Library Dissertation:** Topic for the library dissertation should be finalized and approved by the end of the first six months and the same to be submitted at the end of the first year. It should be approved by the guide and certified by the Head of the Department.
- B. **Conferences and Publication of Scientific Paper:** During the MDS course the student should attend two National Conferences and attempts should be made to present at least two scientific papers and two posters at State / national level speciality and allied conferences / conventions during the training period. and publish at least two scientific articles in an indexed journal relevant to the specialty.

The student is expected to maintain a detailed log book of work done on each day of his/her MDS course and should produce it for evaluation on the day of Practical/Clinical Examination.

Requirements to be met by the candidate to appear for MDS examination

1. Every candidate shall have fulfilled the attendance prescribed by the University during each academic year of the Postgraduate course. A candidate becomes eligible for writing the University examination only after the completion of 36 months from the date of commencement of the course. The candidates should have completed the training period before the commencement of examination.
2. Selection of topic for dissertation should be done within 6 months of the first year and the completed dissertation should be submitted to KUHS six months before the proposed date of examination.
3. Should have attended 15 days posting in the following departments.
 - 3.1. Dermatology and Venereal disease
 - 3.2. General Radiology
 - 3.3. Radiation Oncology / Therapy

- 3.4. General Medicine.
- 3.5. ENT
- 3.6. Forensic Medicine
4. Produce a clinical record with photographs and investigation reports of 15 cases of interest.
5. Produce a record of radiographs of different radiographic techniques
6. Should have undertaken treatment and follow up study of 10 patients with chronic mucosal lesions.
7. Should have attended and presented four paper/ poster at state/national conference.
8. Should have at least two publications.
9. Should have 10 hours of undergraduate teaching experience.
10. Should present a compilation of a minimum of 15 seminars and 15 Journal clubs; presented over the course of three years.
11. Every candidate shall maintain a work diary and logbook for recording his/her participation in the training programmes conducted by the department. The work diary and logbook shall be verified and certified by the Head of the department. The certification of satisfactory progress by the Head of the Department and Head of the Institution shall be based on checklist given in 5.1 to 5.8.
- *Students should note that in case they do not complete the exercises and work allotted to them within the period prescribed, their course requirements will be considered unfulfilled.*
- *Clinical Records, Work Diaries and Logbooks should be maintained regularly and approved by the guide, duly certified by the Head of the Department.*
12. Every candidate shall have to pass the Part I examination to become eligible to appear for the Part II examination. The candidates shall have to pass the Part-I examination at least six months prior to the Part-II examination.

SCHEME OF EXAMINATION:

The candidate shall be assessed on the basis of the written examination, practical examination and viva voce.

A. Theory Examination:

There shall be two theory examinations for the MDS course

Part I Examination – at the end of the first academic year

Part II Examination –at the end of the third academic year

Theory Examination: Total - 400 Marks

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 University Examination :100 marks

Paper I: Applied Basic Sciences: Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics

Part II University Examination (3 papers each of 100 Marks): 300 marks

Paper-I: Oral and Maxillofacial Radiology (100 marks)

Paper-II: Oral Medicine, therapeutics and laboratory investigations (100 marks)

Paper IV: Essay on Oral Medicine and Radiology with Emphasis on recent advances (100 marks)

**The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.*

B. Practical and Clinical Examination

: 200 Marks

It will be two days duration comprising of:

Day I: Time 9 am to 4 pm

I. Clinical Case presentation

- 2 Spotters 2x10=20 Marks
 - 2 Short Cases 2x15= 30 Marks
 - 1 Long Case 1x50=50 Marks
- Total =100 Marks**

II. Radiology Exercises

- 1 IOPA radiograph 10 Marks
- 1 Occlusal Radiograph 15 Marks
- 1 Bitewing Radiograph 15 Marks
- 2 Extra oral Radiographs including technique and interpretation 2x30= 60 Marks

Total =100 Marks

Day II: Time 9 AM to 4 PM

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.

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

2.7. Total number of hours

As per the instruction given by the DCI

2.8. Branches if any with definition

Oral Medicine and Radiology

2.9. Teaching learning methods

Method of Training

The training of a postgraduate student shall be full time but graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, case demonstrations, clinics, journal review meetings, and clinical meetings. Every candidate shall be required to participate in the teaching and training programme of undergraduate students and interns. Training should include involvement in laboratory and experimental work, and research studies. Every Institution undertaking Post Graduate training programme shall set up an Academic cell or a Curriculum Committee, under the chairmanship of a Senior faculty member, which shall work out the details of the training programme in each speciality in consultation with other Department faculty staff and also coordinate and monitor the implementation of these training

Programmes. Based on the above guidelines for a structured training programme for postgraduate courses, the basic tenets of a successful postgraduate teaching programme, are detailed under the following heads.

- ❖ **Formal Lectures** by the faculty on varied subjects including general areas and systems. Both senior and junior faculty can do this. However, the number of these classes should be maintained of low levels to encourage self-learning.
- ❖ **Symposia / Seminars** form an integral part of PG learning. A monthly symposium will generate approximate 30-35 symposia / course. These symposia can include department faculty and HODs as chairpersons and maximum involvement of both students and faculty should be ensured.
- ❖ **Clinical Discussions** form the core of PG training and can be assigned to various clinical units on rotating basis. However other faculty could also actively participate in the discussion. The discussions must be 3-4/week. One suggestion is to score the performance of the candidate by a small panel of faculty and convey the scores to the candidate / PG at the end of the session.
- ❖ **Journal Club /Clinical Club** should be conducted at least once in a week in each postgraduate department. Journal clubs not only imparts new information but also trains the candidate to objectively assess and criticize various articles which come out and should be useful in ensuring evidence based dentistry.
- ❖ **Guest Lectures** can be integrated into the PG program at least once in a month. Even the retired faculty can be invited for delivering the lectures and will ensure importing of greater wisdom to the candidates.
- ❖ **Orientation Classes** for newcomers should also be incorporated. These classes can even be assigned to junior faculty/senior PGs.
- ❖ **Clinical posting.** Each PG student should work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases to be treated by a specialist.
- ❖ **Clinico Pathological Conferences** should be held once a year involving the faculties of Oral Medicine and Radiology, Oral Pathology and concerned clinical department. The student should be encouraged to present the clinical details, radiological and histopathological interpretations and participation in the discussions.
- ❖ **Rotation postings in other departments** should be worked out by each department in order to bring in more integration between the speciality and allied fields.
- ❖ **Periodical Quiz** can be both informative and entertaining and should be encouraged and planned.
- ❖ **Computer Training and Internet Applications** are now becoming a must for both faculty and students. These areas should be strengthened as a next step. There can be a sort of internet information club in the departments.
- ❖ **Conferences/CDEs** – All postgraduate students should be encouraged to attend conferences and CDEs. They should also be asked to present papers wherever appropriate and should be rewarded by assigning scores for them.
- ❖ **Publication of scientific papers** – It is desirable and advisable to have at least two publications in the State/National/International indexed dental journals.
- ❖ **Involvement in Teaching Activity** – PG students can be assigned the job of teaching the undergraduate students and these will definitely improve the teaching skills in the postgraduate students.

Examinations

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 MDS programme. Evaluation is achieved by two processes

- 1) Formative or internal assessment
- 2) Summative or university examinations.

Formative evaluation is done through a series of tests and examinations conducted periodically by the institution. Summative evaluation is done by the university through examination conducted at the end of the specified course. A candidate registered for MDS course must clear the final examination within six years of the date of admission. The examinations should be so organized that this shall be used as the mechanism to confirm that the candidate has acquired appropriate knowledge, skill and competence at the end of the training that he/she can act as a specialist and/or a medical teacher as per expectation. University examination will be held regularly by KUHS in June-July/Jan- Feb every year. A candidate who wishes to study for MDS in a second specialty should have to take the full course of 3 years in that specialty and appear for examinations.

2.10. Content of each subject in each year

Present in clause 2.5

2.11. No: of hours per subject

Present in clause 2.5

2.12. Practical training

Present in clause 2.5

2.13. Records

Present in clause 2.5

2.14. Dissertation: As per Dissertation Regulations of KUHS

Every candidate pursuing MDS degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation. The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

Every candidate shall submit to the University in the prescribed format a synopsis containing particulars of proposed dissertation work after obtaining ethical clearance from the Institutional Ethical Committee **within six months from the date of commencement of the course or before the dates notified by the University**. The synopsis shall be sent only through the Principal of the institution. Such synopsis will be reviewed and the dissertation topic will be registered by the university. No change in the dissertation topic or guide/co guide shall be made without prior approval of the University. The dissertation should not be just a repetition of a previously undertaken study but it should try to explore some new aspects. The dissertation should be written under the following headings:

- i. Introduction
- ii. Aims and Objectives of the study
- iii. Review of Literature
- iv. Methodology
- v. Results
- vi. Discussion

- vii. Conclusion
- viii. Summary
- ix. References
- x. Annexures

The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires, and other annexures. It should be neatly typed (font size 13-Times New Roman or font size 13-Cambria) in 1.5 line spacing on one side of the paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. (Refer Section V and VII). The guide, co-guide if any, Head of the Department and the Head of the Institution shall certify the dissertation.

For uniformity, it was suggested that the colour of the hard bind of the dissertation for all branches of MDS course in the purview of KUHS shall be dark brown with letters of gold colour. The title, author, and year of study should also be imprinted or embossed on the spine of the book. **Three hard copies and one properly labelled soft copy in a CD (refer Section VII) of the dissertation thus prepared shall be submitted to KUHS on the 29th month of commencement of the course / 31st Oct.-of the 3rd academic year, whichever falls first.** Dissertation should preferably be sent to a minimum of three reviewers / examiners / assessors, of which two shall be from outside the state and one from the affiliated colleges o KUHS. Consent for acceptance for evaluation of dissertation should be obtained from the reviewer/examiner/assessor before the dissertation are despatched. Proforma for evaluation of dissertation should be sent along with the copies of the dissertation to the reviewers appointed by the university. The proforma should contain all the assessment criteria with the clause – **Accepted/Accepted with modifications/Rejected** and reasons for rejection by the examiner. This proforma should be sent back to the University within two weeks / within the date specified after receipt of dissertation. The dissertation may be declared accepted if more than 50% of the reviewers (2 in the case of 3 reviewers) have accepted it. If modifications are to be made as specified, 3 hard copies and one soft copy of the dissertation after corrections made by the candidate should be submitted within 30 days to the University which may be sent back to the same examiner/s by the University for Acceptance after a fee has been levied from the candidate. If the dissertation has been rejected by more than 50% of the reviewers (2 in the case of 3 reviewers), the dissertation may be reviewed by an Expert Reviewing Committee comprising of not less than two subject experts, Dean (Research) of KUHS and Guide of the candidate provided the Guide requests for a review, after a fee has been levied from the candidate. If rejected by the Reviewing Committee, the candidate should take up a new topic and undergo all the procedures of submitting the synopsis, fees, IEC clearance, etc as prescribed by the University. The candidate who takes up the new topic can appear only for the subsequent examination.

Approval of dissertation work is an essential precondition for a candidate to appear in the Part II University examination. Hall tickets for the examination should be issued to the candidate only if the dissertation has been accepted. A candidate whose dissertation has been accepted by the examiners and approved by the University, but who is declared to have failed at the final examination will be permitted to reappear at the subsequent MDS examination without having to prepare a dissertation.

- a. **Guide** – The academic qualification and teaching experience required for recognition by the University as a guide for dissertation work is as laid down by the Dental Council of India / KUHS.
- b. **Co-guide** – A co-guide may be included provided the work requires substantial contribution from the same department or a sister department or from another institution recognized for teaching/training by KUHS/DCI. The co-guide should fulfill the academic qualification and teaching experience required for recognition by the University as a co-guide for dissertation work.

c. **Change of Guide** – In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the University.

2.15. Speciality training if any

Present in clause 2.5

2.16. Project work to be done if any

Present in clause 2.5

2.17. Any other requirements [CME, Paper Publishing etc.]

Present in clause 2.5

2.18. Prescribed/recommended textbooks for each subject

Applied Basic Sciences

SUBJECT	NAME OF AUTHOR	NAME OF BOOK
Anatomy	BD Chaurasia	BD Chaurasia's Human Anatomy
	William, Peter L	Grays Anatomy
Oral Anatomy	Ash, Major M	Wheeler's Dental Anatomy, Physiology and Occlusion
	Sicher, Harry, Du Brull , Llyod	Oral Anatomy
Oral Histology	Bhaskar B.N. Ed	Orban's Oral Histology and Embryology
	Avery, James K	Essentials of Oral Histology and Embryology
Embryology	Sadler	Langman's Medical Embryology
	Inderbeer Singh	Human Embryology
Physiology	Guyton Arthur and John L Hall	Text Book of Medical Physiology
	Ganong, William F	Review of Medical Physiology
Pharmacology	KD Tripathi	Essentials of Medical Pharmacology
	Hardman, Joel G	Goodman and Gilman's pharmacological basis of Therapeutics
Nutrition	Nizel	Nutrition in Preventive Dentistry: Science and Practice
General Pathology	Cotran, Ramzi S and Others	Robbins Pathologic Basis of Disease
	Harsh Mohan	Textbook of Pathology
Oral Pathology	Shaffer, William and Others	Textbook of Oral Pathology
	Neville, Brad W and Others	Oral and Maxillofacial Pathology
Microbiology	Ananthanarayan and Panicker	Textbook of Microbiology
	Lakshman S	Essential Microbiology for Dentistry
Biostatistics	Dr. Symalan	Statistics in Medicine

	Soben Peter	Essentials of Preventive and Community Dentistry
	Sunder Rao and Richard J.	Introduction to Biostatistics and Research Methods

Oral Medicine and Radiology

Oral Medicine

1. Burket's Oral Medicine – Diagnosis and Treatment –Matin S ,Greenberg 8,9&10,11ed. &12ed
2. A Text book of Oral pathology , Shafer W G ,et al
3. Oral Diseases of the tropics – Prabhu& Wilson
4. Oral and maxillofacial pathology — Neveille B W et al
5. Internal Medicine for Dentistry – Louis F Rose& Donald Kaye
6. Differential Diagnosis of oral lesions – Wood N K &Goaz P W.
7. Oral Cancer –Jatin Shah
8. Medical Problems in Dentistry –Scully &Cawson

Radiology

1. Fundamental Physics of Radiology -Merdith W J& Massey J B
2. Clarks positioning in Radiography — RA Swallow
3. Text of Dental and Maxillofacial Radiology – Freny R Karjodkar
4. Panoramic Radiology-Langland O E et al
5. Text book of Oral radiology – White and Pharoah
6. Principles and practice in oral radiographic interpretation – Worth H M
7. Hand Book of signs in Dental and Maxillofacial Radiology- Wood R E
8. Principals and Interpretation ,In Oral Radiology -Goaz P W&White S C.
9. Maxillofacial Imaging –Angilo M Delbaso
10. Principles of Dental Imaging –Langland & Langlais
11. Fundamentals of Dental Radiography-Mason Hing L R

2.19. Reference books

As instructed by Professor/ Guide

2.20. Journals

1. Journal of Oral Pathology, Oral Surgery, Oral medicine and Endodontics
2. Journal of Oral Pathology and Medicine
3. Journal of Indian Academy of Oral Medicine and Radiology
4. Journal of American Dental Association
5. British Dental Journal
6. Quintessence International
7. Journal of Canadian Dental Association
8. Dental Clinics of North America
9. Lancet Oncology
10. Oral Oncology
11. Journal of Dental Research
12. Journal of Cancer Research and
13. Therapeutics International Journal of cancer
14. Journal of Head Neck Pathology
15. American Journal of Roentgenology

16. Radiologic clinics of North America
17. Journal of Head and Neck imaging
18. Dento- Maxillofacial Radiology.

2.21. Logbook

Logbooks serve as a document of the trainee's work. The trainee shall maintain this Logbook of the special procedures/operations observed/assisted/performed by him/her during the training period right from the point of entry and its authenticity shall be assessed weekly by the concerned Post Graduate Teacher / Head of the Department. This shall be made available to the Board of Examiners for their perusal at the time of his / her appearing at the Final examination. The logbook should record clinical cases seen and presented, procedures and tests performed, seminars, journal club and other presentations. Logbook entries must be qualitative and not merely quantitative, focusing on learning points and recent advances in the area and must include short review of recent literature relevant to the entry. A work diary containing all the various treatment done by the candidate in the course of the study should also be maintained. The work diary shall be scrutinized and certified by both the guide/co guide and Head of the Department and presented in the University practical/clinical examination

3. Examinations

3.1. Eligibility to appear for exams

Every candidate to become eligible to appear for the **MDS examination** shall fulfill the following requirements.

3.1.1. MDS Part I Examination

❖ Attendance

Every candidate shall have fulfilled the attendance prescribed by the University(80%) during first academic year of the Postgraduate course.

❖ Library Dissertation

Submission of library dissertation as per the regulations of KUHS is mandatory for a candidate to appear for the university examination

3.1.2. MDS Part II (Final) Examination

❖ Attendance

Every candidate shall have fulfilled the attendance prescribed by the University during **each academic year** of the Postgraduate course. A candidate becomes eligible for writing the University examination only after the completion of 36 months from the date of commencement of the course. The candidates should have completed the training period before the commencement of examination.

❖ Dissertation

Approval of the dissertation is a mandatory requirement for the candidate to appear for the Part II university examination

❖ Pass in MDS Part I Examination

Every candidate shall have to pass the Part I examination to become eligible to appear for the Part II examination. The candidates shall have to pass the Part-I examination at least six months prior to the Part-II examination.

❖ Progress and Conduct

Every candidate shall have participated in seminars, journal review meetings, symposia, conferences, case presentations, clinics and didactic lectures during each year as designed by the concerned department.

❖ Work Diary and Logbook

Every candidate shall maintain a work diary and logbook for recording his/her participation in the training programmes conducted by the department. The work diary and logbook shall be verified and certified by the Head of the department. The certification of satisfactory progress by the Head of the Department and Head of the Institution shall be based on checklist given in 5.1 to 5.8.

- *Students should note that in case they do not complete the exercises and work allotted to them within the period prescribed, their course requirements will be considered unfulfilled.*
- *Clinical Records, Work Diaries and Logbooks should be maintained regularly and approved by the guide, duly certified by the Head of the Department.*

3.2. Schedule of Regular/Supplementary exams

The MDS Part I examination shall be held at the end of the first academic year and the MDS Part II examination shall be held at the end of the third academic year. The university shall conduct two examinations in a year at an interval of four to six months between two examinations. Not more than two examinations shall be conducted in an academic year.

3.3. Scheme of examination showing maximum marks and minimum marks

MDS examination will consist of Written(Theory), Viva Voce, and Practical / Clinical examination.

Theory: There shall be two theory examinations for the MDS course,
Part I Examination – at the end of the first academic year
Part II Examination –at the end of the third academic year

Part-I Examination: Shall consist of one theory paper
There shall be a theory examination in Applied Basic Sciences of three hours duration at the end of the first academic year of the course. The question papers shall be set and evaluated by the faculty of the concerned speciality. The candidates shall have to secure a minimum of 50%marks in the Basic Sciences paper and shall have to pass the Part-I examination at least six months prior to the final (Part-II) examination.

Part-II Examination: Shall consist of
(i) Theory - three papers, namely :-Paper I, Paper II & Paper III, each of three hours duration.
(ii) Practical and Clinical Examination;
(iv)Viva-voce and Pedagogy.

A candidate who wishes to study in a second speciality, shall have to undergo the full course of three years duration in that speciality.

Theory: (Total 400 Marks)

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers, each of 100 Marks = 300 Marks)

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each.
(Total of 100 Marks)

(ii)Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each.
(Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (2 x 50 = 100 Marks)

Practical and Clinical Examination: 200 Marks

Viva-voce and Pedagogy: 100 Marks

Written Examination (Theory):400 Marks

There shall be two theory examinations for the MDS course.

Part-I: Basic Sciences Paper - 100 Marks

Part II (Final) Theory/Written examination:300 Marks

The Part II theory examination shall be conducted at the end of Third year of MDS course

and consist of three papers, each of three hours duration. Each paper shall carry 100 marks. The type of questions in the first two papers will be two long essay questions carrying 25 marks each and five short essay questions each carrying ten marks. There will be no options in the questions in the first 2 papers. Third paper will be an essay question paper with three essay questions carrying 50 marks each and the candidate is to answer any two of the essays. Questions on recent advances may be asked in any or all the papers. The syllabus for the theory papers of the concerned specialty should cover the entire field of the subject. Though the topics assigned to the different papers are generally evaluated under designated papers, a strict division of the subject may not be possible topics. The theory examinations shall be held sufficiently earlier than the practical/clinical examinations to facilitate valuation of the answer books before the start of the practical/clinical examination.

The total marks for the Part II theory examination shall be 300.

Practical Examination: 200 Marks

In case of practical examination, it should aim at assessing competence and skills of techniques and procedures. It should also aim at testing student's ability to make relevant and valid observations, interpretation and inference of laboratory or experimental or clinical work relating to his/her subject for undertaking independent work as a specialist. The actual format of clinical examinations in various specialities is given in Section III. The total mark for practical/clinical examinations shall be 200.

Viva voce; 100 Marks

Viva voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The candidate may be given a topic for the pedagogy in the beginning of the clinical examination and asked to make a presentation on the topic for 8-10 minutes. The total marks shall be 100 of which 80 would be for the viva voce (20 marks/examiner) and 20 marks for the pedagogy.

3.4. Papers in each year

MDS Part-I Examination : conducted at the end of first academic year

Paper I : Applied Basic Sciences: Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics

MDS Part II Examination : conducted at the end of the third academic year

Paper-I : Oral and Maxillofacial Radiology

Paper-II : Oral Medicine, therapeutics and laboratory investigations

Paper-III : Essay- Descriptive and analysing type question

3.5. Details of theory exams

Written examination shall consist of

Part I Examination– Applied Basic Sciences, of three hours duration, conducted at the end of First year of MDS course.

Part-II Examination shall be conducted at the end of Third year of MDS course and shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Theory: (Total :400 Marks)

(1) Part I University Examination (100 Marks) :-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers each of 100 Marks) :-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each.
(Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Distribution of topics for each paper will be as follows:

MDS Part-I Examination

Paper I: Applied Basic Sciences: Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics

MDS Part-II Examination:

Paper-I: Oral and Maxillofacial Radiology

Paper-II: Oral Medicine, therapeutics and laboratory investigations

Paper-III: Descriptive and analysing type question

3.6. Model Question Papers

MDS Part I Examination – Oral Medicine and Radiology

Paper 1 – Applied Basic Sciences: Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics

(Answer all questions)

Time: 3 hours

Max. marks: 100

Essay

(10 x 10 = 100 marks)

1. Describe the muscles, neurovasculature, and lymphatic drainage of Tongue
2. Define osteomyelitis. Discuss the etiology, pathogenesis, clinical features and radiographic appearance of chronic osteomyelitis of the mandible.
3. Explain the role of Vitamins in oral health and disease.
4. Hypersensitivity reactions
5. Principles of radiographic interpretation
6. Chemical mediators of acute inflammation
7. Actinomycosis
8. Describe the role of Calcium and Phosphorous on hard tissues.
9. TNM staining
10. Randomized clinical trials

MDS Part II Examination

MDS Oral Medicine and Radiology

Paper I : Oral and Maxillofacial Radiology

Time: 3hrs

Max marks : 100

(Answer all questions)

Long Essay

(2 x 25 = 50marks)

1. Describe in detail radiographic appearances seen in primary and metastatic malignancies affecting the jaws.
2. Describe conventional and advanced imaging techniques for Temporomandibular joints.

Short Essays

(5 x 10 = 50marks)

3. Filters used in diagnostic radiography
4. Radiovisiography
5. Radiographic appearance of sclerosing type of osteomyelitis affecting the jaws.
6. Drawbacks of panoramic radiographs
7. Safelight used in darkroom.

MDS Part II Examination
MDS Oral Medicine and Radiology
Paper II – Oral Medicine, therapeutics and laboratory
investigations
(Answer all questions)

Time: 3 hrs

Max marks : 100

Long Essay

(2 x 25 = 50marks)

1. Discuss radiotherapy for oral cancer in detail. Add a note on the complications of radiotherapy and its management.
2. Describe the etiology, clinical features and medical management of oral lichen planus. Discuss briefly on lichenoid reactions.

Short Essays

(5 x 10 = 50marks)

3. Cyclic Neutropenia
4. Recurrent aphthous stomatitis.
5. Clinical features and treatment of Erythema multiforme.
6. Methods for personal identification in forensic odontology
7. Dental management of diabetic patient

MDS Part II Examination
MDS Oral Medicine and Radiology
Paper III – Essay on Oral Medicine and Radiology with
Emphasis on recent trends.
(Answer any TWO questions)

Time: 3 hrs.

Max marks: 100

1. Ultrasonography in dentistry . (50 marks)
2. Diagnosis of Premalignant mucosal lesions (50 marks)
3. Advances in Digital Radiography (50 marks)

3.7. Internal assessment component

Not applicable.

3.8. Practical and Clinical Examination

: 200 Marks

It will be two days duration comprising of:

Day I: Time 9 am to 4 pm

Clinical Case presentation

- 2 Spotters 2x10=20 Marks
 - 2 Short Cases 2x15= 30 Marks
 - 1 Long Case 1x50=50 Marks
- =100 Marks**

Total

Radiology Exercises

- 1 IOPA radiograph 10 Marks
- 1 Occlusal Radiograph 15Marks
- 1 Bitewing Radiograph 15 Marks
- 2 Extra oral Radiographs including technique and interpretation 2x30= 60 Marks

Total

=100 Marks

Day II: Time 9 AM to 4 PM

Viva-voce : 100 Marks

Viva-Voce examination : 80 Marks

Pedagogy : 20 marks

3.9. Number of examiners needed (Internal & External) and their qualifications

Part I:

The University shall appoint one internal and one external examiner of the same specialty for evaluating the Part I answer scripts. The Part I answer papers shall be evaluated by external and internal examiners of the same speciality appointed by the University adhering to the evaluators guidelines of KUHS.

Part II:

There shall be at least four examiners in each branch of study. Out of four, two (50%) should be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the DCI. The external examiners shall ordinarily be invited from another recognized University from outside the state. An external examiner may ordinarily be appointed for the same institute for not more than two years consecutively. Thereafter he may be reappointed after an interval of one year. The same set of examiners shall ordinarily be responsible for the practical and oral part of the examination. The Head of the Department shall ordinarily be one of the examiners and the chairperson of the Board of Examinations; second internal examiner shall rotate after every two consecutive examinations if there are more than two postgraduate teachers in the department other than the Head of the department. No person who is not an active Postgraduate teacher in that subject can be appointed as Examiner. However in case of retired personnel, a teacher who satisfies the above conditions could be appointed as examiner up to one year after retirement. For the MDS examination, if there are no two qualified internal examiners in an institute the second internal examiner can be from a neighbouring DCI and KUHS approved / recognized Dental College having PG course in the specific speciality. This examiner should be an active PG teacher in the same speciality with the qualifications and experience recommended for a teacher for postgraduate degree programme. The examination can also be conducted by one qualified internal examiner and three qualified external examiners if there is no qualified second internal examiner. Reciprocal arrangement of Examiners should be discouraged, in that, the internal examiner in a subject should not accept external examinership of a college from which the external examiner is appointed in his subject in the same academic year.

3.10. Details of viva Viva Voce :100 Marks

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 : 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.

4. INTERNSHIP

Not applicable for PG cour

5. ANNEXURES

5.1 Check Lists for Monitoring: Log Book, Seminar Assessment etc.

CHECKLISTS and LOGBOOK

Checklist 1

Model Checklist for Evaluation of Preclinical Exercises

Name of Student:

Date:

Name of the Faculty:

Sl. No:	Items for observation during evaluation	Score
1	Quality of Exercise	
2	Ability to answer questions	
3	Punctuality in submission of exercise	
4	TOTAL SCORE	

Performance	Score
Poor	0
Below Average	1
Average	2
Good	3
Very good	4

Signature of Faculty

5.2: Checklist 2

Model Checklist for Evaluation of Journal Review / Seminar Presentation

Name of Student:

Date:

Name of the Faculty:

Name of Journal / Seminar:

Sl. No:	Items for observation during evaluation	Score
1	Relevance of Topic	
2	Appropriate Cross references	
3	Completeness of Preparation	
4	Ability to respond to questions	
5	Effectiveness of Audio-visual aids used	
6	Time Scheduling	
7	Clarity of Presentation	
8	Overall performance	
	TOTAL SCORE	

Performance	Score
Poor	0
Below Average	1
Average	2
Good	3
Very good	4

Signature of Faculty

5.3: Checklist 3

Model Checklist for Evaluation of Clinical Case and Clinical Work

Name of Student:

Date:

Name of the Faculty:

Sl. No:	Items for observation during evaluation	Score
1	History	
	Elicitation	
	Completeness	
2	Examination	
	General Examination	
	Extraoral examination	
	Intraoral examination	
3	Provisional Diagnosis	
4	Investigation	
	Complete and Relevant	
	Interpretation	
5	Diagnosis	
	Ability to defend diagnosis	
6	Differential Diagnosis	
	Ability to justify differential diagnosis	
7	Treatment Plan	
	Accuracy	
	Priority order	
8	Management	
9	Overall Observation	
	Chair side manners	
	Rapport with patient	
	Maintenance of Case Record	
	Quality of Clinical Work	
	Presentation of Completed Case	
10	TOTAL SCORE	

Performance	Score
Poor	0
Below Average	1
Average	2
Good	3
Very good	4

Signature of Faculty

5.4: Checklist 4

Model Checklist for Evaluation of Library Dissertation Work

Name of Student:

Date:

Name of the Faculty/Guide:

Sl. No:	Items for observation during evaluation	Score
1	Interest shown in selecting topic	
2	Relevance of Topic	
3	Preparation of Proforma	
4	Appropriate review	
5	Appropriate Cross references	
6	Periodic consultation with guide	
7	Completeness of Preparation	
8	Ability to respond to questions	
9	Quality of final output	
TOTAL SCORE		

Performance	Score
Poor	0
Below Average	1
Average	2
Good	3
Very good	4

Signature of Faculty

5.5: Checklist 5

Model Checklist for Evaluation of Dissertation Work

Name of Student:

Date:

Name of the Faculty/Guide/Co-guide:

Sl. No:	Items for observation during evaluation	Score
1	Interest shown in selecting topic	
2	Relevance of Topic	
3	Preparation of Proforma	
4	Appropriate review	
5	Appropriate Cross references	
6	Periodic consultation with guide/co-guide	
7	Depth of analysis/Discuss	
8	Ability to respond to questions	
9	Department Presentation of findings	
10	Quality of final output	
TOTAL SCORE		

Performance	Score
Poor	0
Below Average	1
Average	2
Good	3
Very good	4

Signature of Faculty

5.6 : CHECKLIST- 6

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE/CO-GUIDE

Name of the Trainee:

Date

Name of the Faculty

Sl.No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1	Periodic consultation with guide / co- guide					
2	Regular collection of case material					
3	Depth of Analysis / Discussion					
4	Department presentation of findings					
5	Quality of final output					
6	Others					
	TOTAL SCORE					

Signature of the guide / co-guide

5.7: CHECKLIST - 7

OVERALL ASSESSMENT SHEET

Name of the College:

Date:

Name of Department:

Check List No	PARTICULARS	Name of trainee		
		First Year	Second Year	Third Year
1	Preclinical Exercises			
2	Journal Review Presentation			
3	Seminars			
4	Library dissertation			
5	Clinical work			
6	Clinical presentation			
7	Teaching skill practice			
8	Dissertation			
	TOTAL			

Signature of HOD

Signature of Principal

The above overall assessment sheet used along with the logbook should form the basis for certifying satisfactory completion of course of study, in addition to the attendance requirement.

Key:

Mean score: Is the sum of all the scores of checklists 1 to 6

5.8: LOG BOOK

DEPARTMENT OF

MDS Programme

LOG BOOK OF

NAME.....

BIODATA OF THE CANDIDATE

EXPERIENCE BEFORE JOINING P.G. COURSE

DETAILS OF POSTING:

- **FIRST YEAR**
- **SECOND YEAR**
- **THIRD YEAR**

DETAILS OF LEAVE AVAILED

PRECLINICAL EXERCISES

LIBRARY DISSERTATION

RESEARCH WORK

PARTICIPATION IN CONFERENCES – CDE PROGRAMMES

DETAILS OF PARTICIPATION IN ACADEMIC PROGRAMME

SEMINARS /SYMPOSIA PRESENTED

JOURNAL CLUBS

TEACHING ASSIGNMENTS – UNDERGRADUATES / PARAMEDICAL.

SPECIAL DUTIES (IF ANY)

INTERNAL ASSESSMENT

DAILY ACTIVITIES RECORD (BLANK PAGES)

ONE PAGE FOR EACH MONTH X 36 PAGES

MISCELLANEOUS

SUMMARY

5.8.1: LOG BOOK-1

ACADEMIC ACTIVITIES ATTENDED

Name:

Admission Year:

College:

Date	Type of activity - Specify Seminar, Journal club, Presentation, UG teaching	Particulars

Signature of the guide / co-guide

5.8.2: LOG BOOK - 2

ACADEMIC PRESENTATIONS MADE BY THE TRAINEE

Name :

Admission Year:

College:

[illegible]

Signature of the guide / co-guide

5.8.3: LOG BOOK - 3

DIAGNOSTIC AND OPERATIVE PROCEDURES PERFORMED

Name

Admission Year:

College:

Date	Name	OP No.	Procedure	Category 0, A, PA, PI

Key:

O- WASHED UP AND OBSERVED - INITIAL 6 MONTHS OF ADMISSION

A - ASSISTED A MORE SENIOR SURGEON -1 YEAR MDS

PA - PERFORMED PROCEDURE UNDER THE DIRECT SUPERVISION OF A SENIOR SURGEON - II YEAR MDS

PI - PERFORMED INDEPENDENTLY - III YEAR MDS

Signature of the guide / co-guide

Annexure: 5.9

Faculty

- In each department there should be a minimum required full time faculty members belonging to the disciplines concerned with requisite postgraduate qualification and experience for being a PG teacher as prescribed by the DCI. The requirements of the faculty should follow the norms framed by the DCI.
- To strengthen and maintain the standards of postgraduate training, DCI and KUHS recommends the following minimum faculty requirements (Table 1) for starting and continuation of postgraduate training programmes. Any increase of admissions will also be based on the same pattern.

Table 1: Minimum Faculty Requirements

Unit 1

1. Minimum faculty requirement of 1st Unit in an undergraduate institute having basic infrastructure of 50 admissions

Department / Speciality	Professor (HOD)	Readers/ Associate Professors	Lecturers/Assistant Professor
Prosthodontics and Crown & Bridge	1	3	4
Conservative Dentistry and Endodontics	1	3	4
Periodontology	1	2	2
Orthodontics & Dentofacial Orthopedics	1	2	2
Oral & Maxillofacial Surgery	1	2	2
Oral & Maxillofacial Pathology and Oral Microbiology	1	2	2
Oral Medicine & Radiology	1	2	2
Pediatric Dentistry	1	2	2
Public Health Dentistry	1	2	2

2 Minimum faculty requirement of 1st Unit in an undergraduate institute having basic infrastructure of 100 admissions

Department / Speciality	Professor (HOD)	Readers/ Associate Professors	Lecturers/Assistant Professor
Prosthodontics and Crown & Bridge	1	3	6
Conservative Dentistry and Endodontics	1	3	6
Periodontology	1	3	3
Orthodontics & Dentofacial Orthopedics	1	2	3
Oral & Maxillofacial Surgery	1	3	3
Oral & Maxillofacial Pathology and Oral Microbiology	1	2	3
Oral Medicine & Radiology	1	2	3
Pediatric Dentistry	1	2	3
Public Health Dentistry	1	2	3

Unit 2 :-

Each department shall have the following additional teaching faculty, over and above the requirement of Unit 1.

Professor	1
Reader /Associate Professor	1
Lecturer / Assistant Professor	2

- a. In addition to the faculty staff mentioned above there should be adequate strength of Senior Lecturers/ Lecturers available in the department. The department should also have adequate number of technical and other paramedical staff as prescribed by the Dental Council of India.
- b. A department which does not have a Professor and an Assistant Professor with requisite qualifications and experience as laid down by the DCI, shall not start a postgraduate course in that specialty.
- c. Faculty who is accepted as Postgraduate teacher in a dental institute starting MDS course will not be accepted for the next one year in any other dental institute.

Clinical / Laboratory Facilities and Equipments

There should be adequate clinical material, space and sufficient number of dental chairs and units, adequate laboratory facilities and should regularly be updated keeping in view the advancement of knowledge and technology and research requirements. The department should have the minimum number of all equipments including the latest ones necessary for the training and as recommended by the DCI/KUHS for each specialty from time to time.