SYLLABUS

MDS - PROSTHODONTICS AND CROWN & BRIDGE (9500)

Notice

1. Amendment made by the Statutory Regulating Council i.e. Dental Council of India in Rules/Regulations of Post Graduate Dental Courses shall automatically apply to the Rules/Regulations of the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST), Jaipur.

2. The University reserves the right to make changes in the syllabus/books/guidelines, fees-structure or any other information at any time without prior notice. The decision of the University shall be binding on all.

3. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

RULES & REGULATIONS
MASTER OF DENTAL SURGERY
(3 Years Post Graduate Degree Course)

TITLE OF THE COURSE:
It shall be called Master of Dental Surgery

ELIGIBILITY:

- A candidate for admission to the Master in Dental Surgery course, must possess a degree of Bachelor in Dental Surgery awarded by a University of Institute in India recognized by the Dental Council of India and registered with the State Dental Council and has obtained provisional or permanent registration and has undergone compulsory rotator internship of a year in an approval / recognized dental college.
- In the case of a foreign national, the following procedure shall be followed :

The Council may, on payment of the prescribed fee for registration, grant temporary registration for the duration of the post-graduate training restricted to the dental college / institution to which he or she is admitted for the time being exclusively for post-graduate studies: The temporary registration to such foreign national shall be subject to the condition that such person is duly registered as medical practitioner in his/ her own country from which he/she has obtained his/her basics dental qualification and that his/her degree is recognized by the corresponding state dental council or concerned authority.

- **NRI Seats:**

(a) Students from other countries should possess passport, visa and exchange permits valid for the period of their course of study in this institution and should observe the regulations of both central and state governments regarding residential permits and obtain no-objection certificate from the same.
(b) The candidate should have a provisional "Student Visa". If he comes on any other visa and is selected for admission, he will have to first obtain a student visa from his country and then only he will be allowed to join the course. Therefore it is imperative to obtain provisional student visa before coming for counselling.
(c) This clause is applicable to NRI/ Foreign students only.

CRITERIA FOR SELECTION FOR ADMISSION:
There shall be uniform NEET for admission to the post-graduate dental courses in each academic year conducted in the manner, as prescribed by the National Board of Examination or any other authority appointed by the Central Government in this behalf.

- **NRI Quota**

15% of total seats are earmarked for foreign national/PIO/OCI/NRI/Ward of NRI/NRI sponsored candidates who would be admitted on the basis of merit obtained in NEET MDS or any other criteria laid down by Central Government/DCI.

- **Remaining seats (Other than NRI Quota seats)**

(1) Admissions to the remaining 85% of the seats shall be made on the basis of the merit obtained at the NEET conducted by the National Board of Examinations or any other authority appointed by Government of India for the purpose.
(2) The admission policy may be changed according to the law prevailing at the time of admission.

- **Qualifying Criteria for Admission**:

(a) The candidate has to secure the following category-wise minimum percentile in NEET-MDS Examination for admission to post-graduate courses held in a particular academic year.

General	50th Percentile
Person with locomotory disability lower limbs	45th Percentile
Scheduled Caste, Scheduled Tribes, Other Backward Classes	40th Percentile

The percentile shall be determined on the basis of highest marks secured in the All-India common merit list in NEET-MDS for post-graduate courses: Further, when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in NEET-MDS held for any academic year for admission to post-graduate courses, the Central Government in consultation with the Council may, at its discretion lower the minimum marks required for admission to post-graduate courses for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said academic year only.

(b) The reservation of seats in dental college/institutions for respective categories shall be as per applicable laws prevailing in States / Union territories. An all India merit list as well as State wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in NEET-MDS Test and candidates shall be admitted to post-graduate course from the said merit list only. In determining the merit of candidates who are in service of Government / public authority, weightage in the marks may be given by the Government / competent authority as an incentive upto 10% of the marks obtained for each year of service in remote and/or difficult areas upto the maximum of 30% of the marks obtained in NEET-MDS. The remote and difficult areas shall be as defined by State Government / competent authority from time to time.

(c) A candidate who has failed to secure the minimum percentile as prescribed in these regulations, shall not be admitted to any post-graduate courses in any academic year.

(d) Minimum 5% seats of the annual sanctioned intake capacity shall be filled up by candidates with locomotory disability of lower limbs between 50% to 70%: In case any seat in this quota remains unfilled on account of unavailability of candidates with locomotory disability of lower limbs between 50% TO 70% then any such unfiled seat shall be filled up by persons with locomotory disability of lower limbs between 40% to 50 – before they are included in the annual sanctioned seats for general category candidates: This entire exercise shall be completed by each dental college / institution as per the statutory time schedule for admission.

ENROLMENT AND ELIGIBILITY:

Every candidate who is admitted to MDS course in Mahatma Gandhi Dental College & Hospital shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed eligibility and enrolment fees.

The candidate shall have to submit an application to the MGUMST for the enrolment/eligibility along with the following original documents with the prescribed fees (upto November 30 of the year of admission without late fees and upto December 31 of the year of admission with late fees) –

(a) BDS pass degree certificate issued by the University.
(b) Marks cards of all the university examinations passed (I to Final BDS).
(c) Attempt Certificate issued by the Principal.
(d) Certificate regarding the recognition of the Dental College by the Dental Council of India.
(e) Completion of paid Rotatory Internship certificate from a recognized dental college.
(f) Registration by any State Dental Council.
(g) Migration certificate issued by the concerned university.

(h) Proof of SC/ST or other reserve category, as the case may be.

REGISTRATION:
Every candidate who is admitted to MDS course in Mahatma Gandhi Medical College & Hospital shall be required to get himself/herself registered with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed registration fees.

The candidate shall have to submit an application to the MGUMST for registration with the prescribed fees (upto November 30 of the year of admission without late fees upto December 31 of the year of admission with late fees).

DURATION OF THE COURSE:
The Course will commence on 1st May of each academic year and 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 Mahatma Gandhi University of Medical Sciences & Technology, Jaipur and recognized by the Dental Council India.

METHOD OF TRAINING:

- The period of training for the award of MDS course shall be of three years duration for three academic years as full time candidates in an institution including the period of examination:

  Provided that the time period required for passing out of the MDS course shall be a maximum of six years from the date of admission in said course:

  Provided further that the duration of the post graduate course for the post graduate Diploma holders shall be the same as MDS Course in the concerned speciality except that they are not required to (i) to undergo study and training in Basic Sciences (ii) pass the PART-I examination of MDS course. However, they have to submit the dissertation work, as part of the post graduate programme.
- During the period, each student shall take part actively in learning and teaching activities design of training, by the institution or the university. The teaching and learning activities in each speciality, shall be as under-

(a) Lectures
(b) Journal review
(c) Seminars
(d) Symposium
(e) Clinical postings
(f) Clinico-Pathological conference
(g) Interdepartmental meetings
(h) Teaching skills
(i) Dental education programmes
(j) Conferences/ Workshops/ Advanced Courses
(k) Rotation and posting in other Departments
(l) Dissertation/ Thesis

- All the students of the specialty departments shall complete the minimum quota for the teaching and learning activities, as follows:-

  (a) Journal clubs: 5 in a year
  (b) Seminars: 5 in a year
  (c) Clinical case presentations: 4 in a year
  (d) Lectures taken for undergraduates: 1 in a year

(e) Scientific paper/ poster presentations in state/ national level conferences: 4 papers/ posters during three years of training workshop period
(f) Clinic-pathological conferences: 2 presentations during three years of training period.
(g) Scientific publications (optional) : one publication in any indexed scientific journal
(h) Submission of synopsis: one synopsis within six months from date of commencement of the course.
(i) Submission of Dissertation months: one dissertation six months before appearing for the university examination
(j) Submission of library dissertation: one dissertation within eighteen months from the date of commencement of the course

ATTENDANCE, PROGRESS AND CONDUCT:

- A candidate pursuing MDS course should work in the department of the institution for the full period as a full time student. Every candidate shall secure (80 % attendance during each academic year). No candidate is permitted to run a clinic/work in clinic/laboratory/nursing home/hospital/any similar establishment while studying postgraduate course. No candidate shall join any other course of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration. Each year shall be taken as a unit for the purpose of calculating attendance.
- Every candidate shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons. Every candidate shall have not less than 80 percent of attendance in each year of the course. However, candidates should not be absent continuously as the course is a full time one.

MIGRATION:

Under no circumstances, the migration or the transfer of students undergoing post-graduate Degree/ Diploma shall not be permitted by the university or the authority. No interchange of the specialty in the same institution or in any other institution shall be permitted after the date of commencement of session.

MONITORING PROGRESS OF STUDIES- WORK DIARY / LOG BOOK:

Every candidate shall maintain a work diary in which his/her participation in the entire training programme conducted by the department such as reviews, seminars, etc. has to be chronologically entered. The work scrutinized and certified by the Head of the Department and Head of the Institution is to be presented in the University practical/clinical examination.

(a) Periodic tests: There shall be three tests; two of them shall be annual tests, one each at the end of first year and the second year. The third test shall be held three months before the final examination; tests shall include written papers, practical/clinical and viva voce.
(b) Records: Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University when called for.

DISSERTATION:

- Every candidate pursuing MDS degree course is required to carry out work on research project under the guidance of a recognized post graduate teacher . Then such a work shall be submitted in the form of a dissertation. The dissertation is aimed to train a

postgraduate student in research methods & techniques. It includes identification of a problem, formulation of a hypothesis, review of literature, getting acquainted with recent advances, designing of a study, collection of data, critical analysis, comparison of results and drawing conclusions.

- Every candidate shall submit to the Registrar of the University in the prescribed format a synopsis containing particulars of proposed dissertation work on or before the dates notified by the University. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior notice and permission from the University.
- The dissertation should be written under the following headings:

(a) Introduction
(b) Aims and Objectives of study
(c) Review of Literature
(d) Material and Methods
(e) Results
(f) Discussion
(g) Conclusion
(h) Summary
(i) References
(j) Tables
(k) Annexure

- The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The guide, head of the department and head of the Institution shall certify the dissertation. Four copies of dissertation thus prepared shall be submitted to the Registrar for evaluation, six months before final examination on or before the dates notified by the University. Examiners appointed by the University shall value the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.
- Guide: The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as laid down by Dental Council of India / Mahatma Gandhi University of Medical Sciences & Technology, Jaipur.
- Co-guide: A co-guide may be included provided the work requires substantial contribution from a sister department or from another institution recognized for teaching/training by Mahatma Gandhi University of Medical Sciences & Technology, Jaipur / Dental Council of India. The co-guide shall be a recognized postgraduate teacher of Mahatma Gandhi University of Medical Sciences & Technology, Jaipur.
- 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.

ELIGIBILITY TO APPEAR FOR UNIVERSITY EXAMINATION:

- Eligibility: The following requirements shall be fulfilled by every candidate to become eligible to appear for the final examination.

(a) **Attendance**: Every candidate shall have fulfilled the attendance prescribed by DCI during each academic year of the postgraduate course. Every candidate shall secure (80 % attendance during each academic year).

(b) **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 department. The candidate should have exemplified good conduct throughout.

(c) **Work diary and Logbook**: Every candidate shall maintain a work diary for recording his/her participation in the training programme conducted in the department. The work diary and logbook shall be verified and certified by the Department Head and Head of the Institution.

(d) Internal assessments shall be held every 6 months.

- The certification of satisfactory progress by the Head of the Department/ Institution shall be based on (a), (b) and (c) mentioned above.

SCHEME OF MDS EXAMINATIONS:

- The scheme of examination in respect of all the subjects of MDS shall be as under :
- The examinations shall be organised on the basis of marking system.
- Every student during the period of his post graduate studies would be required to submit evidence of the following so as to make him eligible to appear at the final examination of the University :-

(a) Scientific Publication in indexed journal - 1
(b) Scientific Presentations - 3
(c) Specialty Conferences/ PG Conventions attended - 3

- Every student would be required to appear in and qualify the Pre-University examination conducted at the college level .Post graduate students who fail to appear in or do not qualify the Pre-University examination shall not be permitted to appear in the final examination of the University.
- The University shall conduct not more than two examinations in a year for any subject with an interval of not less than 4 months and not more than 6 months between the two examinations.
- The examinations shall consist of Thesis, Theory papers and Clinical/ Practical and Oral examinations.

(a) **Thesis** : Thesis shall be submitted at least six months before the Theory and Clinical/ Practical and Oral examinations.

(1) The thesis shall be examined by a minimum of three examiners- one Internal and two External examiners.

(2) Only on the acceptance of the thesis by two examiners, the candidate shall be eligible to appear for the final examination.

(b) **Theory** :

(1) Theory exams will be conducted in 2 parts.

Part - I – Shall consist of one paper; Applied basic sciences paper at the end of the first year of MDS.The Paper I of Part I shall carry 100 marks. The question paper shall be set and evaluated by the paper setter (external examiner of the recognized university by DCI from out of the state). There shall be 10 questions of 10 marks each. The candidates shall have to secure a minimum of 50% in the basic Sciences and shall have to pass the Part I examination at least 6 months prior to the final (Part II) examination. There shall be one internal and one external examiner for three students appointed by the affiliating university for evaluating the answer scripts of the same speciality. However, the number of examiner/s may be increased with the corresponding increase in the number of students. Answer books shall be evaluated by the internal and external examiner/s and average marks shall be computed.

Part-II - Consisting of 3 papers, out of which 2 will be pertaining to the specialty and one shall be of Essays. Paper I and Paper II shall consist of 2 long answer questions carrying 25 marks each and five questions carrying 10 marks each. In paper III, three questions will be given and student has to answer any two questions. Each question carries 50 marks. There shall be four examiners in each subject. Out of them, two (50%) shall be external examiners and two (50%) shall be internal examiners. Both external examiners shall be from a university other than the affiliating university and one examiner shall be from a university of different state. Answer books shall be evaluated by four examiners, two internal and two external and average marks shall be computed.

(2) Each theory paper examination shall be of three hours duration.

(3) Each theory paper shall carry maximum 100 marks.

(c) **Clinical / Practical and Oral Examination**

(1) Clinical / Practical (of 200 marks) and Oral Examination (of 100 marks) will be conducted by at least four examiners, out of which two (50%) shall be External examiners who shall be invited from other recognized Universities from outside the State. The practical/ clinical examination in all the specialties shall be conducted for 6 candidates in two days: provided that practical/ clinical examination may be extended for one day, if it is not complete in two days.

(2) A candidate will be required to secure at least 50% (viz. 150/300) marks in the Practical including clinical and viva voce examinations.

- A candidate shall be required to secure at least 50% marks in theory papers and 50% marks in practical (including clinical & viva voce) separately to pass MDS Examination.

GRACE MARKS:

- No grace marks will be provided in MDS examinations.

REVEALUATION/SCRUTINY:

- No Revaluation shall be permitted in the MDS examinations. However, the student can apply for scrutiny of the answer books.
- If a candidate fails in MDS Part-II examination in one or more theory paper(s) or practical, he/she shall have to reappear in all theory papers as well as practical.

APPOINTMENT OF EXAMINERS:

- Qualification and experience of Examiners

The qualification and experience for the appointment of an examiner shall be as under:-

(1) shall possess qualification and experience of Professor in a post graduate degree programme.

(2) A person who is not a regular post graduate teacher in the subject shall not be appointed as an examiner.

(3) The internal examiner in a subject shall not accept external examinership in a college for the same academic year.

(4) No person shall be appointed as an external examiner for the same institution for more than 2 consecutive years. However, if there is a break of one year, the person can be reappointed.

- Criteria for pass certificate

To pass the university examination, a candidate shall secure in both theory examination and in practical/ clinical including viva voce independently with an aggregate of 50% of total marks Allotted (50 out of 100 marks in part I examination and 150 marks out of 300 in part II examination in theory and 150 out of 300, clinical plus viva voce together). A

candidate securing marks below 50% as mentioned above shall be declared to have failed in the examination. A candidate who is declared successful in the examination shall be granted a Degree of Master of Dental Surgery in respective speciality.

PROSTHODONTICS AND CROWN & BRIDGE (9500)

1. AIM:

To train the dental graduates so as to ensure higher level of competence in both general and specialty areas of Prosthodontics and prepare candidates with teaching, research and clinical abilities including prevention and after care in Prosthodontics – removable dental prosthodontics, fixed dental prosthodontics (Crown &Bridge), implantology, maxillofacial prosthodontics and esthetic dentistry.

GENERAL OBJECTIVES OF THE COURSE:

Training program for the dental graduates in Prosthetic dentistry– removable dental prosthodontics, fixed dental prosthodontics (Crown & Bridge), implantology, maxillofacial prosthodontics and esthetic dentistry and Crown & Bridge including Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to perform research with a good understanding of social, cultural, educational and environmental background of the society.

- To have adequate acquired knowledge and understanding of applied basic and systemic medical sciences, both in general and in particularly of head and neck region.

- The postgraduates should be able to provide Prosthodontic therapy for patients with competence and working knowledge with understanding of applied medical, behavioral and clinical science, that are beyond the treatment skills of the general BDS graduates and MDS graduates of other specialties,
- To demonstrate evaluative and judgment skills in making appropriate decisions regarding prevention, treatment, after care and referrals to deliver comprehensive care to patients.

KNOWLEDGE:

The candidate should possess knowledge of applied basic and systemic medical sciences.

- 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
- The student shall acquire 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.

- Students shall acquire knowledge and practice of history taking, Diagnosis, treatment planning, prognosis, record maintenance of oral, craniofacial and systemic region.

- 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 arrangement for retention, stability, esthetics, phonation, psychological comfort, fit and insertion.
- Instructions for patients in after care and preventive Prosthodontics and management of failed restorations shall be possessed by the students.

- 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.

- Ability to diagnose and plan treatment for patients requiring Prosthodontic therapy

- Ability to read and interpret radiographs, and other investigations for the purpose of diagnosis and treatment planning.

- 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

- 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.

- Should have knowledge of age changes, geriatric psychology, nutritional considerations and prosthodontic therapy in the aged population.

- Should have ability to diagnose failed restoration and provide prosthodontic therapy and after care.

- Should have essential knowledge on ethics, laws, and Jurisprudence and Forensic Odontology in Prosthodontics.

- 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

- Should identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.

- Should identify cases, which are outside the area of his specialty / competence, refer them to appropriate specialists and perform interdisciplinary case management.

- To advice regarding case management involving surgical and interim treatment

- Should be competent in specialization of team management in craniofacial prosthesis design.

- 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.

- Should attend continuing education programmes, seminars and conferences related to Prosthodontics, thus updating himself/herself.
- To teach and guide his/her team, colleagues and other students.

- 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.

- 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.

- Should have an ability to plan and establish Prosthodontics clinic/hospital teaching department and practice management.

- 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.

SKILLS:

- The candidate should be able to examine the patients requiring 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.

- To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.

- The candidate should be able to 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.

- The candidate should be able to 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 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.

- 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
- Should be able to critically appraise articles published and understand various components of different types of articles and be able to gather the weight of evidence from the same

- To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy.

- 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.
- 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
- To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontics.

ATTITUDES:

- 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.

- Should be willing to share the knowledge and clinical experience with professional colleagues.
- Should develop an attitude towards quality, excellence, ***non-compromising*** in treatment.
- Should be able to self-evaluate, reflect and improve on their own.
- Should pursue research in a goal to contribute significant, relevant and useful information, concept or methodology to the scientific fraternity.
- Should be able to demonstrate ***evidence-based*** practice while handling cases

- 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.

- Should respect patient's rights and privileges, including patient's right to information and right to seek second opinion.

COMMUNICATIVE ABILITIES:

- To develop communication skills, in particular ***and*** to explain treatment options available in the management.

- To provide leadership and get the best out of his / her group in a congenial working atmosphere.

- Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patient. He/She should be able to guide and counsel the patient with regard to various treatment modalities available.

- To develop the ability to communicate with professional colleagues through various media like Internet, e-mails, videoconferences etc. to render the best possible treatment.

- Should demonstrate good explanatory and demonstrating ability as a teacher in order to facilitate learning among students.

3. SYLLABUS:

3.1 Theory

Part - I (9501) Applied Basic Sciences
(Applied Basic sciences: Applied Anatomy, Nutrition and Biochemistry, Pathology and Microbiology, virology, Applied Dental anatomy and histology, Oral pathology and oral Microbiology, Adult and geriatric psychology, Applied Dental materials)

Students should develop thorough knowledge on Applied aspects of Anatomy, Embryology, Histology particularly head and neck, Physiology, Biochemistry, Pathology and Microbiology, Virology, Applied Pharmacology, health and systematic diseases principles in surgery medicine and Anesthesia, Nutrition, Behavioral sciences, age changes, genetics, Dental materail sciences, Congenital defects and syndromes and Anthropology, Biomaterial sciences, Bioengineering and Biomedical and Research Methodology as related to Masters degree Prosthodontics and crown and bridge including implantology.
It is desirable to have adequate and Biostatistics, Research methodology and use of computers to develop necessary teaching skills in the specialty of Prosthodontics including crown and bridge.

APPLIED ANATOMY OF HEAD AND NECK

General Human Anatomy
Gross Anatomy, Anatomy of Head & Neck in detail. Cranial and facial bones, TMJ and function, muscles of mastication and facial expression, muscles of neck and chain of back muscles including muscles of deglutition and tongue, arterial supply and venous drainage of the head and neck, anatomy of the Para nasal sinuses with relation to the V cranial nerve. General consideration of the structure and function of the brain. Brief considerations of V, VII, XI, XII, cranial nerves and autonomic nervous system of the head and neck. The salivary glands, Pharynx, Larynx, Trachea, Esophagus, Functional Anatomy of mastication, deglutition, speech, respiration, and circulation, teeth eruption, morphology, occlusion and function. Anatomy of TMJ, its movements and myofacial pain dysfunction syndrome.

Embryology
Development of the face, tongue, jaws, TMJ, Paranasal sinuses, pharynx, larynx, trachea, esophagus, salivary glands, development of oral and para-oral tissue including detailed aspects of tooth and dental hard tissue formation.

Growth & Development
Facial form and facial growth and development, overview of dentofacial growth process and physiology from fetal period to maturity and old age, comprehensive study of craniofacial

biology. General physical growth, functional and anatomical aspects of the head, changes in craniofacial skeletal relationship between development of the dentition and facial growth.

Dental Anatomy
Anatomy of primary and secondary dentition, concept of occlusion, mechanism of articulation and masticatory function. Detailed structural and functional study of the oral dental and para oral tissues. Normal occlusion, development of occlusion in deciduous mixed and permanent dentitions, root length, root configuration, tooth-numbering system.

Histology
Histology of enamel, dentin, cementum, periodontal ligament and alveolar bone, pulpal anatomy, histology and biological consideration. Salivary glands and histology of epithelial tissues including glands. Histology of general and specific connective tissue including bone, hematopoietic system, lymphoid etc. Muscle and neural tissues, endocrinal system including thyroid. Histology of skin, oral mucosa, respiratory mucosa, connective tissue, bone, cartilage, cellular elements of blood vessels, blood, lymphatic, nerves, muscles, tongue, tooth and its surrounding structures.

Cell biology
Brief study of the structure and function of the mammalian cell with special emphasis on ultra structural features and molecular aspects. Detailed consideration of inter cellular junctions, cell cycle and division, cell-to-cell and cell-extra cellular matrix interactions.

APPLIED PHYSIOLOGY AND NUTRITION
Introduction, mastication, deglutition, digestion and assimilation, homeostasis, fluid and electrolyte balance. Blood composition, volume, function, blood groups and hemorrhage, blood transfusion, circulation, Heart. Pulse, blood pressure, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vit D in growth and development of teeth, bone and jaws. Role of Vit, A, C and B complex in oral mucosal and periodontal health. Physiology and function of the masticatory system. Speech mechanism, mastication, swallowing and deglutition mechanism, salivary glands and saliva.

Endocrine System
General principles of endocrine activity and disorders relating to pituitary, thyroid, pancreas, parathyroid, adrenals, gonads, including pregnancy and lactation . Physiology of saliva, urine formation, normal and abnormal constituents of urine, physiology of pain, sympathetic and parasympathetic nervous system. Neuromuscular co-ordination of the stomatognathic system.

Applied Nutrition
General principles, balanced diet, effect of dietary deficiencies and starvation, diet, digestion, absorption, transportation and utilization, diet for elderly patients.

APPLIED BIOCHEMISTRY
General principles governing the various biological activities of the body such as osmotic pressure, electrolytic dissociation, oxidation-reduction, etc. General composition of the body, intermediary metabolism, carbohydrates, proteins, lipids and their metabolism, enzymes, vitamins, and minerals, hormones, blood and other body fluids. Metabolism of inorganic elements, detoxification in the body and anti metabolites.

APPLIED PHARMACOLOGY AND THERAPEUTICS

Definition of terminologies used - Dosage and mode of administration of drugs. Action and fate of drugs in the body, drug addiction, tolerance and-hypersensitivity reactions, drugs acting on the central nervous system, general anesthetics, hypnotics. Analeptics and tranquilizers, local anesthetics, chemotherapeutics and antibiotics, anti tubercular and anti syphilitic drugs, analgesics and antipyretics, antiseptics, styptics, sialogogues and antisialogogues, haematinics, cortisone, ACTH, insulin and other anti diabetic drugs, vitamins: A,D,B - complex group, C and K etc. Chemotherapy and Radiotherapy.

APPLIED PATHOLOGY

Inflammation, repair and degeneration, Necrosis and gangrene, Circulatory disturbances, Ischemia, hyperemia, chronic venous congestion, edema, thrombosis, embolism and infarction. Infection and infective granulomas, allergy and hypersensitive reaction, Neoplasm; Classification of tumors, Carcinogenesis, characteristics of benign and malignant tumors, spread of tumors. Applied histopathology and clinical pathology.

APPLIED MICROBIOLOGY

Immunity, knowledge of organisms commonly associated with diseases of the oral cavity viz. morphology, cultural characteristics etc of streptococci, staphylococci, pneumococci, gonococci and meningococci, Clostridia group of organisms, Spirochetes, organisms of tuberculosis, leprosy, diphtheria, actinomycosis, moniliasis etc. Virology, cross infection control, sterilization and hospital waste management.

APPLIED ORAL PATHOLOGY

Developmental disturbances of oral and para oral structures, regressive changes of teeth, bacterial, viral and mycotic infections of oral cavity, dental caries, diseases of pulp and periapical tissues, physical and chemical injuries of the oral cavity, oral manifestations of metabolic and endocrine disturbances, diseases of the blood and blood clotting mechanism in relation to the oral cavity, Periodontal diseases, diseases of the skin, nerves and muscles in relation to the Oral cavity.

LABORATORY DETERMINATIONS

Blood groups, blood matching, RBC and WBC count, bleeding and clotting time, smears and cultures - urine analysis and culture

BIOSTATISTICS

Study of Biostatistics as applied to dentistry and research. Definition, aim characteristics and limitations of statistics, planning of statistical experiments, sampling, classification and presentation of data (Tables, graphs, pictograms etc), Analysis of data.

Introduction to Biostatistics

Scope and need for statistical application to biological data. Definition of selected terms - scale of measurements related to statistics, Methods of collecting data, presentation of the statistical diagrams and graphs. Frequency curves, mean, mode, median, Standard Deviation and co-efficient of variation, correlation, co-efficient and its significance, binomial distributions, normal distribution and Poisson distribution, tests of significance.

RESEARCH METHODOLOGY

Understanding and evaluating dental research, scientific method and the behavior of scientists, understanding logic - inductive logic - analogy, models, authority, hypothesis and causation, quacks, Cranks, t/buses of logic, Measurement and Errors of measurement, presentation of results, Reliability, Sensitivity and specificity diagnosis test measurement, Research Strategies, Observation, Correlation, Experimentation and Experimental design.

Logic of statistical interference, balance judgments, judgment under- uncertainty, clinical vs. scientific judgement, problem with clinical judgment, forming scientific judgments, the problem of contradictory evidence. Citation analysis as a Means of literature evaluation, influencing judgment: Lower forms or Rhetorical life. Denigration, Terminal Inexactitude.

APPLIED RADIOLOGY

Introduction, radiation, background of radiation, sources, radiation biology, somatic damage, genetic damage, protection from primary and secondary radiation, Principles of x-ray production, applied principles of radio therapy and after care.

Roentgenographic Techniques

Intra oral, extra oral roentgenography, methods of localization digital radiology and ultra sound, normal anatomical landmarks of teeth and jaws in radiograms, temporomandibular joint radiograms, neck radiograms.

APPLIED MEDICINE

Systemic diseases and its influence on general health and oral and dental health. Medical emergencies in the dental office, prevention, preparation, medico legal consideration. unconsciousness, respiratory distress, altered consciousness, seizures, drug related emergencies, chest pain, cardiac arrest, premedication, and management of ambulatory patients, resuscitation, applied psychiatry in child, adult and senior citizens. Assessment of case, premedication, intubation, monitoring, extubation, complications, assisting in OT for anesthesia.

APPLIED SURGERY & ANAESTHESIA

General principles of surgery, wound healing, incision wound care, hospital care, control of hemorrhage, electrolyte balance. Common bandages, sutures, splints, shifting of critically ill patients, prophylactic therapy, bone surgeries, grafts, etc. Surgical techniques, nursing assistance, anesthetic assistance. Principles in speech therapy, surgical and radiological craniofacial oncology, applied surgical ENT and ophthalmology.

APPLIED PLASTIC SURGERY

Applied understanding and assistance in programmes of Plastic surgery for Prosthodontic therapy.

APPLIED DENTAL MATERIALS

(1) All materials used for treatment of craniofacial disorders - Clinical, treatment, and laboratory materials, associated materials, Technical consideration, shelf life, storage, manipulations, sterilization, and waste management.
(2) Students shall be trained for all clinical procedures with an advanced knowledge of theory of principles, concepts and techniques of various accepted methods and materials used in Prosthodontics.
(3) Students shall acquire full knowledge and practice of equipments, instruments, materials and laboratory procedures at a higher level of competence with accepted methods.

All clinical practices shall involve personal and social obligation of cross infection control, sterilization and waste management.

Part - II : Paper I (9502) : Removable Prosthodontics and Implant supported prosthesis (Implantology), Geriatric dentistry and Craniofacial Prosthodontics

ORAL AND MAXILLOFACIAL PROSTHODONTICS AND IMPLANTOLOGY:

I. NON-SURGICAL AND SURGICAL METHODS OF PROSTHODONTICS AND IMPLANTOLOGY

a. Prosthodontic treatment for completely edentulous patients – Complete dentures, immediate complete dentures, single complete dentures, tooth supported complete dentures & Implant supported Prosthesis for completely edentulous patients for typical and atypical cases
b. Prosthodontic treatment for partially edentulous patients: - Clasp-retained acrylic and cast partial dentures, transitional dentures, immediate dentures, intra coronal and extra coronal precision attachments retained partial dentures & maxillofacial prosthesis for typical and atypical cases
a) **Edentulous Predicament**, Biomechanics of the edentulous state, Support mechanism for the natural dentition and complete dentures, Biological considerations, Functional and Para functional considerations, Esthetic, behavioral and adaptive responses, Temporomandibular joints changes.
b) **Effects of aging of edentulous patients** –aging population, distribution andedentulism in old age, impact of age on edentulous mouth – Mucosa, Bone, saliva, jaw movements in old age, taste and smell, nutrition, aging, skin and teeth, concern for personal appearance in old age
c) **Sequelae caused by wearing complete denture** –the denture in the oralenvironment – Mucosal reactions, altered taste perception, burning mouth syndrome, gagging, residual ridge (reduction) resorption, denture stomatitis, flabby ridge, denture irritation hyperplasia, traumatic Ulcers, Oral cancer in denture wearers, nutritional deficiencies, masticatory ability and performance, nutritional status and masticatory functions.
d) **Temporomandibular disorders in edentulous patients** –Epidemiology, etiology and management, Pharmacotherapy, Physical modalities, and Bio-behavioral modalities
e) **Nutrition Care for the denture wearing patient** –Impact of dental status onfood intake, Gastrointestinal functions, nutritional needs and status of older adults, Calcium and bone health, vitamin and herbal supplementation, dietary counseling and risk factor for malnutrition in patients with dentures and when teeth are extracted.
f) **Preparing patient for complete denture patients** –Diagnosis and treatment planning for edentulous and partially edentulous patients – familiarity with patients, principles of perception, health questionnaires and identification data, problem identification, prognosis and treatment identification data, problem identification, prognosis and treatment planning – contributing history – patient's history, social information, medical status – Prosthodontic treatment for edentulous patients: **-** Complete Dentures and Implant supported Prosthesis. Complete Denture Prosthesis – Definitions, terminologies, G.P.T., Boucher's clinical dental terminology Scope of Prosthodontics – The Cranio Mandibular system and its functions, the reasons for loss of teeth, consequences of loss of teeth and treatment modality with various restorations and replacements systemic status with special reference to debilitating diseases, diseases of the joints, cardiovascular disorders, diseases of the skin, neurological disorders, oral malignancies, climacteric, use of drugs, mental health – mental attitude, psychological changes, adaptability, geriatric changes – physiologic, pathological, pathological and intra oral changes. Intra oral health – mucus membrane, alveolar ridges, palate and vestibular sulcus and dental health. Data collection and recording, visual observation, radiography, palpation, measurement of sulci or fossae, extra oral measurement, the vertical dimension of occlusion, diagnostic casts.
Specific observations – existing dentures, soft tissue health, hard tissue health – teeth, bone

Biomechanical considerations – jaw relations, border tissues, saliva, muscular development – muscle tone, neuromuscular co-ordination, tongue, cheek and lips. Interpreting diagnostic findings and treatment planning

g) **Pre prosthetic surgery** –Improving the patients denture bearing areas andridge relations.

h) **Non surgical methods** –rest for the denture supporting tissues, occlusal correction of the old prosthesis, good nutrition, conditioning of the patients musculature,

i) **Surgical methods** –Correction of conditions, that preclude optimal prosthetic function – hyperplastic ridge – epulis fissuratum and papillomatosis, frenular attachments and pendulous maxillary tuberosities, ridge augmentation, maxillary and mandibular oral implants, corrections of congenital deformities, discrepancies in jaw size, relief of pressure on the mental foramen, enlargement of denture bearing areas, vestibuloplasty, ridge augmentation, replacement of tooth roots with Osseo integrated denture implants.

j) **Immediate Denture** –Advantages, Disadvantages, Contraindications,Diagnosis, treatment planning and Prognosis, Explanation to the patient, Oral examinations, Examination of existing prosthesis, Tooth modification, Prognosis, Referrals/adjunctive care, oral prophylaxis and other treatment needs. First visit, preliminary impressions and diagnostic casts, management of loose teeth, custom trays, final impressions and master casts, two tray or sectional custom impression tray, location of posterior limit and jaw relation records, setting of the posterior denture teeth / verifying jaw relations and the patient try in.
Laboratory phase, setting of anterior teeth, Wax contouring, flasking and boil out, processing and finishing, surgical templates, surgery and immediate denture insertion, post operative care and patient instructions, subsequent service for the patient on the immediate denture.
k) **Over dentures** (tooth supported complete dentures)–indications andtreatment planning, advantages and disadvantages, selection of abutment teeth, loss of abutment teeth, tooth supported complete dentures. Non-coping abutments, abutment with copings, abutments with attachments, submerged vital roots, preparations of the retained teeth.

l) **Single Dentures:** Single Mandibular denture to oppose natural maxillaryteeth, single complete maxillary denture to oppose natural Mandibular teeth to oppose a partially edentulous Mandibular arch with fixed prosthesis, partially edentulous Mandibular arch with removable partial dentures. Opposing existing complete dentures, preservation of the residual alveolar ridge, necessity for retaining maxillary teeth and preventing mental trauma.

m) **Art of communication in the management of the edentulous predicament** – Communication–scope, a model of communication, why communication is important? What are the elements of effective communication? special significance of doctor / patient communication, doctor behavior, The iatro sedative (doctor & act of making calm) recognizing and acknowledging the problem, exploring and identifying the problem, interpreting and explaining the problem, offering a solution to the problem for mobilizing their resources to operate in a most efficient way, recognizing and acknowledging the problem, interpreting and explaining the problem, offering a solution to the problem.

n) **Materials prescribed in the management of edentulous patients -** Denture base materials, General requirements of biomaterials for edentulous patients, requirement of an ideal denture base, chemical composition of denture base resins, materials used in the

fabrication of prosthetic denture teeth, requirement of prosthetic denture teeth, denture lining materials and tissue conditioners, cast metal alloys as denture bases – base metal alloys.

o) **Articulators** – **Evolution of concepts,** Classification, selection, limitations, precision, accuracy and sensitivity, and Functions of the articulator and their uses. Recent advancements including virtual articulator

p) **Fabrication of complete dentures** –complete denture impressions–muscles of facial expressions and anatomical landmarks, support, retention, stability, aims and objectives of preservation, support, stability, aesthetics, and retention. Impression materials and techniques – need of 2 impressions the preliminary impression and final impressions.
Developing an analogue / substitute for the maxillary denture bearing area – anatomy of supporting structures – mucous membrane, hard palate, residual ridge, shape of the supporting structure and factors that influence the form and size of the supporting bones, incisive foramen, maxillary tuberosity, sharp spiny process, torus palatinus, Anatomy of peripheral or limiting structures, labial vestibule, Buccal vestibule, vibrating lines. Preliminary and final impressions, impression making, custom tray and refining the custom tray, preparing the tray to secure the final impression, making the final impression, boxing impression and making the casts
Developing an analogue / substitute for the Mandibular denture bearing area-anatomy of supporting structure, crest of the residual ridge, buccal shelf, shape of supporting structure, mylohyoid ridge, mental foramen, genial tubercles, torus mandibularis, Anatomy of peripheral or limiting structure – labial vestibule, Buccal vestibule, lingual border, mylohyoid muscle, retromylohyoid fossa, sublingual gland region, alveolingual sulcus, Mandibular impressions – preliminary impressions, custom tray, refining, preparing the tray\, final impressions.
q) **Mandibular movements, Maxillo mandibular relations and concepts of occlusion –** Gnathology, identification of shape and location of arch form–Mandibular and maxillary occlusion rims, level of occlusal plane and recording of trail denture base, tests to determine vertical dimension of occlusion, interocclusal & centric relation records. Biological and clinical considerations in making jaw relation records and transferring records from the patients to the articulator, Recording of Mandibular movements – influence of opposing tooth contacts, temporomandibular joint, muscular involvements, neuromuscular regulation of Mandibular motion, the envelope of motion, rest position.

Maxillo – Mandibular relations – the centric, eccentric, physiologic rest position, vertical dimension, occlusion, recording methods – mechanical, physiological, Determining the horizontal jaw relation – Functional graphics, tactile or interocclusal check record method, Orientation / sagittal relation records, Arbitrary / Hinge axis and face bow record, significance and requirement, principles and biological considerations and securing on articulators.
r) **Selecting and arranging artificial teeth and occlusion for the edentulous patient –** anterior tooth selection, posterior tooth selection, and principles in

arrangement of teeth, and factors governing the position of teeth – horizontal
& vertical relations. The inclinations and arrangement of teeth for aesthetics, phonetics and mechanics – to concept of occlusion.
s) **The Try in** –verifying vertical dimension, centric relation, establishment ofposterior palatal seal, creating a facial and functional harmony with anterior teeth, harmony of spaces

of individual teeth position, harmony with sex, personality and age of the patient, co-relating aesthetics and incisal guidance.

t) **Speech considerations with complete dentures & speech production** –structural and functional demands, neuropsychological background, speech production and the roll of teeth and other oral structures – bilabial sounds, labiodental(s) sounds, linguodental sounds, linguoalveolar sound, articulatoric characteristics, acoustic characteristics, auditory characteristics, linguopalatal and linguoalveolar sounds, speech analysis and prosthetic considerations.

u) **Waxing contouring and processing the dentures their fit and insertion and after care** –laboratory procedure–wax contouring, flasking and processing, laboratory remount procedures, ***selective grinding***, finishing and polishing.
Critiquing the finished prosthesis – doctors evaluation, patients evaluation, friends evaluation, elimination of basal surface errors, errors in occlusion, interocclusal records for remounting procedures – verifying centric relation, eliminating occlusal errors.
Special instructions to the patient – appearance with new denture, mastication with new dentures, speaking with new dentures, oral hygiene with dentures, preservation of residual ridges and educational material for patients, maintaining the comfort and health of the oral cavity in the rehabilitated edentulous patients. Twenty-four hours oral examination and treatment and (preventive) Prosthodontic – periodontic recall for oral examination 3 to 4 months intervals and yearly intervals.

v) **Implant supported Prosthesis for partially and Completely edentulous patients** – Scienceof Osseo integration, clinical protocol ***(diagnostic,surgical and prosthetic***) for treatment with implant supported over dentures, managing problems and complications. Implant Prosthodontics for edentulous patients: current and future directions.
o Introduction and Historical Review
o Biological, clinical and surgical aspects of oral implants
o Diagnosis and treatment planning

Implant supported prosthesis for partially edentulous patients – Clinical and laboratory protocol: Implant supported prosthesis, managing problems and complications

- Introduction and historical review
- Biological, clinical and surgical aspects of oral implants
- Diagnosis and treatment planning
- Radiological interpretation for selection of fixtures

o Splints for guidance fort surgical placement of fixtures
o ***Surgical and*** Intra oral plastic surgery, if any
o Guided bone and Tissue regeneration consideration for implants fixture.
o Implant supported prosthesis for complete edentulism and partial edentulism
o Occlusion for implant supported prosthesis.
o Peri-implant tissue and Management of peri-implantitis
o Maintenance and after care
o Management of failed restoration.
o Work authorization for implant supported prosthesis – definitive instructions, legal aspects, delineation of responsibility.

Prosthodontic treatment for partially edentulous patients – Removable partial Prosthodontics –

a**. Scope, definition** and terminology, Classification of partially edentulous arches - requirements of an acceptable method of classification, Kennedy's classification, Applegate's rules for applying the Kennedy classification

b. Components of RPD –

i) major connector–mandibular and maxillary
ii) minor connectors, design, functions & form and location of major and minor connectors, tissue stops, finishing lines, reaction of tissue to metallic coverage
iii) Rest and rest seats – form of the Occlusal rest and rest seat, interproximal Occlusal rest seats, internal Occlusal rests, possible movements of partial dentures, support for rests, lingual rests on canines and incisor teeth, incisal rest and rest seat.

iv) Direct retainers- Internal attachments & extracoronal direct retainers. Relative uniformity of retention, flexibility of clasp arms, stabilizing reciprocal clasp, criteria for selecting a given clasp design, the basic principles of clasp design, circumferential clasp, bar clasp, combination clasp and other type of retainers.
v) Indirect Retainers – denture rotation about an axis, factors influencing effectiveness of indirect retainers, forms of indirect retainers, auxiliary Occlusal rest, canine extensions from Occlusal rests, canine rests, continuous bar retainers and linguoplates, modification areas, rugae support, direct – indirect retention.
vi) Teeth and denture bases – types, materials, advantages and dis-advantages, indications and contraindications and clinical use.

Principles of removable partial Denture design – Bio mechanical considerations, and the factors influencing after mouth preparations – Occlusal relationship of remaining teeth, orientation of Occlusal plane, available space for restoration, arch integrity, tooth morphology, response of oral structure to previous stress, periodontal conditions, abutment support, tooth supported and tooth and tissue supported, need for indirect retention, clasp design, need for rebasing, secondary impression, need for abutment tooth modification, type of major connector, type of teeth selection, patients past experience, method of replacing single teeth or missing anterior teeth.

Difference between tooth supported and tissue supported partial dentures. Essentials of partial denture design, components of partial denture design, tooth support, tissue support, stabilizing components, guiding planes, use of splint bar for denture support, internal clip attachments, overlay abutment as support for a denture base, use of a component partially to gain support.

c. Education of patient

d. Diagnosis and treatment planning

e. Design, treatment sequencing and mouth preparation

f. **Surveying** –Description of dental surveyor, purposes of surveying, Aims and objectives in surveying of diagnostic cast and master cast, Final path of insertion, factors that determine path of insertion and removal, Recording relation of cast to surveyor, measuring amount of retentive area Blocking of master cast – paralleled blockout, shaped blockout, arbitrary blockout and relief.

g. **Diagnosis and treatment planning** –Infection control and cross infectionbarriers – clinical and laboratory and hospital waste management, Objectives of prosthodontic treatment, Records, systemic evaluation, Oral examination, preparation of diagnostic cast, interpretation of examination data, radiographic interpretation, periodontal considerations, caries activity, prospective surgical preparation, endodontic treatment, analysis of occlusal factors, fixed restorations, orthodontic treatment, need for determining the design of components, impression procedures and occlusion, need for reshaping remaining teeth, reduction of unfavorable tooth contours, differential diagnosis : fixed or removable partial dentures, choice between complete denture and removable partial dentures, choice of materials

h. **Preparation of Mouth for removable partial dentures** –Oral surgical preparation, conditioning of abused and irritated tissues, periodontal preparation – objectives of periodontal therapy, periodontal diagnosis, control therapy, periodontal surgery.

i. **Preparation of Abutment teeth** –Classification of abutment teeth, sequence of abutment preparations on sound enamel or existing restorations, conservative restorations using crowns, splinting abutment teeth, utilization, temporary crowns to be used as abutment.

j. **Impression Materials and Procedures for Removable Partial Dentures** –Rigid materials, thermoplastic materials, Elastic materials, Impressions of the partially edentulous arch, Tooth supported, tooth tissue supported, Individual impression trays.

k. **Support for the Distal Extension Denture Base** –Distal extension removable partial denture, Factors influencing the support of distal extension base, Methods of obtaining functional support for the distal extension base.

l. **Laboratory Procedures** –Duplicating a stone cast, Waxing the partialdenture framework, Anatomic replica patterns, Spruing, investing, burnout, casting and finishing of the partial denture framework, making record bases, occlusion rims, making a stone occlusal template from a functional occlusal record, arranging posterior teeth to an opposing cast or template, arrangement of anterior teeth, waxing and investing the partial denture before processing acrylic resin bases, processing the denture, remounting and occlusal correction to an occlusal template, polishing the denture.

m. **Initial placement, adjustment and servicing of the removable partial denture** – adjustments to bearing surfaces of denture framework, adjustmentof occlusion in harmony with natural and artificial dentition, instructions to the patient, follow – up services

n. **Relining and Rebasing the removable partial denture** –Relining toothsupported dentures bases, relining distal extension denture bases, methods of reestablishing occlusion on a relined partial denture.

o. **Repairs and additions to removable partial dentures** –Broken clasp arms,fractured occlusal rests, distortion or breakage of other components – major and minor connectors, loss of a tooth or teeth not involved in the support or retention of the restoration, loss of an abutment tooth necessitating its replacement and making a new direct retainer, Other types of repairs & repair by soldering.

p. **Removable partial denture considerations in maxillofacial prosthetics** –Maxillofacial prosthetics, intra oral prosthesis, design considerations, maxillary prosthesis, Obturators, speech aids, palatal lifts, palatal augmentations, mandibular prosthesis, treatment planning,

framework design, class I resection, Class II resection, mandibular flange prosthesis, jaw relation records.

q. **Management of failed restorations and work authorization details.**

II. MAXILLOFACIAL REHABILITATION:

Scope, terminology, definitions, cross infection control and hospital waste management, work authorization. Behavioral and psychological issues in Head and neck cancer, Psychodynamic interactions between clinician and patient. **Cancer Chemotherapy:** Oral Manifestations, Complications, and management, **Radiation therapy of head and neck tumors:** Oral effects, Dental manifestations and dental treatment: Etiology, treatment and rehabilitation (restoration).

a Acquired defects of the mandible, acquired defects of hard palate, soft palate, clinical management of edentulous and partially edentulous maxillectomy patients, Facial defects, Restoration of speech, Velopharyngeal function, cleft lip and palate, cranial implants, maxillofacial trauma, Lip and cheek support prosthesis, Laryngectomy aids, Obstructive sleep apnoea, Tongue prosthesis, Oesophageal prosthesis, radiation carriers, Burn stents, Nasal stents, Vaginal and anal stents, Auditory inserts, Trismus appliances, mouth controlled devices for assisting the handicapped, custom prosthesis, conformers, and orbital prosthesis for ocular and orbital defects. Osseo integrated supported facial and maxillofacial prosthesis. Resin bonding for maxillofacial prosthesis, cranial prosthesis Implant rehabilitation of the mandible compromise by radiotherapy, Prosthodontic treatment, Material and laboratory procedures for maxillofacial prosthesis.

Part-II : Paper II (9503) : Fixed Prosthodontics, Occlusion, TMJ and Esthetics

FIXED PROSTHODONTICS:

(1)Scope, definitions and terminology, classification and principles, design, mechanical and biological considerations of components - Retainers, connectors, pontics, work authorization.
(2) Diagnosis and treatment planning - patients history and interview, patients desires and expectations and needs, systemic and emotional health, clinical examinations ¬head and neck, oral- teeth, occlusal and periodontal, Preparation of diagnostic cast, radiographic interpretation, aesthetics, endodontic considerations, abutment selection - bone support, root proximities and inclinations, selections of abutments, for cantilever pier abutments, splinting, available tooth structures and crown morphology, TMJ and muscles mastication and comprehensive planning and prognosis.
(3) Caries management - Caries in aged, caries control, removing infected carious materials, protection of pulp, reconstruction measure for compromising teeth- -retentive pins, horizontal slots, retention grooves, prevention of caries, diet, prevention of root caries and vaccine for caries.
(4) Periodontal considerations - attachment units, ligaments, gingivitis, periodontitis microbiological aspect of periodontal diseases, marginal lesion, occlusal trauma, periodontal pockets attached gingival, interdental papilla, gingival embrasures, radiographic interpretations of periodontia, intraoral plastics, periodontal splinting. -Fixed Prosthodontics with periodontially compromised dentitions, placement of margin in restorations.

(5) Biomechanical principles of tooth preparations - individual tooth preparations -Complete metal Crowns - P.F.M., All porcelain - Cerestore crowns, Dicor crowns, Incerametc, porcelain jacket crowns, partial 3/4, half and half, radicular, telescopic, pin - hole, pin - ledge, laminates, inlays, onlays and preparations for restoration of teeth - amalgam, glass ionomer and composite resins, Resin Bonded retainer, Gingival marginal preparations - Design, material selection, and biological and mechanical considerations - intracoronal retainer and precision attachments -custom made and readymade.
(6) Isolation and fluid control - Rubber dam applications, tissue dilation. – soft tissue management for cast restoration, impression materials and techniques, provisional restoration, interocclusal records, laboratory support for Fixed Prosthodontics, Occlusion, Occlusal equilibration, articulators, recording and transferring of occlusal relations, cementing of restoration.
(7) Resins, Gold and gold alloys, glass ionomer restorations.
(8) Restoration of endodontically treated teeth, Stomatognathic Dysfunction and management.
(9) Management of failed restorations.
(10)Osseo integrated implant supported fixed Prosthodontics - Osseo integrated supported and tooth supported fixed Prosthodontics.

OCCLUSION:

(a) Evaluation, Diagnosis and Treatment of occlusal problems.
(b) Scope, definition, terminology, optimum oral health, anatomic harmony, functional harmony, occlusal stability, causes of deterioration of dental and oral health, anatomical, physiological, neuromuscular, psychological, considerations of teeth, muscles of mastication, temporomandibular joint, intra oral and extra oral and facial musculatures, the functions of Cranio mandibular system.
(c) Occlusal therapy, the stomatognathic system, centric relation, vertical dimension, me neutral zone, the occlusal plane, differential diagnosis of temporomandibular disorders, understanding and diagnosing intra articular problems, relating treatment to diagnosis of internal derangements of TMJ, Occlusal splints, Selecting instruments for occlusal diagnosis and treatment, mounting casts, Pankey-Mann-Schuyler philosophy of complete occlusal rehabilitation, long centric, anterior guidance, restoring lower anterior teeth, restoring upper anterior teeth, determining the type of posterior occlusal contours, methods of determining the plane of occlusion, restoring lower posterior teeth, restoring upper posterior teeth, functionally generated path techniques fro recording border movements intra orally, occlusal equilibration, Bruxism, procedural steps in restoring occlusions, requirements for occlusal stability, solving occlusal problems through programmed treatment planning, splinting, solving - occlusal wear problems, deep overbite problems, anterior overjet problems, anterior open bite problems. Treating - end to end occlusion, splayed anterior teeth, cross bite patient, crowded, irregular, or interlocking anterior bite, using Cephalometric for occlusal analysis, solving severe arch malrelationship problems, transcranial radiography, postoperative care of occlusal therapy.

TMJ: Temporomandibular joint dysfunction - Scope, definitions, and terminology

(a) Temporomandibular joint and its function, orofacial pain. and pain from the temporomandibular joint region, temporomandibular joint dysfunction, temporomandibular joint sounds, temporomandibular joint disorders.
(b) Anatomy related trauma, disc displacement, Osteoarthrosis/ Osteoarthritis, Hypermobility and dislocation, infectious arthritis, inflammatory diseases, Eagle's

syndrome (Styloid - stylohyoid syndrome), Synovial chondromatosis, Osteochondrosis disease, Osteonecrosis, Nerve entrapment process, Growth changes, Tumors, Radiographic imaging.

Etiology, diagnosis and Craniomandibular pain, differential diagnosis and management, orofacial pain -pain from teeth, pulp, dentin, muscle pain, TMJ pain- psychological, physiologic - endogenous control, acupuncture analgesia, placebo effects on analgesia, Trigeminal neuralgia, Temporal arteritis.

Occlusal splint therapy - construction and fitting of occlusal splints, management of occlusal splints, therapeutic effects of occlusal splints, occlusal splints and general muscles performance, TMJ joint uploading and anterior repositioning appliances, use and care of occlusal splints.

Occlusal adjustment procedures - Reversible - occlusal stabilization spurns and physical therapies, jaw exercises, jaw manipulation and other physiotherapy or irreversible therapy - occlusal repositioning appliances, orthodontic treatment, Orthognathic surgery, fixed and removable Prosthodontic treatment and occlusal adjustment, removable partial denture treatment and occlusal adjustment, Indication for occlusal adjustment, special nature of orofacial pain, Indication for occlusal adjustment, special nature of orofacial pain, psychopathological considerations occlusal adjustment philosophies, mandibular position, excursive guidance, occlusal contact scheme, goals of occlusal adjustment; significance of a slide in centric, Preclinical procedures, clinical procedures for occlusal adjustment.

ESTHETICS

Morpho-psychology and esthetics, structural esthetic rules –facial components, dental components, gingival components and physical components. Esthetics and its relationship to function – Crown morphology, physiology of occlusion, mastication, occlusal loading and clinical aspect in bio esthetic aspects, Physical and physiologic characteristic and muscular activities of facial muscle, perioral anatomy and muscle retaining exercises Smile – classification and smile components, smile design, esthetic restoration of smile, Esthetic management of the dentogingival unit, intraoral materials for management of gingival contours, and ridge contours, Periodontal esthetics, Restorations – Tooth colored restorative materials, the clinical and laboratory aspects, marginal fit, anatomy, inclinations, form, size, shape, color, embrasures & contact point.

Prosthodontic treatment should be practiced by developing skills, by treating various and more number of patients to establish skill to diagnose and treatment and after care with bio-mechanical, biological, bio-esthetics, bio-phonetics. All treatments should be carried out in more numbers for developing clinical skills.

INFECTION CONTROL & CROSS INFECTION BARRIER – clinical & lab ; hospital & lab waste management

Part-II Paper III (9504): Descriptive and analyzing type question

4. TEACHING PROGRAMME

4.1 Schedule for 3 years

1st Year M.D.S.:

1. Theoretical exposure of all applied sciences of study.
2. Pre-Clinical exercises involved in Prosthodontic therapy for assessment.
3. Commencement of Library Assignment within six months.
4. To carry out short epidemiological study relevant to Prosthodontics.
5. Acquaintance with books, journals and referrals.
6. To differentiate various types of articles published in and critically appraise based on standard reference guidelines.
7. To develop the ability to gather evidence from published articles.
8. To Acquire knowledge of instruments, equipment and research tools in Prosthodontics.
9. Aquire knowledge of published books, journalsand websites for the purpose of gaining knoiwledge and reference- in the field of Oral and Maxillofacial Prosthodontics and Implantology.
10. To Acquire knowledge of Dental Material Science - Biological and biomechanical, bio-esthetic knowledge of using them in laboratory and clinics, including testing methods.
11. Participation and presentation of seminars, didactic lectures.
12. Evaluation-Internal Assessment examinations on applied subjects.
13. Submit a protocol for their dissertation before Institutional Review Board and Institutional Ethics Committee within 6 months.
14. Part I University Examinations

2nd Year M.D.S.:

1. Acquire confidence in various phases and techniques for providing Prosthodontic therapy.
2. Acquire confidence by clinical practice with sufficient number of patients requiring tooth and tooth surface restorations.
3. Fabrication of adequate number of Complete denture prosthesis following higher clinical approach by utilizing semi-adjustable articulators, face bow and graphic tracing.
4. Understanding the use of the dental surveyor and its application in diagnosis and treatment plan for R.P.D.
5. Adequate number of RPDs covering all clinical partially edentulous situations.
6. Adequate number of Crowns, inlays, laminates, FDPs (Fixed Dental Prostheses) covering all clinical partially edentulous situations.
7. Selection of cases and following principles in treatment of partially or completely edentulous patients by implant supported prostheses.
8. Treating single edentulous arch situations by implant supported prostheses.
9. Diagnosis and treatment planning for implant prostheses.
10. I & II stage implant surgery.
11. Understanding Maxillofacial Prosthodontics, treating/ management of craniofacial and orofacial defects.
12. Prosthetic management of TMJ syndrome.
13. Occlusal rehabilitation.
14. Management of failed restorations.
15. Prosthodontic Management of patient with psychogenic disorder.

16. Practice of child and geriatric prosthodontics.
17. Participation and presentation in seminars, didactic and non didactic teaching and training students.
18. Submission of Library Dissertation within 18 Months of the course.

3rd Year M.D.S.:

1. Clinical and laboratory practice continued from II year.
2. Occlusal equilibration procedures - fabrication of stabilizing splint for parafunctional disorders, occlusal disorders and TMJ functions.
3. Practice of dental, oral and facial esthetics.
4. The clinical practice of all aspects of Prosthodontics therapy for elderly patients
5. Implant Prosthodontics - Rehabilitation of Partial Edentulism, Complete edentulism and craniofacial rehabilitation.
6. Failures in all aspects of Prosthodontics and their management and after care.
7. Team management for esthetics, TMJ syndrome and Maxillofacial and Craniofacial Prosthodontics.
8. Management of Prosthodontic emergencies
9. Candidate should complete the course by attending an large and variety of patients to master the prosthodontic therapy. This includes the practice management, examinations, tyreatment planning, communication with patients, clinical and laboratory tyechniaques materials and instrumentation required in different aspects of prosthodontic therapy. Tooth and tooth surface resoration, restoration of root treated teeth, splints for periodontal rehabilitations and fractured jaws, complete dentures, RPDs & FDPs. Immediate dentores, overdentures, implant supported prostheses, maxillofacial and body prostheses and occlusal rehabilitation.
10. Prosthetic management of TMJ Syndrome.
11. Management of failed restorations.
12. Should Complete and submit Main Dissertation 6 months prior to examination.
13. Candidates should acquire complete theoretical and clinical knowledge through seminars, symposia, workshops and reading.
14. Participation, presentation of seminars, didactic lectures.
15. Part II University examinations.

PROSTHODONTIC TREATMENT MODALITIES

1) **Diagnosis and treatment planning prosthodontics**

2) **Tooth and tooth surface restorations** • Fillings • Veneers – composites and ceramics
Inlays- composite, ceramic and alloys
Onlay – composite, ceramic and alloys
Partial crowns – ¾ th, 4/5th, 7/8th, Mesial ½ crowns
Pin-ledge
Radicular crowns
Full crowns

3) **Tooth replacements**

	Partial	**Complete**

• Tooth supported	Fixed partial denture	Overdenture
• Tissue supported	Interim partial denture Intermediate partial denture	Complete denture Immediate denture Immediate complete denture
• Tooth and tissue Supported	Cast partial denture Precision attachment	Overdenture
• Implant supported	Cement retained Screw retained Clip attachment	Bar attachment Ball attachment
• Tooth and implant Supported	Screw retained Cement retained	Screw retained Cement retained
• Root supported	Dowel and core Pin retained	Over denture

Precision attachments
• Intra coronal attachments
• Extra coronal attachments
• Bar – slide attachments
• Joints and hinge joint attachments

4) **Tooth and tissue defects (Maxillo- facial and Cranio-facial prosthesis)**
   a. **Congenital defects**
   b. **Acquired defects**

5) **T.M.J and Occlusal disturbances**

a. Occlusal equilibration
b. Splints - Diagnostic
- Repositioners / Deprogrammers
c. Anterior bite planes
d. Posterior bite planes
e. Bite raising appliances
f. Occlusal rehabilitation

6) **Esthetic/Smile designing**

a. Laminates / Veneers
b. Tooth contouring (peg laterals, malformed teeth)
c. Tooth replacements
d. Team management

7) Psychological therapy

a. Questionnaires
b. Charts, papers, photographs
c. Models
d. Case reports
e. Patient counseling
f. Behavioral modifications
g. Referrals

7) Geriatric Prosthodontics

a. Prosthodontics for the elderly
b. Behavioral and psychological counseling
c. Removable Prosthodontics
d. Fixed Prosthodontics
e. Implant supported Prosthodontics
f. Maxillofacial Prosthodontics
g. Psychological and physiological considerations

8) Preventive measures

a. Diet and nutrition modulation and counseling
b. Referrals

The bench work should be completed before the start of clinical work during the first year of the MDS Course
I. Complete dentures
1. Arrangements on adjustable articulator for
• Class I
• Class II
• Class III
2. Various face bow transfers to adjustable articulators
3. Processing of characterized anatomical dentures
II. Removable partial dentures
1. Design for Kennedy's Classification
(Survey, block out and design)
a. Class I
b. Class II
c. Class III
d. Class IV
2. Designing of various components of RPD
3. Wax pattern on refractory cast
a. Class I
b. Class II

c. Class III
d. Class IV
4. Casting and finishing of metal frameworks
5. Acrylisation on metal frameworks for Class I
Class III with modification
III. Fixed Partial Denture

1. Preparations on ivory teeth / natural teeth
• FVC for metal
• FVC for ceramic
• Porcelain jacket crown
• Acrylic jacket crown
• PFM crown
• 3/4th (canine, premolar and central)
7/8th posterior
• Proximal half crown
• Inlay – Class I, II, V
• Onlay – Pin ledged, pinhole
• Laminates

2. Preparation of different die systems

3. Fabrication of wax patterns by drop wax build up technique
• Wax in increments to produce wax coping over dies of tooth preparations on substructures
• Wax additive technique
• 3-unit wax pattern (maxillary and Mandibular)
• Full mouth

4. Pontic designs in wax pattern
• Ridge lap
• Sanitary
• Modified ridge lap
• Modified sanitary
• Spheroidal or conical
5. Fabrication of metal frameworks
• Full metal bridge for posterior (3 units)
• Coping for anterior (3 unit)
• Full metal with acrylic facing
• Full metal with ceramic facing
• Adhesive bridge for anteriors
• Coping for metal margin ceramic crown
• Pin ledge crown

6. Fabrication of crowns
• All ceramic crowns with characterisation
• Metal ceramic crowns with characterisation
• Full metal crown
• Precious metal crown
• Post and core

7. Laminates
• Composites with characterisation
• Ceramic with characterisation
• Acrylic

8. Preparation for composites
• Laminates
• Crown
• Inlay
• Onlay
• Class I
• Class II
• Class III
• Class IV
• Fractured anterior tooth

IV. Maxillofacial prosthesis
• Eye
Ear
• Nose
• Face
• Body defects
o Cranial
o Maxillectomy
o Hemimandibulectomy
o Finger prosthesis
o Guiding flange
o Obturator

V. Implant supported prosthesis
1. **Step by step procedures –Surgical and laboratory phase**

VI. Other exercises
1. TMJ splints – stabilization appliances, maxillary and Mandibular repositioning appliances
2. Anterior disocclusion appliances
3. Chrome cobalt and acrylic resin stabilization appliances
4. Modification in accommodation of irregularities in dentures
5. Occlusal splints
6. Periodontal splints
7. Precision attachments – custom made
8. Over denture coping
9. Full mouth rehabilitation (by drop wax technique, ceramic build up)
10. TMJ appliances – stabilization appliances

ESSENTIAL SKILLS:
***Key**
O – Washes up and observes
A – Assists a senior

PA – Performs procedure under the direct supervision of a senior specialist
PI – Performs independently
The following list of procedures are expected of the post graduate to complete in the post graduate programme under faculty guidance [PA] or independently [PI] . Each of the following procedures should be evaluated for the competencies like critical thinking, patient centered approach, use of evidence based approach, professionalism, systems based practice approach and communication skills of the student. The mentioned numbers denote minimal requirement. However, the head of the department has the discretion to fix the quota and assess them systematically. There may be procedures which the student has observed [O] or assisted [A]. The student can however make his entry into his log book or portfolio wherein he/she can make his comments with remarks of the facilitator in the form of a feedback which would reinforce his learning.

Tooth and Tooth Surface Restorations

Procedure	O	A	PA	PI
Composite filling/ laminates/inlay/ onlay.	2	2	2	10
Ceramics-inlay/onlay/laminate	2	2	2	10
Glass ionomer restoration	1	1	1	10
FVC – Metal	1	2	2	10
FVC- ceramic	1	2	2	10
Precious metal crown	1	-	1	5
Galvanoformed crown	-	-	1	1
¾ crowns (premolar/ canine/ centrals	1	-	-	5
7/8 posterior crown	1	-	-	5
Proximal half crown	1	-	-	5
Pinledge and pinhole crowns	1	-	-	5
Telescopic crowns	1	-	-	5
Intra-radicular crowns	1	-	-	5
Crown as implant supported prosthesis	1	-	-	5

Fixed Partial Dentures

Procedure	O	A	PA	PI
Cast metal (precious and non precious – 3 unit posterior1	-	-	5	
Porcelain fused to metal (anterior and posterior)	1	1	1	10
Multiple abutment (maxillary and mandibular full arch)	1	1	1	5
Incorporation of custom made and precision attachments	1	1	1	4
Adhesive FPD for anterior and posterior	1	-	1	10
Metal fused to resin anterior FPD	-	-	1	5
Provisional restorations (crowns and FPDs	1	1	1	10
Immediate FPDs	1	-	-	5
FPD in acquired and congenital defects	1	1	1	5
Impant supported prosthesis	1	-	1	1
Implant-tooth supported prosthesis	1	-	1	1

Removable Partial Dentures

Procedure	O	A	PA	PI
Provisional partial denture prosthesis	1	1	1	10
Cast removable partial denture (all kennedy's classes)	1	1	1	6
Removable bridge with precision attachments and telescopic	1	1	2	4

crowns				
Immediate RPD	1	1	1	5
Partial dentures for medically compromised and handicapped	1	1	1	5

Complete Dentures

Procedure	O	A	PA	PI
Neutrocentric occlusion and characterized prosthesis	-	-	1	5
Anatomic characterized prosthesis using semi adjustable articulator	-	-	1	25
Single denture	-	-	1	5
Overlay denture	-	-	1	5
Interim complete denture	-	-	1	5
Complete denture for abnormal ridge relation, ridge form & size	-	-	1	5
Complete denture for patients with TMJ syndromes	-	-	1	5
Complete dentures for medically compromised and handicapped	-	-	1	5
Tooth surface restorations, crowns, FPD and RPD for geriatric patients	-	-	1	5
Geriatric patients Handling geriatric patients requiring nutritional counseling, psychological management and management of co-morbitity including xerostomia and systemic problems. Palliative care to elderly.				
Implant supported complete prosthesis	-	-	1	1

Maxillofacial Prosthesis

Procedure	O	A	PA	PI
Guiding flange and obturator	-	-	1	4
Speech and palatal lift prosthesis	-	-	1	2
Eye prosthesis	-	-	1	2
Ear prosthesis	-	-	1	2
Nose prosthesis	-	-	1	2
Face prosthesis	-	-	-	1
Maxillectomy - Obturator	-	-	1	2
Hemimadibulectomy	-	-	1	2
Cranioplasty	-	--	1	1
Finger/ hand / foot	-	-	1	2
Body prosthesis	-	-	1	1
Management of burns and scars	-	-	-	1

TMJ Disorder Management

Procedure	O	A	PA	PI
Splints, periodontal, teeth, jaws	-	-	1	4
TMJ supportive and treatment prosthesis	-	-	1	1
Stabilization prosthesis for maxilla and mandible with freedom to move from IP to CRCP	-	-	-	1
In IP without freedom to move from CRCP	-	-	-	1
Repositioning appliances , anterior disclusion	-	-	-	1
Chrome cobalt and acrylic resin stabilization appliances	-	-	-	2

Occlusal adjustment and occlusal equilibration	-	-	1	4

Full Mouth Rehabilitation

Procedure	O	A	PA	PI
Full mouth rehabilitation-occlusion	-	-	1	4
Full mouth rehabilitation- restoration of esthetics and function of stomatognathic system	-	-	1	4

Inter-Disciplinary Treatment Modalities

Procedure	O	A	PA	PI
Resoration of oro- craniofacial defects	-	-	1	2

Management of Failed Restorations

Procedure	O	A	PA	PI
Tooth and tooth surface restorations	-	-	-	5
Removable prosthesis	-	-	-	10
Crowns and fixed prosthesis	-	-	-	5
Maxillofacial prosthesis	-	-	-	2
Implant supported prosthesis	-	-	-	1
Occlusal rehabilitation and TMJ syndrome	-	-	-	2
Restoration failure of psychogenic origin	-	-	-	5
Restoration failure due to age changes	-		-	2

All the candidates registered for MDS course shall pursue the course for a period of three years as full time students. During this period each student shall take part actively in learning and teaching activities designed by the Institution/University as follows.

(1) Lectures: There shall be didactic lectures both in the specialty and in basic sciences. The postgraduate department should encourage the guest lectures in the required areas to strengthen the training programmes. It is also desirable to have certain integrated lectures by multidisciplinary teams on selected topics.

(2) Journal club: The journal review meetings shall be held at least once a week. All trainees are expected to participate actively and enter relevant details in the logbook. The trainee should make presentations from the allotted journal of selected articles at least 5 times in a year.

(3) Seminars: the seminars shall be held at least twice a week in the department, all trainees associated with postgraduate teachers are expected to participate actively and enter relevant details in log book. Each trainee shall make at least. 5- Seminar presentations in each year.

(4) Symposium: It is recommended to hold symposium on topics covering multiple disciplines one in each academic year.

(5) Workshops: it is recommended to hold workshops on topics covering multiple disciplines one in each academic year.

(6) Clinical Postings: Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases to be treated by a specialist.

(7) Clinico pathologic Conference: The Clinico-pathological conferences should be held once in a month involving the faculties of oral biology, oral medicine and radiology, oral pathology, oral surgery, period ontology, Endodontics and concerned clinical department. The trainees should be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(8) Interdepartmental Meetings: To bring in more integration among various specialties there shall be interdepartmental meeting chaired by the dean with all heads of postgraduate departments at least once a month.
(9) Rural oriented Prosthodontic health care: To carry out Prosthodontic therapy interacting with rural centers and the institution.
(10) Teaching skills: All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussions.
(11) Evaluation skills: All the trainees shall be encouraged to take part in evaluating the skills and knowledge in clinical laboratory practice including theory by formulating questions banks and model answers.
(12) Continuing dental education programmes: Each Postgraduate department shall organize these programmes on regular basis involving the other institutions. The trainees shall also be encouraged to attend such programmes conducted elsewhere.
(13) Conferences/workshops/advanced courses: The trainees shall be encouraged not only to attend conference/workshops/advance courses but also to present at least two papers at state/national specialty during their training period.
(14) Rotation and posting in other departments: To bring in more integration between the specialty and allied fields each post graduate department shall workout a programme to rotate the trainees in related disciplines and Craniofacial and maxillofacial ward.
(15) Dissertation: Trainees shall prepare a dissertation based on the clinical or laboratory experimental work or any other study conducted by them under the supervision of the post graduate guide.

5. SCHEME OF EXAMINATION

5.1 Theory : 400 Marks

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

(1) Part-I : examination shall consist of Basic sciences paper of three hours duration and shall be conducted at the end of First year of MDS courses. Paper shall be of 100 marks and there shall be 10 questions of 10 marks each. The candidates shall have to secure a minimum of 50% in the Basic Sciences and shall have to pass the Part-I examination at least six months prior to the final (Part-II) examination.
(2) 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. 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 which 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*

Nomenclature of Papers

Part – I (9501) Applied Basic Sciences
(Applied Basic sciences: Applied Anatomy, Nutrition and Biochemistry, Pathology and Microbiology, virology, Applied Dental anatomy and histology, Oral pathology and oral Microbiology, Adult and geriatric psychology, Applied Dental materials).

Part – II :

Paper I (9502) Removable Prosthodontics and Implant supported prosthesis (Implantology), Geriatric dentistry and Cranio facial Prosthodontics

Part II (9503) Fixed Prosthodontics, occlusion, TMJ and esthetics.

Paper III (9504) Descriptive and analyzing type question

*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.

5.2 Practical/Clinical : 200 Marks

Examination shall be for three days. If there are more than 6 candidates, it may be extended for one more day. Each candidate shall be examined for a minimum of three days, six hours per day including viva voce.

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 surface restoration	2 marks
(d)	I.S.P.	5 marks
(e)	Occlusal Rehabilitation	5 marks
(f)	T.M.J.	5 mark
(g)	Maxillofacial Prosthesis	5 marks
(h)	Pre-clinical exercises	10 marks

2. Presentation of actual treated patient- C.D. Prosthesis and Insertion -75 Marks

(a)	Discussion on treatment plan and patient review	10 marks
(b)	Tentative jaw relation records	5 marks
(c)	Face bow – transfer	5 marks
(d)	Transferring it on articulator	5 marks
(e)	Extra oral tracing and securing centric and protrusive /lateral record	25 marks
(f)	Transferring records on articulator and programming.	5 marks
(g)	Selection of teeth	5 marks
(h)	Arrangement of teeth	10 marks
(i)	Waxed up denture trial	10 marks
(j)	Fit, insertion and instruction of previously processed characterized, anatomic complete denture prosthesis.	5 marks
(j)	All steps will include chair side, lab and viva voce	

3. Fixed Partial Denture – 35 marks

(a)	Case discussion including treatment planning and selection of patients for F.P.D.	5 marks
(b)	Abutment preparation, isolation and fluid control	15 marks
(c)	Gingival retraction and impressions	10 marks
(d)	Cementation of provisional restoration	5 marks

4. Removable Partial Denture – 25 Marks

(a)	Surveying and designing of partially dentate cast.	15 marks
(b)	Discussion on components and material selection including occlusal scheme	10 marks

5. **Implant supported prosthesis (2nd 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

5.3 Viva-Voce- 100 marks

(a) 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.

(b) Pedagogy Exercise: 20 marks
A topic is 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.

6. BOOKS AND JOURNALS

Dental Materials:

(1) Phillips' science of dental materials - Kenneth J. Anusavice, Ralph W. Phillips
(2) Dental materials: properties and manipulation - Robert G. Craig
(3) Dental materials: properties and manipulation - John M. Powers, John C. Wataha
(4) Dental materials: properties and selection - William Joseph O'Brien
(5) Applied dental materials - John F. McCabe, Angus Walls
(6) Restorative dental materials - Robert George Craig, Marcus L. Ward

Complete Denture Prosthodontics:

(1) Prosthodontic treatment for edentulous patients: complete dentures and implant-supported prostheses - George Albert Zarb, Charles L. Bolender, Steven E. Eckert
(2) Syllabus of complete dentures - Charles M. Heartwell
(3) Essentials of complete denture Prosthodontics - Sheldon Winkler
(4) Clinical dental prosthetics - H.R.B. Fenn
(5) Complete denture prosthodontics - John J. Sharry
(6) Textbook of Complete Dentures - Arthur O. Rahn, Plummer, John R. Ivanhoe
(7) Complete denture prosthetics - D. J. Neill, R. I. Nairn
(8) Swenson's complete dentures - Merrill Gustaf Swenson, Carl O. Boucher
(9) Complete denture prosthodontics: clinical and laboratory procedures - Bernard Levin, Glenn D. Richardson
(10) Synopsis of complete dentures - Charles W. Ellinger
(11) Diagnosis and treatment in prosthodontics - William R. Laney, Joseph A. Gibilisco

Removable Partial Prosthodontics:

(1) McCraken's removable partial prosthodontics - William L. McCracken
(2) Stewart's Clinical Removable Partial Prosthodontics - Rodney D. Phoenix, Daivd R. Cagna, Charles F. DeFreest, Kenneth L. Stewart
(3) Essentials of removable partial denture prosthesis - Oliver C. Applegate
(4) Partial dentures - John Osborne, George Alexander Lammie
(5) Removable partial prosthodontics - Joseph E. Grasso, Ernest L. Miller

Fixed Prosthodontics:

(1) Tylman's Theory and practice of fixed prosthodontics - William F. P. Malone, David L. Koth
(2) Contemporary fixed prosthodontics - Stephen F. Rosenstiel, Martin F. Land, Junhei Fujimoto
(3) Fundamentals of fixed prosthodontics - Herbert T. Shillingburg
(4) Fundamentals of tooth preparations - H. Shillingberg
(5) Johnston's Modern practice in fixed prosthodontics - John F. Johnston, Roland W. Dykema, Charles J. Goodacre, Ralph W. Phillips
(6) Fixed bridge prostheses - Derek Harry Roberts
(7) Guide to occlusal waxing - Herbert T. Shillingburg, Edwin L. Wilson, Jack T. Morrison
(8) Inlays, crowns and bridges: a clinical handbook - Leslie C. Howe, George F. Kantorowicz
(9) Metal Ceramic Technology Vol. I & II - Mc Lean

Maxillofacial Prosthodontics:

(1) Maxillofacial rehabilitation prosthodontic and surgical considerations - John Beumer, Thomas A. Curtis,
(2) Maxillofacial prosthetics: multidisciplinary practice - Varoujan A. Chalian, Joe B. Drane, S. Miles Standish
(3) Maxillofacial prosthetics - William R. Laney
(4) Clinical Maxillofacial prosthetics - Taylor
(5) Facial prosthetics - Arthur H. Bulbulian

Implant Prosthodontics:

(1) Contemporary implant dentistry - Carl E. Misch
(2) Dental implant prosthetics - Carl E. Misch
(3) Dental implants: the art and science - Charles A. Babbush
(4) Tissue-integrated Prostheses: osseointegration in clinical dentistry - Per-Ingvar Brånemark, George Albert Zarb, Tomas Albrektsson

Miscellaneous:

(1) Dental Laboratory Procedures: Complete dentures - Robert M. Morrow, Kenneth D. Rudd, John E. Rhoads
(2) Dental Laboratory Procedures: Removable partial dentures - Robert M. Morrow, Kenneth D. Rudd, John E. Rhoads
(3) Dental Laboratory Procedures: Fixed partial dentures - Robert M. Morrow, Kenneth D. Rudd, John E. Rhoads
(4) Occlusion - Major M. Ash, SigurdPederRamfjord
(5) Occlusion - Hamish Thomson, B. J. Parkins
(6) Occlusion: Principles And Concepts - Jose Santos
(7) A Textbook of occlusion - Norman D. Mohl
(8) Functional occlusion: from TMJ to smile design - Peter E. Dawson
(9) Management of temporomandibular disorders and occlusion - Jeffrey P. Okeson
(10) Overdentures made easy: a guide to implant and root supported prostheses - Harold W. Preiskel

Journals:

(1) Journal Of Prosthetic Dentistry
(2) International Journal Of Prosthodontics
(3) Journal Of Prosthodontics
(4) European Journal Of Prosthodontics And Restorative Dentistry
(5) Journal Of Indian Prosthodontic Society.

(6) Journal Of Prothodontic Research
(7) Dental Materials.
(8) International Journal Of Oral Implantology And Research
(9) International Journal Of Clinical Implant Dentistry
(10) Journal Of Oral Implantology
(11) International Journal Of Oral And Maxillofacial Implants
(12) Journal Of Esthetic And Restorative Dentistry
(13) Gerodontology

MODEL PAPER

M.D.S. Part-I **Bas.Sci.-I**
9501

Master of Dental Surgery Part-I Examination Month Year

PROSTHODONTICS AND CROWN & BRIDGE

Applied Basic Sciences

(Applied Basic sciences: Applied Anatomy, Nutrition and Biochemistry, Pathology and Microbiology, virology, Applied Dental anatomy and histology, Oral pathology and oral Microbiology, Adult and geriatric psychology, Applied Dental materials)

Time: Three Hours
Maximum Marks: 100

Attempt all Questions.
All the parts of one question should be answered at one place in sequential order.
Illustrate your answers with suitable diagrams, wherever necessary.

Q.1	Classify joint Describe anatomy of TMJ.	10
Q.2	Discuss Candida Albicans and its applied significance in Prosthodontics.	10
Q.3	Define 'sample'. Describe different methods of sample collection.	10
Q.4	Describe different muscles of mastication	10
Q.5	Discuss calcium metabolism and its disorders.	10
Q.6	Describe embryology of the tongue. add a note on it's significance in Prosthodontics.	10
Q.7	Discuss analgesics agents used in mild to moderate pain in Dentistry.	10
Q.8	Define blood. Add a short note describing the components of blood.	10
Q.9	Classify resin cement discuss its properties and uses in details.	10
Q.10	Classify dental abrasives. Add a note on denture polishing.	10

MODEL PAPER

M.D.S. Part-II **Rem.Prostho.Oral.Impla.-I**
9502

Master of Dental Surgery Part-II Examination Month Year

PROSTHODONTICS AND CROWN & BRIDGE

Paper - I

Removable Prosthodontics and Implant supported prosthesis (Implantology), Geriatric dentistry and Craniofacial Prosthodontics

Time: Three Hours
Maximum Marks: 100

Attempt all Questions.
All the parts of one question should be answered at one place in sequential order.
Illustrate your answers with suitable diagrams, wherever necessary.

Q.1 Discuss Centric Relation as an ever evolving concept 25

Q.2 Discuss the role of the Surveyor in Removable Prosthodontics 25

Q.3 Short Notes 5x10= 50
(a) Loading protocols in Implant Prosthodontics
(b) Concepts of Complete Denture Occlusion
(c) Philosophies of RPD designing
(d) Implants in extra-oral maxillofacial Prostheses
(e) Denture abused tissues

MODEL PAPER

M.D.S. Part-II **Fix.Prostho.-II**
9503

Master of Dental Surgery Part-II Examination Month Year
PROSTHODONTICS AND CROWN & BRIDGE

Paper - II
Fixed Prosthodontics, Occlusion, TMJ and Esthetics

Time: Three Hours
Maximum Marks: 100

Attempt all Questions.
All the parts of one question should be answered at one place in sequential order.
Illustrate your answers with suitable diagrams, wherever necessary.

Q.1	Discuss the various concepts in Full Mouth Rehabilitation	25
Q.2	Discuss in detail pontic designs used in FPD	25
Q.3	Short Notes	5x10= 50
a)	Zirconia as an alternative to metal alloys	
b)	Shade selection in Fixed Prosthodontics	
c)	Tissue management and fluid control in Fixed Prosthodontics	
d)	Advances in post-endodontic restoration	
e)	Marginal integrity of fixed restorations	

MODEL PAPER

M.D.S. Part-II **Essay.-III**
9504

Master of Dental Surgery Part-II Examination Month Year
PROSTHODONTICS AND CROWN & BRIDGE

Paper - III
Descriptive and analyzing type question

Time: Three Hours
Maximum Marks: 100

Answer any two questions.
All the parts of one question should be answered at one place in sequential order.
Illustrate your answers with suitable diagrams, wherever necessary.

Q.1	Face-Bow – its role in Prosthodontics	50
Q.2	Implant supported Hybrid Denture	50
Q.3	Maxillofacial rehabilitation	50