

***Goals, objectives, Competencies, Learning outcomes & their
assessment methods, Graduate attributes and assessment***

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1. Introduction

The Maharashtra institute of dental sciences and research (dental college), Latur was established in 2006 by Hon. Prof Dr. Vishwanath Karad, MAEERS Pune. The college is recognized by dental council of India and affiliated by Maharashtra University of health sciences Nashik. The intake capacity of collage is 100 students per year for bachelor of dental surgery and 28 for master of dental surgery program. MDS course is conducted in 6 specialities viz. Prosthodontics, Conservative and endodontics, Oral and maxillofacial surgery, Orthodontics, Pedodontics and Periodontics. The college have very progressive environment developed by highly qualified and experienced faculty using modern and innovative teaching skills. All graduates have made successful future in private practice as well higher education in India and overseas.

The college is spacious and accommodate fully equipped departments with all latest technologies and facilities and total 314 chairs. The well established laboratories and infrastructure facilities are inseparable part of excellent academic activities. It has full access to advanced operation theatre of around 785 bedded medical hospitals. Beside all ceramic fabrication system, implant unit, laser equipment, research microscope, endodontic microscope, CBCT facility and digital imaging system. Faculty and students are benefited with huge library over 5674 books along with national and international journals. Outcome-based methods have been adopted in education systems around the world, at multiple levels

Outcome-based education works on each part of educational system. At the end of the educational experience, each student should be competent and full of knowledge and skills. Method of teaching and analyzing the knowledge and skills may vary in OBE. It is expected students should take advantage of opportunity and exposure given by the mentor, and at the same time mentor should closely examine the students. Mentor has to play different based on the outcomes targeted.

Students are trained basic medical and dental sciences, scientific literature, research and appraisal research methodology, biostatistics, evidence based methods, computer application, presentation skills and professional ethics. Training is also provided in multisystem and multispecialty management of patients.

2.A GOALS:

The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out all activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate also should understand the concept of community oral health education and be able to participate in the rural health care delivery programmes existing in the country.

2.B OBJECTIVES:

The objectives are dealt under three headings

- (a) Knowledge and understanding
- (b) Skills
- (c) Attitudes.

KNOWLEDGE AND UNDERSTANDING:

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

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

SKILLS:

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

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

ATTITUDES:

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

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

3. COMPETENCIES

List of competencies

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

GENERAL SKILLS

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

PRACTICE MANAGEMENT

- Evaluate practice location, population dynamics & reimbursement mechanism
- Co-ordinate & supervise the activities of allied dental health personnel Maintain all records
- Implement & monitor infection control and environmental safety programs
- Practice within the scope of one's competence
- Communication & Community Resources
- Assess patients goals, values and concerns to establish rapport and guide patient care
- Able to communicate freely, orally and in writing with all concerned
- Participate in improving the oral health of the individuals through community activities.

PATIENT CARE – DIAGNOSIS

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

PATIENT CARE – TREATMENT PLANNING

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

PATIENT CARE – TREATMENT

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

4. ADOPTED METHOD OF COLLEGE TO MEASURE THE ATTAINMENT OF COMPETENCIES

Curriculum followed by Institution is designed by dental council of India and recognized by MUHS Nasik University. The students after joining the Course are introduced to different departments. Orientation program is arranged for every fresh batch to make them familiar to college environment details of course.

Once students acquire preclinical skills they are permitted to enter clinics. After entering to clinics staff guide and helps them to achieve clinical competencies and also sensitize them to principles and ethics of profession. The students have to perform and complete number of case department wise recommended by DCI under the supervision of staff of particular faculty.

Faculty assigned to specialty gives demonstration for every step that has to be followed by student while performing on patient in the clinics.

After allotting case to the student, student have to take detailed case history and need to present case in front of faculty on which faculty member ask relevant questions on diagnosis treatment planning.

Every student undergoes chairside evaluation before starting up case.

Students are monitored and guided for every step during procedure and faculty member does one to one assessment until that particular procedure is up to the mark.

Formative assessment of clinical competencies is done through chairside viva and practical examination.

Before appearing to university exam students have to finish patients' quota as per DCI norms.

Periodic evaluation of clinical knowledge and its application is done through three internal examinations. After all this student get certified by staff and head of the department for completing no of cases as per DCI norms and for acquiring clinical competencies.

Lastly student have to face university examination in which he/she have to perform exercises given by examiner on to patient and face viva and assessment of practical knowledge is done by examiner.

When student enters the internship he/she have to perform opd along with juniors and do the diagnosis along with student have to finish no of cases allotted to them with easy to advance difficulty level with the help of staff.

When he/she finish cases of all specialties as per DCI, he /she get certified with internship completion certificate.

5. PROGRAM SPECIFIC LEARNING OUTCOMES

The goal of the courses of undergraduate and post graduates are to develop professional and skilled dental graduates and post graduates who serve the society responsibly.

Programme Intended Learning Outcomes

After completing BDS course, the student will be able to do so

Knowledge and Understanding

- Will be able to recognize and describe the anatomy and physiology of the oral and maxillofacial structures.
- Will be able to define and explain the different pathologies associated with the stomatognathic system and identify specific diagnostic aids.
- Students should be able to explain the various treatment approaches used to recover an individual's health.
- Will be able to explain approaches for the prevention of oral diseases in individuals and communities.

Cognitive Skills

- Diagnosis of the oral state of the patient in relation to medical conditions and interpret diagnostic evidence for the creation of a treatment plan
- Diagnose different oral diseases and design treatment plan
- Apply multidisciplinary approaches to optimize treatment plans
- Reconfigure known treatment methodologies to best address oral disease
- Create a cost-effective plan for the broader community to boost oral health status.

Practical Skills

- Clinical examination to distinguish manifestations of oral diseases in an ethical and empathetic manner.
- Perform appropriate treatment procedures for oral diseases to restore the oral health of the patient by selecting appropriate equipment and materials.
- Proper treatment plan for patients with oral symptoms of systemic diseases and conduct interventions and referral to improve compassionate patient safety.
- Relieve pain and infection by prescribing the appropriate drugs and handle medical emergencies associated with dental treatment.

ORAL MEDICINE & RADIOLOGY

- Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned speciality for their management
- Should have an adequate knowledge about common laboratory investigations and interpretation of their results.
- Should have adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions/ consent from the concerned medical specialist.
- Have adequate knowledge about radiation health hazards, radiations safety and protection.
- Competent to take intra-oral radiographs and interpret the radiographic findings.
- Gain adequate knowledge of various extra-oral radiographic procedures, TMJ radiography and sialography.

- Be aware of the importance of intra- and extra-oral radiographs in forensic identification and age estimation
- Should be familiar with jurisprudence, ethics and understand the significance of dental records with respect to law.

PAEDIATRIC & PREVENTIVE DENTISTRY

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

ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

- Understand about normal growth and development of facial skeleton and dentition.
- Pinpoint aberrations in growth process both dental and skeletal and plan necessary treatment
- Diagnose the various malocclusion categories
- Able to motivate and explain to the patient (and parent) about the necessity of treatment
- Plan and execute preventive orthodontics (space maintainers or space regains)
- Plan and execute interceptive orthodontics (habit breaking appliances)
- Manage treatment of simple malocclusion such as anterior spacing using removable appliances
- Handle delivery and activation of removable orthodontic appliances
- Diagnose and appropriately refer patients with complex malocclusion to the specialist.

PERIODONTOLOGY

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

PROSTHODONTICS AND CROWN & BRIDGE

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

CONSERVATIVE DENTISTRY AND ENDODONTICS

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

ORAL & MAXILLOFACIAL SURGERY

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

PUBLIC HEALTH DENTISTRY

- Apply the principles of health promotion and disease prevention
- Have knowledge of the organization and provision of health care in community and in the hospital service

- Have knowledge of the prevalence of common dental conditions in India.
- Have knowledge of community based preventive measures—
- Have knowledge of the social, cultural and environmental factors which contribute to health or illness.
- Administer and hygiene instructions, topical fluoride therapy and fissure sealing.
- Educate patients concerning the etiology and prevention of oral disease and encourage them to—assume responsibility for their oral health.

6. LEARNING OUTCOME & ASSESSMENT FOR BDS:-

Formative assessment-over the study course the teachers use continuous evaluation to assess and enhance performance of the students. The approaches used generate valuable information to evaluate an individual's knowledge and skills development, assess strategic reasoning, decision-making and problem-solving capabilities. The methods employed include viva voce and internal assessment during delivery of the course. They allow trainers to monitor the Extension of achievement of course outcomes. Its main objective is to identify the shortcomings in such a way that the correct Learning interventions which encourage students to master the necessary skills and knowledge.

The clinical /practical examination: The clinical /practical examination includes different procedures for the candidate to express their skills. Examinations can include clinical procedures, lab experiments, spotters, instrument description, etc.

Attendance & Records/Log Books:The candidate should be assessed based on regular attendance (Theory-75% & Practical/clinical-80%), clinical records books and scores obtained in the record.

End posting Clinical and practical examinations: Clinical procedures/experiments to be performed and to be discussed with faculty. Faculty will assess their presentation and clinical skills.

Viva voce: Viva voce can determine the student's problem solving skill. An effective-domain evaluation is also possible through viva voce.

Seminar: The students are expected to present a seminar during course period. The purpose of the presentation of the seminar is to evaluate the interactions of students with students and teachers on assigned topic. The competencies in information, planning, presentation and communication are evaluated.

Project work: To evaluate Students' skill-to prepare and then carry out the plan by planning and performing experiments; analyze& interpret data and produce results within a time frame is evaluated

Summative assessment - Comprehensive evaluation of learning outcomes is carried out at the end of the academic year. The methods employed are the annual theory and practical University examination conducted at the end of the academic year covering the complete syllabus.

POST GRADUATES (MDS) LEARNING OUTCOMES

The goal of the courses for post graduates are to develop professional and skilled dental post graduates who serve the society responsibly

PAEDIATRIC& PREVENTIVE DENTISTRY

Learning outcome:

At the end of 3 years of training the candidate should be able to

- Create not only a good oral health in the child but also a good citizen tomorrow.
- Instill a positive attitude and behavior in children.
- Understand the principles of prevention and prevention dentistry right from birth to adolescence Guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry
- Prevent and intercept developing malocclusion.

Skills

- Obtain proper clinical history, methodological examination of the child patient, perform essential diagnostic procedures and interpret them and arrive at a reasonable diagnosis and treat appropriately.
- be competent to treat dental diseases which are occurring in child patient.
- Manage to repair and restore the lost *I* tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.
- Manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

Attitudes

- Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice.
- Professional honesty and integrity are to be fostered
- Treatment care is to be delivered irrespective of the social status, cast, creed, and religion of the patients.
- Willingness to share the knowledge and clinical experience with professional colleagues.
- Willingness to adopt, after a critical assessment, new methods and techniques of Pedodontics.
- Management developed from time to time, based on scientific research, which are in the best interest of the child patient.
- Respect child patient's rights and privileges, including child patient's right to information and right to seek a second opinion.
- Develop an attitude to seek opinion from allied medical and dental specialities, as and when required

ORAL & MAXILLOFACIAL SURGERY

Learning outcomes:

Knowledge:

- To have acquired adequate knowledge and understanding of the etiology, pathophysiology and diagnosis, treatment planning of various common oral and Maxillofacial surgical problems both minor and major in nature
- To have understood the general surgical principles like pre and post surgical management, particularly evaluation, post surgical care, fluid and electrolyte management, blood transfusion and post surgical pain management.
- Understanding of basic sciences relevant to practice of oral and maxillofacial surgery
- Able to identify social, cultural, economic, genetic and environmental factors and their relevance to disease process management in the oral and maxillofacial region.
- Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of hepatitis and HIV.

Skills:

- To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures and order relevant laboratory tests and interpret them and to arrive at a reasonable diagnosis about the surgical condition.
- To perform with competence minor oral surgical procedures and common maxillofacial surgery. To treat both surgically and medically the problems of the oral and Maxillofacial and the related area.
- Capable of providing care for maxillofacial surgery patients. Attitude:
- Develop attitude to adopt ethical principles in all aspect of surgical practice, professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Willing to adopt new techniques of surgical management developed from time to time based on scientific research which is in the best interest of the patient
- Respect patient right and privileges, including patients right to information and right to seek a second opinion.
- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

Communication Skills:

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular surgical problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time
- Develop the ability to communicate with professional colleagues.
- Develop ability to teach undergraduates.

PERIODONTOLOGY:

Learning outcomes

Knowledge

- Discuss historical perspective to advancement in the subject proper and related topics.
- Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population.
- Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology.
- Describe various preventive periodontal measures
- Describe various treatment modalities of periodontal disease from historical aspect to currently available ones.
- Describe interrelationship between periodontal disease and various systemic conditions
- Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it.
- Identify rarities in periodontal disease and environmental/Emotional determinates in a given case .
- Recognize conditions that may be outside the area of his/her Specialty/ competence and refer them to an appropriate Specialist .
- Decide regarding non-surgical or surgical management of the case.
- Update the student by attending courses, conferences and seminars relevant to periodontics or by self-learning process.
- Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his/her work in scientific journals.
- Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated.
- Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population (Region wise).
- Shall develop knowledge, skill in the science and practice of Oral Implantology.
- Shall develop teaching skill in the field of Periodontology and Oral Implantolog.y
- Principals of Surgery and Medical Emergencies.
- To sensitize students about inter disciplinary approach towards the soft tissues of the oral cavity with the help of specialist from other departments.

Skills:

- Take a proper clinical history, thorough examination of intra oral, extra oral, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis.

- Effective motivation and education regarding periodontal disease maintenance after the treatment.
- Perform both non-surgical & education regarding periodontal disease, maintenance after the treatment.
- Perform both non-surgical and surgical procedures independently.
- Provide Basic Life Support Service (BLS) recognizes the need for advance life support and does the immediate need for that.

Human values, ethical practice to communication abilities

- Adopt ethical principles in all aspects of treatment modalities; Professional honesty & integrity are to be fostered. Develop Communication skills to make awareness regarding periodontal disease Apply high moral and ethical standards while carrying out human or animal research, Be humble, accept the limitations in his/her knowledge and skill, and ask for help from colleagues when needed, Respect patients rights and privileges, including patients right to information and right to seek a second opinion.
- To learn the principal of lip repositioning and perio esthetics surgeries.

PROSTHODONTICS AND CROWN & BRIDGE

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.
- 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 cranio-mandibular 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.

CONSERVATIVE DENTISTRY AND ENDODONTICS

Objectives: The following objectives are laid out to achieve the goals of the course. These are to be achieved by the time the candidate completes the course. These objectives may be considered under the following subtitles. Knowledge: At the end of 36 months of training, the candidates should be able to:

- Describe etiology, pathophysiology, periapical diagnosis and management of common restorative situations, endodontic situations that will include contemporary management of dental caries, management of trauma and pulpal pathosis including periodontal situations.

- Demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics.
- Identify social, economic, environmental and emotional determinants in a given case or community and take them into account for planning and execution at individual and community level.
- Ability to master differential diagnosis and recognize conditions that may require multi disciplinary approach or a clinical situation outside the realm of the specialty, which he or she should be able to recognize and refer to appropriate specialist.
- Update himself by self-study and by attending basic and advanced courses, conferences, seminars, and workshops in the specialty of Conservative Dentistry-Endodontics-Dental Materials and Restorative Dentistry.
- Ability to teach/guide, colleagues and other students. Use information technology tools and carry out research both basic and clinical with the aim of his publishing his work and presenting the same at scientific platform.

Skills:

- Take proper chair side history, examine the patient and perform medical and dental diagnostic procedures as well as perform relevant tests and interpret to them to come to a reasonable diagnosis about the dental condition in general and Conservative Dentistry – Endodontics in particular. And undertake complete patient monitoring including preoperative as well as post operative care of the patient.
- Perform all levels of restorative work, surgical and non-surgical Endodontics as well as endodontic-periodontal surgical procedures as part of multidisciplinary approach to clinical condition. • Provide basic life saving support in emergency situations.
- Manage acute pulpal and pulpo periodontal situations.
- Have a thorough knowledge of infection control measures in the dental clinical environment and laboratories.
- Should have proper knowledge of sterilization procedures

Human Values, Ethical Practice and Communication Abilities

- Adopt ethical principles in all aspects of restorative and contemporary Endodontics including non-surgical and surgical Endodontics.
- Professional honesty and integrity should be the top priority.
- Dental care has to be provided regardless of social status, caste, creed or religion of the patient.
- Develop communication skills in particular to explain various options available for management and to obtain a true informed consent from the patient.
- Apply high moral and ethical standards while carrying on human or animal research.
- He/She shall not carry out any heroic procedures and must know his limitations in performing all aspects of restorative dentistry including Endodontics. Ask for help from colleagues or seniors when required without hesitation. • Respect patient’s rights and privileges including patient’s right to information.

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Objectives: The training programme in Orthodontics is to structure and achieve the following four objectives Knowledge:

- The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment.
- The etiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems.
- Various treatment modalities in Orthodontics – preventive, interceptive and corrective.
- Basic sciences relevant to the practice of Orthodontics
- Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro – facial deformities
- Factors affecting the long-range stability of orthodontic correction and their management
- Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.

Skills:

- To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, and interpret them and arrive at a reasonable diagnosis about the Dento-facial deformities.
- To be competent to fabricate and manage the most appropriate appliance – intra or extra oral, removable or fixed, mechanical or functional, and active or passive – for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of oro-facial deformities.

Attitude:

- Develop an attitude to adopt ethical principles in all aspects of Orthodontic practice.
- Professional honesty and integrity are to be fostered
- Treatment care is to be delivered irrespective of the social status, cast, creed and religion of the patients.
- Willingness to share the knowledge and clinical experience with professional colleagues
- Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which are in the best interest of the patient
- Respect patients' rights and privileges, including patients right to information and right to seek a second opinion
- Develop attitude to seek opinion from allied medical and dental specialists as and when required.

Communication Skills:

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Dento-facial problem and to obtain a true informed consent from them for the most appropriate treatment available at that point of time.
- Develop the ability to communicate with professional colleagues, in Orthodontics or other specialties through various media like correspondence, Internet, e-video, conference, etc. to render the best possible treatment.

7. LEARNING OUTCOME & ASSESSMENT PROCESSES FOR POST GRADUATES:

Attendance & Records/Log Books:The candidate should be assessed based on regular attendance (Theory-75% & Practical/clinical-80%), clinical records books and scores obtained in the record.

Journal club: The journal club shall be held at least once a week. It is required that all PGs and staff associated will actively participate and enter relevant details in the logbook. A standard checklist to follow when assessing the presentation of journal clubs

Case discussions: Regular case discussions to be held with postgraduate students to evaluate their case based problem solving skills.

Clinical postings: Each PG shall work in the department clinics on regular basis to gain adequate professional skills and competency in managing various cases of pertaining specialty.

Teaching skills: All PG's should be encouraged to engage either by lectures and case discussions in undergraduate teaching programmes. A model check list to be followed for assessment of the teaching

Synopsis/Dissertation / Thesis: The PG's should submit synopsis & prepare a dissertation based on the clinical or experimental work or any other research performed by them under the supervision of the guide.

Short term studies:The PG's are assessed for research skills through short term studies.

Written and practical assessment exam: Written and practical assessment exam should be conducted after completion of each academic year during post graduate curriculum at institutional level.

8. GRADUATE ATTRIBUTES

The MIDSr institute enables our graduates to become:

Perfection in academics

Have in-depth knowledge of speciality

Have great achievement in writing, publishing research activities

Have ability to handle complications and solve problems and effective skill of communication

Be critical and creative thinkers, and mind set for continued self-directed learning

Be able to operate information and communication technologies and able to keep continued education.

Knowledgeable across disciplines:

Should have multidisciplinary knowledge

Expand their analytical and cognitive skills through learning experiences in diverse subjects

Have ability to diagnose and treat.

Patient care diagnosis and treatment

Have ability to apply knowledge and skills while handling patients

Student must be good observer and critical thinker with this able to diagnose.

Student must be efficient using scientific literature to decide treatment options

Have ability to evaluate treatment outcome.

Should be aware of professional ethics

When deciding treatment should not deny the patients right to choose the option.

Should respect the patients privacy.

Should follow the professional ethical principles –

To do no harm

To do good

Respect the person

Justice

Respect patients right to information and right to seek second opinion

Able to accept the limitations of skill and if needed refer the patient.

THE ASSESSMENT OF GRADUATE ATTRIBUTES

- Subject Knowledge
- Clinical skills
- Behavior with staff and colleague
- Communication skills
- Interest towards research
- Skills of Pedagogical presentation
- Professional Ethics

These attributes are monitored and enforced by regular theory classes, seminars, projects, case discussions, assignments, interdepartmental discussions, communication with the patients, short studies, CDE and workshops. The outcome is assessed through Theory exams, practical exams and viva-voce.