



SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
— Deemed to be University —

MASTER OF DENTAL SURGERY (M.D.S.) DEGREE

REGULATIONS -2017

(For students admitted from 2017 - 2018 onwards)

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

FACULTY OF MEDICINE AND HEALTH SCIENCES

SRM Institute of Science and Technology

(Formerly Known as SRM UNIVERSITY)

Kattankulathur – 603 203

REGULATIONS -2017
MASTER OF DENTAL SURGERY (M.D.S.)
Orthodontics & Dentofacial Orthopedics

1. SHORT TITLE AND COMMENCEMENT:

These regulations shall be called 'MASTER OF DENTAL SURGERY REGULATIONS 2017' under SRM Institute of Science and Technology, Kattankulathur, Kancheepuram District, Tamilnadu. The regulations are in compliance to the Dental Council of India Master of Dental Surgery course regulations 2017 released in the Gazette of India dated 05.09.2017. The same has been placed and approved by the 36th Academic council meeting of SRM Institute of Science and Technology held on 25.10.2017.

The regulations shall come into force for the candidates admitted from the academic year 2017-2018 onwards.

DEFINITIONS:

Orthodontics & Dentofacial Orthopedics:

Deals with prevention and correction of oral anomalies and malocclusion and the harmonizing of the structures involved, so that the dental mechanisms will function in a normal way.

NEET:

NEET means the National Eligibility–cum–Entrance Test conducted by the National Board of Examination for admission to post-graduate courses.

2. GOALS & OBJECTIVES:

2.A. GOALS

The goals of postgraduate training in various specialties are to train B.D.S. graduate who will, after successful completion of the course:

- ✓ Practice respective specialty efficiently and effectively, backed by scientific knowledge and skill.
- ✓ Exercise empathy and a caring attitude and maintain high ethical standards.
- ✓ Continue to evince keen interest in continuing professional education in the specialty and allied specialties irrespective of whether in teaching or practice.
- ✓ Willing to share the knowledge and skills with any learner, junior or a colleague.
- ✓ Develop the faculty for critical analysis and evaluation of various concepts and views, to adopt the most rational approach.

2.B. OBJECTIVES:

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

The above objectives are to be achieved by the time the candidate completes the course. The objectives may be considered as under -

1. Knowledge (Cognitive domain)
2. Skills (Psycho motor domain)
3. Human values, ethical practice and communication abilities

KNOWLEDGE:

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

The students undergoing postgraduate courses shall be exposed to the following:-

- Basics of statistics to understand and critically evaluate published research papers.
- Few lectures on other type of exposure to human behavior studies.
- Basic understanding of pharmaco-economics.
- Introduction to the non-linear mathematics.

SKILLS:

- ✓ Take a proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reason
- ✓ diagnosis about the condition.
- ✓ Acquire adequate skills and competence in performing various procedure required in the speciality.

HUMAN VALUES, ETHICAL PRACTICE AND COMMUNICATION ABILITIES:

Adopt ethical principles in all aspects of practice. Professional honesty and integrity are to be fostered.

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

3. ELIGIBILITY FOR SELECTION CRITERIA OF STUDENTS:

A candidate for admission to the Master of Dental Surgery course, must possess a recognized degree of Bachelor of Dental Surgery awarded by a university or institute in India and registered with the State Dental Council and has obtained provisional or permanent registration and has undergone compulsory rotatory internship of a year in an approved/recognized dental college:

Provided that 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:

Provided further that 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.

3.A. SELECTION OF CANDIDATE FOR POST- GRADUATE COURSES:

There shall be a 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. The overall superintendence, direction and control of the NEET shall vest with the Council.

3.B. QUALIFYING CRITERIA FOR ADMISSION TO POST-GRADUATE COURSES:

- a. The candidate has to secure the following category wise minimum percentile in NEET for admission to post-graduate courses held in a particular academic year. Provided that the percentile shall be determined on the basis of highest marks secured in the All-India common merit list in NEET for post-graduate courses:

| | |
|--|-----------------------------|
| General | 50 th Percentile |
| Person with locomotor disability of lower limbs | 45 th percentile |
| Scheduled castes, Scheduled tribes, other backward classes | 40 th percentile |

Provided further, that when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in NEET 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 Test and candidates shall be admitted to post-graduate courses from the said merit list only
- 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.

3.C. COMMON COUNSELING:

There shall be a common counseling for admission to all post-graduate specialties (MDS) on the basis of merit list of the NEET to be conducted by the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India.

3.D. REQUIRED DOCUMENTS:

No candidate shall be admitted to any Postgraduate MDS course unless the candidate has obtained and produced eligibility certificate issued by University. The candidate has to make an application to the University with the following documents along with the prescribed fee:

- a. BDS pass / degree certificate issued by the University.
- b. Marks cards of all the university examinations passed (I to IV BDS year course).
- 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 college.
- f. Registration by any State Dental Council and
- g. Proof of SC/ ST or Category I, as the case may be.

Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the University.

A candidate who has been admitted to postgraduate course should register his / her name in the University within a month of admission after paying the registration fee.

4. COURSE OVERVIEW:

4.A. DURATION OF THE COURSE:

The Course shall be of three years duration. All the candidates for the degree of MDS are required to pursue the prescribed course for at least three academic years course as full time candidates under the direction of the Head of the Department, who has to be a recognized postgraduate teacher in that specialty.

4.B. MAXIMUM DURATION OF THE COURSE:

The time period required for passing out of the MDS course shall be a maximum of 6 years from the date of admission in said course.

5. COMMENCEMENT OF ACADEMIC SESSION:

The classes for the course shall commence from 1st week of May and the cut –off date for admission will be 31st May.

6. MIGRATION:

Under no circumstances, the migration or the transfer of students undergoing post-graduate degree shall not be permitted by SRM Institute of Science and Technology or the authority. No interchange of the speciality in the same institution or in any other institution shall be permitted after the date of commencement of session

7. COMMENCEMENT OF EXAMINATION:

Written examination shall consist of Basic Science Part 1 which will be conducted at the end of 1st year of MDS course. Part 2 examination shall be conducted during the 1st week of June after completion of 3 years/ 36 months. Examinations for the repeaters / arrears shall be conducted in the month of December every academic year.

The University shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations.

8. STRUCTURE OF PROGRAM:

| M.D.S - Orthodontics and Dentofacial Orthopedics | | |
|---|-----------|--|
| Subject Code | | Subject Title |
| Part – I | | |
| 17MDS111 | Part - I | Applied Basic Sciences: Applied Anatomy, Physiology, Dental Materials, Genetics, Pathology, Physical Anthropology, Applied Research Methodology, Bio-Statistics and Applied Pharmacology. |
| Part – II | | |
| 17MDS121 | Paper - 1 | Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic procedures and treatment planning in Orthodontics, Practice management in Orthodontics. |
| 17MDS122 | Paper - 2 | Clinical Orthodontics |
| 17MDS123 | Paper - 3 | Descriptive and Analysing type question |
| 17MDS124 | Paper - 4 | Practical and Clinical |
| 17MDS125 | Paper - 5 | Viva - Voce and Pedagogy |

9. ATTENDANCE, PROGRESS AND CONDUCT:

A candidate pursuing degree/diploma course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/ work in a clinic / laboratory /nursing home while studying post graduate 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 have not less than 80 percent of attendance in each year of the course. However, candidates should not be continuously absent as the course is a full time one.

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.

CONDONATION:

There is no condonation for MDS courses

10. MONITORING PROGRESS OF STUDIES:

10.1. WORK DIARY / LOG BOOK:

- ✓ Every Post Graduate candidate shall maintain a record of skills [Log Book] he has acquired during the three years training period, certified by the various Heads of Departments he has undergone training.
- ✓ The candidate should record of his / her participation in the training programme conducted by the department such as journal reviews, seminars, etc. in the Log book.
- ✓ Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.
- ✓ The Head of the Department shall scrutinize the Log Book every 3 months.
- ✓ At the end of the course, the candidate should summarise the contents and the Log Book certified by the Head of the Department and Head of the Institution.
- ✓ The Log Book should be submitted at the time of University practical / Clinical examination for the scrutiny of the board of Examiners.

10.2. PERIODIC TESTS:

In case of degree courses of three years duration, the concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical/clinical and viva voce. Records and marks obtained in such tests will be maintained by the Head of the Department and sent to the University, when called for.

10.3. 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.

11. DISSERTATION:

The trainees shall prepare a dissertation based on the clinical or experimental work or any other study conducted by them under the supervision of the guide.

11.1. DISSERTATION:

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

Every candidate shall submit to the Registrar of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course 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 approval of the University. The dissertation should be written under the following headings:

- i. Introduction
- ii. Aims or Objectives of study
- iii. Review of Literature
- iv. Material and Methods
- v. Results
- vi. Discussion
- vii. Conclusion
- viii. Summary

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 dissertation shall be certified by the guide, head of the department and head of the Institution.

The completed dissertation should be submitted six months before the final examination as per calendar of events.

The dissertation shall be valued by examiners appointed by the University. 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.

Co-guide: A co-guide may be included provided the work requires substantial contribution from a sister department or from another institution recognised for teaching/training by the Dental Council of India. The co-guide shall be a recognised postgraduate teacher of the University.

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.

12. EXAMINATION:

ELIGIBILITY: The following requirements shall be fulfilled by the candidate to become eligible for the final examination.

- (i) **Attendance:** Every candidate shall secure (80% attendance during each academic year).
- (ii) **Progress and conduct:** Every candidate shall participate in seminars, journal review meetings, symposia, conferences, case presentations, clinics and didactic lectures during each year organized by the concerned department.
- (iii) **Work diary and log book:** Every candidate shall maintain a work diary and log book as per Annexure-I appended to these regulations for recording his or her participation in the training programs conducted by the department. The work diary and log book shall be verified and certified by the Head of the Department of the institution. The certification of satisfactory progress is based on the work diary and log book.

UNIVERSITY EXAMINATION The University examination shall consist of theory, practical and clinical examination and viva-voce and Pedagogy

12.1. THEORY:

Part-I: Shall consist of one paper there shall be a theory examination in the Basic Sciences at the end of 1st year of course. The question papers shall be set and evaluated by the concerned Department/Specialty. 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.

Part-II: Shall consist of

- (i) Three theory papers
- (ii) Practical and Clinical Examination
- (iii) Viva-voce
- (iv) Pedagogy.

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

12.2 DISSERTATION: Every candidate appearing for the post-graduate degree examination shall at least six months prior to the examinations, submit with his form for examination, four typewritten copies of the dissertation undertaken by the candidate, prepared under the direction and guidance of his/her guide. The dissertation so submitted shall be referred to the examiners for their examination and acceptance of it shall be a condition precedent to allow the candidate to appear for the written part of the examination.

Provided that a candidate whose dissertation has been accepted by the examiner, but declared failed at the examination, shall be permitted to re-appear at the subsequent examination without a new dissertation: Provided further that if the dissertation is rejected by the examiner, the examiner shall assign reasons therefor with suggestions for its improvement to the candidate and such candidate shall resubmit his/ her dissertation to the examiner who shall accept it before appearing in the examination.

CLINICAL/PRACTICAL EXAMINATION:

Clinical/practical examination is designed to test the clinical skill, performance and competence of the candidate in skills such as communication, clinical examination, medical/dental procedures or prescription, exercise prescription, latest techniques,

evaluation and interpretation of results so as to undertake independent work as a specialist. SRM Institute of Science and Technology shall ensure that the candidate has been given ample opportunity to perform various clinical procedures. The practical/clinical examination in all the specialties shall be conducted for six candidates in two days.

Provided that practical/clinical examination may be extended for one day, if it is not complete in two days.

VIVA-VOCE EXAMINATION: Viva voce examination aims at assessing the depth of knowledge, logical reasoning, confidence and communication skill of the students.

SCHEME OF EXAMINATION:

Theory: Part-I: Basic Sciences Paper - **100 Marks**

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

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course. Part-II Examination 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 Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers.

12.3 DISTRIBUTION OF MARKS:s

THEORY: (TOTAL 400 MARKS)

1. PART I UNIVERSITY EXAMINATION (100 Marks):

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

2. PART II (3 papers of 100 Marks):

- a. **Paper-I:** 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)
- b. **Paper-II:** 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)
- c. **Paper III:** 2 out of 3 essay questions (50 x 2 = 100 Marks)

PRACTICAL EXAMINATION: 200 MARKS

VIVA-VOCE AND PEDOGOGY: 100 MARKS

(MODEL QUESTION PATTERN)
MDS DEGREE EXAMINATIONS
PART I
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

TIME : 3 HRS

MAX.MARKS:100

Answer All the Questions

(10x10=100 marks)

- 1.-----
- 2.-----
- 3.-----
- 4.-----
- 5.-----
- 6.-----
- 7.-----
- 8.-----
- 9.-----
- 10.-----

(MODEL QUESTION PATTERN)
MDS DEGREE EXAMINATIONS
PART II- PAPER I
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

TIME : 3 HRS

MAX.MARKS:100

Section A

Answer All the Questions

(2x25=50 marks)

- 1.-----
- 2.-----

Section B

Answer All the Questions

(5x10=50 marks)

- 3.-----
- 4.-----
- 5.-----
- 6.-----
- 7.-----

(MODEL QUESTION PATTERN)
MDS DEGREE EXAMINATIONS
PART II- PAPER II
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

TIME : 3 HRS

MAX.MARKS:100

Section A

Answer All the Questions

(2x25=50 marks)

- 1.-----
- 2.-----

Section B

Answer All the Questions

(5x10=50 marks)

- 3.-----
- 4.-----
- 5.-----
- 6.-----
- 7.-----

(MODEL QUESTION PATTERN)
MDS DEGREE EXAMINATIONS
PART II- PAPER III
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

TIME : 3 HRS

MAX.MARKS:100

Section A

Answer Any 2 Questions

(2x50=100 marks)

- 1.-----
- 2.-----
- 3.-----

| M.D.S - Orthodontics and Dentofacial Orthopedics | | | | |
|---|---------|---|------------------------|----------------------|
| Subject Code | | Subject Title | Passing Minimum | Maximum Marks |
| Part – I | | | | |
| 17MDS111 | Paper 1 | Applied Basic Sciences : Applied Anatomy, Physiology, Dental Materials, Genetics, Pathology, Physical Anthropology, Applied Research Methodology, Bio- Statistics and Applied Pharmacology. | 50 | 100 |
| | | Theory Aggregate | 50 | 100 |
| Part – II | | | | |
| 17MDS121 | Paper 1 | Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic procedures and treatment planning in Orthodontics, Practice management in Orthodontics. | | 100 |
| 17MDS122 | Paper 2 | Clinical Orthodontics | | 100 |
| 17MDS123 | Paper 3 | Descriptive and Analysing type question | | 100 |
| | | Theory Aggregate | 150 | 300 |
| 17MDS124 | Paper 4 | Practical and Clinical | | 200 |
| 17MDS125 | Paper 5 | Viva - Voce and Pedagogy | | 100 |
| | | Practical Aggregate | 150 | 300 |

***Note:** 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.

**PRACTICAL EXAMINATIONS: PRACTICAL / CLINICAL EXAMINATION:200 MARKS
DAY 1& DAY 2 SEPARATE:**

Exercise No: 1 Functional Case:50 Marks

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

Exercise No: 2 Multiband exercise: 50 Marks

1. M stage with auxiliary springs or
2. Bonding of SWA brackets and construction of suitable arch wire.

Exercise No. 3 Display of records of the treated cases (minimum of 5 cases) 5 cases * 15 marks = 75 Marks

Exercise No: 4 Long case discussions: 25 Marks

| S.No | Exercise | Marks allotted | Approximate Time |
|------|---|----------------|------------------|
| 1 | Functional appliance | 50 | 1 hour 1 hour |
| 2 | Bonding/ Arch wire fabrication | 50 | 1 hr 30 min |
| 3 | Display of case records (a minimum of 5 cases to be presented with all the cases) | 75 | 1 hour |
| 4 | Long cases | 25 | 2 hours |

VIVA-VOCE AND PEDAGOGY: 100 Marks

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

13. EVALUATION METHOD

13.1. EXAMINERS:

PART I:

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 number of students.

PART II:

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.

13.2. QUALIFICATION AND EXPERIENCE FOR EXAMINERS:

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

- (i) Shall possess qualification and experience of a Professor in a post-graduate degree programme;
- (ii) A person who is not a regular post-graduate teacher in the subject shall not be appointed as an examiner;
- (iii) The internal examiner in a subject shall not accept external examinership in a college for the same academic year;
- (iv) No person shall be appointed as an external examiner for the same institution for more than two consecutive years. However, if there is a break of one year, the person can be re-appointed.

13.3. VALUATION OF ANSWER BOOKS:

PART-I & II:

Answer books shall be evaluated by four examiners, two internal and two external and the average marks shall be computed.

14. PASSING MINIMUM:

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 the respective specialty.

15. RE-VALUATION AND RE-TOTALLING:

There is no provision for re-evaluation or re-totalling of answer books.

16. CLASSIFICATION:

As the Master of Dental Surgery course is more of training and practice oriented giving class is precluded.

MEDALS AND RANKINGS:

All papers should be cleared in the first attempt and percentage of marks secured should be above 60.

17. SYLLABUS:

Part-I -Applied Basic Sciences

Part-II

Paper-I : Diagnosis and Treatment Planning

Paper-II : Clinical Orthodontics

Paper-III : Descriptive and analyzing type question

DETAILED SYLLABUS:

| | |
|---------|---|
| PART I | Applied Basic Sciences: Applied anatomy, Physiology, Dental Materials, Pathology, Physical Anthropology, Applied Research methodology, Bio-Statistics and Applied Pharmacology. |
| PART II | |
| Paper-1 | Diagnosis and Treatment Planning -Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic procedures and treatment planning in Orthodontics, Practice management in Orthodontics |
| Paper-2 | Clinical Orthodontics |
| Paper-3 | Descriptive and analyzing type question |

PART I

| SUBJECT CODE | PAPER | SUBJECT TITLE |
|--------------|---------|---|
| 17MDS111 | PAPER 1 | Applied Basic Sciences: Applied Anatomy, Physiology, Dental Materials, Genetics, Pathology, Physical Anthropology, Applied Research Methodology, Bio-Statistics and Applied Pharmacology. |

PAPER 1:

APPLIED ANATOMY:

1. Prenatal growth of head:
2. Stages of embryonic development, origin of head, origin of face, origin of teeth.
3. Postnatal growth of head:

4. Bones of skull, the oral cavity, development of chin, the hyoid bone, general growth of head, face growth.
5. Bone growth:
6. Origin of bone, composition of bone, units of bone structure, schedule of Ossification, mechanical properties of bone, roentgen graphic appearance of bone.
7. Assessment of growth and development:
8. Growth prediction, growth spurts, the concept of normality and growth increments of growth, differential growth, gradient of growth, methods of gathering growth data. Theories of growth and recent advances, factors affecting physical growth.
9. Muscles of mastication:
10. Development of muscles, muscle change during growth, muscle function and development, muscle function and malocclusion
11. Development of dentition and occlusion:
12. Dental development periods, order of tooth eruption, chronology of permanent tooth formation, periods of occlusal development, pattern of occlusion.
13. Assessment of skeletal age, the carpal bones, carpal x - rays, cervical vertebrae

PHYSIOLOGY:

1. Endocrinology and its disorders(Growth hormone, thyroid hormone, parathyroid hormone, ACTH) pituitary gland hormones, thyroid gland hormones, parathyroid gland hormones
2. Calcium and its metabolism
3. Nutrition-metabolism and their disorders: proteins, carbohydrates, fats, vitamins and minerals
4. Muscle physiology
5. Craniofacial Biology: cell adhesion molecules and mechanism of adhesion
6. Bleeding disorders in orthodontics: Hemophilia.

DENTAL MATERIALS:

1. Gypsum products: dental piaster, dental stone and their properties, setting reaction etc.
2. Impression materials: impression materials in general and particularly of alginate impression material.
3. Acrylics: chemistry, composition physical properties
4. Composites: composition types, properties setting reaction

5. Banding and bonding cements: Zn (PO#)2, zinc silicophosphate, Zinc polycarboxylate, resin cements and glass ionomer cements
6. Wrought metal alloys: deformation, strain hardening, annealing, recovery, recrystallization, grain growth, properties of metal alloys.
7. Orthodontic arch wires: stainless steel gold, wrought cobalt chromium nickel alloys, alpha & beta titanium alloys.
8. Elastics: Latex and non-latex elastics.
9. Applied physics, Bioengineering and metallurgy.
10. Specification and tests methods used for materials used in Orthodontics
11. Survey of all contemporary literature and Recent advances in above - mentioned materials.

GENETICS:

1. Cell structure, DNA, RNA, protein synthesis, cell division
2. Chromosomal abnormalities
3. Principles of orofacial genetics
4. Genetics malocclusion
5. Molecular basis of genetics
6. Studies related to malocclusion
7. Recent advances in genetics related to malocclusion
8. Genetic counseling
9. Bioethics and relationship to Orthodontic management of patients.

PHYSICAL ANTHROPOLOGY:

1. Evolutionary development of dentition
2. Evolutionary development of jaws.

PATHOLOGY:

1. Inflammation
2. Necrosis

APPLIED PHARMACOLOGY & THERAPEUTICS:

Definition of terminologies used - Dosage and mode of administration of drugs. Action and fate of drugs in the body, Drug addiction, tolerance and hypersensitive reactions, Drugs acting on the central nervous system, general anesthetics hypnotics. Analeptics and tranquilizers, Local anesthetics, Chemotherapeutics and antibiotics, Antitubercular and anti syphilitic drugs, Analgesics and antipyretics, Antiseptics, styptics, Sialogogues and antisialogogues, Haematinics, Cortisone, ACTH, insulin and other antidiabetics vitamins: A, D, B - complex group C and K etc. Chemotherapy and Radiotherapy

BIOSTATISTICS:

1. Statistical principles
 - a. Data Collection
 - b. Method of presentation
 - c. Method of Summarizing
 - d. Methods of analysis - different tests/errors
2. Sampling and Sampling technique
3. Experimental models, design and interpretation
4. Development of skills for preparing clear concise and cogent scientific abstracts and publication

APPLIED RESEARCH METHODOLOGY IN ORTHODONTICS:

1. Experimental design
2. Animal experimental protocol
3. Principles in the development, execution and interpretation of methodologies in Orthodontics
4. Critical Scientific appraisal of literature.

APPLIED PHARMACOLOGY:**PART II**

| SUBJECT CODE | PAPER | SUBJECT TITLE |
|--------------|---------|--|
| 17MDS121 | PAPER 1 | Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic procedures and treatment planning in Orthodontics, Practice management in Orthodontics. |

PART 2**PAPER-I: Diagnosis and Treatment Planning:****ORTHODONTIC HISTORY:**

1. Historical perspective,
2. Evolution of orthodontic appliances,
3. Pencil sketch history of Orthodontic peers
4. History of Orthodontics in India

CONCEPTS OF OCCLUSION AND ESTHETICS:

1. Structure and function of all anatomic components of occlusion,
2. Mechanics of articulation,

3. Recording of masticatory function,
4. Diagnosis of Occlusal dysfunction,
5. Relationship of TMJ anatomy and pathology and related neuromuscular physiology.

ETIOLOGY AND CLASSIFICATION OF MALOCCLUSION:

1. A comprehensive review of the local and systemic factors in the causation of malocclusion
2. Various classifications of malocclusion

DENTOFACIAL ANOMALIES:

1. Anatomical, physiological and pathological characteristics of major groups of developmental defects of the orofacial structures.

CHILD AND ADULT PSYCHOLOGY:

1. Stages of child development.
2. Theories of psychological development.
3. Management of child in orthodontic treatment.
4. Management of handicapped child.
5. Motivation and Psychological problems related to malocclusion / orthodontics
6. Adolescent psychology
7. Behavioral psychology and communication

DIAGNOSTIC PROCEDURES AND TREATMENT PLANNING IN ORTHODONTICS:

1. Emphasis on the process of data gathering, synthesis and translating it into a treatment plan
2. Problem cases - analysis of cases and its management
3. Adult cases, handicapped and mentally retarded cases and their special problems
4. Critique of treated cases.
5. Cephalometrics
6. Instrumentation
7. Image processing
8. Tracing and analysis of errors and applications
9. Radiation hygiene
10. Advanced Cephalometrics techniques
11. Comprehensive review of literature
12. Video imaging principles and application.

PRACTICE MANAGEMENT IN ORTHODONTICS:

1. Economics and dynamics of solo and group practices
2. Personal management
3. Materials management
4. Public relations
5. Professional relationship
6. Dental ethics and jurisprudence
7. Office sterilization procedures
8. Community based Orthodontics.

| SUBJECT CODE | PAPER | SUBJECT TITLE |
|---------------------|--------------|-----------------------|
| 17MDS122 | PAPER 2 | Clinical Orthodontics |

PAPER-2: Clinical Orthodontics**CLINICAL ORTHODONTICS:****MYOFUNCTIONAL ORTHODONTICS:**

1. Basic principles
2. Contemporary appliances - their design and manipulation
3. Case selection and evaluation of the treatment results
4. Review of the current literature.

DENTOFACIAL ORTHOPEDICS:

1. Principles
2. Biomechanics
3. Appliance design and manipulation
4. Review of contemporary literature

CLEFT LIP AND PALATE REHABILITATION:

1. Diagnosis and treatment planning
2. Mechanotherapy
3. Special growth problems of cleft cases
4. Speech physiology, pathology and elements of therapy as applied to:
5. Team rehabilitative procedures.

BIOLOGY OF TOOTH MOVEMENT:

1. Principles of tooth movement-review
2. Review of contemporary literature
3. Applied histophysiology of bone, periodontal ligament
4. Molecular and ultra cellular consideration in tooth movement

ORTHODONTIC I ORTHOGNATHIC SURGERY:

1. Orthodontist' role in conjoint diagnosis and treatment planning
2. Pre and post-surgical Orthodontics
3. Participation in actual clinical cases, progress evaluation and post retention study
4. Review of current literature
5. Ortho / Perio-Prostho inter relationship
6. Principles of interdisciplinary patient treatment
7. Common problems and their management

BASIC PRINCIPLES OF MECHANOTHERAPY INCLUDES REMOVABLE APPLIANCES AND FIXEDAPPLIANCES:

1. Designing
2. Construction
3. Fabrication
4. Management
5. Review of current literature on treatment methods and results

APPLIED PREVENTIVE ASPECTS IN ORTHODONTICS:

1. Caries and periodontal disease prevention
2. Oral hygiene measures
3. Clinical procedures

INTERCEPTIVE ORTHODONTICS:

1. Principles
2. Growth guidance
3. Diagnosis and treatment planning
4. Therapy emphasis on:
 - a. Dento-facial problems
 - b. Tooth material discrepancies
 - c. Minor surgery for Orthodontics

RETENTION AND RELAPSE:

1. Mechanotherapy - special reference to stability of results with various procedures
2. Post retention analysis
3. Review of contemporary literature

RECENT ADVANCES LIKE:

1. Use of implants
2. Lasers
3. Application of F.E.M.
4. Distraction Osteogenesis

| SUBJECT CODE | PAPER | SUBJECT TITLE |
|--------------|---------|---|
| 17MDS123 | PAPER 3 | Descriptive and Analysing type question |

PAPER-3: Descriptive and analyzing type question

18. TEACHING AND LEARNING ACTIVITIES:**18.1. LECTURES:**

There shall be some didactic lectures in the specialty and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

18.2. JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles. A model check list for the evaluation of journal review presentation is annexed at Schedule-I of these regulations.

18.3. SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook. A model check list for the evaluation of seminar presentation is annexed at Schedule-II of these regulations.

18.4. SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

18.5. CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases, A model check list for evaluation of clinical postings is annexed at Schedule-III of these regulations.

18.6. CLINICO- PATHOLOGICAL CONFERENCE:

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

18.7. INTER-DEPARTMENT AL MEETINGS:

To encourage integration among various specialties, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

18.8. TEACHING SKILLS:

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussions. A model check list for evaluation of teaching skills is annexed at Schedule-IV of these regulations.

18.9. DENTAL EDUCATION PROGRAMMES:

Each department shall organize dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

18.10. CONFERENCES / WORKSHOPS / ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State / national level specialty and allied conferences / conventions during the training period.

18.11. ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialties and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

18.12. DISSERTATION / THESIS:

A model check list for evaluation of dissertation presentation and continuous evaluation of dissertation work by guide / co-guide is annexed at Schedule-V of these regulations. A model overall assessment sheet to be filled by all the trainees undergoing post-graduate course is annexed at Schedule-VI of these regulations.

18.13. MINIMUM REQUIRED QUOTA:

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) Clinico 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 the date of commencement of the course
- (i) Submission of Dissertation months : one dissertation within 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

18.14. CLINICAL QUOTA:

SKILLS:

II. Pre - Clinical Exercises

A general outline of the type of exercises is given here. Every institution can decide the details of exercises under each category.

1. General Wire bending exercises to develop the manual dexterity.
2. Clasps, Bows and springs used in the removable appliances.
3. Soldering and welding exercises.
4. Fabrication of removable habit breaking, mechanical and functional appliances, also all types of space maintainers and space regainers.
5. Bonwill Hawley Ideal arch preparation.
6. Construction of orthodontic models trimmed and polished preferably, as per specifications of Tweed or A.B.O.
7. Cephalometric tracing and various Analyses, also superimposition methods –
8. Fixed appliance typhodont exercises.
 - a. Training shall be imparted in one basic technique i.e. Standard Edgewise / Beggtechnique or its derivative / Straight wire etc., with adequate exposure to other techniques.
 - b. Typhodont exercise

- i. Band making
 - ii. Bracket positioning and placement
 - iii. Different stages in treatment appropriate to technique taught
- 9. Clinical photography
- 10. Computerized imaging
- 11. Preparation of surgical splints, and splints for TMJ problems.
- 12. Handling of equipments like vacuum forming appliances and hydro solder etc.

FIRST YEAR:

- 1. Basic Pre-Clinical Exercise Work for the MDS Students:
First 6 Months

I. NON-APPLIANCE EXERCISES:

All the following exercises should be done with 0.7 or 0.8mm wire

| SI.NO. | EXERCISE | NO. |
|--------|------------------------------------|--------|
| 1 | Straightening of 6" & 8" long wire | 1 each |
| 2 | Square | 1 |
| 3 | Rectangle | 1 |
| 4 | Triangle of 2" side | 1 |
| 5 | Circle of 2" side | 1 |
| 6 | Bending of 5U's | 1 |
| 7 | Bending of 55555V's | 1 |

2. CLASPS:

| SI No | Exercise | No. |
|-------|--|-----|
| 1 | % Clasps | 2 |
| 2 | Full clasps | 2 |
| 3 | Triangular Clasps | 2 |
| 4 | Adam's clasp - upper molar | |
| 5 | Adam's Clasp - lower molar | 2 |
| 6 | Adam's Clasp - Pre-molar | 2 |
| 7 | Adam's Clasp – Incisor | 2 |
| 8 | Modification of Adam's - With Helix | 2 |
| 9 | Modification of Adam's - With distal extension | 2 |
| 10 | Modification of Adam's- With soldered tube | 2 |
| 11 | Duyzing Clasps on Molars | 2 |
| 12 | Southend Clasp | 1 |

3. LABIAL BOWS:

| S1.NO. | EXERCISE | NO. |
|--------|---|-----|
| 1 | Short labial bow (upper & lower) | 1 |
| 2 | Long labial bow (upper & lower) | 1 |
| 3 | Robert's retractor | 1 |
| 4 | High labial bow-with apron spring's | 1 |
| 5 | Mill's labial bow | 1 |
| 6 | Reversi loop labial bow | 1 |
| 7 | Retention labial bow soldered to Adam's clasp | 1 |
| 8 | Retention labial bow extending distal to second molar | 1 |
| 9 | Fitted labial bow | 1 |
| 10 | Split high labial bow | 1 |

4. SPRINGS:

| S1.NO. | EXERCISE | NO. |
|--------|-------------------------------|-----|
| 1 | Finger spring-mesial movement | 2 |
| 2 | Finger spring-distal movement | 2 |
| 3 | Double cantilever spring | 2 |
| 4 | Flapper spring | 2 |
| 5 | Coffin spring | 2 |
| 6 | T spring | 2 |

5. CANINE RETRACTORS:

| S1.NO. | EXERCISE | NO. |
|--------|-----------------------------------|---------|
| 1 | U loop canine retractor | 2 PAIRS |
| 2 | Helical canine retractor | 2 PAIRS |
| 3 | Palatal canine retractor | 2 PAIRS |
| 4 | Self -supporting canine retractor | 2PAIRS |
| 5 | Self -supporting canine retractor | 2PAIRS |

6. APPLIANCES:

| SL NO. | EXERCISE |
|--------|---|
| 1 | Hawley's retention appliance with anterior bite plane |
| 2 | Upper Hawley's appliance with posterior bite plane |
| 3 | Upper expansion appliance with coffin spring |
| 4 | Upper expansion appliance with coffin spring |
| 5 | Upper expansion appliance with expansion screw |
| 6 | Habit breaking appliance with tongue crib |
| 7 | Oral screen and double oral screen |

| | |
|----|------------------------|
| 8 | Lip bumper |
| 9 | Splint for Bruxism |
| 10 | Catalans appliance |
| 11 | Activator |
| 12 | Bionator |
| 13 | Frankel-FR 2 appliance |
| 14 | Twin block |
| 15 | Lingual arch |
| 16 | TPA |
| 17 | Quad helix |
| 18 | Bihelix |
| 19 | Utility arches |
| 20 | Pendulum appliance |

7. SOLDERING EXERCISES:

| S1.NO. | EXERCISE | NO. |
|--------|--------------------------------------|-----|
| 1 | Star | 1 |
| 2 | Comb | 1 |
| 3 | Christmas tree | 1 |
| 4 | Soldering buccal tube on molar bands | 1 |

8. WELDING EXERCISES:

| SL.NO. | EXERCISE |
|--------|---|
| 1 | Pinching and welding of molar, premolar, canine and Incisor bands |
| 2 | Welding of buccal tubes and brackets on molar bands and incisor bands |

9. IMPRESSION OF UPPER AND LOWER ARCHES IN ALGINATE

10. STUDY MODEL PREPARATION

11. MODEL ANALYSIS

| SL NO. | EXERCISE |
|--------|--|
| 1 | Impression of upper and lower dental arches |
| 2 | PREPARATION OF STUDY MODEL - 1 And all the permanent dentition analyses to be done. |
| 3 | PREPARATION OF STUDY MODEL - 2 And all the permanent dentition analyses to be done. |
| 4 | PREPARATION OF STUDY MODEL - 3 And all the mixed dentition analyses to be done. |

12. CEPHALOMETRICS:

| SL.NO. | EXERCISE |
|--------|--|
| 1 | Lateral cephalogram to be traced in five different colors and super imposed to see the accuracy of tracing |
| 2 | Steiner's analysis |
| 3 | Down's analysis |
| 4 | Tweed analysis |
| 5 | Rickett's analysis |
| 6 | Burrstone analysis |
| 7 | Rakosi's analysis |
| 8 | Mc Namara analysis |
| 9 | Bjork analysis |
| 10 | Coben's analysis |
| 11 | Harvold's analysis |
| 12 | Soft tissue analysis- Holdaway and Burstone |

13. BASICS OF CLINICAL PHOTOGRAPHY INCLUDING DIGITAL PHOTOGRAPHY

14. LIGHT WIRE BENDING EXERCISES FOR THE BEGG TECHNIQUE

| SL NO. | EXERCISE |
|--------|---|
| 1 | Wire bending technique on 0.016' wire circle "Z"Omega |
| 2 | Bonwill-Hawley diagram And all the permanent dentition analyses to be done. |
| 3 | Making a standard arch wire - |
| 4 | Inter maxillary hooks- Boot leg and Inter Maxillary type |
| 5 | Upper and Lower arch wire |
| 6 | Bending a double back arch wire |
| 7 | Bayonet bends (vertical and horizontal offsets) |
| 8 | Stage-III arch wire |
| 9 | Torquing auxiliary (upper) |
| 10 | Reverse Torquing (lower) |
| 11 | Up righting spring |

15. TYPHODONT EXERCISES:

(Begg or P.E.A. method)

| SL NO. | EXERCISE |
|--------|--|
| 1 | Teeth setting in Class-U division I malocclusion with maxillary anterior Proclination and mandibular anterior crowding |
| 2 | Band pinching, welding brackets and buccal tubes to the bands |
| 3 | Stage-I |
| 4 | Stage-II |
| 5 | Pre Stage-III |
| 6 | Stage-III |

CLINICAL WORK:

Once the basic pre-clinical work is completed the students can take up clinical cases and the clinical training is for the two and half years.

Each postgraduate student should start with a minimum of 50 cases of his/her own. Additionally he/she should handle a minimum of 20 transferred cases.

The type of cases can be as follows:

- i Removable active appliances-Scases
- ii Class-I malocclusion with Crowding
- iii Class-I malocclusion with bi-maxillary protrusion
- iv Class-II division-1
- v Class-U division-2
- vi Class-III(Orthopedic, Surgical, Orthodontic cases)
- vii Inter disciplinary cases
- viii Removable functional appliance cases like activator, Bionator, functional regulator, twin block and new developments
- ix Fixed functional appliances - Herbst appliance, jasper jumper etc - 5 cases
- x Dento-facial orthopedic appliances like head gears, rapid maxillary expansion nitiexpander etc., - 5 cases
- xi Appliance for arch development such as molar distalization - 5 cases
- xii Fixed mechano therapy cases (Begg, PEA, Tip edge, Edgewise)
- xiii Retention procedures of above treated cases.

19. RECOMMENDED LIST OF TEXTBOOKS & JOURNALS:

TEXT BOOKS:

1. Contemporary Orthodontics - William R. Proffit, Henry W. Fields, David M. Sarver.
2. Orthodontics principles and practice- T. M. GRABER.
3. Orthodontics: Current Principles and Techniques — Thomas Graber, Robert Vanarsdall, Katherine Vig.
4. Orthodontic Diagnosis - Thomas Rakosi, I. Jonas, Thomas M. Graber.
5. An atlas and manual of cephalometric radiography - Thomas Rakosi.
6. Orthodontic Cephalometry - Athanasios E. Athanasiou.
7. Radiographic cephalometry - Alexander Jacobson, Richard L. Jacobson.
8. Facial growth - Donald H. Enlow.
9. A synopsis of craniofacial growth - Don M. Ranly
10. Text book of craniofacial growth - Sridhar Prem kumar.
11. Dento facial orthopedics with functional appliances - Alexander G. Petrovic, Thomas M. Graber, Thomas Rakosi.
12. Twin Block Functional Therapy: Applications in Dentofacial Orthopedics William J. Clark.
13. Orthodontics and dentofacial orthopedics - James A. McNamara, William L. Brudon
14. Biomechanics in Clinical Orthodontics – Ravindra Nanda.
15. Biomechanics & Esthetic Strategies in Clinical Orthodontics – Ravindra Nanda.
16. Biomechanics in Orthodontics - Michael R. Marcotte.
17. Contemporary treatment of dentofacial deformity-William R. Proffit, Raymond p. White, David M. Sarver.
18. Orthodontic Theory and Technique - P.R. Begg, Peter Kesling.
19. Straight Wire - Lawrence F. Andrews .
20. Orthodontic Treatment Mechanics and the Preadjusted Appliance - McLaughlin, Bennett .
21. Orthodontic Management of the Dentition with the Preadjusted Appliance- McLaughlin, Bennett.
22. Systemized Orthodontic Treatment Mechanics, from Drs. McLaughlin, Bennett and Trevisi.
23. Orthodontic materials - William A. Brantley, Theodore Eliades.
24. Hand book of orthodontics - Robert E. Moyers.
25. Orthodontic and orthopedic treatment in the mixed dentition - James A. McNamara, William L. Brudon
26. The 20 Principles of the Alexander Discipline - R. G. Alexander.
27. Bioprogressive therapy - Robert M. Ricketts
28. Tip-Edge Orthodontics - Richard Parkhouse.

JOURNALS:

1. American journal of orthodontics and dentofacial ORTHOPEDICS
2. Seminars in orthodontics
3. Journal of clinical orthodontics
4. Journal of orthodontics
5. The angle orthodontist
6. European journal of orthodontics
7. Journal of orthofacial orthopedics
8. Orthodontics and cranio facial research
9. The cleft – palatecranio facial journal

**20. CHECKLISTS
CHECK LISTS AND LOGBOOKS**

**CHECKLIST-1
MODEL CHECK LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS**

Name of the Trainee:

Date:

Name of the Faculty / Observer:

| Sl. No | Items for observation during presentation | Poor 0 | Below Average 1 | Average 2 | Good 3 | Very Good 4 |
|---------------|---|-------------------|----------------------------|----------------------|-------------------|------------------------|
| 1. | Article chosen was | | | | | |
| 2. | Extent of understanding of scope & objectives of the paper by the candidate | | | | | |
| 3. | Whether cross-references have been consulted | | | | | |
| 4. | Whether other relevant publications consulted | | | | | |
| 5. | Ability to respond to questions on the paper / subject | | | | | |
| 6. | Audio - Visual aids used | | | | | |
| 7. | Ability to discuss the paper | | | | | |
| 8. | Clarity of presentation | | | | | |
| 9. | Any other observation | | | | | |
| | Total Score | | | | | |

CHECKLIST-2
MODEL CHECK LIST FOR EVALUATION OF SEMINAR PRESENTATIONS.

Name of the Trainee:

Date:

Name of the Faculty / Observer:

| Sl No. | Items for observation during presentation | Poor 0 | Below Average 1 | Average 2 | Good 3 | Very Good 4 |
|---------------|--|-------------------|----------------------------|----------------------|-------------------|------------------------|
| 1 | Whether other relevant publications consulted | | | | | |
| 2 | Whether cross - references have been consulted | | | | | |
| 3 | Completeness of Preparation | | | | | |
| 4 | Clarity of Presentation | | | | | |
| 5 | Understanding of subject | | | | | |
| 6 | Ability to answer the questions | | | | | |
| 7 | Time scheduling | | | | | |
| 8 | Appropriate use of Audio -Visual aids | | | | | |
| 9 | Overall performance | | | | | |
| 10 | Any other observation | | | | | |
| Total score | | | | | | |

CHECKLIST-3
MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN OPD

Name of the Trainee:

Date:

Name of the Unit Head:

| Sl. No. | Items for observation | Poor 0 | Below Average 1 | Average 2 | Good 3 | Very Good 4 |
|----------------|--|-------------------|--------------------------------|----------------------|-------------------|----------------------------|
| 1. | Regularity of attendance | | | | | |
| 2. | Punctuality | | | | | |
| 3. | Interaction with colleagues and supportive staff | | | | | |
| 4. | Maintenance of case records | | | | | |
| 5. | Presentation of cases | | | | | |
| 6. | Investigations work -up | | | | | |
| 7. | Chair - side manners | | | | | |
| 8. | Rapport with patients | | | | | |
| 9. | Overall quality of clinical work | | | | | |
| | Total score | | | | | |

Please use a separate sheet for each faculty member

CHECKLIST - 4
EVALUATION FORM FOR CLINICAL CASE PRESENTATION

Name of the Trainee:

Date:

Name of the faculty / Observer:

| Sl. No | Items for observation during presentation | Poor 0 | Below Average 1 | Average 2 | Good 3 | Very Good 4 |
|--------|--|-----------|--------------------|--------------|-----------|----------------|
| 1. | Completeness of history | | | | | |
| 2. | Whether all relevant points elicited | | | | | |
| 3. | Clarity of presentation | | | | | |
| 4. | Logical order | | | | | |
| 5. | Mentioned all positive and negative | | | | | |
| 6. | Accuracy of general physical examination | | | | | |
| 7. | Investigations required Complete list | | | | | |
| 8. | Relevant order Interpretation of Investigations | | | | | |
| | Ability to discuss differential diagnosis. | | | | | |
| 9. | Ability to discuss diagnosis. | | | | | |
| 10. | Others | | | | | |
| | Grand Total | | | | | |

Please use a separate sheet for each faculty member

CHECKLIST-5
MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL

Name of the Trainee:

Date:

Name of the faculty Observer:

| Sl. No. | | Strong Point | Weak Point |
|----------------|--|---------------------|-------------------|
| 1. | Communication of the purpose of the talk | | |
| 2. | Evokes audience interest in the subject | | |
| 3. | The introduction | | |
| 4. | The sequence of ideas | | |
| 5. | The use of practical examples and / or illustrations | | |
| 6. | Speaking style (enjoyable, monotonous, etc. Specify) | | |
| 7. | Attempts audience participation | | |
| 8. | Summary of the main points at the end | | |
| 9. | Ask questions | | |
| 10. | Answer questions asked by the audience | | |
| 11. | Rapport of speaker with his audience | | |
| 12. | Effectiveness of the talk | | |
| 13. | Uses AV aids appropriately | | |

Please use a separate sheet for each faculty member

CHECKLIST-6
MODEL CHECKLIST FOR DISSERTATION PRESENTATION

Name of the Trainee:

Date:

Name of the faculty / Observer:

| Sl. No. | Prints to be considered | Poor | Below | Average | Good | Very |
|---------|---|------|-------|---------|------|------|
| 1. | Interest show in selecting topic | | | | | |
| 2. | Appropriate review | | | | | |
| 3. | Discussion with guide and other faculty | | | | | |
| 4. | Quality of protocol | | | | | |
| 5. | Preparation of Proforma | | | | | |
| | Total Score | | | | | |

CHECKLIST-7
CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE/CO-GUIDE

Name of the Trainee:

Date :

Name of the Faculty/Observer:

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

CHECKLIST - 8
OVERALL ASSESSMENT SHEET

Name of the College:

Date:

| Check List No. | PARTICULARS | A | B | C | D | E | F | G | H | I |
|----------------|-----------------------------|---|---|---|---|---|---|---|---|---|
| 1. | Journal Review Presentation | | | | | | | | | |
| 2. | Seminars | | | | | | | | | |
| 3. | Clinical work in wards | | | | | | | | | |
| 4- | Clinical presentation | | | | | | | | | |
| 5. | Teaching skill practice | | | | | | | | | |
| 6. | | | | | | | | | | |
| TOTAL | | | | | | | | | | |

Signature of HOD

Signature of Dean

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

Key:

Mean score: Is the sum of all the scores of checklists 1 to 7 **A, B,.....**: Name of trainees

LOG BOOK
Table 1
Academic activities attended

Name :
 Admission Year :
 College :

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

LOG BOOK
Table 2
Academic Presentations made by the trainee

Name :
 Admission Year :
 College :

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

LOG BOOK
Table 3
Diagnostic and operative procedures performed

Name :
 Admission Year :
 College :

| Date | Name | OP No. | Procedure | Category O, A, PA, PI |
|------|------|--------|-----------|--------------------------|
| | | | | |
| | | | | |
| | | | | |

Key:

- O - WASHED UP AND OBSERVED - INITIAL 6 MONTHS OF ADMISSION
- A - ASSISTED A MORE SENIOR SURGEON - 1 YEAR MDS
- PA - PERFORMED PROCEDURE UNDER THE DIRECT SUPERVISION OF A SENIOR SURGEON - II YEAR MDS
- PI - PERFORMED INDEPENDENTLY - III YEAR MDS