

# A Structured Programme for Post Graduate Training in Orthodontics

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## Abstract

A structured programme for post graduate training in orthodontics is suggested here. The programme is intended for Fellowship (FCPS) training of the College of Physicians & Surgeons of Pakistan (CPSP) but can be used for any four years postgraduate degree. Its first four modules are as per the requirements of IMM (Intermediate Module of FCPS) and MCPS (Membership) of CPSP but are equally good for a two-year M-Sc programmes. A total of eight modules have been developed each of six months duration and the whole course is divided in these eight modules. The details of all the modules are given along with Table of specifications. The learning objectives and instructional strategies are according to the individual needs of each area and specific tools of assessment are used for every segment of learning. The modules are structured in line with the basic learning theories that encompass knowledge, skills and attitude to be integral to learning of any individual. After successful adoption of this modular form of teaching, residents should attain the appropriate knowledge, proper attitudes and basic skills of orthodontics. The resident should also possess a sense of professionalism, knowledge about medical ethics, scientific attitude, an inquisitive mind and a quest for research and Continuing Professional Development. A modular form of post graduate training in orthodontics is suggested here with an intention to standardize Orthodontic training across the country.

**Key Words:** Attitude; learning; orthodontics; curriculum

## Introduction

This curriculum, in its original form, was made for postgraduate training in Orthodontics at KRL Hospital, Islamabad by the first author and was in use since 2004. During the MHPE (Masters in Health Professions Education) session of the authors at the University of Health Sciences, Lahore, a task was given to make an assessment plan of a study module/training programme and it was thought pertinent to make the assessment plan for this postgraduate training programme. Later we took the task further and changed the whole programme. Although it was intended to be implemented in the Margalla Institute of Health Sciences,

Rawalpindi but it is published here for two purposes; for benefit and use of other institutions of the country running programmes of matching durations and secondly for continuous improvement and evaluation of the programme by input from every corner. Currently this programme is in use for FCPS/MCPS courses (of the College of Physicians & Surgeons of Pakistan) at the Margalla Institute of Health Sciences, Rawalpindi but it is equally useful for other programmes, e.g., MDS and MSc.

The whole programme is divided in eight modules of six months each and the whole syllabus for postgraduate orthodontics is distributed in these. Keeping in view the Bloom's taxonomy, the learning areas are divided in three domains of Knowledge (K), Skills (S) and Attitudes (A).<sup>1</sup> The Knowledge, Skills and Attitudes will be taught and assessed separately. The learning objectives and instructional strategies will be according to the individual needs of each area (as can be

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seen in the first part of training programme) and specific tools of assessment will be used for every segment of learning (shown in the Table of Specifications, TOS). It will be mandatory for the trainees to pass each segment (K, S & A) individually. This separation ensures coverage of all areas especially the affective domain, which otherwise gets neglected. The study topics for each module will cover a certain area of the curriculum and the trainees will have to study these through Peer Assisted Learning (PAL), weekly Presentations, weekly Journal Club Meetings (JCM) and self-study. Using the PAL technique, the senior residents will teach the immediate junior batch.<sup>2</sup> In the JCM, the articles from the latest journals, related to the study topics, will be discussed. The skill works and attitudes will be synchronous with the study topics and will be done in the department. The scoring of each division will be done separately. The knowledge will be assessed by scoring of weekly PAL, JCM and Presentation sessions, by the Observation Of Teaching (OOT). The scores of all these sessions will be added in the end of module exam, which will comprise of MCQs, SAQs, and Viva. The Diagnosis & Treatment Planning session will be assessed through Case-based Discussion (CbD).<sup>3</sup> The assessment tools of "Workplace-Based Assessment" (WBA)<sup>4</sup> along with the checklists will be used for the assessment of skills and affective domain. These will include Mini-Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedural Skills (DOPS), CbD and OOT. The Critical Incident Technique (CIT)<sup>5</sup> will be used as another assessment tool for positive or negative scoring of individual happenings. Finally for the preparation (fitness to appear) for certification exam, the same assessment tools will be applied as are in use in the current MCPS, IMM (Intermediate Module) and FCPS examinations of the College of Physicians & Surgeons of Pakistan (CPSP).

These include OSCE (Objective Structured Clinical Exam), MCQ (Multiple choice questions), SAQ (Short answer questions), Viva, Short Clinical Case and Long Clinical Case. Only those candidates, who pass this departmental exam, will be eligible to sit in the CPSP examinations. A combination of formative and summative assessments will be used. The episodes of weekly Presentations, PAL sessions, Diagnosis & Treatment Planning sessions, weekly JCM and skills and affective domains, mentioned against each module, will be assessed and scored using the abovementioned tools. Feedback will also be given at the end of the session as a formative tool, which will aid in the learning process. The cumulative score of the six-monthly module will be used for the progress to the next module and 60% score will be the bare minimum requirement for that. As per Wilkinson TJ "WBA may be part of formative or summative assessment; the former checks progress and informs the educational process, whereas the latter checks what the student has achieved and knows how/can do what the course learning outcomes entailed."<sup>5</sup> The entire collection of WBAs may inform the Annual Review of Competence Performance (ARCP).<sup>6</sup> The same will be used here on biannual basis. The assessment Performas for OOT, DOPS, Mini-CEX, CbD and Check Lists etc. are available with the authors.

#### **Some Important points:**

1. We are allotting patients at the start of Module II, therefore the "comprehensive case records" is not mentioned in the Skills section of Module I. It is included in Module II through Module IV. At the end of Module IV, residents are not allotted new patients so in Module V again, the "comprehensive case records" is not mentioned. During the Module VI, early started cases are in debonding stage, so from Module VI onward

- “comprehensive case records” of debonded cases is mentioned.
2. After the residents are allotted cases, they start initial orthodontics including bonding and banding in the Module II. From Module III onward they are doing full-fledged Orthodontics hence the “comprehensive orthodontics” is mentioned first time in the Module III in Skills section and it appears till the module VIII.
  3. The number of items to be assessed is flexible depending upon the number of supervisors, number of residents and the work load. The main idea is the percentage of marks that a resident gets out of the total, which is kept at a cumulative 60% as bare minimum to pass a module. It will also be re-assessed on regular basis. The feedback in this regards is welcomed.
  4. As an example, a schedule of Module I is given as Annexure at the end of program. This is made according to our centre, keeping in mind the number of residents and number of supervisors at our place. A similar tailor made schedule can be made according to the requirements of any centre.

## **Postgraduate Training Programme in Orthodontics Margalla Institute of Health Sciences, Rawalpindi**

### **Section I;**

- A. All the content will be covered in the 4 years FCPS-II training, which is divided into 8 modules. Each module comprises of 6 months.
- B. The 2 years MCPS training comprises of 1<sup>st</sup> four modules of FCPS-II training.
- C. Each module consists of 3 divisions: Knowledge (K), Skills (S) & Attitudes (A). The assessment of each division will be done separately.
- D. It is mandatory for all trainees to cover all the contents of a module and get a cumulative score of 60% in each division (K, S & A) separately, to get promoted to the next module. The failure to do so will make them eligible for a retake exam.

### **Section II; Knowledge (PAL):**

- A. The study topics will be covered by self-study, weekly Presentations and weekly Peer Assisted Learning (PAL) sessions.
- B. The PAL session will be scored, according to an Observation Of Teaching (OOT) Performa, by a supervisor/registrar who will observe the whole activity. The presenters shall be assessed on the basis of their presentation and the attendees shall be assessed on the basis of their active participation and receptiveness.
- C. On-time feedback will be given by the supervisor and the participants will be informed about their scoring at the end of the session.
- D. Attendance in the PAL must be ensured. Any absentee shall be marked zero for that session.
- E. Scores for all the PAL sessions assessed will be added for the whole module.
- F. An exam will be conducted by the end of the module for the assessment of study topics, comprising of one MCQ paper, one SAQ paper and a Viva.

### **Section III; Knowledge (Presentations):**

- A. Topics of presentations will be divided among the trainees in the start of module.

- B. Each presentation will be scored, according to an OOT Performa, on the basis of content and delivery of presentation by the presenter. The participants will be assessed on the basis of their participation.
- C. On-time feedback will be given by the supervisor and the participants will be informed about their scoring at the end of session.
- D. Attendance must be ensured. Any absentee shall be marked zero for that session.
- E. Scores for all the presentations assessed will be added for the whole module.

**Section IV; Knowledge {Journal club meeting (JCM)}:**

- A. All trainees are required to prepare the assigned article. Any trainee can be asked, on the day of JCM, to present the article.
- B. The JCM will be scored, according to an OOT Performa, on the basis of content and delivery of presentation by the presenter. The participants will be assessed on the basis of their active participation.
- C. On-time feedback will be given by the supervisor and the participants will be informed about their scoring at the end of session.
- D. Attendance must be ensured. Any absentee shall be marked zero for that session.
- E. Scores for all the sessions assessed will be added for the whole module.

**Section V; Skills {Diagnosis & Treatment planning Session}:**

- A. The presenter and attendees will be scored according to the Case-based Discussion Cbd Performa.
- B. On-time feedback will be given by the supervisor and the participants will be informed about their scoring at the end of the session.
- C. Scores for all the sessions assessed will be added for the whole module.

**Section VI; Skill works:**

- A. The trainees are required to complete the required number of skill tasks in every module.
- B. Clinical skills will be signed and scored.
- C. The skill work will be assessed during and at the end of the module and a cumulative score of 60% is mandatory to get promoted to the next module.
- D. Pre-treatment, interim and post-treatment case records can be checked from time to time and scored accordingly.
- E. Trainees are required to take intra-oral photographs of monthly visit.
- F. Soft copies of case records should be uploaded on server. They will be checked.
- G. Two publishable research papers are mandatory for every trainee of year 3 & 4. This is apart from the mandatory research work required by the CPSP.
- H. The skill works will be assessed by Mini-Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedural Skills (DOPS), Check list, Objective Structured clinical exam (OSCE), OOT, Long Clinical Case and Short Clinical Case.

**Section VII; Attitudes:**

- A. The behaviour with the seniors, peers, staff & patients, attitude in work and enthusiasm will be monitored and scored.
- B. Any administrative duty assigned should be fulfilled.
- C. It is the duty of a trainee to take assigned lectures and lab demonstrations of final year BDS.
- D. The positive & negative attitudes will be specifically assessed by the Critical Incident Technique (CIT).
- E. Trainees will be checked for following patients' appointments and in-time completion of cases. Negative scoring will be done in case of delay (CIT).

- F. A trainee is subjected to negative marking if his/her patient presents with any complaint. Negative marking will be done on the basis of nature of complaint (CIT).
- G. The attitudes will be assessed by CIT, Mini-CEX and DOPS.

**Fitness to appear in IMM/MCPS/FCPS Exam:**

**IMM/MCPS;**

- Completed two years of training
- Completion of logbook
- Certificate of attendance of mandatory workshops
- End of Module IV Exam Passed
- 1 case for IMM/ 2 cases for MCPS complete
- Synopsis approved for IMM

**FCPS II;**

- Completed four years of training
- Completion of logbook
- Certificate of attendance of mandatory workshops
- End of Module VIII exam passed
- Completed five cases
- Dissertation submission

Two research papers approved for publication

## Module I

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Explain cell, molecular biology, genetics and normal & abnormal growth of craniofacial region.
- Find relationship between medical & oral pathological conditions and orthodontic diagnosis.
- Take basic diagnostic record and interpret it.
- Do the basic wire work.
- Explain the procedure to the patient, take consent for it and value the privacy & confidentiality of the patient.

| Knowledge (K)   | Instructional Strategies (K)   | Assessment (K)   | Skills (S)  | Attitudes (A)   | Instructional Strategies (S & A)   | Assessment (S & A)   |
|---|--|--|---|---|--|--|
| <ul style="list-style-type: none"> <li>• Cell, molecular biology, genetics, embryology, growth and development</li> <li>• Craniofacial anomalies/ syndromes, cleft lip and palate (basic knowledge)</li> <li>• Orthodontic diagnosis: (development of problem list)</li> <li>• Medical conditions related to dentistry</li> <li>• Oral pathology</li> <li>• Patient behaviour, psychology and motivation</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {lectures by second year residents} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Ceph tracing &amp; analysis (as per departmental log book)</li> <li>• Impression taking, wax bite and model trimming (as per CPSP log book)</li> <li>• Photography (as per CPSP log book)</li> <li>• History taking (as per CPSP log book)</li> <li>• Cast analysis including mixed dentition &amp; Bolton analysis (as per CPSP log book)</li> <li>• Orthodontic Diagnostic skills</li> <li>• Wire work (5 Each)               <ul style="list-style-type: none"> <li>➢ Finger spring</li> <li>➢ Z-spring</li> <li>➢ T-spring</li> <li>➢ Canine retractor</li> <li>➢ Adams clasp</li> <li>➢ Ball ended clasp</li> <li>➢ C clasp</li> <li>➢ Labial bow</li> </ul> </li> <li>• Feeding Plate (1 each)               <ul style="list-style-type: none"> <li>➢ For Unilateral cleft</li> <li>➢ For Bilateral cleft</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from the patient</li> <li>• Privacy of the patient</li> <li>• Comfort of the patient</li> <li>• Confidentiality of the patient</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstrations by senior residents)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• CbD</li> </ul> |

## Module II

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Apply the knowledge of removable & fixed appliances, development of occlusion, indices and anchorage etc. to the orthodontic diagnosis and treatment planning.
- Identify the role of mechanics, biomechanics and orthodontic materials in correction of dentofacial anomalies.
- Utilize the knowledge gained from the CPSP workshops pertaining to communication skills, IT & computer technology, research methodology & biostatistics, primary surgical skills and BLS (Basic Life support) etc. for the benefit of orthodontic patients.
- Fabricate appliances related to preventive and interceptive orthodontics.
- Place bands and brackets.
- Explain the procedure to the patient, take consent for it and value the privacy & confidentiality of the patient.
- Exhibit an awareness of protecting self, patient and staff from radiation.

| Knowledge (K)   | Instructional Strategies (K)   | Assessment (K)   | Skills (S)  | Attitudes (A)   | Instructional Strategies (S & A)  | Assessment (S & A)   |
|---|--|--|---|---|---|--|
| <ul style="list-style-type: none"> <li>• Fixed &amp; Removable appliances</li> <li>• Development of dentition &amp; occlusion</li> <li>• Indices</li> <li>• Timing of orthodontic treatment</li> <li>• Anchorage</li> <li>• Preventive &amp; interceptive orthodontics</li> <li>• Biomechanics &amp; mechanics</li> <li>• Orthodontic materials</li> <li>• Radiology and radiography</li> <li>• Orthodontic diagnosis &amp; treatment planning</li> <li>• CPSP workshops</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {lectures by second year residents} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Band cementation &amp; bracket bonding                             <ul style="list-style-type: none"> <li>➢ on typodont</li> <li>➢ on patient</li> </ul> </li> <li>• TPA/Nance button</li> <li>• Soldering/welding</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Preventive &amp; interceptive orthodontic appliances                             <ul style="list-style-type: none"> <li>➢ Space maintainer</li> <li>➢ Habit breaking appliance</li> <li>➢ Whip spring</li> <li>➢ Lip bumper</li> <li>➢ Oral screen</li> <li>➢ Mouth guard</li> </ul> </li> <li>• Hawley's retainer</li> <li>• OPG &amp; periapical (taking &amp; interpretation)</li> <li>• CBCT (interpretation)</li> <li>• Comprehensive case records</li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from the patient</li> <li>• Privacy of the patient</li> <li>• Comfort of the patient</li> <li>• Confidentiality of patient</li> <li>• Radiation safety</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstration by senior residents)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• Cbd</li> </ul> |

### Module III

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Classify different malocclusions and plan growth modification for skeletal discrepancies in growing children.
- Identify disturbances in dental development and formulate a solution for that problem.
- Fabricate and apply fixed, orthopaedic & expansion appliances, distalizers, headgear, face mask & chin cup etc.
- Teach the subject of orthodontics & give demonstrations to final year BDS.
- Write synopsis as a prerequisite for dissertation writing.
- Place Implant intraorally.
- Take basic diagnostic record and interpret it.
- Explain the procedure to the patient, take consent for it and value the privacy, safety & confidentiality of the patient.

| Knowledge (K)  | Instructional Strategies (K)  | Assessment (K)   | Skills (S)   | Attitudes (A)   | Instructional Strategies (S & A)   | Assessment (S & A)  |
|--|---|--|--|---|--|---|
| <ul style="list-style-type: none"> <li>• Orthopaedics</li> <li>• Extra-oral traction</li> <li>• Arch lengthening &amp; expansion</li> <li>• Occlusion, oral physiology, malocclusions</li> <li>• Orthodontic treatment; Phase I (levelling and alignment)</li> <li>• Disturbances in dental development including impacted teeth</li> <li>• Smile aesthetics</li> <li>• Implants</li> <li>• Teaching &amp; learning</li> <li>• Synopsis writing</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {lectures by third year residents} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Comprehensive orthodontics</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Impression, bite registration of functional appliance</li> <li>• Articulation of functional appliances</li> <li>• Fabrication of functional appliances</li> <li>• Hyrax</li> <li>• Quad helix</li> <li>• W-arch</li> <li>• Nitinol expander</li> <li>• Bite plates (ant/post)</li> <li>• Inclined planes</li> <li>• Molar uprighting and distalizing appliance</li> <li>• Forsus appliance</li> <li>• Head gear</li> <li>• Face mask</li> <li>• Chin cup</li> <li>• Implant placement</li> <li>• Demonstrations &amp; teaching of final year BDS</li> <li>• Comprehensive case records</li> <li>• Synopsis writing</li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation safety</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning(PAL) (demonstration by senior residents)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• CbD</li> <li>• OOT (Lec/Demo)</li> <li>• Submission of synopsis for approval</li> </ul> |

## Module IV

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Relate the current orthodontic appliances with the historic ones.
- Choose appropriate mechanics to carry out phase II & III of orthodontic treatment keeping in view the adult and adjunctive orthodontics and its impact on dentition, periodontium and temporomandibular joint.
- Teach the subject of orthodontics & give demonstrations to final year BDS.
- Apply the knowledge of relapse for stability of attained orthodontic results.
- Undertake research work for dissertation writing.
- Take basic diagnostic record, interpret it and carry out fixed orthodontic treatment using various mechanics.
- Do Kesling setup and fabricate various retention appliances.
- Analyse data for biostatistical use in research work.
- Explain the procedure to the patient, take consent for it and value the privacy, safety & confidentiality of the patient.

| Knowledge (K)   | Instructional Strategies (K)  | Assessment (K)   | Skills (S)   | Attitudes (A)  | Instructional Strategies (S & A)   | Assessment (S & A)   |
|---|---|--|--|--|--|--|
| <ul style="list-style-type: none"> <li>• History of orthodontics</li> <li>• Appliance systems (Begg, Tip edge, Tweed, Damon, MBT etc.)</li> <li>• Orthodontic treatment Phase II                             <ul style="list-style-type: none"> <li>➢ Overbite correction</li> <li>➢ Over jet correction</li> <li>➢ Closure of residual spaces</li> </ul> </li> <li>• Orthodontic treatment Phase III (finishing)</li> <li>• TMJ</li> <li>• Adult orthodontics</li> <li>• Adjunctive orthodontics</li> <li>• Orthodontic research for dissertation writing</li> <li>• Biostatistics</li> <li>• Extraction vs non-extraction</li> <li>• Periodontal problems related to appliance wear</li> <li>• Iatrogenic effects of orthodontic treatment</li> <li>• Retention &amp; relapse</li> <li>• Teaching &amp; learning</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {lectures by third year residents} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Comprehensive orthodontics</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Piggy back arches</li> <li>• Segmental wire work</li> <li>• Kesling set up</li> <li>• Fixed wire work                             <ul style="list-style-type: none"> <li>➢ Arch forms</li> <li>➢ 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> order bends</li> <li>➢ Loops and springs</li> <li>➢ Auxiliaries</li> </ul> </li> <li>• Retainers                             <ul style="list-style-type: none"> <li>➢ Essex type</li> <li>➢ Lingual</li> <li>➢ Clip-on type</li> </ul> </li> <li>• Analysis of biostatistics in research paper</li> <li>• Demonstrations &amp; teaching of final year BDS</li> <li>• Comprehensive case record</li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation Safety</li> <li>• Recognise &amp; inform the patient about oral health care</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstrations by senior residents)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• CbD</li> <li>• OOT (Lec/Demo)</li> </ul> |

## Module V

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Plan and execute orthognathic surgical cases with reference to facial asymmetries, Cleft Lip & Palate and skeletal disharmonies.
- Solve problems related to high frenal attachment and severe tooth rotations.
- Teach the subject of orthodontics & give demonstrations to final year BDS.
- Undertake a research project leading to publication & submission of synopsis for research paper 1.
- Take basic diagnostic record, interpret it and carry out fixed orthodontic treatment using various mechanics.
- Explain the procedure to the patient, take consent for it and value the privacy, safety & confidentiality of the patient.

| Knowledge (K)  | Instructional Strategies (K)   | Assessment (K)   | Skills (S)  | Attitudes (A)   | Instructional Strategies (S & A)   | Assessment (S & A)  |
|--|--|--|---|---|--|---|
| <ul style="list-style-type: none"> <li>• Minor Oral surgery (CSF, high frenum etc.)</li> <li>• Facial asymmetries</li> <li>• Orthognathic surgery</li> <li>• Cleft Lip &amp; Palate</li> <li>• Systemic effects of treatment</li> <li>• Trauma and orthodontics</li> <li>• Orthodontic research</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {lectures by fourth year residents} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• CSF procedure</li> <li>• Comprehensive orthodontics</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Prediction tracing</li> <li>• Face bow record and mounting</li> <li>• Model surgery</li> <li>• Splint fabrication &amp; insertion</li> <li>• Demonstrations &amp; teaching of final year BDS</li> <li>• Undertaking a research project leading to publication (synopsis for paper 1)</li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation safety</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstrations by senior residents)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• OSCE</li> <li>• CIT</li> <li>• Cbd</li> <li>• OOT (Lec/Demo)</li> <li>• Submission of synopsis for approval (paper 1)</li> </ul> |

## Module VI

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Identify and manage the cases of Distraction Osteogenesis, Obstructive Sleep Apnea and Lingual orthodontics.
- Explain the use of magnets in orthodontics.
- Teach the subject of orthodontics & give demonstrations to final year BDS.
- Undertake clinical audit.
- Develop and run specialist practice independently keeping in view the medicolegal aspects of health provision.
- Submit research work (paper 1) for publication.
- Take basic diagnostic record, interpret it and carry out fixed orthodontic treatment using distalizers and fixed functional appliances.
- Explain the procedure to the patient, take consent for it and value the privacy, safety & confidentiality of the patient.

| Knowledge (K)  | Instructional Strategies (K)   | Assessment (K)   | Skills (S)   | Attitudes (A)   | Instructional Strategies (S & A)   | Assessment (S & A)   |
|--|--|--|--|---|--|--|
| <ul style="list-style-type: none"> <li>• Distraction Osteogenesis</li> <li>• Obstructive sleep apnea</li> <li>• Magnets</li> <li>• Lingual orthodontics</li> <li>• Clinical audit</li> <li>• Clinical governance</li> <li>• Medicolegal aspects of practice</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {lectures by fourth year residents} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Comprehensive orthodontics</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Crimpable hook</li> <li>• Ball stop</li> <li>• Pendulum appliance</li> <li>• Distal jet</li> <li>• Jones jig</li> <li>• Fixed functional appliances;                             <ul style="list-style-type: none"> <li>➢ Mara</li> <li>➢ Sabbagh universal spring</li> <li>➢ Bite corrector</li> <li>➢ Jasper jumper</li> </ul> </li> <li>• Demonstrations &amp; teaching of final year BDS</li> <li>• Completion of research project (paper 1)</li> <li>• Comprehensive case records (Debonding)</li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation safety</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstrations by senior residents)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• Cbd</li> <li>• OOT (Lec/Demo)</li> <li>• Submission of research paper-1 for publication</li> </ul> |

## Module VII

**Learning Objectives: By the end of the module, the trainee should be able to;**

- Apply the knowledge of indirect bonding, self-ligating brackets and LASERS in clinical orthodontics.
- Teach the subject of orthodontics & give demonstrations to final year BDS.
- Undertake a research project leading to publication & submission of synopsis for research paper 2.
- Use Dolphin imaging and digitized landmark identification for ceph analysis and Visual Treatment Objective (VTO).
- Explain the procedure to the patient, take consent for it and value the privacy, safety & confidentiality of the patient.

| Knowledge (K)  | Instructional Strategies (K)   | Assessment (K)   | Skills (S)  | Attitudes (A)   | Instructional Strategies (S & A)  | Assessment (S & A)   |
|--|--|--|---|---|---|--|
| <ul style="list-style-type: none"> <li>• Indirect bonding</li> <li>• Self-ligating brackets</li> <li>• LASERS</li> <li>• Aligners</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {Registrar/ Senior registrar} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Comprehensive Orthodontics</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Aligners</li> <li>• Indirect bonding</li> <li>• Dolphin imaging</li> <li>• Digitized landmark identification &amp; ceph analysis</li> <li>• Demonstrations &amp; teaching of final year BDS</li> <li>• Undertaking a research project leading to publication (synopsis for paper 2)</li> <li>• Comprehensive case records (Debonding)</li> </ul> | <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation safety</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstrations by Registrar/ Senior Registrar)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• CbD</li> <li>• OOT (Lec/Demo)</li> <li>• Submission of synopsis for approval (paper 2)</li> <li>• Long clinical case</li> <li>• Short clinical case</li> </ul> |

## Module VIII

**Learning Objectives: By the end of the module, the trainee should be able to**

- Show knowledge of staff management, patient record keeping, financial record keeping, disciplinary procedures & store keeping.
- Teach the subject of orthodontics & give demonstrations to final year BDS.
- Submit research work (paper 2) for publication.
- Solve past papers and MCQs.
- Analyse critically the articles of journals.
- Comply with the welfare & rights of staff members, confidentiality of patients' record and honesty.

| Knowledge (K)   | Instructional Strategies (K)   | Assessment (K)   | Skills (S)   | Attitudes (A)  | Instructional Strategies (S & A)   | Assessment (S & A)  |
|---|--|--|--|--|--|---|
| <ul style="list-style-type: none"> <li>• Management of staff</li> <li>• Disciplinary procedures</li> <li>• Patients' record keeping</li> <li>• Financial record keeping</li> <li>• Store keeping</li> <li>• Past FCPS papers</li> <li>• MCQs</li> <li>• Journals</li> </ul> | <ul style="list-style-type: none"> <li>• Self-study</li> <li>• Peer Assisted Learning (PAL) {Registrar/ Senior registrar} (Section II)</li> <li>• Weekly presentation (Section III)</li> <li>• Weekly journal club meeting (JCM) (Section IV)</li> </ul> | <ul style="list-style-type: none"> <li>• End of module exam comprising of MCQs, SAQs &amp; Viva</li> <li>• OOT (PAL)</li> <li>• OOT (Presentation)</li> <li>• OOT (JCM)</li> </ul> | <ul style="list-style-type: none"> <li>• Comprehensive Orthodontics</li> <li>• Orthodontic Diagnostic &amp; Treatment planning skills</li> <li>• Staff management</li> <li>• Disciplinary procedures</li> <li>• Patients' record keeping</li> <li>• Financial record keeping</li> <li>• Store keeping</li> <li>• Demonstrations &amp; teaching of final year BDS</li> <li>• Undertaking a research project leading to publication (Paper 2)</li> <li>• Comprehensive case records (Debonding)</li> </ul> | <ul style="list-style-type: none"> <li>• Considerations about the rights of staff members</li> <li>• Welfare of staff</li> <li>• Confidentiality of patients' record</li> <li>• Honesty</li> </ul> | <ul style="list-style-type: none"> <li>• Peer Assisted Learning (PAL) (demonstration by Registrar/ Senior Registrar)</li> <li>• Self-practice</li> </ul> | <ul style="list-style-type: none"> <li>• Check list</li> <li>• DOPS</li> <li>• Mini-CEX</li> <li>• OSCE</li> <li>• CIT</li> <li>• CbD</li> <li>• Submission of research paper for publication (Paper 2)</li> <li>• Long clinical case</li> <li>• Short clinical case</li> </ul> |

**Table of Specifications (TOS) for Module I**

| Column No. 1  | 2       | 3   | 4    | 5            | 6                     | 7            | 8          | 9   | 10       | 11   |
|---|---------|-----|------|--------------|-----------------------|--------------|------------|-----|----------|------|
| Units   | SA<br>Q | MCQ | Viva | OOT<br>(PAL) | OOT<br>(Presentation) | OOT<br>(JCM) | Check list | CbD | Mini-CEX | DOPS |
| <b>Knowledge (K)</b>  |         |     |      |              |                       |              |            |     |          |      |
| • Cell, molecular biology, genetics, embryology, growth and development   | 1       | 2   | 1    | 1            |                       |              |            |     |          |      |
| • Craniofacial anomalies/ syndromes, cleft lip and palate (basic knowledge)   | 1       | 2   | 1    | 1            | 1                     |              |            |     |          |      |
| • Orthodontic diagnosis: (development of problem list)  | 1       | 2   | 1    | 1            |                       |              |            |     |          |      |
| • Medical conditions related to dentistry   | 1       | 1   | 1    | 1            | 1                     | 3            |            |     |          |      |
| • Oral pathology  | 1       | 2   | 1    | 1            |                       |              |            |     |          |      |
| • Patient behavior, psychology and motivation   | 1       | 1   | 1    | 1            | 1                     |              |            |     |          |      |
| <b>Skills (S)</b>   |         |     |      |              |                       |              |            |     |          |      |
| • History taking  |         |     |      |              |                       |              |            |     | 3        |      |
| • Ceph tracing & analysis   |         |     |      |              |                       |              | 1          |     |          |      |
| • Model trimming  |         |     |      |              |                       |              | 1          |     |          |      |
| • Cast analysis including mixed dentition & Bolton analysis   |         |     |      |              |                       |              | 2          |     |          |      |
| • Feeding Plate   |         |     |      |              |                       |              | 1          |     |          |      |
| • Wire work   |         |     |      |              |                       |              | 1          |     |          |      |
| • Impression taking, wax bite and model trimming  |         |     |      |              |                       |              |            |     |          | 2    |
| • Photography   |         |     |      |              |                       |              |            |     |          | 1    |
| • Orthodontic Diagnostic Skills   |         |     |      |              |                       |              |            | 6   |          |      |
| <b>Attitudes (A)</b>  |         |     |      |              |                       |              |            |     |          |      |
| <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from the patient</li> <li>• Privacy of the patient</li> <li>• Comfort of the patient</li> <li>• Confidentiality of the patient</li> </ul> |         |     |      |              |                       |              |            |     | 3        | 3    |
| <b>Total</b>  | 6       | 10  | 6    | 6            | 3                     | 3            | 6          | 6   | 6        | 6    |

**Table of Specifications (TOS) for Module II**

| Column No. 1  | 2   | 3   | 4    | 5            | 6                     | 7            | 8             | 9   | 10           | 11   | 12   |
|---|-----|-----|------|--------------|-----------------------|--------------|---------------|-----|--------------|------|------|
| Units   | SAQ | MCQ | Viva | OOT<br>(PAL) | OOT<br>(Presentation) | OOT<br>(JCM) | Check<br>list | CbD | Mini-<br>CEX | DOPS | OSCE |
| <b>Knowledge (K)</b>  |     |     |      |              |                       |              |               |     |              |      |      |
| • Fixed & Removable appliances  | 1   | 1   | 1    | 1            |                       |              |               |     |              |      |      |
| • Development of dentition & occlusion  | 1   | 1   | 1    |              |                       |              |               |     |              |      |      |
| • Indices   | 1   | 1   | 1    | -            | 1                     |              |               |     |              |      |      |
| • Timing of orthodontic treatment   | 1   | 1   | 1    |              |                       |              |               |     |              |      |      |
| • Anchorage   | 1   | 1   | 1    | 1            |                       | 3            |               |     |              |      |      |
| • Preventive & interceptive orthodontics  | 1   | 1   | 1    | 1            | 1                     |              |               |     |              |      |      |
| • Biomechanics & mechanics  | 1   | 1   | 1    | 1            |                       |              |               |     |              |      |      |
| • Orthodontic materials   | 1   | 1   | 1    | 1            |                       |              |               |     |              |      |      |
| • Radiology and radiography   | 1   | 1   | 1    | 1            | 1                     |              |               |     |              |      |      |
| • Orthodontic diagnosis & treatment planning  | 1   | 1   | 1    | -            |                       |              |               |     |              |      |      |
| <b>Skills (S)</b>   |     |     |      |              |                       |              |               |     |              |      |      |
| • Banding & bonding   |     |     |      |              |                       |              |               |     |              | 1    | 1    |
| • TPA/Nance button  |     |     |      |              |                       |              |               |     |              | 1    | 1    |
| • Preventive & interceptive orthodontic appliances  |     |     |      |              |                       |              |               |     |              |      |      |
| • Orthodontic Diagnostic & Treatment Planning skills  |     |     |      |              |                       |              |               | 6   |              |      | 1    |
| • OPG & periapical (taking & interpretation)  |     |     |      |              |                       |              |               |     |              | 1    | 1    |
| • CBCT (interpretation)   |     |     |      |              |                       |              | 1             |     |              |      |      |
| • Hawley's retainer   |     |     |      |              |                       |              | 1             |     |              |      | 1    |
| • Comprehensive case records  |     |     |      |              |                       |              | 2             |     | 3            |      | -    |
| • Soldering/welding   |     |     |      |              |                       |              | 2             |     |              |      | 1    |
| <b>Attitudes (A)</b>  |     |     |      |              |                       |              |               |     |              |      |      |
| <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from the patient</li> <li>• Privacy of the patient</li> <li>• Comfort of the patient</li> <li>• Confidentiality of the patient</li> <li>• Radiation Safety</li> </ul> |     |     |      |              |                       |              |               |     | 3            | 3    |      |
| <b>Total</b>  | 10  | 10  | 10   | 6            | 3                     | 3            | 6             | 6   | 6            | 6    | 6    |

**Table of Specifications (TOS) for Module III**

| Column No. 1  | 2   | 3   | 4    | 5            | 6                     | 7            | 8                 | 9             | 10  | 11           | 12   | 13   |
|---|-----|-----|------|--------------|-----------------------|--------------|-------------------|---------------|-----|--------------|------|------|
| Units   | SAQ | MCQ | Viva | OOT<br>(PAL) | OOT<br>(Presentation) | OOT<br>(JCM) | OOT<br>(Lec/Demo) | Check<br>list | CbD | Mini<br>-CEX | DOPS | OSCE |
| <b>Knowledge (K)</b>  |     |     |      |              |                       |              |                   |               |     |              |      |      |
| • Orthopaedics  | 1   | 1   | 1    | 1            |                       |              |                   |               |     |              |      |      |
| • Extra-oral traction   | 1   | 1   | 1    | 1            | 1                     |              |                   |               |     |              |      |      |
| • Arch lengthening & expansion  | 1   | 1   | 1    |              |                       |              |                   |               |     |              |      |      |
| • Occlusion, oral physiology, malocclusions   | 1   | 3   | 1    | 1            | 1                     |              |                   |               |     |              |      |      |
| • Orthodontic treatment; Phase I (levelling and   | 1   | 1   | 1    | 1            |                       | 3            |                   |               |     |              |      |      |
| • Disturbances in dental development including impacted teeth   | 1   | 2   | 1    | 1            | 1                     |              |                   |               |     |              |      |      |
| • Smile aesthetics  | 1   | 1   | 1    | 1            |                       |              |                   |               |     |              |      |      |
| • Implants  | -   | -   | -    | -            |                       |              |                   |               |     |              |      |      |
| • Teaching & learning   | -   | -   | -    | -            |                       |              |                   |               |     |              |      |      |
| <b>Skills (S)</b>   |     |     |      |              |                       |              |                   |               |     |              |      |      |
| • Comprehensive orthodontic   |     |     |      |              |                       |              |                   | -             |     |              | 1    | -    |
| • Orthodontic Diagnostic & Treatment Planning   |     |     |      |              |                       |              |                   | -             | 6   |              |      | 1    |
| • Functional appliance (Removable)  |     |     |      |              |                       |              |                   | 1             |     |              | 1    | 1    |
| • Forsus appliance  |     |     |      |              |                       |              |                   |               |     |              |      |      |
| • Expansion appliances  |     |     |      |              |                       |              |                   | 1             |     |              |      | 1    |
| • Bite plates (ant/ post)   |     |     |      |              |                       |              |                   | 1             |     |              |      | -    |
| • Inclined planes   |     |     |      |              |                       |              |                   |               |     |              |      | -    |
| • Molar uprighting and distalizing appliance  |     |     |      |              |                       |              |                   | 1             |     |              |      | 1    |
| • Head gear, Face mask, Chin cup  |     |     |      |              |                       |              |                   | 1             |     |              |      | 1    |
| • Implant placement   |     |     |      |              |                       |              |                   | -             |     |              | 1    | 1    |
| • Teaching of final year BDS  |     |     |      |              |                       |              | 1                 | -             |     |              |      | -    |
| • Comprehensive case records  |     |     |      |              |                       |              |                   | 1             |     | 3            |      | -    |
| <b>Attitudes (A)</b>  |     |     |      |              |                       |              |                   |               |     |              |      |      |
| <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from the patient</li> <li>• Privacy of the patient</li> <li>• Comfort of the patient</li> <li>• Confidentiality of the patient</li> <li>• Radiation Safety</li> </ul> |     |     |      |              |                       |              |                   |               |     | 3            | 3    |      |
| <b>Total</b>  | 7   | 10  | 7    | 6            | 3                     | 3            | 1                 | 6             | 6   | 6            | 6    | 6    |

**Table of Specifications (TOS) for Module IV**

| Column No. 1  | 2   | 3   | 4    | 5         | 6                  | 7         | 8              | 9          | 10  | 11       | 12   | 13   |
|---|-----|-----|------|-----------|--------------------|-----------|----------------|------------|-----|----------|------|------|
| Units   | SAQ | MCQ | Viva | OOT (PAL) | OOT (presentation) | OOT (JCM) | OOT (Lec/Demo) | Check list | CbD | Mini-CEX | DOPS | OSCE |
| <b>Knowledge (K)</b>  |     |     |      |           |                    |           |                |            |     |          |      |      |
| • History of orthodontics & Appliance systems   | 1   | 1   | 1    | 1         |                    |           |                |            |     |          |      |      |
| • Orthodontic treatment Phase II & III  |     | 1   |      |           | 1                  |           |                |            |     |          |      |      |
| • TMJ   | 1   | 1   | 1    | 1         |                    |           |                |            |     |          |      |      |
| • Adult orthodontics  |     | 1   |      | 1         |                    |           |                |            |     |          |      |      |
| • Adjunctive orthodontics   | 1   | 1   | 1    | 1         |                    |           |                |            |     |          |      |      |
| • Periodontal problems related to appliance wear  |     | 1   |      |           | 1                  | 3         |                |            |     |          |      |      |
| • Extraction vs. non-extraction   | 1   | 1   | 1    | 1         |                    |           |                |            |     |          |      |      |
| • Iatrogenic effects of orthodontic treatment   |     | 1   |      |           |                    |           |                |            |     |          |      |      |
| • Retention & relapse   |     | 1   |      |           |                    |           |                |            |     |          |      |      |
| • Research Methodology & Biostatistics  | 1   | 1   | 1    | 1         | 1                  |           |                |            |     |          |      |      |
| <b>Skills (S)</b>   |     |     |      |           |                    |           |                |            |     |          |      |      |
| • Comprehensive orthodontics  |     |     |      |           |                    |           |                |            |     |          | 1    |      |
| • Orthodontic Diagnostic & Treatment Planning skills  |     |     |      |           |                    |           |                |            | 6   |          |      | 1    |
| • Piggy back arches   |     |     |      |           |                    |           |                |            |     |          | 1    |      |
| • Segmental wire work   |     |     |      |           |                    |           |                | 1          |     |          | 1    | 1    |
| • Kesling set up  |     |     |      |           |                    |           |                | 1          |     |          |      |      |
| • Fixed wire work   |     |     |      |           |                    |           |                | 1          |     |          |      | 4    |
| • Retainers   |     |     |      |           |                    |           |                | 1          |     |          |      |      |
| • Teaching of final year BDS  |     |     |      |           |                    |           | 1              |            |     |          |      |      |
| • Comprehensive case records  |     |     |      |           |                    |           |                | 2          |     |          |      |      |
| <b>Attitudes (A)</b>  |     |     |      |           |                    |           |                |            |     | 3        |      |      |
| <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from the patient</li> <li>• Privacy of the patient</li> <li>• Comfort of the patient</li> <li>• Confidentiality of the patient</li> <li>• Radiation Safety</li> </ul> |     |     |      |           |                    |           |                |            |     | 3        | 3    |      |
| <b>Total</b>  | 5   | 10  | 5    | 6         | 3                  | 3         | 1              | 6          | 6   | 6        | 6    | 6    |

**Table of Specifications (TOS) for Module V**

| Column No. 1  | 2   | 3   | 4    | 5            | 6                     | 7            | 8                   | 9             | 10  | 11   | 12   |
|---|-----|-----|------|--------------|-----------------------|--------------|---------------------|---------------|-----|------|------|
| Units   | SAQ | MCQ | Viva | OOT<br>(PAL) | OOT<br>(presentation) | OOT<br>(JCM) | OOT<br>( Lec/ Demo) | Check<br>list | CbD | DOPS | OSCE |
| <b>Knowledge (K)</b>  |     |     |      |              |                       |              |                     |               |     |      |      |
| • Minor Oral surgery (CSF, high frenum etc.)  | 1   | 1   | 1    | 1            | 1                     |              |                     |               |     |      |      |
| • Facial asymmetries  | 1   | 2   | 1    | 1            |                       |              |                     |               |     |      |      |
| • Orthognathic surgery  | 1   | 2   | 1    | 1            | 1                     |              |                     |               |     |      |      |
| • Cleft Lip & Palate  | 1   | 2   | 1    | 1            |                       | 3            |                     |               |     |      |      |
| • Systemic effects of orthodontic treatment   | 1   | 2   | 1    | 1            |                       |              |                     |               |     |      |      |
| • Trauma and orthodontics   |     | 1   |      |              | 1                     |              |                     |               |     |      |      |
| <b>Skills (S)</b>   |     |     |      |              |                       |              |                     |               |     |      |      |
| • CSF procedure   |     |     |      |              |                       |              |                     |               |     | 1    |      |
| • Comprehensive orthodontics  |     |     |      |              |                       |              |                     |               |     | 1    |      |
| • Orthodontic Diagnostic & Treatment Planning skills  |     |     |      |              |                       |              |                     |               | 6   |      | 1    |
| • Prediction tracing  |     |     |      |              |                       |              |                     | 1             |     |      | 1    |
| • Face bow record and mounting  |     |     |      |              |                       |              |                     | 1             |     | 1    | 1    |
| • Model surgery   |     |     |      |              |                       |              |                     | 1             |     |      | 1    |
| • Splint fabrication & insertion  |     |     |      |              |                       |              |                     | 1             |     |      | 1    |
| • Demonstrations & teaching of final year BDS   |     |     |      |              |                       |              | 1                   |               |     |      |      |
| • Undertaking a research project leading to publication (synopsis for paper 1)  |     |     |      |              |                       |              |                     | 1             |     |      |      |
| <b>Attitudes (A)</b>  |     |     |      |              |                       |              |                     |               |     |      |      |
| <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation Safety</li> </ul> |     |     |      |              |                       |              |                     |               |     | 3    |      |
| <b>Total</b>  | 5   | 10  | 5    | 6            | 3                     | 3            | 3                   | 5             | 6   | 6    | 5    |

**Table of Specifications (TOS) for Module VI**

| Column No. 1  | 2   | 3   | 4    | 5            | 6                     | 7            | 8                     | 9                | 10  | 11           | 12   | 13   |
|---|-----|-----|------|--------------|-----------------------|--------------|-----------------------|------------------|-----|--------------|------|------|
| Units   | SAQ | MCQ | Viva | OOT<br>(PAL) | OOT<br>(Presentation) | OOT<br>(JCM) | OOT<br>(Lec/<br>Demo) | Check list       | CbD | Mini-<br>CEX | DOPS | OSCE |
| <b>Knowledge (K)</b>  |     |     |      |              |                       |              |                       |                  |     |              |      |      |
| • Distraction osteogenesis  | 1   | 2   | 1    | 1            | 1                     |              |                       |                  |     |              |      |      |
| • Obstructive sleep apnea   | 1   | 2   | 1    | 1            |                       |              |                       |                  |     |              |      |      |
| • Magnets   |     | 1   |      | 1            | 1                     |              |                       |                  |     |              |      |      |
| • Lingual orthodontics  | 1   | 2   | 1    | 1            |                       | 3            |                       |                  |     |              |      |      |
| • Clinical audit, Clinical governance   | 1   | 2   | 1    | 1            | 1                     |              |                       |                  |     |              |      |      |
| • Medicolegal aspects of practice   | 1   | 1   | 1    | 1            |                       |              |                       |                  |     |              |      |      |
| <b>Skills (S)</b>   |     |     |      |              |                       |              |                       |                  |     |              |      |      |
| • Comprehensive orthodontics  |     |     |      |              |                       |              |                       |                  |     |              | 1    | 1    |
| • Orthodontic Diagnostic & Treatment Planning skills  |     |     |      |              |                       |              |                       |                  | 6   |              |      |      |
| • Crimpable hook, Ball stop   |     |     |      |              |                       |              |                       |                  |     |              | 1    | 2    |
| • Pendulum appliance  |     |     |      |              |                       |              |                       |                  |     |              |      |      |
| • Distal jet  |     |     |      |              |                       |              |                       | 2                |     |              | 1    | 1    |
| • Jones jig   |     |     |      |              |                       |              |                       |                  |     |              |      |      |
| • Fixed functional appliances;<br>➤ Mara<br>➤ Sabbagh universal spring<br>➤ Bite corrector<br>➤ Jasper jumper   |     |     |      |              |                       |              |                       | 1<br>1<br>1<br>1 |     |              |      | 2    |
| • Demonstrations & teaching of final year BDS   |     |     |      |              |                       |              | 1                     |                  |     |              |      |      |
| • Completion of research project (paper 1)  |     |     |      |              |                       |              |                       |                  |     |              |      |      |
| • Comprehensive orthodontic case record (Debonding)   |     |     |      |              |                       |              |                       |                  |     | 3            |      |      |
| <b>Attitudes (A)</b>  |     |     |      |              |                       |              |                       |                  |     |              |      |      |
| • Explaining the procedure before hand<br>• Taking consent from patient<br>• Informed consent<br>• Privacy of patient<br>• Comfort of patient<br>• Confidentiality of patient<br>• Radiation Safety |     |     |      |              |                       |              |                       |                  |     | 3            | 3    |      |
| <b>Total</b>  | 5   | 10  | 5    | 6            | 3                     | 3            | 1                     | 6                | 6   | 6            | 6    | 6    |

**Table of Specifications (TOS) for Module VII**

| Column No. 1  | 2       | 3   | 4    | 5            | 6                     | 7            | 8                 | 9             | 10  | 11           | 12   | 13   | 14                       | 15                            |
|---|---------|-----|------|--------------|-----------------------|--------------|-------------------|---------------|-----|--------------|------|------|--------------------------|-------------------------------|
| Units   | SA<br>Q | MCQ | Viva | OOT<br>(PAL) | OOT<br>(Presentation) | OOT<br>(JCM) | OOT<br>(Lec/Demo) | Check<br>list | CbD | Mini-<br>CEX | DOPS | OSCE | Long<br>clinical<br>Case | Short<br>clinic<br>al<br>case |
| <b>Knowledge (K)</b>  |         |     |      |              |                       |              |                   |               |     |              |      |      |                          |                               |
| • Indirect bonding  | 1       | 3   | 1    | 1            | 1                     |              |                   |               |     |              |      |      |                          |                               |
| • Self-ligating brackets  | 2       | 3   | 2    | 1            | 1                     | 3            |                   |               |     |              |      |      |                          |                               |
| • LASERS  | 1       | 2   | 1    | 1            | 1                     |              |                   |               |     |              |      |      |                          |                               |
| • Aligners  | 1       | 2   | 1    | 1            |                       |              |                   |               |     |              |      |      |                          |                               |
| <b>Skills (S)</b>   |         |     |      |              |                       |              |                   |               |     |              |      |      |                          |                               |
| • Comprehensive orthodontics  |         |     |      |              |                       |              |                   |               |     |              | 1    |      |                          |                               |
| • Orthodontic Diagnostic & Treatment Planning skills  |         |     |      |              |                       |              |                   |               | 6   |              |      | 1    | 1                        | 4                             |
| • Indirect bonding  |         |     |      |              |                       |              |                   |               |     |              | 1    |      |                          |                               |
| • Dolphin imaging   |         |     |      |              |                       |              |                   | 1             |     |              |      | 1    |                          |                               |
| • Digitized landmark identification & cephal analysis   |         |     |      |              |                       |              |                   | 1             |     |              |      | 1    |                          |                               |
| • Demonstrations & teaching of final year BDS   |         |     |      |              |                       |              | 1                 |               |     |              |      |      |                          |                               |
| • Undertaking a research project leading to publication (synopsis for paper 2)  |         |     |      |              |                       |              |                   | 1             |     |              |      |      |                          |                               |
| • Aligners  |         |     |      |              |                       |              |                   | 1             |     |              |      |      |                          |                               |
| • Comprehensive case records (Debonding)  |         |     |      |              |                       |              |                   |               |     | 3            |      |      |                          |                               |
| <b>Attitudes (A)</b>  |         |     |      |              |                       |              |                   |               |     |              |      |      |                          |                               |
| <ul style="list-style-type: none"> <li>• Explaining the procedure before hand</li> <li>• Taking consent from patient</li> <li>• Informed consent</li> <li>• Privacy of patient</li> <li>• Comfort of patient</li> <li>• Confidentiality of patient</li> <li>• Radiation Safety</li> </ul> |         |     |      |              |                       |              |                   |               |     | 3            | 2    |      |                          |                               |
| <b>Total</b>  | 5       | 10  | 5    | 6            | 3                     | 3            | 1                 | 4             | 6   | 6            | 4    | 3    | 1                        | 4                             |

**Table of Specifications (TOS) for Module VIII**

| Column No. 1   | 2   | 3   | 4    | 5            | 6                     | 7            | 8                 | 9          | 10  | 11       | 12   | 13   | 14                 | 15                  |
|--|-----|-----|------|--------------|-----------------------|--------------|-------------------|------------|-----|----------|------|------|--------------------|---------------------|
| Units  | SAQ | MCQ | Viva | OOT<br>(PAL) | OOT<br>(presentation) | OOT<br>(JCM) | OOT<br>(Lec/Demo) | Check list | CbD | Mini-CEX | DOPS | OSCE | Long clinical Case | Short clinical case |
| <b>Knowledge (K)</b>   |     |     |      |              |                       |              |                   |            |     |          |      |      |                    |                     |
| • Management of staff  |     |     |      | 1            | 1                     |              |                   |            |     |          |      |      |                    |                     |
| • Disciplinary procedures  |     |     |      | 1            |                       |              |                   |            |     |          |      |      |                    |                     |
| • Patients' record keeping   |     |     |      | 1            | 1                     |              |                   |            |     |          |      |      |                    |                     |
| • Financial record keeping   |     |     |      | 1            |                       | 3            |                   |            |     |          |      |      |                    |                     |
| • Store keeping  |     |     |      | 1            | 1                     |              |                   |            |     |          |      |      |                    |                     |
| • Past FCPS papers   | 5   |     |      |              |                       |              |                   |            |     |          |      |      |                    |                     |
| • MCQs   |     | 10  |      |              |                       |              |                   |            |     |          |      |      |                    |                     |
| • Journals   |     |     | 5    |              |                       |              |                   |            |     |          |      |      |                    |                     |
| <b>Skills (S)</b>  |     |     |      |              |                       |              |                   |            |     |          |      |      |                    |                     |
| • Orthodontic Diagnostic & Treatment Planning skills   |     |     |      |              |                       |              |                   |            | 6   |          |      | 2    | 1                  | 4                   |
| • Comprehensive Orthodontics   |     |     |      |              |                       |              |                   |            |     |          | 1    |      |                    |                     |
| • Staff management   |     |     |      |              |                       |              |                   | 1          |     |          |      |      |                    |                     |
| • Disciplinary procedures  |     |     |      |              |                       |              |                   |            |     |          | 1    |      |                    |                     |
| • Patients' record keeping   |     |     |      |              |                       |              |                   | 1          |     |          |      |      |                    |                     |
| • Financial record keeping   |     |     |      |              |                       |              |                   | 1          |     |          |      |      |                    |                     |
| • Store keeping  |     |     |      |              |                       |              |                   | 1          |     |          |      |      |                    |                     |
| • Demonstrations & teaching of final year BDS  |     |     |      |              |                       |              | 1                 |            |     |          |      |      |                    |                     |
| • Undertaking a research project leading to publication (Paper 2)  |     |     |      |              |                       |              |                   | 1          |     |          |      | 1    |                    |                     |
| • Comprehensive case records (Debonding)   |     |     |      |              |                       |              |                   |            |     | 3        |      |      |                    |                     |
| <b>Attitudes (A)</b>   |     |     |      |              |                       |              |                   |            |     |          |      |      |                    |                     |
| <ul style="list-style-type: none"> <li>• Considerations about the rights of staff members</li> <li>• Welfare of staff</li> <li>• Confidentiality of patients' record</li> <li>• Honesty</li> </ul> |     |     |      |              |                       |              |                   |            |     | 3        | 2    |      |                    |                     |
| <b>Total</b>   | 5   | 10  | 5    | 5            | 3                     | 3            | 1                 | 5          | 6   | 6        | 4    | 3    | 1                  | 4                   |

**Annexure**  
**Schedule of Module-I for DOPS/Mini-CEX/CbD/Checklist/PAL (6 per Module for each Resident)**

|             | Jan  | Feb  | March | April | May  | June |
|-------------|------|------|-------|-------|------|------|
| Resident 1  | S-I  | SR   | Reg   | S-II  | S-I  | SR   |
| Resident 2  | S-II | S-I  | SR    | SR    | S-II | Reg  |
| Resident 3  | SR   | S-II | S-I   | Reg   | SR   | S-I  |
| Resident 4  | Reg  | SR   | S-II  | S-I   | Reg  | S-II |
| Resident 5  | S-I  | Reg  | SR    | S-II  | S-I  | SR   |
| Resident 6  | S-II | S-I  | Reg   | SR    | S-II | Reg  |
| Resident 7  | SR   | S-II | S-I   | Reg   | SR   | S-II |
| Resident 8  | Reg  | SR   | S-II  | S-I   | Reg  | SR   |
| Resident 9  | S-I  | Reg  | SR    | S-II  | S-I  | Reg  |
| Resident 10 | S-II | I    | Reg   | SR    | S-II | S-I  |

S-I: Supervisor I    S-II: Supervisor II    SR: Senior Registrar    Reg: Registrar

**Schedule of Module-I for Presentation/ JCM (3 per Module for each Resident)**

|             | Feb  | April | June |
|-------------|------|-------|------|
| Resident 1  | S-I  | SR    | Reg  |
| Resident 2  | S-II | S-I   | SR   |
| Resident 3  | SR   | S-II  | S-I  |
| Resident 4  | Reg  | SR    | S-II |
| Resident 5  | S-I  | Reg   | SR   |
| Resident 6  | S-II | S-I   | Reg  |
| Resident 7  | SR   | S-II  | S-I  |
| Resident 8  | Reg  | SR    | S-II |
| Resident 9  | S-I  | Reg   | SR   |
| Resident 10 | S-II | S-I   | Reg  |

**Schedule of Module-I for Observation of Teaching/ Demo (1 per Module for each Resident)**

|             |      |
|-------------|------|
| Resident 1  | SR   |
| Resident 2  | Reg  |
| Resident 3  | S-I  |
| Resident 4  | S-II |
| Resident 5  | SR   |
| Resident 6  | Reg  |
| Resident 7  | S-I  |
| Resident 8  | S-II |
| Resident 9  | SR   |
| Resident 10 | Reg  |

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