

In the Name of God



Islamic Republic of Iran
Ministry of Health, Treatment and Medical Education
Tehran University of Medical Sciences

Curriculum of Pediatric Dentistry Postgraduate (MSc) Program

In the Name of God

Section I:

Title: **Pediatric Dentistry**

Degree: **Master of Science in Clinical Dentistry (MSc)**

Introduction (not more than 100 words including general comments on the field and its developments, advancements and history)

Pediatric dentistry is one of the dental post graduate fields with the aim of prevention, preservation and health promotion, diagnosis and treatment of pediatrics oral and dental diseases, healthy teenagers and people with special needs. The educational subtitles in this filed consists of taught points in undergraduate educational plan but in higher learning level.

Definition (the main subject of study and services provided by the graduates)

The main subjects and services provided by the graduates of the program consist of:
a. diagnosis b. prevention c. treatment d. consulting e. education f. research g. managing h. self learning

1. Role in diagnosis, requesting required lab examination, taking diagnostic actions, diagnosing the disease, determining the prognosis, prescribing medications and non-surgical treatments, performing related surgical maintenance care, precise documentation in treatment and therapeutic process, multidisciplinary participation in treatment and consulting with related medical experts in order to complete patients health documents.

2. Role in prevention: identification of predisposed population and target groups and conducting preventive actions in different levels of the society in the field of oral health.

3. Role in consultation: providing professional consultation for patients and colleagues, scientific associations and health care system.

4. Role in education: teaching the patients and their parents/caregivers and other members of health care system regarding oral health.

5. Role in research: proposing research projects, analyzing data, preparing the reports, writing a scientific article and publication, criticizing related articles and regarding the research ethics.

6. Role in management: leading dental and oral health care team and managing periodontal teaching, research and treatment

The Aim of the Course (including its vision and mission)

The aim of conducting this educational plan is educating pediatric dentistry experts who meet international standards in the aspects of knowledge, belief and professional behavior and clinical skills and are able to present preventive and therapeutic services with good quality.

General Competencies (including communicative, interviewing, educational, writing, reporting, critical thinking, problem solving, managerial ones as well as professionalism)

Pediatric dentistry post graduates should have these capabilities:

- Acquiring knowledge and skill in pediatric hygiene education in order to preserve and promote oral and dental health and prevent from oral and dental diseases.
- Acquiring knowledge about prevention from pediatric oral and dental diseases incidence and also people with special needs. Capability in diagnosis and treatment of pediatric oral and dental disorders and also in people with special needs.
- Capability in diagnosis and treatment of oral and dental disorders under general anesthesia for children with whom establishing contact is impossible.
- Capability in conducting a research in relation with pediatrics oral and dental disorders.

Professionalism and ethical expectations from residents: It is expected that graduates:

- A. **In the area of altruism:** preferring the patient's interests to their own, observance of justice while working with different patients, considering all physical, psychological, social and belief-related aspects of patients while treating them, spending enough time in all phases of patient care, paying

attention to patients' demands and discomforts, observance of the patients' bill of rights.

- B. **In the area of dutifulness and responsibility:** have enough commitment to do their tasks, answer patients' questions, provide patients and their accompaniers with information regarding the patient's status in the most appropriate way, avoid unnecessary interferences with colleagues' work and interact with the health team members, ask patients' permission for examining and taking any diagnostic-therapeutic measures, and instructing patients properly regarding prevention, appearance of side effects, disease reoccurrence and improvement of life quality.
- C. **In the area of honor and honesty:** be truthful, honest and confidant and respect patient's privacy.
- D. **In the area of respecting others:** respect patients' conventions, traditions and habits, respect patient as a human being, respect patients' time and observe order and regularity, respect patients' accompaniers, colleagues and therapeutic team members, and have an appearance appropriate to professional prestige.
- E. **In the area of professional career:** accept critique, know their scientific limitations, ask for advice and help if needed, improve their knowledge and skills constantly, do diagnostic-therapeutic measures according to available facilities and scientific achievements, and observe the standards of completing medical record and reporting.

Specific Competencies and Skills (Special Qualifications)

1. Training specialist with theoretical and practical knowledge capable of prevention, diagnosis and treatment of oral diseases in children and adolescents, and dental treatment of special cases under general anesthesia.
2. Training specialist capable of prevention from oral and dental diseases incidence specially in children's dental caries according to their prevalence, life quality promotion and country's treatment costs.
3. Training specialist that believe themselves as an inseparable member of comprehensive health care.
4. Training pediatric dentists that believe in lifetime learning
5. Training specialists who treat patients according to evidence based dentistry
6. Training specialist who could do research in this field.
7. Meeting ethical and professional codes during treatment with treatment team, staff and patients.
8. Being capable of establishing an effective cooperative smart contact with the

patient, parents/caregivers and the treatment team

The Terms and Conditions of Admission to the Course

(specific conditions including exams, interview, CV, Recommendations, etc.)

Applicant's documents, including his/her DDS/BDS degree, CV, Recommendation, etc will be reviewed by the faculty members of Pediatric Dentistry Department. Based on the documents, the applicant will be accepted for either an interview or a three month evaluation period to be an observer in Restorative Dentistry Department. If he/she could successfully pass the interview/evaluation period, he/she will be accepted to continue as a MSc student.

Educational Strategies, Methods and Techniques

The following educational strategies are considered in Pediatric Dentistry MSc program:

Learner-centered education, learning based on problem solving, integration of basic and clinical sciences, evidence-based learning, lifelong community-oriented education, and systematic education.

Student Assessment

A variety of assessment methods including theoretical exam, DOPS, OSCE, Seminar presentation, portfolio, etc, depending on the course, is implemented.

Number and Type of Credits and Tables of the Courses (including compulsory and optional [elective] courses)

Duration:

The Pediatric Dentistry MSc program is a 3 year full time program in accordance with the regulations of the Council of Dental and Specialty Educations.

The educational system:

The educational system of the Pediatric Dentistry MSc program is semestrial. Theoretical, practical and workshop courses are set in four areas of common basic sciences, specific basic sciences, related sciences and specialty sciences.

Course structure

The course structure of the Pediatric Dentistry MSc program consisting of common and specific basic science, related science and specialty science courses as follows:

Basic science courses (common and specific)

Basic sciences are the foundation of related and specialty sciences with the goal of training and retraining and deepening the subtitles presented in the post graduate course.

Basic sciences are 15 units in common and specific mode. Common sciences are presented simultaneously in the same educational environment for all dental post graduate courses though the specific basic sciences are presented with specialized sciences.

Related science courses

Related sciences discuss the scientific relationship to other dental specialized majors and science, creativity and appropriate decision making of the students in a way that the students will achieve the capability in teamwork for presenting comprehensive treatment with the knowledge about capabilities, priorities, limitations and modern developments in related sciences. Related sciences are 22 units in two parts of faculty and hospital, and most of the faculty courses are integrated with pediatrics dental course lessons.

Specialty science courses

Specialty science courses are with the goal of knowledge promotion, making belief and appropriate qualitative skill in the field of pediatric dentistry. Specialty sciences are 74 units that are presented by faculty members.

The total course units of this program is 111 units.

Common Basic Science

Code	Course	Units			Hours				prerequisite
		Theoretical	Practical	Workshop	Theoretical	Practical	Workshop	total	
1	Medical Education(1)	-	-	1	-	-	51	51	-
2	Medical Education(2)	-	-	2	-	-	102	102	-
3	Research methodology & EBD	-	-	2	-	-	102	102	-
4	Clinical photography	-	-	1	-	-	52	52	-
5	Medical emergencies	-	-	0.5	-	-	24	24	-
6	Medical Regulation and Ethics	-	-	1	-	-	51	51	-
7	Infection Control & Patient's Safety	-	-	1	-	-	51	51	-
8	Clinical Management and Governance	-	-	1	-	-	51	51	-
total		-	-	9.5	-	-	484	484	-

Specific Basic Science

Code	Course	Units			Hours				Prerequisites
		Theoretical	Practical	Workshop	Theoretical	Practical	Workshop	Total	
9	Immunology	0.5	-	-	9	-	-	0.5	
10	Pediatrics head and neck applicable anatomy	1	-	-	17	-	-	1	
11	Head and face development	1	-	-	17	-	-	1	
12	Pediatrics oral lesions	0.5	-	-	9	-	-	0.5	
13	Oral biology and physiology	0.5	-	-	9	-	-	0.5	
14	Laser application in pediatric dentistry	-	-	1	-	-	51	1	
15	Drug prescription in pediatric dentistry	-	-	1	-	-	51	1	
Total		3.5	-	2	61	-	102	5.5	

Faculty Related Sciences

Code	Course	Units			Hours				Prerequisites
		Theoretical	Practical	Workshop	Theoretical	Practical	Workshop	Total	
16	Theoretical Orthodontics	3	-	-	51	-	-	3	
17	Practical orthodontics 1	-	1	-	-	34	-	1	
18	Practical orthodontics 2	-	1	-	-	34	-	1	
19	Practical orthodontics 3	-	1	-	-	34	-	1	
20	Practical orthodontics 4	-	1	-	-	34	-	1	
21	Endodontics	0.5	0.5	-	9	17	-	1	
22	Oral medicine 1	-	0.5	-	-	17	-	0.5	
23	Oral medicine 2	-	0.5	-	-	17	-	0.5	
24	Periodontics	0.5	0.5	-	9	17	-	1	
25	Oral and maxillofacial surgery	-	1	-	-	34	-	1	
26	Restorative dentistry 1	1	-	-	17	-	-	1	
27	Restorative dentistry 2	-	1	-	-	34	-	1	
28	Oral and maxillofacial radiography	0.5	0.5	-	9	17	-	1	
29	Pediatric psychology	2	-	-	34	-	-	2	
30	Genetics and its application in research	0.5	-	-	9	-	-	0.5	
total		8	8.5	-	138	289	-	16.5	

Hospital related sciences

Code	Course	Units			Hours				Prerequisites
		Theoretical	Practical	Workshop	Theoretical	Practical	Workshop	Total	
31	Anesthesia and sedation	-	0.5	-	-	17	-	0.5	
32	Pediatric medicine	0.5	0.5	-	9	17	-	1	
33	Special children treatment 1	-	2	-	-	68	-	2	
34	Special children treatment 2	-	2	-	-	68	-	2	
total		0.5	5	-	9	170	-	5.5	

Specialty sciences

Code	Course	Units			Hours				Prerequisites
		Theoretical	Practical	Workshop	Theoretical	Practical	Workshop	Total	
35	Case presentation1	2	-	-	34	-	-	2	
36	Case presentation2	2	-	-	34	-	-	2	
37	Case presentation3	2	-	-	34	-	-	2	
38	Case presentation4	2	-	-	34	-	-	2	
39	Literature review 1	2	-	-	34	-	-	2	
40	Literature review 2	2	-	-	34	-	-	2	
41	Literature review 3	3	-	-	51	-	-	3	
42	Thesis 1	-	-	2	-	-	102	2	
43	Thesis 2	-	-	2	-	-	102	2	
44	Thesis 3	-	2	-	-	68	-	2	
45	Thesis 4	-	-	2	-	-	102	2	
46	Thesis 5	-	-	2	-	-	102	2	
47	Research in public dentistry 1	-	-	1	-	-	51	1	
48	Research in public dentistry 2	-	1	1	-	34	51	2	
49	Theoretical pediatric dentistry 1	3	-	-	51	-	-	3	
50	Theoretical pediatric dentistry 2	3	-	-	51	-	-	3	

51	Theoretical pediatric dentistry 3	2	-	-	34	-	-	2	
52	Theoretical pediatric dentistry 4	3	-	-	51	-	-	3	
53	Theoretical pediatric dentistry 5	2	-	-	34	-	-	2	
54	Practical pediatric dentistry 1	-	6	-	-	204	-	6	
55	Practical pediatric dentistry 2	-	8	-	-	272	-	8	
56	Practical pediatric dentistry 3	-	8	-	-	272	-	8	
57	Practical pediatric dentistry 4	-	6	-	-	204	-	6	
58	Practical pediatric dentistry 5	-	3	-	-	102	-	3	
59	Practical pediatric dentistry 6	-	2	-	-	68	-	2	
Total		28	36	10	476	1224	510	74	

Ethical issues

The graduates should,

- Observe the Patient's Bill of Rights¹ when working with the patients.
- Strictly observe Biosafety and Patient Safety Rules* concerning the patients, personnel and workplace.
- Observe the Rulebook for Dress Code².
- Strictly observe the Regulations of Working with the Laboratory Animals³.
- Carefully preserve resources and equipment.
- Truly respect faculty members, the staff, classmates and other students and work for creating an intimate and respectful atmosphere.
- Observe social and professional ethical considerations in criticism.

1, 2 and 3 are contained in the Enclosures.

* Biosafety and Patient Safety Rules will be set out by the Educational Departments and will be available to the students.

Section II

Unit Title: Medical Education 2

Unit Code: 2

Number and type of unit: 2 Workshop unit

Educational hours during the course: 102h

Prerequisites: Medical Education 1

Aims: The goal of medical education 1 and 2 is about acquiring necessary capabilities by resident for participation in teaching and evaluation in theoretical, workshop, preclinical, clinical courses in the field.

Subtitles:

1. Specialized lesson plan
2. Student assessment and its methods
3. Multiple choices questions
4. Descriptive questions
5. Exam questions leveling
6. Evaluation during practice
7. Dops design
8. OSCE exams
9. Oral exam
10. Question analysis
11. Plan assessment
12. Course planning
13. Logbook
14. Port folio
15. Learning skill based attitude
16. Standard patent
17. Integration in education

Unit Title: EBD and research methodology

Unit Code: 3

Number and type of unit: 2 Workshop unit

Educational hours during the course: 102h

Aims: Acquiring knowledge about research scientific basis and familiarity with research methods in the field of education and acquiring skill in research results publication.

Subtitles:

No	Title	Learning-Teaching method	Course hours
1	Research and evidence based dentistry principles- question designing principles in evidence based dentistry	Problem oriented lecture	3
2	Literature review	Problem oriented lecture	3
3	Search engines and important and practical websites in dentistry	Workshop	6
4	Familiarity with scientific reference management software of various studies in dental research	Practical	9
5	Types of studies in dental research	Cooperative lecture	3
6	Descriptive studies	Lecture, discussion in small groups	3
7	Health and Disease measuring scales	Problem oriented lecture	3
8	Relation measuring scales	Problem oriented lecture	3
9	Observation – Annalistic studies ` principles	Lecture	3
10	Experimental studies	Problem oriented lecture	3
11	Reviewing studies	Lecture	3
12	Diagnostic tests evaluation	Problem oriented lecture	3
13	Errors and causes	Problem oriented lecture	3
14	Descriptive Statistics principles	Problem oriented lecture	6
15	Theory estimation and examination	Problem oriented lecture	6
16	Critical evaluation	Lecture	3
17	Prioritizing and subject selection and problem statement	Lecture, discussion in small groups	3
18	Goals and , variables, research management and research ethics	Lecture, discussion in small groups	3
19	Data collection methods and questionnaire	Lecture, discussion in small groups	3
20	Sampling and sample volume calculation	Lecture, discussion in small groups	3
21	Research errors and bias	Problem oriented lecture	3
22	Research interaction and errors – confounding variable	Problem oriented lecture	3

23	Case control and cohort studies special considerations	Lecture, discussion in small groups	3
24	Experimental studies special consideration	Lecture, discussion in small groups	3
25	Diagnostic tests` evaluation special consideration	Lecture, discussion in small groups	3
26	Qualitative studies	Problem oriented lecture	3
27	Familiarity with statistics tests application in dentistry	Problem oriented lecture	6

Unit Title: Clinical Photography*

Unit Code: 4

Number and type of unit: 1 Workshop unit

Educational hours during the course: 51h

Aims: The resident should always be aware and dominate on what to do in emergencies and show on standardized patient. It is therefore necessary for the resident to expose the emergency treatment workflow.

Subtitles:

No	Title	Learning-Teaching method	Course hours
1	Familiarity with types of appropriate and standard cameras and familiarity with their application method and use of support	Workshop	1
2	Familiarity with types of retractors and mirror and their application	Workshop	1
3	Portrait and profile photograph	Workshop	1
4	Intra and extra oral photographs	Workshop	1
5	Taking photograph of casts and radiographs	Workshop	1
6	Familiarity with 3D photography and taking it	Workshop	1
7	Familiarity with solving possible problems during photography in groups and workshop	Workshop	1
8	Conducting standard photograph in the field and their analysis (by the related attending)	Workshop	3
9	Conducting 3D photographs and their analysis	Workshop	3
10	Superimposition of radiograph and photographs method	Workshop	1
11	Familiarity with photographs storage	Workshop	1
12	Familiarity with software related to photograph and their storage	Workshop	1
13	Slide presentation with PowerPoint	Workshop	1

Course main references:

Mastering Digital Dental Photography 2006 and Specialized books of each major

*This is an optional course

Unit Title: Medical Emergencies

Unit Code: 5

Number and type of unit: 0.5 Workshop unit

Educational hours during the course: 24h

Aims: Acquiring skill for diagnosis and treatment of common medical emergencies in dental clinics in Skill lab and with training models.

Subtitles:

1. Observation taking method, medical history and its role in preventing and diagnosing emergencies and examinations
2. Equipment and tools in emergencies
3. Common emergencies and their treatment method: including allergy reactions, respiratory disorders, change consciousness
4. CPR
5. Immediate applicable techniques related to circulation-airway-breathing
6. Medication application in medical emergencies
7. Practical skills in medical emergencies (injections-serum therapy etc.)
8. Familiarity with emergency materials and equipment available in the department or common facilities available in the faculty

NOTE: it is suggested those educational sessions to be held in 3 hours workshop by oral and maxillofacial surgery attending (it can be held with help of Emergency Medicine department)

Unit Title: Medical Regulations and Ethics

Unit Code: 6

Number and type of unit: 1Workshop unit
Educational hours during the course: 51h

Aims: Making the residents capable in the fields of ethics basic theories, their professional commitment to the society and the patient's and colleague's legal rights. Diagnostic skills of ethical issues during incidence and its analysis will be promoted in this course therefore with employment of ethical legal issues in educational and research environment as faculty member and researcher and also during service as therapist they are able to take the best decision.

Subtitles:

No	Title	Learning-Teaching method	Course hours
1	General and practical ethics and professionalism basics	Workshop	1
2	Altruism and respect, justice and promotion in career	Workshop	1
3	Honor and honesty, sense of duty	Workshop	1
4	Ethics philosophy and history, four principles of bioethics	Workshop	1
5	Ethical theories and costumes	Workshop	1
6	Diagnostic tools in ethical decision making	Workshop	1
7	Conscious consent, avoidance and determining the capacity of substitute decision making	Workshop	1
8	Secrecy and truthfulness	Workshop	1
9	Dentist's relation with other health care provider members	Workshop	1
10	Office management, medical records documentation, dentist's relation with the patient and companions	Workshop	1
11	Familiarity with Medical Council, Forensics dentistry, responsibility, errors and medical malpractice 1and compensation	Workshop	1
12	Familiarity with consequences of certification and court's regulations and judging methods	Workshop	1
13	Conflict of interest	Workshop	1
14	Ethics in educational environments	Workshop	1
15	Islamic jurisprudence, Hadithes, and its relationship with ethics in dentistry	Workshop	1
16	Medical ethics challenges	Workshop	1
17	Integrated case presentation	Case presentation and literature review	1

*Each session equals 3 educational hours

References:

- 1. Clinical Ethics: comments on the application of ethics in the management, authoring Wiliarm Depender, translated Venus Hejazi, Hayyan Publishing, 1384
 - 2. Professional Ethics in Health Care, M. Esfahani, Iran University of Medical Sciences, 1325
 - 3. Ethics in medical research, the author Treror Smith, translator dr Mohammad Zargham, publisher: "Baraye farad"
4. Medicine for physicians, dr Seyed Ziauddin Tabeie, publisher: Shiraz University of Medical Sciences, 1389

Unit Title: Infection control and patient safety

Unit Code: 7

Number and type of unit: 1 Workshop unit

Educational hours during the course: 51h

Aims: Familiarity with patient safety methods and skills in dental and hospital clinics.

Subtitles:

1. Patient safety
2. Importance of human factors in patients` safety
3. Familiarity with complex and efficient systems in patient care and safety
4. Efficient team formation and application
5. Experience from last mistakes for prevention of future hazards
6. Medical hazards familiarity and management
7. Quality promotion methods for safety promotion
8. Patients further contact with staff
9. Attention, prevention and infection control
10. Safety in infectious diseases
11. Medication safety promotion
12. Dental common infectious diseases microbiology and its transfer
13. *Presence in the department and employing the taught lessons

In teamwork every resident discuss about assigned topics.

*This section consists of 5 integrated sessions during resident`s clinical actions in the department with employing taught lessons, clinical and complementary evaluation and educations. It is expected that with such trainings, education tips will be planted in the residents and will be evaluated in the next semester.

Textbook: Patient Safety Curriculum Guide, Multi-professional Edition which is available in

http://whqlibdoc.who.int/publications/2011/9789241501958_eng.pdf

Unit Title: Management and clinical governance*

Unit Code: 8

Number and type of unit: 1 Workshop unit

Educational hours during the course: 51h

Aims: Familiarity with models and service quality management tools, service promotion demands, patient safety, management and evaluation and believing the necessity of oral health care quality promotion with implication of models and quality management tools such as clinical service governance model and employing these.

Minimum expected skills: Residents are expected to hire clinical service governance while presenting oral health services and in higher semesters to represent these spontaneously

Subtitles:

No	Title	Learning-Teaching method	Course hours
1	Quality and its improvement systems	workshop	1
2	Oral health quality service management	workshop	1
3	Clinical service governance and perquisites	workshop	1
4	Models and quality management tools	workshop	1
5	Patient's safety	workshop	1
6	Clinical effectiveness	workshop	1
7	Clinical effectiveness principles and evidence based dentistry and clinical audit	workshop	1
8	Cooperation with patients companions and society	workshop	1
9	Staff, education and management	workshop	1
10*	Quality improvement in specialized services	workshop	5
11*	Evaluation of realization and clinical governance principles employment in the field	workshop	3

*This item is simultaneous with clinical service in the specialized majors with the difference that necessary educations about clinical service governance management will be presented in these sessions.

*This is an optional course.

Unit Title: Immunology

Unit Code: 9

Number and type of unit: 0.5 theoretical units

Educational hours during the course: 9h

Prerequisites: none

Aims: increasing the knowledge about organs and immunity system function, immune response, immunity system diseases and their application in dentistry science field and familiarity with practical immunologic diagnostic methods

Subtitles:

1. General immunology principles such as immune system components acquired and innate immunity, humoral and cellular immunity, complement system, immune response regulation, allergy reaction, autoimmunity etc.
2. Oral and salivary immunology
3. Dental pulp and periapical tissues immune response
4. Effective immune responses in bone resorption and periodontal diseases
5. Immune response against dental plaque and caries
6. Drug sensitivity and its relation with immune system
7. Discussion and Q&A about residents interesting topics in the field

Unit Title: Applicable pediatrics head and neck anatomy

Unit Code: 10

Number and type of unit: 1 theoretical units

Educational hours during the course: 17 h

Prerequisites: none

Aims: acquiring knowledge about applicable anatomy of head and neck for better learning in pediatric dentistry

Subtitles:

1. Oral cavity
2. Muscles and their attachment in oral and perioral regions
3. Submandibular region
4. Sublingual region
5. Pharyngeal region
6. Paranasal and jaw sinuses
7. Salivary glands
8. Skin and facial expression muscles
9. Masticatory muscles
10. Orbit cavity
11. Lymphatic nodes and drainage
12. Sensitive and motor nerves of oral and maxillofacial region
13. Crucial vessels of oral and maxillofacial region
14. Fascia spaces
15. Oral and maxillofacial bones
16. Teeth and alveolar bone

Unit Title: Head and face development

Unit Code: 11

Number and type of unit: 1 theoretical units

Educational hours during the course: 17 h

Prerequisites: none

Aims: acquiring knowledge about oral and maxillofacial tissues` structure, formation, growth and development in pediatric dentistry

Subtitles:

1. Familiarity with oral and maxillofacial hard and soft tissues of fetus
2. Familiarity with growth and development of dental bud
3. Familiarity with growth and development of anatomic structures like sinus, bony sutures etc.
4. Familiarity with growth and development of neuromuscular system
5. Familiarity with common oral and maxillofacial anomalies such as lip and palate cleft and common related syndromes

This course is suggested to be presented in 3rd semester with developmental disorders seminar

Unit Title: Pediatrics oral lesions

Unit Code: 12

Number and type of unit: 0.5 theoretical units

Educational hours during the course: 9 h

Prerequisites: none

Aims: acquiring knowledge about microscopic diagnosis of oral cavity tissues` lesions

Subtitles:

1. Familiarity with tissues` healing histopathology (cellular growth-fibrosis-ulcer healing)
2. Familiarity with common oral cavity reactive lesions
3. Familiarity with oral cavity neoplastic lesions (primary-metastatic)
4. Familiarity with oral cavity inflammatory lesions (infectious-noninfectious)
5. Familiarity with oral cavity developmental lesions
6. Familiarity with oral cavity microscopic smear interpretation

This course is suggested to be presented in 4th semester with pediatrics oral common tumor

Unit Title: Oral biology and physiology

Unit Code: 13

Number and type of unit: 0.5 theoretical units

Educational hours during the course: 9 h

Prerequisites: none

Aims: acquiring knowledge about oral and maxillofacial physiology and biology for better and deeper understanding of other specialized pediatric dental lessons

Subtitles:

1. Familiarity with dental mineralization and formation process
2. Familiarity with dental chemical structure
3. Enamel, dentin, pulp, bone and cementum physiology
4. Lymphatic nodes, saliva, oral mucosa and taste buds physiology
5. TMJ and related muscles physiology
6. Pain physiology and its control
7. Oral function physiology (chewing, swallowing, speech and respiration)
8. Tooth eruption and resorption physiology
9. Familiarity with bone resorption and regeneration mechanism
10. Familiarity with muscles reflex mechanism
11. Familiarity with the role of nutrition, age and hormones in oral and dental structure
12. Dental plaque characteristics and formation biology and prevention methods

This course is suggested to be presented in the 3rd semester with morphology seminar

Unit Title: Laser application in pediatric dentistry

Unit Code: 14

Number and type of unit: 1 theoretical units

Educational hours during the course: 51 h

Prerequisites: none

Aims: familiarity with laser and its application in pediatric dentistry

Subtitles:

Familiarity with laser application in pediatric dentistry

This course is suggested to be presented in first semester (first year)

Unit Title: Drugs description workshop in pediatrics dentistry

Unit Code: 15

Number and type of unit: 1 workshop units

Educational hours during the course: 51 h

Prerequisites: none

Aims: acquiring knowledge about practical and common drugs in dentistry, effects and interference in pediatric dentistry

Subtitles:

1. Familiarity with drugs effects and side effects (toxic effects, idiosyncrasy, hypersensitivity etc.)
2. Drugs interference
3. Drugs prescription in pregnancy and breast feeding period
4. Familiarity with prescription principles
5. Familiarity with analgesics pharmacology
6. Familiarity NSAIDS and steroid anti-inflammatory pharmacology
7. Familiarity with various antibiotics and their mechanism (antimicrobial, antifungal and antiviral)
8. Familiarity with antihistamines
9. Familiarity with local anesthesia drugs
10. Familiarity with effective drugs on CNS and PNS
11. Familiarity with sedative drugs
12. Familiarity with effective drugs on saliva secretion
13. Familiarity with local drugs mechanism in mucosal and dermal diseases
14. Familiarity with local antiseptics in dentistry
15. Familiarity with immunosuppressive drugs in noncancerous diseases treatment
16. Familiarity with vitamins and minerals role in cancerous diseases treatment

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Referenced introduced by attendings

This course is suggested to be presented in 4th semester with the course: " patients with special therapeutic 1"

Unit Title: Theoretical orthodontics

Unit Code: 16

Number and type of unit: 3 theoretical units

Educational hours during the course: 51 h

Prerequisites: none

General aims: acquiring knowledge about orthodontics specialists attitude in relation with pediatric dentistry in the fields of occlusion growth and development and treatment in deciduous and permanent tooth systems in order to prevent subsequent disorders

Specific aims:

1. Diagnosis, prevention and treatment of oral habits
2. Anterior and posterior crossbite treatment
3. Occlusion growth and development
4. Space management
5. Capability in diagnosis and treatment of dental minor disorders in mixed dentition with removable orthodontic appliances and biomechanics
6. Acquiring knowledge about removable appliances fabrication and application, Beg techniques general principles and functional appliances
7. Cephalometry and its application in preventive orthodontics and radiograph analysis
8. Serial extraction and its process

Evaluation method: multi choice exams, advanced matching and essay test

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth.4th ed.2007.
4. Garcia- Godoy. Primary Preventive Dentistry.7th ed.2009.
5. Proffit. Contemporary orthodontics .4th ed.2007.

This course is suggested to be presented in second semester with pediatric dentistry seminars

Unit Title: Practical orthodontics 1-4

Unit Code: 17-20

Number and type of unit: 4 practical units (1 practical unit per term)

Educational hours during the course: 136 h

Prerequisites: none

General aims: performing treatment of dental disorders in deciduous, mixed and permanent dentition in order to prevent subsequent disorders.

Specific aims:

1. Documentation and radiography and photography order and impression taking
2. Anterior posterior crossbite treatment
3. Cephalometric radiography application and analysis
4. Space regainer and space maintainer fabrication
5. Space supervision and its management
6. Diagnosis of dental minor disorders in mixed dentition and treatment with removable appliances
7. Removable appliances for controlling and guiding jaw growth in the children

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth.4th ed.2007.
4. Proffit. Contemporary orthodontics .4th ed.2007

Based on each faculty conditions, this course is suggested to be presented in second semester(first years). This course will be presented continuously in next semesters. With cooperation of orthodontics attending in first semester of 3rd year.

Unit Title: Endodontics

Unit Code: 21

Number and type of unit: 1 theoretical-practical units (0.5 unit theoretical, 0.5 unit practical)

Educational hours during the course: 26 h

Prerequisites: none

General aims: acquiring knowledge about endodontists' attitudes in relation with pediatrics permanent and deciduous teeth pulp treatment and performing permanent teeth pulp treatment with undeveloped root.

Specific aims:

1. Inflammation and its control with clinical and pathologic attitude in endodontics
2. Pain and its control in endodontics
3. New methods and ideas in pulp treatment of permanent teeth with open apex with the aspects of apexogenesis and apexification.
4. Traumatized teeth endodontic treatment
5. New methods of canal preparation and filling
6. Performing at least 2 pulpotomy of permanent teeth with undeveloped apex by new methods and materials
7. Preparation and filing at least 2 permanent teeth with open apex by new methods and materials

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Traumatic Injuries to the Teeth. J.O.Andreasen, F.M. Andreasen, L. Andersson.4th ed.2007

This course is suggested to be presented in 3rd semester as 0.5 unit in specialized seminar and 0.5 practical unit in endodontic department or pediatric department or in common

Unit Title: Oral medicine 1 and 2

Unit Code: 21

Number and type of unit: 1 practical unit (0.5 unit per term)

Educational hours during the course: 34 h

Prerequisites: none

General aims: acquiring knowledge about oral medicine specialists` attitudes in relation with pediatric dentistry and diagnosis of oral diseases in clinic.

Specific aims:

1. Clinical examination methods and principles
2. Consultation principles and lesions description
3. Common laboratory test`s indication and interpretation
4. Systemic diseases with oral manifestations in children

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Little, D.A. Falace, et al. Dental management of the compromised patients. 7th e d. 2008.

This course is suggested to be presented with specialized seminars of pediatric department with cooperation of oral medicine specialist, 0.5 unit in 3rd semester and 0.5 unit in common with oral medicine department in 4th semester.

Unit Title: Periodontics

Unit Code: 24

Number and type of unit: 1 theoretical-practical unit (0.5 unit practical, 0.5 unit theoretical)

Educational hours during the course: 26 h

Prerequisites: case presentation 2

General aims: acquiring knowledge about periodontists' attitude in relation with pediatrics dentistry and performing related treatments

Specific aims:

1. Acquiring knowledge about periodontal tissues disease and healthy condition
2. Common periodontal diseases in children and teenagers
3. Periodontal scales and related epidemiologic studies
4. Impacted teeth exposure methods
5. Muccogingival surgeries indications and principles
6. Frenectomy and frenotomy principles and indications

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.

This course is suggested to presented in 3rd or 4th semester as periodontal diseases and 0.5 practical unit in common between periodontics and pediatric departments

Unit Title: Oral and maxillofacial surgery

Unit Code: 25

Number and type of unit: 1 practical unit

Educational hours during the course: 34 h

Prerequisites:

General aims: acquiring knowledge about surgeons attitudes` in relation with pediatric dentistry and performing related surgeries

Specific aims:

1. Observation and treatment of acute infection with the dental origin in children
2. Supernumerary tooth surgeries
3. Consultation and assisting the ankylosed teeth surgeries
4. Observation and assistance in performing cyst surgeries
5. Observation and assistance in performing peripheral giant cell tumors surgeries
6. Consultation and biopsy conduction
7. Observation and assistance in frenum surgery
8. Treatment method of condyle and jaw fractures

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed.2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence.4th Ed, 2005.
3. Malamed S.F.Medical emergency in the Dental office.6 Th ed. 2007.

This course is suggested to be presented in 3rd or 4th semester with the cooperation of oral and maxillofacial surgeons

Unit Title: Restorative dentistry 1

Unit Code: 26

Number and type of unit: 1 theoretical unit

Educational hours during the course: 17 h

Prerequisites:

General aims: acquiring knowledge about restorative dentistry specialists` in relation with children crown restoration and modern techniques

Specific aims:

1. Cavity preparation principles
2. Acquiring knowledge about new restorative materials:
 - new self cure and light cure composites
 - new dentine bonding generation
 - Maryland bridge fabrication
 - restorative methods of teeth with enamel defects and enamel malformations
 - restorative materials application in teeth with enamel defects
 - principles and application of resin and ceramic facings
 - whitening methods of vital teeth

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.

This course is suggested to be presented in 3rd semester with cooperation of restorative dentistry faculty members

Unit Title: Restorative dentistry 2

Unit Code: 27

Number and type of unit: 1 practical unit

Educational hours during the course: 34 h

Prerequisites:

General aims: acquiring knowledge about restorative dentistry specialists` in relation with children crown restoration and performing new restorations on children`s teeth

Specific aims:

1. Complex cavity preparation principles
2. Acquiring knowledge about new restorative materials:
 - new self cure and light cure composites
 - new dentine bonding generation
 - Maryland bridge fabrication
 - restorative methods of teeth with enamel defects and enamel malformations
 - restorative materials application in teeth with enamel defects
 - principles and application of resin and ceramic facings
 - whitening methods of vital teeth

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.

This course is suggested to be presented in 4th semester with cooperation of restorative dentistry faculty members

Unit Title: Oral and maxillofacial radiology

Code: 28

Number and type of unit: 1 practical-theoretical unit (0.5 unit theoretical, 0.5 unit practical)

Educational hours during the course: 34 h

Prerequisites:

General aims: acquiring knowledge about oral and maxillofacial radiologist` attitude in relation with pediatric dentistry and performing specialized radiographies in children

Specific aims:

1. Radiation safety
2. Infection control in radiology
3. Application and comparison of intraoral radiographic techniques, localization and landmarks
4. Application of extraoral techniques and anatomic landmarks (panoramic, cephalometry, TMJ, paranasal sinus and skull)
5. Specialized imaging techniques (digital, CT Scan, MRI, Sonography, nuclear medicine)
6. Various oral and maxillofacial lesions radiographic patterns and interpretation principles
7. Using bite wing, periapical, occlusal, OPG, lateral cephalometry radiographs for healthy children and teenagers and children with special needs
8. Localization technique (buccal object rule)
9. Radiography in traumatized patients interpretation and method
10. Complete radiographic procedure in children undergoing trauma

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th ed, 2005.
3. References introduced by radiology department

This course is suggested to be presented in seminar format in 3rd semester in common with other post graduate students and 0.5 practical unit in common radiology department

Unit Title: Pediatric Psychology

Code: 29

Number and type of unit: 2 theoretical units

Educational hours during the course: 34 h

Prerequisites:

General aims: acquiring knowledge about pediatric psychology principles in order to control children's behavior in dentistry

Specific aims:

1. The emotional development of children
2. Emotional and behavioral problems of children
3. Children mental health
4. Establishing a relationship with the child

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.

This course is suggested to be presented in the first semester in behavior control seminar format

Unit Title: Genetics and its application in research

Code: 30

Number and type of unit: 0.5 theoretical units

Educational hours during the course: 9 h

Prerequisites:

General aims: acquiring knowledge about genetics principles for better learning and prevention, diagnosis, treatment plan in pediatric dentistry

Specific aims:

1. Introduction and genetic principles
2. Monogenic and polygenic and multi factorial heritage
3. Environmental influence on genetic
4. Genetic principles of dental caries, periodontal diseases, occlusion, dental developmental disorders and their inheritance
5. Familiarity with new principles in genetics

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. References introduced by genetics department

This course is suggested to be presented in second or 3rd semester of first year with the cooperation of genetics faculty members

Unit Title: anesthesia and sedation

Code: 31

Number and type of unit: 0.5 practical units

Educational hours during the course: 17 h

Prerequisites:

General aims: acquiring knowledge about anesthesia and sedation principles before, during and after operation in pediatric dentistry

Specific aims:

1. CPR
2. Drugs used in general anesthesia
3. Performing general anesthesia
4. Acute pain after surgery
5. Practical serum therapy
6. Post-op care
7. Stomach aspiration
8. Pre-op evaluation
9. Emergency drugs in pediatric dentistry clinic

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th ed, 2005.

This course is suggested to be presented in 3rd in faculty OR or in the hospital.

Unit Title: Pediatrics medicine

Code: 32

Number and type of unit: 1 theoretical-practical units (0.5 unit theoretical, 0.5 unit practical)

Educational hours during the course: 26 h

Prerequisites:

General aims: acquiring knowledge about children health scales and common pediatric diseases for diagnosis, treatment and prevention from pediatric oral and dental disorders

Specific aims:

1. Acquiring knowledge about pediatric growth and development principles in relation with health scales
2. Pediatric vaccination
3. Contagious diseases of childhood
4. Common disorders of pediatric endocrine secretory glands
5. Pediatric common diseases specially diseases with oral manifestations

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Introduced references by faculty member

This course is suggested to be presented in 3rd semester as 0.5 unit in seminar format and 0.5 unit in hospital (practically)

Unit Title: Treatment of patients with special needs 1

Code: 33

Number and type of unit: 2 practical units (hospital)

Educational hours during the course: 68 h

Prerequisites:

General aims: acquiring skill in dental treatment of children with special needs

Specific aims:

1. Examination and diagnosis and treatment of children with special needs in clinic or OR
2. Presenting appropriate practical method in prevention from caries and gingival diseases incidence to children, parents and health care providers
3. Performing dental clinical treatments under general anesthesia
4. Performing preventive treatments like fluoride therapy, fissure sealant therapy with or without sedative drugs or nitrous oxide, oxygen
5. Permanent and deciduous teeth pulp treatment regarding systemic considerations in clinic with or without sedative drugs and nitrous oxide
6. Deciduous and permanent carious teeth restoration with restorative materials with SSC or other crowns in clinic with sedative drugs or nitrous oxide or in OR under general anesthesia
7. Irreparable deciduous or permanent infectious teeth extraction in clinic under general anesthesia
8. Dental acute infection treatment in children with special needs
9. Performing traumatized teeth treatment which needs sedative drugs or general anesthesia in children with special needs
10. Preventive orthodontic treatment regarding special conditions of the patient

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth. 4th ed. 2007.
4. Garcia- Godoy. Primry Preventive Dentistry. 7th ed. 2009.
5. Proffit. Contemporary orthodontics .4th ed. 2007

This procedures are performed in pediatric dental clinic or OR by the residents with the supervision of faculty member and the cases are assigned by the attending.

Unit Title: Treatment of patients with special needs 2

Code: 33

Number and type of unit: 2 practical units (hospital)

Educational hours during the course: 68 h

Prerequisites:

General aims: performing prevention, diagnosis and treatment of oral and dental disorders of children with special needs under general anesthesia in the hospital

Specific aims:

1. Examination and diagnosis and treatment of children with special needs in clinic or OR
2. Presenting appropriate practical method in prevention from caries and gingival diseases incidence to children, parents and health care providers
3. Performing dental clinical treatments under general anesthesia
4. Performing preventive treatments like fluoride therapy, fissure sealant therapy with or without sedative drugs or nitrous oxide, oxygen
5. Permanent and deciduous teeth pulp treatment regarding systemic considerations in clinic with or without sedative drugs and nitrous oxide
6. Deciduous and permanent carious teeth restoration with restorative materials with SSC or other crowns in clinic with sedative drugs or nitrous oxide or in OR under general anesthesia
7. Irreparable deciduous or permanent infectious teeth extraction in clinic under general anesthesia
8. Dental acute infection treatment in children with special needs
9. Performing traumatized teeth treatment which needs sedative drugs or general anesthesia in children with special needs
10. Preventive orthodontic treatment regarding special conditions of the patient

Evaluation method: logbook, Dops test, 360 degree test

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth. 4th ed. 2007.
4. Garcia- Godoy. Primry Preventive Dentistry. 7th ed. 2009.
5. Proffit. Contemporary orthodontics .4th ed. 2007.

This procedures are performed in pediatric dental clinic or OR by the residents with the supervision of faculty member and the cases are assigned by the attending.

Unit Title: Case presentation 1

Code: 35

Number and type of unit: 2 theoretical units

Educational hours during the course: 34 h

Prerequisites:

General aims: acquiring skill in criticizing and assessing the diagnosis, treatment plan, conducted treatments and their prognosis and defending the taken measures during case presentation

Specific aims:

1. Interesting scientific case selection for presentation with mentor`s consultation
2. Case documentation
3. Necessary radiographies and radiographies
4. In necessary, paraclinical examination
5. Presenting case study model if necessary
6. Presenting a comprehensive report of discussed cases history
7. Presenting a report of scientific subjects from references and articles and also a summary of similar cases for comparison and differential diagnosis

Educational method: seminar in small groups

Evaluation method: evaluation of logbook by faculty members and also personal behavior as a qualitative score

Unit Title: Case presentation 2-4

Code: 36-38

Number and type of unit: 6 theoretical units (in three successive semesters, two theoretical units per semester)

Educational hours during the course: 102 h

Prerequisites:

General aims: acquiring skill in criticizing and assessing the diagnosis, treatment plan, conducted treatments and their prognosis and defending the taken measures during case presentation

Specific aims:

1. Interesting scientific case selection for presentation with mentor's consultation
2. Case documentation
3. Necessary radiographies and radiographies
4. In necessary, paraclinical examination
5. Presenting case study model if necessary
6. Presenting a comprehensive report of discussed cases history
7. Presenting a report of scientific subjects from references and articles and also a summary of similar cases for comparison and differential diagnosis

Educational method: seminar in small groups

Evaluation method: evaluation of logbook by faculty members and also personal behavior as a qualitative score

References:

1. Journal of American Academy of Pediatric Dentistry
2. International Journal of pediatric Dentistry
3. Dental Research Journal (Isfahan Medical University)
4. Journal of Dentistry of Tehran University of Medical Sciences

Unit Title: Literature review 1 and 2

Code: 39-40

Number and type of unit: 4 theoretical units (2 units per semester)

Educational hours during the course: 68 h

Prerequisites:

General aims: acquiring skill in criticizing and assessing the national and international valid articles in order to get new information and research methods in relation with pediatric dentistry.

Specific aims:

The following subtitles are arranged by the qualitative and quantitative importance:

1. Caries, prevention and treatment
2. Space maintainer occlusion development
3. Teeth and jaws traumas
4. Pediatric dental pulp treatment
5. Teeth and mouth growth and developmental disorders
6. Child's behavior control
7. Treatment of children with special needs
8. Tooth eruption and its disorders
9. Public dentistry
10. Gingiva and periodontium definition in children
11. Oral and dental surgery under general anesthesia
12. Examination and treatment plan
13. Dental materials
14. Nutrition and its effect on teeth evolution
15. Genetics and oral and dental related disorders
16. Lip and palate cleft
17. Children mouth and jaw tumors
18. Hospital dentistry

Educational method: seminar in small group

References:

1. Journal of American Academy of Pediatric Dentistry
2. International Journal of pediatric Dentistry
3. Dental Research Journal (Isfahan Medical University)
4. Journal of Dentistry of Tehran University of Medical Sciences
5. Articles suggested by the mentor or department's post graduate officer

Articles are selected by the attending regarding journals introduced by dental education council for board exams.

Unit Title: Literature review 3

Code: 41

Number and type of unit: 3 theoretical units

Educational hours during the course: 51 h

Prerequisites:

General aims: acquiring skill in criticizing and assessing the national and international valid articles in order to get new information and research methods in relation with pediatric dentistry.

Specific aims:

Similar to literature review 1 and 2

Education method: seminar in small group

References:

1. Journal of American Academy of Pediatric Dentistry
2. International Journal of pediatric Dentistry
3. Dental Research Journal (Isfahan Medical University)
4. Journal of Dentistry of Tehran University of Medical Sciences
5. Articles suggested by the mentor or department's post graduate officer

Unit title: Thesis (1) to (5)

Unit code: 42-46

Number and type of unit: ten practical-workshop units

Educational hours within the course duration: 476 h

Thesis (1) - Aim: Selection of research subject with in the area of specialty.

This course is held in two work shop units and must be taken to account in the educational program. The research subject will be chosen with the assistance of the relevant supervisor throughout the work shop sessions. Field research must be done out of work shop time and the outcome of it must be presented during the work shop sessions. The resident must have gathered his/her documents to present the proposal by the end of the semester. The proposal must be preregistered in the research council and the evidence suggesting that the resident has passed the course by the dead line must be handed to postgraduate director.

Thesis (2)- Aim: Registration of research subject.

This course is held in two work shop units and the resident must participate in sessions held in collaboration with statistical consultant and/or statistic experts or epidemiologists. The resident must complete his/her proposal by the end of the semester and must register it in the relevant site. Meetings must also be held with the supervising professor during these sessions.

Thesis (3)- Aim: Performing the research.

This course is held in two practical and must be taken to account in the educational program. The time and manner of performance of this unit is up to the supervisor and can be organized in continuous or interrupted sessions. The supervisor must inform the postgraduate director of the department about the progress so that other educational programs can be coordinated. If the research requires more time than one semester, the measures that must be taken during that semester should be confirmed by the supervisor.

Thesis (4)- Aim : writing the thesis and relevant article.

It is a two unit work shop course must be taken to account in the educational program. The resident should statistically analyze data, extract the results and write the thesis under the supervision of the supervisor and statistical consultant. The resident is obliged to write and submit at least one paper to a valid journal. If the research is to be done in more than one semester, the resident must analyze and extract the primary results.

Thesis (5)- Aim: Defense of thesis

This is a two unit work shop course that should be considered in the educational program. The resident must complete the thesis, present his findings and defend the thesis.

Notice: It is apparent that all researches may not follow this sequence and timing and may require more time. It is possible to extend the performance to reschedule the dead line only with the confirmation of the vice dean of research.

Unit Title: Research in public dentistry 1

Code: 47

Number and type of unit: 1 workshop

Educational hours during the course: 51 h

Prerequisites:

General aims: capability and commitment in prevention in the field of dental science in the society and special groups

Specific aims:

1. Oral and dental health status of different age groups: birth to 6 years old- 6 to 12 years old- 18 to 34 years old- 34 to 44 years old- upper than 44 years old in a proper way
2. Pediatrics dental health scales
3. Various methods of hygiene education for different target group: parents-kindergarten and school couch and students
4. Oral hygiene education presentation to various members of the society
5. Acquiring knowledge about cooperation in oral and dental hygiene plans in the therapeutic hygienic centers around the city
6. Presenting a comprehensive report of responsibilities in the school, therapeutic hygienic centers and supported communities

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth.4th ed.2007.
4. Garcia- Godoy. Primary Preventive Dentistry.7th ed.2009.
5. Proffit Contemporary orthodontics .4th ed.2007
6. Introduced references by the community oral health department

Evaluation method: logbook, poster presentation, 360 degree test and presenting field report

Unit Title: Research public dentistry 2

Code: 48

Number and type of unit: 2 practical- workshop (1 unit practical, 1 unit workshop)

Educational hours during the course: 85 h

Prerequisites: Research in public dentistry 1

General aims: capability and commitment in prevention in the field of dental science in the society and special groups.

Specific aims:

1. Oral and dental hygiene and priorities in groups with risk of caries and periodontal diseases and oral cavity cancers
2. Cooperation in conducting oral and dental hygiene plans in hygienic and therapeutic centers
3. Active participation in public dentistry course of under graduate students and leadership of the student groups
4. Presenting a complete report of duties in schools and hygienic therapeutic centers and other supported societies
5. Analyzing previous information about research in public dentistry 1 and determining therapeutic needs in various age groups and presenting a complete report of the duties
6. Capability in analyzing and planning the presented idea in the field of oral and dental health in supported groups

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth. 4th ed. 2007.
4. Garcia- Godoy. Primry Preventive Dentistry. 7th ed. 2009.
5. .Proffit Contemporary orthodontics .4th ed. 2007.

Evaluation method: logbook, poster presentation, 360 degree test and presenting field report

Unit Title: Theoretical pediatric dentistry 1

Code: 49

Number and type of unit: 3 theoretical

Educational hours during the course: 51 h

Prerequisites: none

General aims: Acquiring knowledge about pediatric dentistry cognitive subtitles with assessing the scientific references

Specific aims:

1. Acquiring knowledge about examination method of head, neck, face and mouth of children:
 - clinical examination
 - radiographic and laboratory assessment, study model etc.
 - diagnosis and treatment plan
2. Pediatrics behavioral method:
 - pediatric psychology in different ages
 - physiopathology of inappropriate behaviors
 - making contact with children and the parents role
 - pediatrics behavioral methods on the basis of psychological principles application
 - pediatrics behavioral control by physical movement control and medication and anesthesia application
3. Developmental disorders of teeth, jaws, face and the mouth:
 - teeth developmental stages
 - definition, classification, epidemiology and dental developmental disorders etiology
 - enamel, dentine and cement disorders
 - head and neck syndromes
 - cysts
 - prevention and treatment
4. Familiarity with:
 - embryology, histology and physiology of oral and dental tissues
 - tooth eruption theories
 - syndromes and diseases causing tooth eruption disorder
 - tooth eruption disorders and their management
5. Tooth caries, prevention and treatment
 - etiology and theories of dental caries formation and the epidemiology
 - diagnostic scales, cement, enamel and dentine caries histopathology
 - dental caries activity tests and the micro flora
 - microbial plaque
 - diet and dental caries
 - tooth fissures sealing
 - chemical and mechanical oral hygiene

6. Pediatrics dental caries restoration methods
 - anterior and posterior teeth preparation principles
 - difference between deciduous and permanent teeth in their cavity preparation and restoration materials
 - prefabricated crowns application (polycarbonate, stainless steel etc.) in deciduous and permanent teeth and custom crowns
7. Deciduous and permanent teeth pulp treatment method:
 - definition, classification, diagnosis and treatment plan
 - pulpotomy indication and contraindication
 - new pulp treatment methods
 - pulp histological reactions and radiographic and clinical signs of tooth received pulpotomy treatment
 - deciduous teeth pulpectomy
 - prognosis and follow up of pulp treatment in deciduous teeth
 - apexogenesis and apexification

Educational method: seminar in small groups

References:

1. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
2. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
3. Andreasen J.O. ET al. Traumatic Injuries to the Teeth.4th ed.2007.
1. Garcia- Godoy. Primary Preventive Dentistry.7th ed.2009.
4. Proffit Contemporary orthodontics .4th ed.2007.

Evaluation method: scientific and ethical behavior of the residents and a checklist of presentation and activates of the resident

Unit Title: Theoretical pediatric dentistry 2

Code: 50

Number and type of unit: 3 theoretical

Educational hours during the course: 51 h

Prerequisites: none

General aims: Acquiring knowledge about pediatric dentistry reference books topics, analyzing the topics to be prepared for practice in clinic

Specific aims:

1. Gingival and periodontal diseases in children and teenagers

-Gingivitis

-Pre puberty Periodontitis

-Papillon lefevre

-histological and physiologic characteristics of periodontium in teenagers and children

-systemic and periodontium diseases

- deciduous teeth early exfoliation

-periodontal scales

2. Pediatrics oral minor surgeries

-ankylosed tooth

-supernumerary tooth

- local anesthesia

-deciduous tooth extraction

-dental abscess

-abscess treatment and pediatrics oral and dental infections

3. Hospital dentistry

-patient admittance principles

-nursing principles

-consulting principles

-teamwork principles in oral and dental diseases

-general anesthesia principles

-injection principles

-intubation

-extubation

-recovery

-conscious sedation

-gas sedation

-sedation indication and contraindication

-general considerations in children with special needs

-definition, epidemiology and ethiology

-down syndrome children

-cerebral palsy children

- mental retard children
- learning disorders
- hemophilic children
- children with congenital or acquired heart diseases
- leukemic children
- solid tumors
- lymphomas
- bone marrow transplant
- aids and hepatitis
- 4. Pediatrics oral and dental damages by trauma
 - definition, classification, etiology, epidemiology and prevention
 - examination, diagnosis, treatment plan and prognosis
 - crown, root, crown-root fractures
 - luxation and evulsions lesions
 - damages to tooth and oral mucosa supporting bones
 - trauma to deciduous teeth and its effect on substitute permanent teeth
 - dental splint and immediate trauma treatment
 - dental fractures treatment
- 5. Acquiring knowledge about public dentistry
 - definition and aims
 - prevention stages (primary, secondary, tertiary)
 - 1-6 years old children needs
 - adults and pregnant women dental needs
 - familiarity with therapeutics hygienic systems in Iran and other countries
 - familiarity with WHO
 - PHC principles
 - oral hygiene integration with PHC systems
 - fluoride addition to water, salt and milk
 - fissure sealant application
 - oral and dental hygiene management
 - epidemiologic principles
 - solving the hygienic problems

Educational method: seminar in small groups

References:

5. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
6. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
7. Andreasen J.O. ET al. Traumatic Injuries to the Teeth.4th ed.2007.
2. Garcia- Godoy. Primary Preventive Dentistry.7th ed.2009.
8. Proffit Contemporary orthodontics .4th ed.2007.

Evaluation method: scientific and ethical behavior of the residents and a checklist of presentation and activities of the resident

Unit Title: Theoretical pediatric dentistry 3-5

Code: 51-53

Number and type of unit: 7 theoretical (Theoretical pediatric dentistry 3: 2 theoretical units, Theoretical pediatric dentistry 4: 3 theoretical units, Theoretical pediatric dentistry 5: 2 theoretical units)

Educational hours during the course: 119 h

Prerequisites: none

General aims: Acquiring knowledge about theoretical information acquired from reference books and their relation with clinical practice

Specific aims:

Just like Theoretical pediatric dentistry 1 and 2 and application of reference books information in clinic

Educational method: seminar in small groups

References:

9. McDonald R. E, Avery D. R. Dean J. A. Dentistry for the Child and Adolescent. 9th ed. 2011.
10. Pinkham J. R. et al. Pediatric Dentistry, Infancy through Adolescence 4th Ed, 2005.
11. Andreasen J.O. ET al. Traumatic Injuries to the Teeth.4th ed.2007.
3. Garcia- Godoy. Primary Preventive Dentistry.7th ed.2009.
12. Proffit Contemporary orthodontics .4th ed.2007.

Evaluation method: scientific and ethical behavior of the residents and a checklist of presentation and activities of the resident

Unit Title: Practical pediatric dentistry 1

Code: 54

Number and type of unit: 6 practical units (model and clinic)

Educational hours during the course: 204 h

Prerequisites: none

General aims: conducting therapeutic pediatric dentistry methods on the model, simulators and patients

Specific aims:

1. Preparing study models
2. Restorative and pulp treatments on the model
3. Preparation and SS crown application on the deciduous and permanent teeth in the lab
4. Splint application on the model
5. Various matrix used in restoration of permanent teeth
6. Removable and fixed space maintainer in dental models
7. Rubber dam application in various regions on the model

NOTE: each practical unit is equal to 4 hours of work in the week

Unit Title: practical pediatric dentistry 2

Code: 55

Number and type of unit: 8 practical units

Educational hours during the course: 272h

Prerequisites: none

General aims: Adequate skills and commitment and professionalism in diagnosis, treatment and prevention of oral and dental pediatric diseases

Specific aims:

1. Examination, medical and dental history of children from birth to 15 years old
2. Diagnosis and treatment plan of pediatric oral and dental disorders
3. Educating maintenance and promotion of pediatric oral and dental hygiene to their parents
4. Fluoride administration and fissure sealant in teeth predisposed to caries
5. Anterior posterior deciduous and permanent teeth restoration
6. Preparation and stainless steel crown application on deciduous teeth
7. Permanent teeth pulp treatment (apexogenesis, apexification)
8. Pulp treatments, IPT, DPC, pulpotomy and pulpectomy of deciduous teeth
9. Deciduous and permanent teeth extraction
10. Deciduous and permanent teeth undergoing trauma treatment and management
11. Space maintainers fabrication and application

NOTE: each practical unit is equal to 4 hours of work in the week

Unit Title: practical pediatric dentistry 3-6

Code: 56-59

Number and type of unit: 19 practical units (Practical pediatric dentistry 3: 8 Practical units, Practical pediatric dentistry 4: 6 Practical units, Practical pediatric dentistry 5: 3 Practical units, Practical pediatric dentistry 6: 2 Practical units)

Educational hours during the course: 646h

Prerequisites: none

General aims: Adequate skills and commitment and professionalism in diagnosis, treatment and prevention of oral and dental pediatric diseases

Specific aims:

1. Examination, medical and dental history of children from birth to 15 years old
2. Diagnosis and treatment plan of pediatric oral and dental disorders
3. Educating maintenance and promotion of pediatric oral and dental hygiene to their parents
4. Fluoride administration and fissure sealant in teeth predisposed to caries
5. Anterior posterior deciduous and permanent teeth restoration
6. Preparation and stainless steel crown application on deciduous teeth
7. Permanent teeth pulp treatment (apexogenesis, apexification)
8. Pulp treatments, IPT, DPC, pulpotomy and pulpectomy of deciduous teeth
9. Deciduous and permanent teeth extraction
10. Deciduous and permanent teeth undergoing trauma treatment and management
11. Space maintainers fabrication and application

NOTE: each practical unit is equal to 4 hours of work in the week

Pediatric dentistry practical units 3-6 will be presented in 4 successive semesters