



DENTED SCHOOL VISITATION

Institute of Dentistry

UNIVERSITY OF HELSINKI

Finland

Part I

Self Evaluation

Part II

Visitors Comments

20 – 24 March 1999

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INFORMATION FOR DENTED VISITORS

SECTION 1: INTRODUCTION AND GENERAL DESCRIPTION

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THE MISSION

To produce well-educated oral health care professionals capable of meeting challenges of the new millennium. The mission leads to the education of oral physicians which is needed for understanding the principles of holistic and comprehensive care in greying society.

This calls for new thinking in dental education, both in terms of clinical and theoretical teaching and teaching methods, and in aspects of team work and cooperation with other health care professionals. Further, the line between basic dental education and specialist care must be clarified together with the patient treatment allocations between dentists and dental hygienists.

THE COMMITMENT

The Institute is committed to providing undergraduate, postgraduate, and continuing education in oral health care and dentistry within the frames of the Faculty of Medicine. The Institute works in close cooperation with the School of Dental Hygienists, Technicians and Auxiliary to educate the students as an oral health care team. The Institute has applied problem based learning since fall 1998 in integrated preclinical studies with medical students and is committed to go on in developing methods of education also in future.

The Institute provides external postgraduate and continuing education courses for domestic and foreign colleagues, costs paid by the participants (The Helsinki International Institute of Oral Health).

THE BIG CHANGE

From January 1, 2000, the administration and practical running of the dental clinic will change dramatically. Until then (and now) the clinic belongs to the University, administered by the Ministry of Education, and it is mainly financed by the treatment fees of self-paying patients. Next year, patients needed for undergraduate education shall be provided by the Health Care Center of the City of Helsinki. Patients for postgraduate education (specialist training) shall be provided by the Helsinki University Central Hospital. All patients will then pay only a nominal fee set by the Government. The University Central Hospital shall then administer all clinical activities. A part of the teachers and a great part of the present supporting staff shall be moved from the existing dental clinic to the new organisations. The remaining staff will maintain the University as their employer, and their main responsibilities will be research and theoretical teaching. The preparations for the change are currently in progress and the Big Change will obviously affect all areas and activities of the Institute in the year 1999. The Change is, however, going to provide better and more "natural" working conditions for clinical training and also to call for closer cooperation with other fields of medicine, but its effects on academic dentistry will remain to be seen.

SECTION 2: FACILITIES (Incl. Library, Lecture Theatres, Seminar Rooms etc.)

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CLINIC FOR DENTAL AND ORAL DISEASES

Altogether 151 dental units for clinical training

- 13 for polyclinics, including 1 unit for treatment of patients suffering from contagious diseases
- 70 units for basic dental care
- 44 units for special dental care, including 4 units for oral surgery and dental care in general anesthesia and 1 unit for treatment under nitrous oxygen sedation
- 24 units for clinical training of dental hygienist students of the Institute for Higher Education. These units are also used for continuing education courses organized by the Institute of Dentistry.

For radiological examinations

- 1 Scanorama device
- 3 ortopantomographs
- 1 cephalostat
- 14 devices for intraoral radiological imaging

Lecture Theatres and Seminar Rooms

- 3 Lecture Rooms and four Seminar Rooms (180 + 70 + 40 + 32 + 32 + 30 + 50 = 434 seats)
- 2 rooms for simulated (phantom) training on models (70 seats).

Library

A comprehensive collection of scientific journals (235 subscriptions) and books (20.000 volumes) provides a central national dental library. Virtually all databases available can be reached via computer networks. can be reached via computer networks.

Strengths

Adequate physical facilities for clinical and simulated training on models.
Comprehensive library services.

Weaknesses

The dental units are 20 years old, although very well equipped and maintained.
The simulation model training facilities need to be updated.

Planned developments

Integration of the clinical training into the municipal health care system in 1.1.2000.

SECTION 3: ORGANISATIONAL AND ADMINISTRATIVE STRUCTURES

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ORGANISATION

The Institute of Dentistry is a part of the Faculty of Medicine, University of Helsinki.

The Institute was reorganized in 1996 focusing on the functions instead of the disciplines. The three basic functions are **research, education and clinical training**. Education contains the theory part of the undergraduate training, postgraduate vocational training, postgraduate scientific training as well as the continuing education programs and the Master of Science programs. The clinical training included in the curricula of both undergraduate and postgraduate vocational training is organised by the Clinic for Dental and Oral Diseases. In the year 2000 the clinical training will be transferred from the university to the health care system. This applies to all the units of dental education in Finland. Till then the clinics render services to both the health care system and to private patients. In 2000, the university clinic stops to exist, and dentists are trained in a municipal health care unit of Helsinki and in the Helsinki University Central Hospital (HUCH).

ADMINISTRATION

The Institute is led by the Head of the Institute, Professor Jukka H. Meurman, and the Steering Committee. The Committee decides e.g. on the general principles of finances and staff employment.

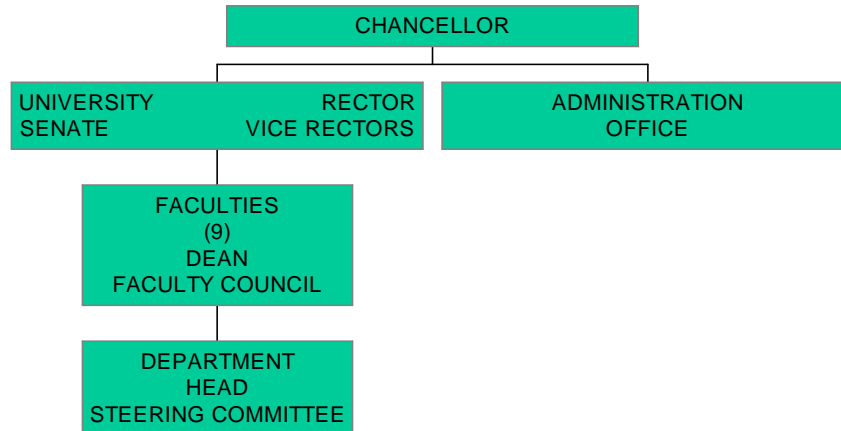
The committees for undergraduate training and postgraduate vocational training as well as for the research supervise their own fields of interest. In the curriculum, the disciplines are organised into bigger entities, or approaches to dentistry. This principle will be discussed in detail under the sections 5-16.

INFORMATION TECHNOLOGY

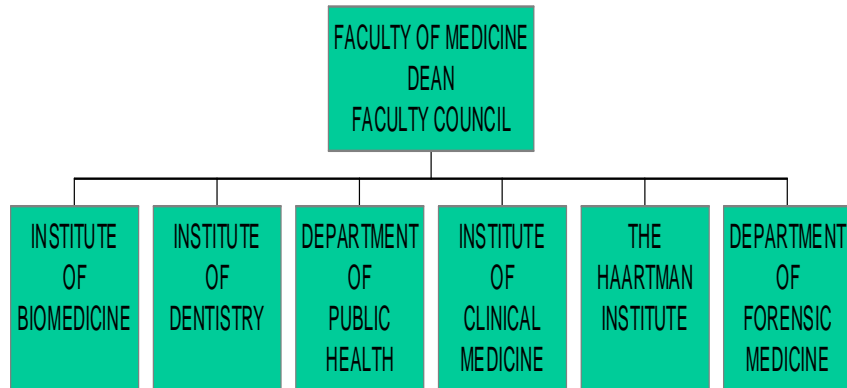
In the University of Helsinki we have the most common office programs as standard programs including e.g. WordPerfect, Word, Excel, PowerPoint etc.. Special programs for research and statistical analysis include the most important RDBMS programs. Furthermore, we have electronic mail and internet available to both staff and students.

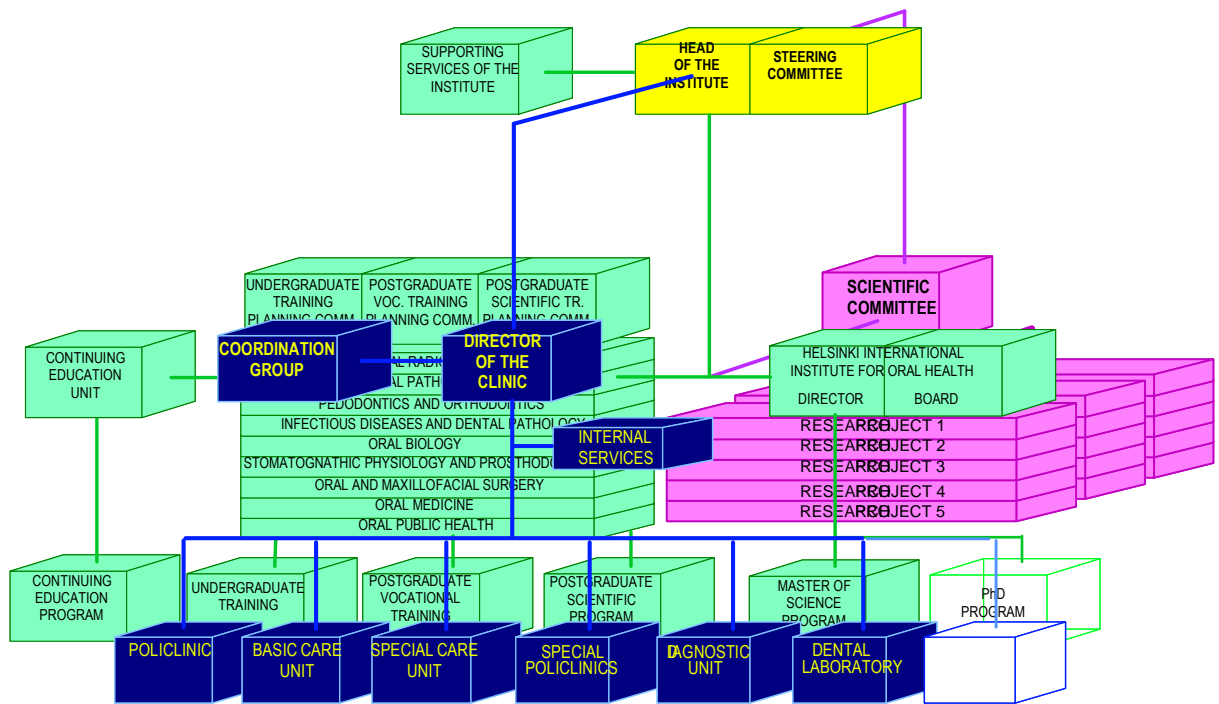
The Clinic has tailor-made programs for its patient records, student's achievements and finances. The university has special programs for accounting and personnel management. These programs were installed in 1997. A new general student information system is going to be installed by the year 2000. The present one is not especially suited for a curriculum like the one in dentistry. The own program in use in the Institute contains both the educational and the patient/finances aspect. It was created in 1985 and has been in operation ever since. It will not be able to handle the year 2000. The integration of the clinic into the health care system brings in a new program, Sinuhe, used by the Helsinki Health Care.

UNIVERSITY OF HELSINKI ORGANISATION



UNIVERSITY OF HELSINKI FACULTY OF MEDICINE ORGANISATION





SECTION 4: STAFF

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4.1 STAFFING LEVELS

Clinical Academic Staff Statistics

Professors	10
Other Senior Non-Professorial Staff	32
Non Senior Full-time Staff:	
Clinical Dentists	13.5
Postgraduate Students	18

Other Non-Clinical Academic Staff

Senior	2
Non-Senior	1
Administrative/Secretarial Staff	20.5
Nursing Staff	48
Dental Technicians	4
Auxiliary Research Staff	9
Remaining Staff	4.5

SECTIONS 5-16: UNDERGRADUATE DENTAL CURRICULUM

INTRODUCTION TO HELSINKI CURRICULUM

The extent of the basic degree programme in dentistry in Finland is 200 local credits (300 ECTS credits). The degree of Licentiate in Dentistry can be completed in five years.

The degree is divided into pre-clinical (1.-2. year) and clinical (3.-5. year) stages, the pre-clinical stage comprising basic and biomedical studies, and the clinical stage comprising most of the subject studies, advanced studies and practical training.

REFORMING EDUCATION

The undergraduate medical and dental curriculums at the University of Helsinki are undergoing rapid changes. The curriculum used to be discipline-based and consisted mostly of lectures, especially in the pre-clinical phase. The faculty board has decided upon introducing a curriculum reform, the objectives of which are as follows:

1. To educate doctors who will better meet the needs of society and individuals.
2. To improve the weaknesses in the old curriculum. The emphasis is on:
 - a learning-centred approach
 - developing skills and attitudes
 - motivation, excitement and creativeness
 - evaluation by competence
 - life-long learning skills to facilitate maintenance of competence
 - scientific thinking

To achieve these goals, the faculty has decided to implement the curriculum reform in several stages. The first stage began in August 1994 and included the introduction of an integrated pre-clinical curriculum and early patient contacts with special emphasis on the doctor-patient relationship. The second stage began in August 1995, when a problem-based curriculum ('parallel track') started with 14 voluntary medical students.

During the process of planning and implementing the curriculum reform, special emphasis has been placed on teacher education. A six-week general training programme in basic medical pedagogy extending for one year was started in 1993. So far, 30 faculty members have taken part in the programme, and a new group of 12 will begin their training every year. In addition there is a specific training programme aiming at training teachers in the methodology of problem-based learning.

The emphasis on the dental curriculum has been put on close relationships with medicine stressing the need for deeper knowledge in the preclinical studies. Simultaneously, a need for earlier patient contacts and improved communication skills made it necessary to re-evaluate the whole clinical teaching.

PRECLINICAL STUDIES

The pre-clinical studies currently last 2 years and are mostly held in common with the pre-clinical studies in medicine. Learning topics have been integrated into larger functional units than conventional disciplines, such as 'the musculo-skeletal system' and 'the gastro-intestinal system and nutrition'. Dental and medical students are working in the same groups, with the exception of foreign language studies and courses in interpersonal skills.

Since fall 1998 preclinical studies have been organized according to problem based learning (PBL) approach.

The pre-clinical studies in dentistry are the same as those in medicine and instruction is mainly in common for dental and medical students during the first year of studies. These course descriptions are presented in the sections 5.1, 5.2, 6.1, 6.2 and 7.1

CLINICAL STUDIES

The clinical stage takes place in the University Clinic for Dental and Oral Diseases and lasts 3 years. The clinical teaching is reorganized based on the concept of an integrated dental clinic where all the clinical fields of specialisation are represented, instead of the conventional department based model.

In order to avoid overlapping and unnecessary repetition in the theoretical teaching the whole substance of knowledge has been reorganized in nine new categories, called 'entities of learning' instead of the old discipline based approach. These entities were chosen to cover all aspects of modern dentistry, each of them forming an umbrella for several conventional disciplines. Special emphasis has been put on oral medicine and oral public health.

Entities of learning

1. Growth of the masticatory system
2. Oral diagnostics
3. Development guidance of the occlusion
4. Stomatognathic physiology
5. Reconstruction of bite function
6. Infectious diseases of the tooth and periodontium
7. Traumatology and diseases of soft and hard tissues
8. Oral medicine
9. Oral public health

During each term, both theoretical studies and practical clinical work will have special emphasis:

Term	Special emphasis on
5	Theoretical basics, preventive dentistry
6	Basic clinical skills
7	Diagnostics
8	Rehabilitation of masticatory system
9	Independent work in the clinic
10	Dental profession as a part of the health care system

Possibilities of modern dental care and changing disease panorama challenge dental school staff to encourage the development of new kinds of professional skills and abilities. Particularly skills for inter-disciplinary and -professional co-operation and team work are needed.

At the University of Helsinki dental students in their clinical studies are practising in the same facilities with students of dental hygiene, nursing and technology. Clinical work is practiced in teams of 2 students from each clinical year (6 students all together), 2 dental nurses, 1-2 dental hygienists and 1-2 dental technicians. Students have different roles in dental team depending on their stage of learning process. Dental students have 8 weeks rotation in all units of dental clinic.

INTERPERSONAL SKILLS (7,5 LOCAL CREDITS)

Training in interpersonal skills enables students to get early patient contacts and deepens the student's awareness of what it means to be a dentist. Moreover, it provides an excellent forum for practising the communicational skills without having the fear of failing in the manual skills. Interpersonal skills add up to 7,5 local credits in 5 years.

ADVANCED STUDIES (8 LOCAL CREDITS)

Most of the courses are compulsory for all students. Some study modules, especially in the advanced studies, can be chosen according to the interests of the student. It is also possible to begin scientific research work before graduation either within the MD/PhD programme (see below) or later on.

FOREIGN LANGUAGE STUDIES (4,5 LOCAL CREDITS)

All Finnish students are requested to learn the second domestic language, Swedish (or Finnish for Swedish-speaking students), and either one or two foreign languages. All Master's degrees contain studies in a domestic language (Finnish or Swedish) or at least a proficiency test.

There are three different kinds of foreign language studies included in the degree program. They are text workshop and oral command in one foreign language and both oral and written course in the second domestic language.

OPTIONAL STUDIES (10 LOCAL CREDITS)

Students may include any university studies in their diploma in dentistry. This is how they are encouraged to the principles of interdisciplinarity also outside their own faculty.

REGISTRATION AS A DENTIST

The degree of Licentiate in Dentistry is one prerequisite for registration as a Dentist. In order to get a full registration, the graduate must work for six months in a health centre (public or private) as an assistant dentist (orientation stage).

KEY TO COMPARE DENTED SECTIONS WITH HELSINKI CURRICULUM

PRECLINICAL STUDIES

Following sections are integrated into inter-disciplinary functional units

Sections	5.1	Biochemistry
	5.2	Molecular Biology
	6.1	Anatomy
	6.2	Physiology
	7.1	Pharmacology

CLINICAL STUDIES

Entities of learning

1. Growth of the masticatory system
Section 9.1 Orthodontics
2. Oral diagnostics
Section 13.2 Oral/Dental Radiology and Radiography
Section 14.2 Oral Pathology
3. Development guidance of the occlusion
Section 9.1 Orthodontics
4. Stomatognathic physiology
5. Reconstruction of bite function
Section 11.3 Prosthodontics
6. Infectious diseases of the tooth and periodontium
Section 7.2 Microbiology
Section 9.2 Paediatric Dentistry
Section 10 Preventive Dentistry
Section 11.1 Conservative Dentistry
Section 11.2 Endodontics
Section 12 Periodontology
Section 15.1 Integrated (Comprehensive) Patient Care
7. Traumatology and diseases of soft and hard tissues
Section 8.3 Anaesthesiology
Section 13.1 Oral Surgery
8. Oral medicine
Section 5.3 Genetics
Section 7.3 General Pathology
Section 8.1 General Medicine
Section 8.2 General Surgery
Section 14.1 Oral Medicine
Section 15.2 Dental Emergencies
9. Oral public health
Section 10 Public Oral Health
Section 15.3 Care of special need patients
Section 16.1 Behavioural Sciences
Section 16.2 Communications
Section 16.3 Ethics and Jurisprudence
Section 16.4 Practice Management

PRECLINICAL STUDIES

Following sections are integrated into inter-disciplinary functional units (collected into tables 1 and 2)

Sections	5.1	Biochemistry
	5.2	Molecular Biology
	6.1	Anatomy
	6.2	Physiology
	7.1	Pharmacology

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Table 1: Terms 1 and 2, 1st year

Entities	Total hours	ECTS credits
Introduction to medical studies	120	6
Introduction to molecular and cellular biology and pharmacology	200	9
Cell biology and basic tissues	160	8
From cell to multicellular organism	80	4
Metabolism	200	9
Molecular biology and protein synthesis	160	8
The musculo-skeletal system	280	13
Interpersonal skills *)	60	3
Total	1260	60

*) The course continues all through the studies.

In the end of this part there are common answers on the behalf of all the preclinical subjects to the questions 5-10.

INTRODUCTION TO MEDICAL STUDIES

1. An introduction

The objective of the course is to introduce students to medical studies. The course presents the legal base of the medical professions.

1st term

2. Primary Aims

The broad perspective of health and its challenges for the physician is illustrated by an overview of the human lifespan, including the psychological aspects of illness.

See item 1.

3. Main objectives

- Information technology and skills to use different sources of information
- Dentistry as a profession
- Motivate to develop learning skills individually and in groups
- Stimulate to reflect on the role of dentist
- Medical decision making and ethics
- Describes clinical practice and the health care system.

4. Hours in the Curriculum

Lectures	12 h
Small groups	32 h
Independent study	76 h
Total	120 h

INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY AND PHARMACOLOGY

1. An introduction

The objective is to learn medically relevant chemical, physical and biochemical principles and the medical properties of macromolecules in the extent required to understand future courses in metabolism and molecular biology.

1st term

2. Primary Aims

See item 1

3. Main objectives

Lectures cover nucleic acids, proteins, carbohydrates, and lipids. Introduction to enzymology is also given. Students will practise basic laboratory techniques (SDS-PAGE, TLC, spectrophotometric protein assay and spectral analysis of hemoglobin).

4. Hours in the Curriculum

Lectures	27 h
Tutor groups	10 h
Group instruction	4 h
Laboratory work	16 h
Independent study	142 h
Total	200 h

CELL BIOLOGY AND BASIC TISSUES

1. An introduction

The objective is to learn the basic structure of a cell and how the different components of the cell participate in its functions.

1st term

2. Primary Aims

To learn how various functional differences are reflected in the structure of the cells and basic tissues and to learn to understand that a living cell and tissue is constantly in a dynamic process leading to stability or

change. The microscopy of the cells and basic tissues will reveal to the student how the function and the chemical structure of cells and tissues is reflected in histological preparations.

3. Main objectives

- Identification of structures and tissues under light microscope and in EM pictures
- To describe cell particles and their functions both verbally and in written form
- Proteinsynthesis
- Endo and exocytosis
- Cell´s internal order and shape
- Cell movements
- Cell junctions to other cells and to extracellular fluid
- Different tissuetyes

4. Hours in the Curriculum

Lectures and seminars	12 h
Tutor groups	14 h
Independent study	117 h
Examination	5 h
Other instruction	12 h
Total	160 h

FROM CELL TO MULTICELLULAR ORGANISM

1. An introduction

The objectives are to learn the basic biological and molecular mechanisms influencing cell division, growth and differentiation as well as the maintenance and degeneration of cells and tissues.

2nd term

2. Primary Aims

See item 1.

3. Main objectives

These mechanisms are studied in the context of fertilization, early embryogenesis, differentiation of the basic tissues and formation of some multicomponential tissues. The importance of these mechanisms for the understanding of pathophysiological processes is explained in the seminars.

4. Hours in the Curriculum

Tutor groups	6 h
Lectures	6 h
Examination	4 h
Other instruction	2 h
Independent study	62 h
Total	80 h

METABOLISM

1. An introduction

Students concentrate on the intermediary metabolism of carbohydrates, amino acids and lipids. Lectures cover metabolic regulation.

2nd term

2. Primary Aims

See item 3.

3. Main objectives

- Students will partially purify lactate dehydrogenase and characterize its kinetics. Also, they will isolate fat cells by collagenase treatment and study the regulation of glycerol release.
- Homeostatic mechanisms and control systems
- Intercellular information procedures

4. Hours in the Curriculum

Tutor groups	12 h
Lectures	20 h
Examination	4 h
Laboratory work	16 h
Other instruction	2 h
Independent study	148 h
Total	200 h

MOLECULAR BIOLOGY AND PROTEIN SYNTHESIS

1. An introduction

The objective is to understand the structure and function of eukaryotic and prokaryotic genes.

2nd term

2. Primary Aims

To understand basic molecular biology methods and to learn the mechanisms of protein synthesis, targeting and modification.

3. Main objectives

- DNA replication and transcription, recombination and genes' molecular anatomy
- Information mechanisms in RNA, DNA and protein synthesis level
- Genetechnology
- Domestic genetic inheritance

4. Hours in the Curriculum

Lectures	16 h
Tutor groups	6 h
Laboratory work	6 h
Examination	4 h
Other instruction	2 h
Independent study	127 h
Total	160 h

THE MUSCULO-SKELETAL SYSTEM

1. An introduction

The course is built around the anatomical dissections of the trunk and the extremities.

2nd term

2. Primary Aims

In addition to the musculo-skeletal system, also the peripheral nervous system and vasculature of these parts are studied. Anatomy is integrated mainly with physiology, but also with biochemistry and, at some points, with pharmacology.

3. Main objectives

Course consists of three entities:

- Upper extremity, back, thorax, head and neck
- Lower extremity, pelvis, lumbar vertebrae
- Musculo-skeletal system's adjustment to stress, muscles energy metabolism, metabolism in bone, thermal regulation of the body, medication used in functional disorders of musculo-skeletal system

4. Hours in the Curriculum

Tutor groups	24 h
Lectures	19 h
Other instruction	33 h
Independent study	204 h
Total	280 h

Table 2: Terms 3 and 4, 2nd year

Entities	Total hours	ECTS credits
Interpersonal skills	60	3
Neurobiology	376	16
Circulation, kidneys and respiration	350	15.5
The gastro-intestinal system and nutrition	200	9
Endocrinology and the reproductive organs	160	7
Environment, protection and defence of the body	136	6
Final examination of the first (preclinical) stage		3.5
Total	1282	60

NEUROBIOLOGY

1. An introduction

The anatomy, histology, cell biology, physiology and pharmacology of the nervous system are integrated to give the student a comprehensive overview of the structures, functions and pharmacological aspects of the central and peripheral nervous system.

3rd term

2. Primary Aims

See item 1.

3. Main objectives

- The mechanisms of chemical transmission
- The development and structure of the nervous system
- The autonomous nervous system
- Sensory functions
- Special senses
- Motor functions

- Higher cognitive functions.

4. Hours in the Curriculum

Lectures and seminars	50 h
Small groups	97 h
Examination	3 h
Independent study	226 h
Total	376 h

CIRCULATION, KIDNEYS AND RESPIRATION

1. An introduction and its timing in the curriculum (sufficient information to explain the courses)
This course deals with the anatomy, embryology, histology, cell biology, physiology and pharmacology of the respiratory and circulatory systems.

3rd and 4th term

2. Primary Aims

These disciplines (see item 1) are integrated to give the student a comprehensive picture of the medical aspects of the structure and function of these systems, including the most common clinical tests and methods.

3. Main objectives

- Mechanical and electrical function of the heart
- Blood pressure regulation
- The lymphatic system
- CPR's pathophysiological basics
- Fluid, electrolyte and acid-base homeostasis
- Urinary system
- External and internal respiration

4. Hours in the Curriculum

Lectures and seminars	50 h
Small groups	62 h
Examinations	6 h
Independent study	232 h
Total	350 h

THE GASTRO-INTESTINAL SYSTEM AND NUTRITION

1. An introduction

The separate disciplines of anatomy, embryology, histology, cell biology, physiology, biochemistry and pharmacology of the gastro-intestinal organ system are integrated into a comprehensive course.

4th term

2. Primary Aims

Students will approach in particular the medically important aspects of this organ system. Also the basic principles of nutrition are within the scope of this course.

3. Main objectives

- Macroscopic and microscopic structure of the GI tract
- Mechanical and chemical digestion
- Liver as a functional entity
- Most common disorders with their functional, biochemical and structural alterations
- Nutrition and its regulation

4. Hours in the Curriculum

Lectures	30 h
Small groups	44 h
Examination	2 h
Independent study	124 h
Total	200 h

ENDOCRINOLOGY AND THE REPRODUCTIVE ORGANS

1. An introduction

The objective is to understand the mechanisms of action of different hormones. The student should become familiar with the structure and function of the major endocrine organs and the reproductive organs.

4th term

2. Primary Aims

The synthesis, release, transport and inactivation of hormones will be discussed. Special emphasis is given to insulin, catecholamines, steroid hormones and thyroid hormones.

3. Main objectives

Anatomy, histology and pharmacology of the kidneys, urinary tract and reproductive organs.

4. Hours in the Curriculum

Lectures	15 h
Small groups	37 h
Examination	2 h
Independent study	106 h
Total	160 h

ENVIRONMENT, PROTECTION AND DEFENCE OF THE BODY

1. An introduction

The objective is to learn the most important forms of the physical, chemical and biological effects of the environment on the human body.

4th term

2. Primary Aims

The protective mechanisms and the defence systems of the human body will be illustrated also from the pathophysiological and clinical points of view.

3. Main objectives

- The main subjects are antimicrobial chemotherapy, toxicology and radiation physics.
- Basics in microbiology and epidemiology
- Most common toxications and their treatments

4. Hours in the Curriculum

Lectures	44 h
Small groups	16 h
Examination	3 h
Independent study	73 h
Total	136 h

COMMON ANSWERS ON BEHALF OF ALL THE PRECLINICAL SUBJECTS TO THE QUESTIONS 5-10

5. Method of learning/teaching

- Problem based learning. Mixed groups with both dental and medical students.
- Integrated multidisciplinary larger functional units (entities) than conventional disciplines
- Working on weekly bases: New case is usually presented in the beginning of the week with keynote lectures. During the week mainly group work. Case is closed by the end of the week.
- There are 10 contacts eaching hours per week.

6. Assessment methods

Written examination after each entity. All these tests have to be passed before student is entitled to continue his/her studies in the clinical phase.

Preclinical final examination in the end of the first two years covering all the entities. This examination has to be passed by the beginning of the 4th study year.

7. Strengths

- same curriculum for both dental and medical students gives equal biomedical basic knowledge
- PBL as a method of learning is student centered. It is highly demanding for the student but also develops desired capabilities.

8. Weaknesses

Strengths may also be weaknesses; Dental students may not see the importance and relevance of the identical curriculum with medical students. This can lead to lack of motivation. If the case was so, then PBL may cause even more study difficulties.

The hours for anatomy and physiology of head and neck are very limited.

9. Innovations and Best Practices

See item 7.

The anatomy and physiology of head and neck are integrated in the clinical study courses in relation with the dental aspects.

Dental students may return to preclinical institute for autopsies.

10. Plans for future changes

We have to improve the motivation of dental students. There should be a dentist taking apart in planning the cases in order to include more dental topics into common studies with relevance to both dental and medical students.

CLINICAL STUDIES

CLINICAL TRAINING

Person in School who will explain and show this to the visitors:

Name: Doc. Kimmo Suomalainen

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1. An introduction

Terms 5 to 10.

Clinical training is clinical work performed at the Clinic for Dental and Oral Diseases of the Institute of Dentistry. The clinical training is supervised by clinical teachers. It includes the necessary examinations of the patients to be able to set a diagnosis, treatment planning as well as the procedures needed for the treatment of the patient.

2. Primary Aims

After completion of this course the student understands the significance of diagnosis, treatment planning and follow-up in practice.

3. Main objectives

The student can communicate with the patient independently and as a member of a team, can examine the patient, produce a relevant documentation and a treatment plan, perform the necessary procedures for the treatment of the patient and, if needed, remit the patient for special care. The student also acquires readiness to create a good patient relationship.

4. Hours in the Curriculum.

There are 16 clinical weeks in a term.

Daily working hours are from 8 a.m.-2 p.m.:

- 3rd year students 2 days per week (=48 days per year) equals 12 h / week
- 4th year students 3 days per week (=96 days per year) equals 18 h / week
- 5th year students 4 days per week (=128 days per year) equals 24 h / week

For all it equals half of which in basic dental care unit (total 786 h in 3 years)

1/8 in pediatric dentistry and orthodontics (total appr 200 h)

1/8 in admissions (policlinic) (total appr 200 h)

1/8 independent studies (total appr 200 h)

1/16 surgery (total appr 100 h)

1/16 diagnostics (rtg, pathology) (total appr 100 h)

Total hours appr. 1586 in 3 years.

5. Method of learning/teaching

The learning/teaching occurs chair-side in groups including 2 students of every clinical course (H3, H4, H5), dental hygienist students and dental assistant (nurse) students. During each term the clinical training will have special emphasis on a certain entity as follows:

- theoretical basics, preventive dentistry
- basic clinical skills
- diagnostics and treatment planning
- rehabilitation of the masticatory function
- independent work in the clinic
- dental profession as a part of the health care system

6. Assessment methods

The progress in ones ability to perform clinical treatment procedures is assessed with a portfolio. The student demonstrates his/her ability to perform clinical treatment procedures. This is evaluated by the student him/herself and by the clinical teacher simultaneously. In this context the students (i) attitude, (ii) knowledge and (iii) clinical skills are evaluated. Also the sufficiency of the documentation is assessed. The student and the teacher compare and discuss their results of the evaluation and, accordingly, set new objectives for the student.

7. Strengths

A comprehensive evaluation can be achieved.

Individual goals can be set.

At best, the result is a continuous evaluation of progress at an individual level.

8. Weaknesses

The students are worried of the possible involvement of personal anti- and sympathies in the evaluation (not an objective evaluation).

The evaluation requires additional resources (time), at least at this stage, when it is all new and strange.

9. Innovations and Best Practices

Tutoring effect:

Training in groups including students from every clinical course as well as dental hygienist students.

Explicit responsibility:

The clinical teacher of the group is responsible for the completion of the treatment of the patient.

10. Plans for future changes

Inclusion of dental technician students in the clinical groups.

The clinical training will be integrated into the municipal health care system 1st of January 2000. The clinical teachers will no longer be university staff members. This will put more emphasis on simulation model training supervised by the staff members.

The status of the university staff members in the municipal health care system must be clarified (f.ex. consultants ?).

ENTITIES (1 TO 9) OF LEARNING

Entity 1 Growth of the masticatory system

Section 9.1 Orthodontics

Terms 5 and 6, 3rd year

Anatomy of head and neck

Morphology

Normal craniofacial and dental development

Terms 7 and 8, 4th year

no courses

Terms 9 and 10, 5th year

Dental and craniofacial growth disturbances

Person in School who will explain and show this to the visitors:

Name: Prof. Sinikka Pirinen

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Section 9.1 Orthodontics

1. An introduction

Craniofacial development and orthodontics are taught throughout the three clinic years, the third, fourth and fifth study year. Craniofacial and dental growth and development are profoundly dealt with during the autumn semester of the third year. The theoretical clinical part starts immediately after that and gives a wide overview of modern orthodontics. Series of lectures and group teaching sessions are scheduled for each of the three clinic years. Patient work also starts at the beginning of the third year and is limited to orthodontic screening, diagnosis and simple preventive and corrective treatments.

2. Primary Aims

Primary aim is to prepare the student for work at the Public Dental Service. This includes screening of malocclusions, diagnostic and preventive procedures, first aid for patients with fixed appliances, and working under the guidance of a consulting orthodontist.

3. Main objectives

Main objectives are to ensure that the student learns the current concepts of

- development of the dentition
- craniofacial growth, mechanisms and timing
- the possibilities of modern orthodontics
- the aetiology of malocclusion in modern man
- the principles of orthodontic diagnosis
- the principles of treatment planning
- the common orthodontic appliances
- the most common craniofacial anomalies

4. Hours in the Curriculum

Hours in the curriculum are 156 for the theoretical part and 72 for clinical training. Each student has thus 22 hours of clinical training a year.

5. Method of learning/teaching

The training takes place in groups of four students, one from each year class and a teacher who is a specialist in orthodontics. The treatment session starts with a meeting, where the patients for the day are discussed, using dental casts, radiographs, written records and sometimes videofilms. The students perform treatment procedures like dental impressions, analysis of radiographs, fitting of bands and brackets, functional appliances, ligation of arch wires etc.

6. Assessment methods

The skills of the students are assessed in three written examinations, the third one being the final examination. The clinical skills are assessed continuously during the clinical sessions. The teachers take care that every student has had a possibility to perform the most common procedures.

7. Strengths

The strength of the course is that we have been lucky to have patients that get the treatment from their public dental clinic, and that these patients can be divided into groups of easily treated cases for undergraduate and more difficult cases for specialist training. The course is well organized and the teachers are all very good. The students are extremely interested in orthodontics, reflecting the present great interest towards the discipline.

8. Weaknesses

Weakness may be the fact that one student cannot always follow the course of individual treatments. The students would like have more hours devoted to clinical orthodontics.

9. Innovations and Best Practices

- group teaching is better in the long run than “own“ patients that we had earlier
- morning meetings are an excellent way to teach orthodontics
- screening the 9-year-old patients from school classes for treatment according to a treatment need index
- craniofacial anomalies are taught in patient meetings organized by the students
- the last lectures, on year five, “orthodontics today“, are grouped to one special day with the whole staff and several visitors contributing.

10. Plans for future changes

- more problem based learning, less traditional lectures

Anatomy of head and neck

There is no such separate course in the clinical phase but instead anatomy and physiology of head and neck are integrated in the clinical study courses in relation with each relevant dental aspect.

6. Assessment methods

In the beginning of the 3rd year students take an introductory written examination in anatomy of head and neck after independent studying of the particular chapters from their preclinical anatomy book. This is to confirm their basics in topographic anatomy as a starting level for further studies.

From there on anatomy is an inseparable part of several courses as students are informed to study certain aspects relevant f. ex. in stomatognathic physiology, local anaesthesia or bony structures in radiology.

Morphology

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Kirsti Liede

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1. An introduction

5th term

2. Primary Aims

See item 3.

3. Main objectives

The course consists of the following topics: Dental evolution, genetic regulation of dental morphology continuous eruption, morphology of primary and permanent teeth and it's significance in clinical work.

4. Hours in the Curriculum

Lectures	4 h
Small groups	16 h
Independent study:	12 h
Total	32 h

5. Method of learning/teaching

Mainly in dental skills lab

6. Assessment methods

Formative originating from the student's point of view while practising. Continued assessment leading to the dental skills lab practices in operative dentistry.

7. Strengths

The idea to combine the basic biological aspects of the determination of the tooth structures in the growth of an embryo to the same course, where the actual tooth anatomy is taught. Thus, the problems encountered usually with the conventional approach, where morphology is taught only as mechanical procedure to carve teeth from wax, i.e. lack of motivation and frustration is avoided. The risk for frustration was also tried to minimize by restricting the carving to the crown of the tooth, as roots are not restored in the clinics either! Also, lectures to emphasize the relevance of tooth morphology were added to the course.

8. Weaknesses

The co-ordination between the various disciplines did not work in an optimal way, leading to uncertainty among the students about the course content required. Obviously, too little time was allocated to the actual carving rehearsals, though this could be compensated later during the simulation course (phantom course proper) where modeling was continued.

9. Innovations and Best Practices

To give the vocabulary to the students both in Finnish and in English, to facilitate their future clinical studies and understanding of the textbooks.

The use of modeling clay to quickly illustrate the number and position of roots in relation to the crown.

Example: The student has one minute time to model an upper and a lower incisor to that level, that they are easily identified. Particularly this is useful for the further studies of endodontics.

The use of natural teeth prepared so that the root canals are visible and the pulpal tissue replaced by red wax is very effective way to illustrate to the student the number, location and curvature of the canals.

When practising the carving, to carve the tooth as a replacement of a Frasco tooth in the model to see the alignment in the bite, not only to produce a wax model of an extracted tooth.

10. Plans for future changes

To modify the course towards a practice, where each discipline takes care of their own aspects of the morphology. This will help to maintain the clinical relevance in all teaching. Thus, the present course would serve only as a core course. Moreover, as amalgam is not the material of choice any more, it is worth questioning whether carving should be included in the course at all. Also, modern 3-dimensional computer programs should be given emphasis in the future teaching of tooth morphology: both for viewing the images and creating ones.

Normal craniofacial and dental development

1. An introduction

This course is the foundation of our undergraduate teaching in orthodontics, which focuses in early and simple interceptive treatments to eliminate factors which disturb normal growth. In this treatment philosophy it is essential to have a profound knowledge of the mechanisms and timing of normal craniofacial and dental growth.

5th term

2. Primary Aims

The aim of this course is that the students learn mechanisms and timing of normal craniofacial and dental development.

3. Main objectives

- Prenatal craniofacial development
- Bone and cartilage development
- Growth of the maxilla and mandible
- Regulation of early tooth development, eruption and tooth formation
- Timing of tooth formation and tooth eruption, and estimation of biological age
- Development of occlusion in the deciduous dentition and during the transitional period
- Hormonal regulation of growth and dental development
- Postnatal regulation of the jaws and the dentition
- Follow-up of growth and growth prediction

4. Hours in the Curriculum

Lectures	20 h
Small group	4 h
Independent study	24 h
Total	48 h

5. Method of learning/teaching

This course consists mainly of lectures. In addition, the students learn in small groups to estimate stages of tooth development and dental age using panoramic x-rays. In these estimations they also use a dental development computer program. They make simple cephalometric tracings.

6. Assessment methods

Participation in training sessions and a written examination

7. Strengths

The students have a chance to get the very latest research results and visions in the field of craniofacial and dental growth (I.Thesleff). This is a compact package of knowledge. Each lecturer is an expert in the field she/he teaches.

8. Weaknesses

This course is early in the dental education program and the students have it difficult to see links to practical dentistry.

This course includes many traditional lectures compared with hours spent in small group work.

9. Innovations and Best Practices

The use of CDROM in estimation of dental age

The course is partly held in English

10. Plans for future changes

More effort in activation of discussion

To tell more about links with practical dentistry

ENTITY 2. ORAL DIAGNOSTICS

Section 13.2 Oral/Dental Radiology and Radiography

Section 14.2 Oral Pathology

Terms 5 and 6, 3rd year

Elementary course in oral radiology

Terms 7 and 8, 4th year

No courses

Terms 9 and 10, 5th year

Oral pathology II (microscopics)

Concluding course in radiographic diagnostics

Oral Radiology

Section 13.2 Oral Radiology and Radiography

1. An introduction

The students are learning oral radiology during the three clinic years, the third, fourth and fifth study year. The afore-mentioned courses are lectures. The theoretical studies begin with the basic course in the beginning of third year and continue with the integrated courses in diagnostics during the fourth year. In the spring semester of the fifth year is the concluding course in oral radiology including the essential knowledge of modern radiographic methods such as MRI, CT, US, and the legislation concerning oral radiology. Teaching of the diagnostic radiology is integrated with oral pathology, oral surgery and partly also with paediatric dentistry and prosthodontics in the curriculum.

Students' patient work starts with intraoral radiographic examinations at the third year after the basic course in oral radiology. This work continues during the fourth year including also panoramic and cephalometric radiography. In the fifth year the students participate in practical diagnostic service analysing actual patient radiographs under the supervision of the teacher.

2. Primary Aims

Primary aim is to prepare the student to work at the Public Dental Service. This includes to provide the students with essential knowledge of radiation physics, radiation risks and legislation concerning oral radiology, capability to perform basic radiographic examinations e.g. intraoral, panoramic and cephalometric investigations and capability to diagnose the most common diseases from the radiographs.

3. Main objectives are to ensure that the students learn the current concepts of

- radiation physics and radiation risks
- legislation concerning oral radiology
- basic radiographic methods
- radiographic anatomy in the maxillofacial area
- developmental disturbances of teeth and jaws
- diseases of the teeth and parodontium
- inflammations of jawbones
- odontogenic and nonodontogenic cysts of the oral region and jaws
- odontogenic and nonodontogenic benign and malignant tumours of jaws
- fibro-osseal lesions of the jaws
- salivary gland diseases
- temporomandibular joint diseases
- possibilities of modern radiographic methods
- distinguish the patients in need for remittance to specialist's examination

4. Hours in the curriculum are 80 for the theoretical part and 51 for clinic training.

5. Method of learning/teaching

The teaching is given mainly as lectures. At lectures dealing with cysts, tumours and bone diseases oral radiologist and oral pathologist both are present at the same time. In basic course the students are taught in groups to perform radiographic examinations and in concluding course the students are taught in groups to diagnose the diseases from the radiographs.

6. Assessment methods

The skills of the students are assessed in five written examinations, the fifth one being the final examination. In first and final examination diagnostics of radiographs are included. The clinical skills are assessed continuously during the clinical part of the studies.

7. Strengths

The strength of the course is that it has been integrated with other disciplines, especially with oral pathology. The strength is also that the students have had positive attitude towards training oral radiographic diagnostics. We have also been lucky to have good teachers who all are specialists in oral radiology. We also have had material enough for performing radiographic examinations and for diagnostics of actual radiographs the number of patients visiting the department being about 5.500 patients in a year.

8. Weakness is that oral radiology has lost the professorship which diminishes the interest of investigators and teachers in this discipline. The other weakness is the small number of the staff. Weakness may also be that the students do not sufficiently see interesting clinical cases during their clinical work – the material is not many-sided enough. Weakness may also be that students are more interested in clinical practice than the theoretical backgrounds of the matter. Finally a weakness is that we cannot provide the students with clinical experience in modern radiological examination methods such as CT and MRI.

9. Innovations and Best Practices

- the correct diagnosis is the basis for the proper treatment of the patient
- radiological diagnostic is just one diagnostic method and in most cases radiographic examination has to be supplemented by other diagnostic methods
- integrated courses and especially courses in which specialists in two different disciplines are present at the same time have proved to be fruitful
- clinical training in small groups in analysing patient cases from radiographs/slides has proved to be excellent way to teach radiological diagnostics

10. Plans for future changes

- the preparation of self-studying material e.g. different patient cases and preparation of self-studying material in co-operation with other disciplines such as oral pathology and oral surgery
- more problem based learning
- more co-operation with general medical radiology

Oral Pathology

Section 14.2 Oral Pathology

1. An introduction

Pathology is taught throughout the three clinic years, the third, fourth and fifth study year. General and organ pathology are profoundly dealt with during the autumn semester of the third year. Teaching of oral pathology is integrated with oral medicine, dental radiology and oral surgery in the curriculum. These integrated courses run in the autumn and spring semester of the fourth clinic year. The aforementioned courses are lectures. In the autumn semester of the fifth year the students have a microscopical histopathological slide course. During this course they have each day first an introductory lecture and then they study personally histopathological sections under the guidance of their teacher. In the spring semester of the fifth year the students participate in practical diagnostic service. In the field of oral pathology this means that at least in two separate sessions each student studies interesting oral histopathological sections first alone and thereafter with the teacher.

2. Primary Aims

Primary aims is to teach the student to understand the principles and pathomechanisms of pathology in oral tissues and jaws. The importance of biopsy for correct diagnosis and the understanding of biopsy report and its terminology are essential for the dentist.

3. Main objectives are to ensure that the student learns the current concepts of

- the principles of cell injury and cell death
- the inflammatory process and its mediators
- premalignant lesions and conditions
- oral carcinogenesis and cancer epidemiology
- oral benign and malignant tumours
- odontogenic and nonodontogenic cysts of the oral region and jaws
- odontogenic tumours
- fibro-osseous lesions of the jaws
- salivary gland diseases and tumours
- how to take good biopsy - the aspect of a histopathologist

4. Hours in the curriculum are 20 for the theoretical part and 30 for the microscopical histopathological course. The practical clinical training consists of 10 hours.

5. Method of learning/teaching

The teaching is given in lectures. In some lectures oral pathologist and dental radiologist both are available at the same time. Identical system has been used with the professor of oral medicine in some lectures. In the "microscopical" course the students are taught in groups after having an introductory lecture of the day's theme. In the clinical diagnostic sessions each student is individually taught in private session.

6. Assessment methods

The skills of the students are assessed in five written examinations, the fifth one being the final examination. The fourth written examination is based on histopathological slides. In this test the student has to interpret histopathological biopsy material and to try to reach the right pathological diagnosis (PAD).

7. Strengths

The strength of the course is that it has been integrated with other disciplines (explained earlier). The practical training gives the student good knowledge of the most important oral diseases. The courses are well-organized and the teachers are very experienced. Our annual 2400 oral biopsy specimens provide excellent new teaching material

8. A weakness may be that the student does not see sufficiently clinical cases during the clinical work period. This reflects also on the understanding of oral pathology. The terminology and broad spectrum of oral diseases dealt with in oral pathology seem to cause difficulties for some students, as well. The students would like to have more hours devoted to lectures in oral pathology.

9. Innovations and Best Practices

- integrated courses are good practice
- dentist is an “oral doctor“ responsible for the treatment of all oral diseases not only teeth
- the correct diagnosis often reached by biopsy is the basis of the treatment of the patient
- individual practical sessions just before the student finishes his/her studies are very fruitful

10. Plans for future changes

- histopathological seminars might be interesting
- the preparation of self teaching material in co-operation with dental radiology and oral medicine.

Basic course in oral radiology

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Juhani Wolf

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fax: +358-9-19127230

1. An introduction

To teach the student essentials of radiation, oral radiographic methods, equipment and radiographic diagnostics.

5th term

2. Primary Aims

- to give the student essential knowledge and skills to make basic oral radiographic examinations
- to give the student essential knowledge and skill to diagnose the most common diseases from the radiographs

3. Main objectives

- ionizing radiation physics
- essential knowledge of radiation protection
- materials and equipment used in oral radiography
- basic oral radiographic examination methods including intraoral, panoramic ja cephalometric examinations
- film processing
- roentgen anatomy in intraoral, panoramic and cephalometric radiographs
- radiographic diagnostics of the most common diseases of teeth and jaws including carious lesions, periodontal diseases and periapical lesions

4. Hours in the Curriculum

Lectures	30 h
Small groups	4 h
Independent study	30 h
Total	64 h

5. Method of learning/teaching
 - mainly lectures, practical training in small groups
6. Assessment methods
 - written examination including also interpretation of radiographs after the lectures
7. Strengths
 - combination of theory and praxis
8. Weaknesses
 - the course is too short to provide minimum of the essentials of oral radiography and radiographic diagnostics
9. Innovations and Best Practices
 - practicing radiological examinations
 - practicing interpretation of radiographs
 - the radiographic differential diagnostics between normal anatomy and pathological processes and between different pathological lesions may be difficult

Microscopic course in oral pathology

Person in School who will explain and show this to the visitors:

Name: Pirjo-Liisa Lukinmaa

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1. An introduction

This is a practical (microscopic) course in oral pathology given in the Institute of Dentistry as part of the basic clinical study program of the dental students in the University of Helsinki during the 9th term of clinical studies.

2. Primary Aims

Primary aims are: first, to indicate that treatment of the patient should always be based on a sound diagnosis, which in many cases can be achieved by taking a histological biopsy specimen; second, to accomplish teaching given in the form of lectures by offering a more practical approach to understanding of various pathological processes of the oral region.

3. Main objectives

- To give the future dentists an overview of the spectrum of pathological changes occurring in the oral region.
- To teach the dental students to assess adequately the need of taking a biopsy specimen.
- To inform the students how to collaborate with a histopathological laboratory.
- To increase the preparedness of the students to interpret statements given by the oral pathologist so as to draw correct conclusions with regard to the treatment plans.

Finally, to give an overview of not only the possibilities but also limitations of histopathology as a diagnostic tool.

4. Hours in the Curriculum

The course comprises

Lectures/demonstrations	10 h
Small group studies	20 h
Independent studies	46 h
Total	76 h

5. Method of learning/teaching

The course is divided into 10 lessons (once a week), each containing an 1 h introductory demonstration (diapositives, overheads) followed by guided microscopy of slides grouped under following subject headings: basic concepts and terms used in pathology; normal structure of and pathological changes in teeth; inflammatory and other reactive changes; specific lesions and premalignant changes in the oral mucosa; jaw cysts; benign tumours and tumour-like changes; malignant tumours; odontogenic tumours; and salivary gland-related changes including tumours (a total of 70 entities/slides).

For microscopy, the students attending the course (about 30) are divided into two subgroups. Each student has a slide box, microscope and written material duplicated and distributed in advance (giving a short description of the major histological findings in each slide and their clinical significance) at his/her disposal. Independent studies relying on textbooks of oral pathology are necessary to amplify teaching given in the course.

6. Assessment methods

The course ends up with a written/practical examination (diagnoses of 2-3 slides based on a detailed description. The slides are included in the subject field but represent cases other than those in the box).

7. Strengths

Small group/individual teaching.

8. Weaknesses

The rather large number of entities/slides included but only one slide of each may lead to a certain degree of superficiality. Lack of combined clinical, possible radiographic and histopathological information/documents may lead to failure to get a comprehensive picture of the entity in question.

9. Innovations and Best Practices

The course hopefully helps the students appreciate themselves as versatile professionals responsible for the diagnosis and treatment of the variety of diseases occurring in the oral region.

10. Plans for future changes

To include in the course more than one slide illustrating selected common entities, e.g. radicular cyst, at the expense of certain rarities; to increase in collaboration with clinicians and radiologists the proportion of cases/slides for which additional data are available.

Concluding course in radiographic diagnostics

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Juhani Wolf

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1. An introduction

To provide the student with essential knowledge of modern radiographic methods, radiation risks; and to practice radiological diagnostics.

10th term

2. Primary Aims

- to provide the student essential knowledge of modern digital radiographic methods and their use in maxillofacial area, radiation risks and radiation protection
- to practice radiological diagnostics in seminars of patients cases

3. Main objectives

- essentials of digital imaging
- digital imaging of teeth and jaws
- computed tomography
- ultrasonography
- scintigraphy
- magnetic resonance imaging
- radiation risks and radiation protection
- legislative aspects concerning oral radiography
- practical radiological diagnostics of the diseases in the maxillofacial area

4. Hours in the Curriculum

Lectures	16 h
Small groups	12 h
Independent study	16 h
Total	44 h

5. Method of learning/teaching

- mainly lectures
- radiological diagnostics in groups

6. Assessment methods

- written examination after the lectures

7. Strengths

- practical interpretation of radiographs seem to motivate the student to learn this difficult field of dentistry

8. Weaknesses

- heterogenous course: the course deals with several different fields of oral radiology

9. Innovations and Best Practices

- the use of digital methods not available at the Institute of Dentistry could be demonstrated in a hospital

10. Plans for future changes

- to clarify the contents of the course

ENTITY 3 DEVELOPMENT GUIDANCE OF THE OCCLUSION

Section 9.1 Orthodontics

The overall description of the are

Terms 5 and 6, 3rd year

Diagnosis of malocclusions

Treatment of malocclusions and orthodontic appliances

Terms 7 and 8, 4th year

Orthodontic treatment

Terms 9 and 10, 5th year

Special topics in orthodontics

Person in School who will explain and show this to the visitors:

Name: Prof. Sinikka Pirinen

E-mail: sinikka.pirinen@helsinki.fi

fax: +358-9-19127266

Section 9.1 Orthodontics

1. An introduction

Craniofacial development and orthodontics are taught throughout the three clinic years, the third, fourth and fifth study year. Craniofacial and dental growth and development are profoundly dealt with during the autumn semester of the third year. The theoretical clinical part starts immediately after that and gives a wide overview of modern orthodontics. Series of lectures and group teaching sessions are scheduled for each of the three clinic years. Patient work also starts at the beginning of the third year and is limited to orthodontic screening, diagnosis and simple preventive and corrective treatments.

2. Primary Aims

Primary aim is to prepare the student for work at the Public Dental Service. This includes screening of malocclusions, diagnostic and preventive procedures, first aid for patients with fixed appliances, and working under the guidance of a consulting orthodontist.

3. Main objectives

Main objectives are to ensure that the student learns the current concepts of

- development of the dentition
- craniofacial growth, mechanisms and timing
- the possibilities of modern orthodontics
- the aetiology of malocclusion in modern man
- the principles of orthodontic diagnosis
- the principles of treatment planning
- the common orthodontic appliances
- the most common craniofacial anomalies

4. Hours in the Curriculum

Hours in the curriculum are 156 for the theoretical part and 72 for clinical training. Each student has thus 22 hours of clinical training a year.

5. Method of learning/teaching

The training takes place in groups of four students, one from each year class and a teacher who is a specialist in orthodontics. The treatment session starts with a meeting, where the patients for the day are discussed, using dental casts, radiographs, written records and sometimes videofilms. The students perform treatment procedures like dental impressions, analysis of radiographs, fitting of bands and brackets, functional appliances, ligation of arch wires etc.

6. Assessment methods

The skills of the students are assessed in three written examinations, the third one being the final examination. The clinical skills are assessed continuously during the clinical sessions. The teachers take care that every student has had a possibility to perform the most common procedures.

7. Strengths

The strength of the course is that we have been lucky to have patients that get the treatment from their public dental clinic, and that these patients can be divided into groups of easily treated cases for undergraduate and more difficult cases for specialist training. The course is well organized and the teachers are all very good. The students are extremely interested in orthodontics, reflecting the present great interest towards the discipline.

8. Weaknesses

Weakness may be the fact that one student cannot always follow the course of individual treatments. The students would like have more hours devoted to clinical orthodontics.

9. Innovations and Best Practices

- group teaching is better in the long run than “own“ patients that we had earlier
- morning meetings are an excellent way to teach orthodontics
- screening the 9-year-old patients from school classes for treatment according to a treatment need index
- craniofacial anomalies are taught in patient meetings organized by the students
- the last lectures, on year five, “orthodontics today“, are grouped to one special day with the whole staff and several visitors contributing.

10. Plans for future changes

- more problem based learning, less traditional lectures

Diagnosis of malocclusions

1. An introduction

During this course the student learns basic skills needed to diagnose malocclusion traits using dental casts, cephalograms and photographs. Diagnostic skills are later deepened in connection with theoretical learning about treatments and during patient treatment sessions.

5th term

2. Primary Aims

The aim is that after this course the student can recognize different malocclusion traits, finds several cephalometric landmarks, and knows how cephalometric analysis and model analysis are done in orthodontics.

3. Main objectives

- Names and definitions of dental malocclusion traits
- Names and definitions of skeletal malocclusion traits
- Cephalometric analysis
- Model analysis in orthodontics
- Space analysis and prediction during the early transitional dentition
- Orthodontic diagnosis: The development of a problem list

4. Hours in the Curriculum

Lectures	12 h
Small groups	8 h
Independent study	12 h
Total	32 h

5. Method of learning/teaching

Lectures alternating with of training in diagnostic skills and discussions in small groups.

6. Assessment methods

- A review of diagnostic skills. The students make a diagnoses of a patient case (slides, casts, panoramic X-ray, cephalogram). The principle is to do this independently, but teachers give some personal advice also during the task. At the end, the teacher and the students analyse the case together.
- Participation in training sessions

7. Strengths

We have collected a good material (casts, X-rays) to be used during training sessions

2-3 teachers assist the students during training sessions, which leads to favourable conditions for learning

There has been a relaxed atmosphere

8. Weaknesses

The presence of many teachers needed in small group teaching (about 1/10 students). The first theoretical lessons are a little boring (orthodontic vocabulary and definitions) although well tolerated by students.

9. Innovations and Best Practices

Alteration of theory with with training of diagnostic skills.

Concentration of the course to some intensive days.

Assessment method.

10. Plans for future changes

No major changes planned.

According to student assessments, they are very satisfied with this course.

Treatment of malocclusions and orthodontic

1. An introduction

During this course the students learns to know the most commonly used orthodontic appliances. They train some basic skills that are needed in the treatment of orthodontic patients. They also become acquainted with the etiology and treatment of some typical malocclusions.

6th term

2. Primary Aims

After the course the student should

- have knowledge of some typical malocclusions.
- be able to build basic parts of fixed orthodontic appliances, the Quad- Helix appliance and the most commonly used extraoral appliances.

3. Main objectives

- How to take orthodontic impressions and to make dental casts
- How to separate teeth and seat and weld orthodontic bands
- Fixed appliances, how to place brackets on teeth
- Removable orthodontic plates
- Treatment of crowding
- Treatment of posterior cross-bites, how to activate Quad-Helix
- Treatment of distal occlusion

4. Hours in the Curriculum

Lectures	26 h
Clinical skills lab	28 h
Independent study	26 h
Total	80 h

5. Method of learning/teaching

Alteration of lectures and training of skills. The students take dental impressions of each other and set separating ligatures to each other. Other skills are trained in the phantom laboratory. Oral presentations by groups.

6. Assessment methods

Participation in training sessions
Written examination

7. Strengths

The students are very motivated.

Theory is closely connected with training of practical skills.

Good videotapes made in our clinic of some topics (seating brackets and bands, Q-H)

Training sessions in general well organized.

8. Weaknesses

If not enough teachers present (about 1/10 students), enthusiasm turns to irritation and the good atmosphere for learning is lost.

9. Innovations and Best Practices

Training of skills follows immediately the theory in question.

Some experiments with patient cases (problem based learning)

Many appliances are taught in connection with treatments where they are typically used. Oral presentations by groups.

10. Plans for future changes

Increase the number of (written) patient cases (problem based learning)

Orthodontic treatment

1. An introduction

The first part of the course continues the presentation of treatments of different malocclusion types, which was started during the 6th term. The last part consists of various other topics in the field of orthodontics. 7th and 8th term

2. The aim is that the students

- learn about treatment need and about the etiology and treatment of several typical malocclusions.
- get acquainted with tissue reactions and problems connected with orthodontic treatment.

3. Main objectives

- To acquaint the students with following topics:
- Deep bite
- Anterior cross-bite
- Open bite
- Retention in orthodontics
- Prevalence and etiology of malocclusions
- Tissue reactions in orthodontic treatment
- Problems related to orthodontic treatment and their prophylaxis
- Treatment need and screening to orthodontic treatment

4. Hours in the Curriculum

Lectures and small groups	34 h
Independent study	34 h
Total	68 h

5. Method of learning/teaching

- Lectures
- Training of skills in a phantom laboratory
- Screening patients for treatment using intraoral photographs of an entire school class
- Written patient cases (problem based learning)
- Oral presentations by students

6. Assessment methods

- Oral presentations by students on topics related to the course
- Presence in the sessions for training of skills

7. Strengths

The course covers the whole 4th year so that students can continuously add pieces of new theoretical learning to the on-going clinical training in orthodontics.

8. Weaknesses

The division of the course into two parts (7th and 8th term) makes the course somewhat incoherent. The contents of all parts of the course are not naturally linked to each other (in contrast to the diagnostic course)

9. Innovations and Best Practices

- Screening patients for treatment using intraoral photographs of an entire school class
- We expect the use of oral presentations instead of a written examination as an assessment method to be an improvement (We'll experiment with it in the spring 1999).

10. Plans for future changes

This course will be developed to include more problem based learning

Orthodontics to-day

1. An introduction

This course gives a view of special topics in orthodontics to students in the finishing phase of their studies. The topics will be changed according to new knowledge in the field and the wishes of the students.

10th term

2. Primary Aims

The aim is that the students get an up-to-date picture of the possibilities of orthodontics in adult dentistry and of other topics of interest.

3. Main objectives

- To acquaint the students with following topics:
- Screening of patients for treatment in public health care
- Possibilities of early orthodontic treatment in prevention of malocclusions
- Cleft lip and/or palate
- Orthodontic treatment in adults
- Obstructive sleep apnea and occlusion
- Orthodontic considerations in the treatment of patients with compromised periodontium

4. Hours in the Curriculum

Lectures	15 h
Small groups	5 h
Independent study	15 h
Total	35 h

5. Method of learning/teaching

- Lectures and discussion
- Presentation using a computerized teaching program

6. Assessment methods

In connection of the written final examination

7. Strengths

Concentration of almost the whole course to one lecture day resulted in very high participation. All lecturers are experts in their topics. Since the students showed intense attention in these lectures, the selection of topics must have been interesting.

8. Weaknesses

Some difficulties in placing many interesting presentations in one day

9. Innovations and Best Practices

This last course in orthodontics takes place mainly during one day. Many staff members and visitors contribute, which makes the day especially "festive". Students have a possibility to influence the selection of topics.

10. Plans for future changes

The topics "Hypodontia and impacted canines -treatment principles and methods" and "Orthodontis and prosthetics" will be added. The topic "Screening of patients for treatment in public health care" will be moved to 8th term.

ENTITY 4 STOMATOGNATHIC PHYSIOLOGY

(No referable Dented sections)

Terms 5 and 6, 3rd year

Stomatognathic physiology, normal function I
Stomatognathic physiology, normal function II
Stomatognathic physiology, malfunctions I

Terms 7 and 8, 4th year

Stomatognathic physiology, malfunctions II

Terms 9 and 10, 5th year

Stomatognathic physiology, malfunctions III

Person in School who will explain and show this to the visitors:

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1. An introduction

Stomatognathic physiology and temporomandibular disorders are taught to the students during third, fourth and fifth year. Students are lectured about normal physiology of the masticatory system (0.8 study weeks. Further, they are lectured about various aspects of temporomandibular disorders (TMD (1.8) and examination of the masticatory system is demonstrated individually to students. During the fourth year more specific aspects of TMD is taught. During the fifth year understanding is deepened in TMD (0.4).

2. Primary Aims

The aim is to give theoretical knowledge of the sensory and motor functions of the system and to give skills to understand, diagnose and treat TMD patients.

3. Main objectives

- Normal functions of the masticatory system
- Pathofunction of the masticatory system
- TMD: epidemiology and etiology
- Acute and chronic pain
- Bruxism and other parafunctions
- TMJ diseases
- Functional examination of the masticatory system
- Diagnostics and differential diagnostics of TMD
- Treatment modalities of TMD

4. Hours in the Curriculum

	3rd year	4th year	5th year
Lectures	43	27	8
Independent study	51	35	8
Dental skills lab	10		

5. Method of learning/teaching

Mainly lectures

6. Assessment methods

Skills are tested in three written examinations, one of which is the final examination of Course 4 and Course 5. The clinical skills are assessed continuously and the students had to pass clinical examination in specific tasks related to treatment of TMD.

7. Strengths

Strength of the course is that it is both theoretically and clinically executed in concert with other specialists of the TMD treatment team such as psychologist, oral surgeons and specialist in chronic pain.

8. Weaknesses

Weaknesses of the course are that there is not enough manpower to give more profound understanding of different subgroups of TMD in clinical training.

10. Plans for future changes

The plans in future are to add problem-based learning in TMD teaching.

ENTITY 5 RECONSTRUCTION OF BITE FUNCTION

Section 11.3 Prosthodontics

Terms 5 and 6, 3rd year

Dental materials

Basic course in planning prosthetic treatment

Terms 7 and 8, 4th year

Dental materials

Prosthetic treatment with crowns, bridges and combined prosthesis

Prosthetic treatment with removable partial and whole dentures

Onlays, inlays, laminates

Terms 9 and 10, 5th year

Implantology and praeprosthodontic surgery

Up-date of reconstruction

Person in School who will explain and show this to the visitors:

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1. An introduction

Prosthodontics and oral rehabilitation is taught during the during third, fourth and fifth year. During the third year students are lectured about materials in prosthodontics (1.0 weeks), prosthetic treatment (0.5 w) and they do phantom works related to oral rehabilitation in “clinical skills lab“ (0.3 w or more, if necessary). During the fourth year students are lectured about fixed prosthodontics (1.5 w) and removable prosthodontics (1.0 w). Materials in prosthodontics are further lectured (0.5 w). Again phantom works of oral rehabilitation in “clinical skills lab“ (1.2 w or more, if necessary). They are also lectured about laminates and inlays and onlays (0.5 w) including phantom works of oral rehabilitation in “clinical skills lab“ (0.5 w). During the fifth year students are lectured about implants and pro-prosthetic surgery (0.5 w) and “reconstruction update“ (0.5 w).

2. Primary Aims

The aim is to give students theoretical background for oral rehabilitation regarding materials, technological and clinical aspects and to give skills to apply knowledge independently in clinical practice.

3. Main objectives

- select and use clinically prosthetic materials
- indications and planning of prosthetic treatment
- indications and planning of fixed, removable and implant prosthodontics
- pro-prosthodontics, maintenance and follow-up of treatment results
- complications in prosthodontics

4. Hours in the Curriculum

	3rd year	4th year	5th year	Total
Lectures	30	70	20	120
Independent study	30	70	20	120
Dental skills lab	12	68		80
Total	72	208	40	320

5. Method of learning/teaching

Most of the lectures have been combined with the practical work in the dental skills lab so that students are proceeding simultaneously both in theory and manual skills.

6. Assessment methods

Skills are tested in two written examinations, one of which is the final examination concerning all taught theoretical and clinical education. The clinical skills are practiced first in the “clinical skills lab“ and then applied in treatment of patients. Further, students had to pass both the lab and clinical examination in specific tasks related to prosthodontics.

7. Strengths

Strength of the course is possibility for continuous individual testing of students’ skills in both lab and clinics.

8. Weaknesses

Weaknesses are lack of sufficient number of clinical teachers (specialist) in prosthodontics.

10. Plans for future changes

The plans for future are to add problem-based learning in prosthodontics.

ENTITY 6: INFECTIOUS DISEASES OF THE TOOTH AND PERIODONTIUM

Section 7.2 Microbiology
Section 9.2 Paediatric Dentistry
Section 10 Preventive Dentistry
Section 11.1 Conservative Dentistry
Section 11.2 Endodontics
Section 12 Periodontology
Section 15.1 Integrated (Comprehensive) Patient Care

Terms 5 and 6, 3rd year

Medical microbiology

- Bacteriology and immunology
- Virology

Nutrition and dental diseases

Basic course in periodontology

Basic courses in cariology

Propedeutic course in operative dentistry

Terms 7 and 8, 4th year

Endodontics

Clinical course in periodontology

Clinical course in cariology

Oral ecology

Periodontal surgery

Propedeutic course in operative dentistry

Terms 9 and 10, 5th year

Oral ecology

Concluding course in periodontology and in cariology

Bacteriology and immunology

Person in School who will explain and show this to the visitors:

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1. An introduction

Basic course of medical microbiology comprising bacteriology, mycology, parasitology and immunology. The course partly integrated with that of medical students.

2. Primary Aims

To teach the basics in the disciplines in question

5th term

3. Main objectives

Comprehensive course in medical microbiology

"Attack and defense" is the introductory part of the course to the subjects taught during the third year: pathology, immunology, bacteriology, virology and genetics. It provides basic knowledge in these subjects. The aim is to give student a view of the ability of the human body to defend itself against outside invaders (e.g. microbes) and the means the body has to repair the damages. The main emphasis is on 1) basic immunology, cellular basis of disease inflammation and repair, 2) structure and replication of viruses and the pathogenesis of viral diseases, 3) structure, genetics and virulence of bacteria, 4) genes and disease.

In bacteriology and immunology the main emphasis is on molecular, cellular and pathogenetic aspects, but also diagnostic, therapeutic and epidemiological issues are included. Students will practice basic microbiology technics.

4. Hours in the Curriculum

Lectures	32 h
Small group (lab)	20 h
Independent study	48 h
Total	100 h

5. Method of learning/teaching

Lecturing, laboratory experiments and training of basic bacteriological skills, self-learning and seminars

6. Assessment methods

Written examination combining bacteriology and virology.

7. Strengths

The course is run by experts in the disciplines and it is organized by the dep. of medical microbiology.

8. Weaknesses

Links to oral microbiology could always be improved, although they do exist even today.

9. Innovations and Best Practices

Practical training possibilities are excellent

10. Plans for future changes

More integration with the respective course of medical students

Virology

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Mirja Puolakkainen, Dep. of Virology

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1. An introduction

Virology is taught during 5th term of the curriculum. The course gives students basic knowledge on viruses and viral diseases with special emphasis on dental aspects. Also the prevention and treatment of viral diseases, especially those that transmit during dental procedures and those of general interest, are covered.

2. Primary Aims

To understand the nature of viruses as pathogens

To study viral diseases of importance especially in dentistry as well as their prevention and treatment

3. Main objectives

Knowledge on:

- viruses as pathogens (structure, replication)
- viral diseases (spectrum, epidemiology)
- disinfection of viruses
- laboratory diagnosis of viral diseases
- prevention and treatment of viral diseases

Skills:

- can take into account and minimize/eliminate transmission risks of viral diseases in his/her practice (blood-borne viruses and viral diseases transmitted through saliva)
- can take adequate specimens/have adequate specimens taken for viral diagnosis
- can inform patients about prevention and treatment of viral diseases

4. Hours in the Curriculum

Lectures	18 h
Small groups	10 h
Independent study	24 h
Total	52 h

5. Method of learning/teaching

Methods of teaching include lectures, laboratory work in small groups and discussion/problem solving of dental-virological topics in small groups

6. Assessment methods

Approved lab work.

Written examination coordinated with bacteriology and immunology.

7. Strengths

Laboratory work and discussions in small groups bring students into contact with virologists, when specific topics and questions can be brought up

8. Weaknesses

As for practical reasons, lectures are often combined with those for medical students, the dental aspects can sometimes be hidden.

9. Innovations and Best Practices

PBL-principles (problem based learning) adapted to the teaching

Course on lab techniques, where individual's own serum can be analyzed eg. for the presence of viral antibodies

10. Plans for future changes

More problem-oriented aspects in teaching

Integration with immunology and bacteriology (has been considered)

Nutrition and dental diseases

Person in School who will explain and show this to the visitors:

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1. An introduction

See item 3

5th and 10th term

2. Primary Aims

See item 3

3. Main objectives

- On the 3rd year principles in nutrition based on the preclinical gastro-intestinal tract entity.
- On the 5th year special dietary issues.

4. Hours in the Curriculum

	5th term	10th term
Lectures	15 h	5 h
Independent study	15 h	5 h

5. Method of learning/teaching

Lectures, practical work in basic dental care unit first with one another, then with patients.

6. Assessment methods

Written examination

7. Strengths

Learning goals are set according to proceeding in clinical work

10. Plans for future changes

Basics are studied on the 5th term with dental hygienist students just as the clinical work is also done.

Basic course in cariology

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Kirsti Liede

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1. An introduction

The basic course in cariology includes the theory, research and practical guidelines in the aetiology, prevention and treatment of dental caries. The first two years are the same with medical students and special dental training starts at the third year. The course is held during three terms: first and second term in the 3rd year of the DDS course and first term in the 4th year of the DDS course.

2. Primary Aims

- a) theoretical : to teach the students to understand the aetiology and prevention of dental caries
- b) practical: to teach the students to examine patients, to make treatment plans, to prevent dental caries and to provide appropriate treatment for patients with primary, secondary and advanced caries, and assess treatment results in relation to dental caries.

3. Main objectives are that the students are able to

1. examine patients with carious lesions and make decisions concerning preventive approaches and active treatment
2. make judgment concerning treatment need of previous fillings
3. understand the role of food and systemic medications
4. understand the role of saliva (secretion rate, pH and microbes)
5. plan the course and timing of active treatment
6. plan individual fluoride and additional preventive treatment
7. diagnose, prevent and treat dental erosion
8. assess both professional quality of the treatment and the patient's satisfaction of treatment

4. Hours in the Curriculum

lectures and seminars

third year, first term	40 h
third year, second term	35 h
fourth year, first term	40 h

5. Methods of learning

Traditional lectures about basic theory and student introduced problem based group work projects. For the latter the students are encouraged to introduce topics for problems and then they use books, journals and computer (Medline). At the end of the studies the students write a seminar after going more deeply into a specific problem which often includes some research work.

6. Assessment methods

Pedagogic department assesses education according to assessment forms filled by the students, and the department also gives feedback to the teacher. In the clinic, the students assess their learning together with their clinical teacher: what they have learnt in general, what is their ability to perform a specific treatment, and how they have succeeded with the treatment of a specific patient.

7. Strengths

The Institute of Dentistry in the University of Helsinki has excellent state of art of facilities for clinical teaching. Teachers and students have good interaction with each other and they meet often with each other and discuss and resolve clinical problems together in a seminar. The Finnish success in preventing caries among children by public health oriented approach of dental care gives the students good starting point for understanding, why prevention is the most rational, the most humane, and the most cost-effective way to cope with dental caries.

8. Weaknesses

The timing between paraclinical course and clinical work has not been ideal during the last two years. It has been difficult to co-ordinate theoretical and practical teaching, when lectures are not related to practicals. The teacher-student ratio has been reduced and there are too few teachers because of the financial problems of the university.

9. Innovations and Best Practices

The teaching clinic is based on small groups, generally six to eight students per one teacher. Continuous training possibilities are encouraged in propeudetic laboratory, as well as consultations with dental specialists when appropriate.

10. Plans for future changes

Major changes has been planned in the near future. At the beginning of the year 2000 patient treatment in university dental clinic will end completely. Patients will be treated either in community health care centre or in the central medical hospital. The role of dental students in these new systems is undergoing detailed planning at the present times.

Propedeutic course in operative dentistry

Person in School who will explain and show this to the visitors:

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1. Propedeutic course in cariology includes both theory and practical training in the treatment of dental caries. The first two years are the same with medical students and propedeutic training starts at the third year. The course is held during three terms: first and second term in the 3rd year of the DDS course and first term in the 4th year of the DDS course.

2. Primary aims are that the students are familiar with and capable of performing all possible operations needed in preventive and/or active caries treatment.

3. Main objectives are that the students are able to

1. diagnose dental caries
2. use proper instruments
3. seal tooth fissures
4. prepare tooth cavities
5. treat both initial and advanced caries lesions
6. handle different filling materials
7. use posts
8. use different matrix techniques

4. Hours in the curriculum

third year, first term:	50 h
third year, second term:	50 h
fourth year, first term:	5 h

5. Methods of learning

Short lectures concerning topics of the day (theory, materials and practice). Then the students work with phantom heads, and a clinical instructor comes to the student -on the spot- and learns the right way of doing.

6. Assessment methods

Pedagogic department assesses education according to assessment forms filled by the students, and the department also gives feedback to the teacher. In addition, the students assess each other's learning anonymously in a numeric form, and they also make self assessment in forms of making a drawing of the AMA angles etc. In this, we have also found the stereo microscope very useful. Especially, looking at the cross sectioned roots after obturation to reveal voids, areas filled only with sealer etc. has stimulated many students to better performance.

7. Strengths

Instead of having the course in the conventional way as preclinical, the substance is divided into smaller entities alternating with the actual clinical (patient) work. The purpose is that immediately having passed the practicals in Class I cavity preparation, the students could perform this procedure to a real patient. This helps to keep the motivation high and, on the other hand, gives the student more realistic view of the field of operative dentistry, involving not only the mechanistic approach but also the biology and clinical picture of dental caries.

8. Weaknesses

The high number of students (10-13) per one clinical instructor has been a constant problem throughout the years at the University of Helsinki. Also the physical equipment is restricting the proper conduction of a modern simulation teaching. The installation of the phantom heads does not allow an ergonomic working position to demonstrate the 4-handed dentistry. This leads to a situation, where unergonomic working positions are adopted. Fortunately, the detrimental effect of this can be diminished, if the ergonomic aspects are sufficiently emphasized during the clinical periods.

9. Innovations and Best Practices

The general rule, that the instructor comes to the student - on the spot - helps to assess the right way of doing from the very beginning, not only the end result of each procedure, as it used to be in the conventional approach. Also, the students learn to work confidentially in spite of the fact that the teacher is watching, which is important in the future to improve the skills and to compare the methods.

The general idea, that the simulation work performed has no value as such, it is the learning process that counts. In practical terms this means, that after having the particular work assessed and accepted by the instructor, they don't have to keep it as a trophy (like we used to do!), but they can chop it down and start to scrutinize the cross-sections etc.

The use of extracted human teeth as much as possible. To start the course by only excavating the caries and replacing the missing structure with IRM, before having any access to the cavity outline forms, which are still considered important, but should not too much restrict the way of thinking. Also, to be able to test self the prerequisites of bonding in various situations and various materials. On the other hand, filling of the Class II cavity is not practised on an extracted tooth loose in hand, as the placing of the matrix is not feasible.

10. Plans for future changes

To divide the students in two groups to be able to keep the student-teacher ratio more favorable. Also to imply new technology, specially intra oral camera in the teaching. By filing the works of an individual student, it is easy to monitor the progress. This also gives an marvelous tool to be used both in self assessment and in the peer review.

Endodontics

Person in School who will explain and show this to the visitors:

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1. An introduction. Clinical endodontics, 7th term

2. Primary Aims

Aims are:

- to give a biological basis for treatment of pulpal and periapical pathological processes
- to give a theoretical background of clinical procedures in endodontics

10 main objectives

- Pathogenesis of pulpitis and apical periodontitis
- Clinical examination and diagnosis
- Differential diagnosis
- Pulpal and periapical pain
- Treatment of vital and nonvital tooth
- Resorptions
- Endodontic emergency treatment
- Root canal medicaments, irrigation and systemic medication
- Complications

4. Hours in the Curriculum

Lectures 10, small groups 12, independent study 10. Included in Propedeutic course in operative dentistry 60 hours of skills lab on terms 6-8, demonstrations 2.

5. Method of learning/teaching

Lectures and problem based assignments (groupwork). Video/live demonstrations of aseptics, basic endodontic procedures, radiology in endodontics, endodontic bacterial sample. Also, a straight e-mail connection was established between the students and the teacher: Students were supposed to formulate their group works using word processing on computer and finally also distribute the results via e-mail to the teacher and class mates.

6. Assessment methods

A preliminary course in endodontic practicals in operative dentistry required. Students were required to keep a logbook about their learning processes and progress.

7. Strengths

The students were encouraged to look at the original publications, thus practising essence of the evidence based dentistry. The themes for the group works were chosen among the latest items, thus the making the use of textbooks only not sufficient.

8. Weaknesses

Due to the practical difficulties in the time table, the assistance at the computer class (to guide into the use of Medline, Excel, Word, and e-mail) was not always available when the students actually had their scheduled session, thus leading to frustration. As periapical pathosis would be perfect subject to teach the connection and relationship between the basic biological mechanisms (pathology, microbiology) and clinical root canal treatment procedures (endodontics) this course should be scheduled longer (more stuffy hours) and perhaps the name changed to endodontology (though no difference in the Finnish language!) At the present background knowledge may be too much emphasised on the cost of the practical, clinical 'way-of-doing'.

9. Innovations and Best Practices

E-mail connection: enabled the student to speak out questions and to get an accurate answer without having the fear to be mobbed by the fellow students or by the teacher publicly. Thus, many basic questions got clarification as 'stupid' questions were not withheld

10. Plans for future changes

Finnish textbook, Haapasalo: Käytännön endodontia, will be used as additional textbook.

Oral Biology and Periodontics

Person in School who will explain and show this to the visitors:

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These course descriptions of Oral Biology and Periodontics include the following topics:

- Basic course in periodontology
- Clinical course in periodontology
- Oral ecology

Concluding course in periodontology and in cariology

1. An introduction

Periodontal disorders are taught to the students during third, fourth and fifth year. Students are lectured about oral and periodontal structures and physiology for 0.8. study weeks. Further, they are lectured about various aspects of periodontal and peri-implant disorders (1.8.) and their clinical diagnosis. Treatment methods and modalities are taught and demonstrated individually to students. Students will follow the treatment of severe cases of periodontitis in collaboration with clinical-specialist-program students. During the fourth year more specific aspects of periodontal diseases and peri-implantitis are taught. During the fifth year understanding is deepened in periodontics, oral biology, oral microbiology and implantology (0.4.). During Course 5 students in small groups (3-5) participate in self-learning problem-based seminar-program addressing recent molecular and clinical progressive topics in oral biology, periodontics and implantology (0.8.) often guided by international experts in the field.

2. Primary Aims

The aim is to give theoretical knowledge of the oral biology and periodontics and to give clinical skills to understand, diagnose and treat periodontal and peri-implant diseases.

3. Main objectives

- Normal structure and function of periodontium
- Pathogenesis of the periodontal diseases
- Periodontitis associated and risk factors to general health
- Infectious etiopathogenesis of periodontal diseases
- Epidemiology and etiology periodontal diseases
- Diagnostics and differential diagnostics of periodontitis and peri-implantitis
- Oral biology, oral microbiology and implantology
- Treatment modalities of periodontal diseases and peri-implantitis

4. Hours in the Curriculum

	3rd year	4th year	5th year	Total
Lectures	38	32	12	82
Independent study	58	32	40	130
Dental skills lab	20			20
Small group			28	28
Total	116	64	80	260

5. Method of learning/teaching

Lecture-teaching, chair-side instructions, self-learning, problem-based single- and small team/groups-working

6. Assessment methods

Skills are tested in three - four written examinations, one of which is the final examination of Course 4 and Course 5. The clinical skills are assessed continuously and the students had to pass clinical examination in specific tasks related to treatment of periodontal diseases.

7. Strengths

Strength of the course is that it is both theoretically and clinically executed in concert with other domestic and international specialists of the clinical dentistry team.

8. Weaknesses

Weaknesses of the course are that there is not enough manpower to give more profound understanding of different subgroups in clinical training.

10. Plans for future changes

The plans in future are to add problem-based learning in teaching in periodontal diseases.

Periodontal surgery

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Kimmo Suomalainen

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fax: + 358-9-1912 7286

1. An introduction

Periodontal surgery on the 8th term

2. Primary Aims

After completion of the course the student is informed of the indications and possibilities of periodontal surgery and can perform simple periodontal surgical procedures.

3. Main objectives

- Matters discussed during the course include
- Indications, instruments, periodontal dressings / surgical packs
- Curetage, gingivectomy, flap-operations
- Treatment of furcation lesions
- Mucogingival surgery,
- Osseosurgery: osseoplasty and grafts
- Guided tissue regeneration
- Maintenance care

4. Hours in the Curriculum

Lectures	5 h
Small groups	8 h
Independent study	15 h
Total	28 h

5. Method of learning/teaching

The students are encouraged to familiarize themselves with the subject in advance by organizing a propedeutic exam. The study sessions are initiated by an introductory lecture or by a short presentation of a relevant clinical case. Demonstration of procedures is done also by videorecordings. The students are encouraged to use resources on the World Wide Web (f. ex. derweb). Before treatment of patients simulated practical hands-on-training of gingivectomy and flap operation is done using pig jaws.

6. Assessment methods

Written examination before the course and clinical skills assignments.
Theoretical test as a part of the final exam in periodontology.

7. Strengths

Simulation model training.

8. Weaknesses

Poor model for simulated training (proper models are expensive).

9. Innovations and Best Practices

Alternative practices in (propedeutic) exams.

The students assist their fellow students in at least two periodontal surgical operations before they are entitled to perform one themselves.

Resources on the World Wide Web

10. Plans for future changes

Integration of the clinical training to the municipal health care system is bound to increase the importance of simulated training on models.

Paediatric and preventive dentistry

Sections 9.2 and 10

Person in School who will explain and show this to the visitors:

Prof. Satu Alaluusua

E-mail: satu.alaluusua@helsinki.fi

Fax: 358919127266

1. An introduction

Paediatric and preventive dentistry is taught the students during second, third, fourth and fifth year. During the second year, the introduction (1.5 study weeks) to preventive measures and the first clinical experience are given. During the third (0.5) and fourth years (0.75) the students have lectures on paediatric and preventive dentistry. The clinical training is about 50 hours/year. During the courses, the students treat children who have been selected for the based on their need for treatment. In addition to treating ordinary children the students have one day rotations in the Children's Hospital, Dental Clinic and in the general anaesthesia unit.

2. Primary Aims

Primary aim is to prepare the student for working as a pediatric general practitioner in the Public Dental Service, which includes planning and performing preventive as well as therapeutic dental care for all children aged 0-16.

3. Main objectives to be covered:

- prevention
- behaviour management
- oral diagnosis and treatment planning
- pulp therapy
- restoration of primary and young permanent teeth
- pain control
- oro-facial trauma
- medically compromised children

4. Hours in the Curriculum

Each student has 50 hours of clinical training a year. Each treatment session contains a short seminar concerning the problem of the patients to be treated. The clinical training takes place in small groups of approximately 5 students/one teacher. The students do preventive measures, restorative treatment, trauma treatment and extractions and they also screen patients together with their clinical instructor. As mentioned, they also follow treatment in the Children's Hospital, Dental Clinic and in a unit of general anaesthesia, where they sometimes extract or make fillings themselves. The lectures cover the subjects listed in main objectives. In addition, the students get phantom training in trauma treatment and in endodontic treatment of primary teeth.

5. Method of learning/teaching

The skills of the student are tested in two written examinations, one of them being the final examination. The clinical skills are assessed continuously and the students have to pass clinical examination in specified procedures.

6. Assessment methods

Strength of the course is that the training is well organized and we have very good teachers in paediatric dentistry. The attitudes of the patients, parents and the students are also very good towards paediatric dentistry. We have the responsibility of the dental care of medically compromised children in the Hospital for Children and Adolescents. Children, who need dental treatment under general anaesthesia are sent to the Children's Hospital and to the University Dental Clinic. This gives us very wide and interesting patient material.

7. Strengths

8. Weaknesses

Weaknesses are that the number of hours devoted to clinical training is low. As the number of hours is low, the selection of patients treated by the student is limited. However in clinical seminars the students become acquainted with dental problems and treatment planning of a bigger child group.

9. Innovations and Best Practices

The plan in the future is to add more problem based learning in the curriculum.

ENTITY 7 TRAUMATOLOGY AND DISEASES OF SOFT AND HARD TISSUES

Section 8.3 Anaesthesiology

Section 13.1 Oral Surgery

Terms 5 and 6, 3rd year

Basic course in oral and maxillofacial surgery

Anaesthesia

Terms 7 and 8, 4th year

Anaesthesia (Pain control in paediatric dentistry)

Basic course in oral and maxillofacial surgery

Cysts, tumours, bone diseases

Salivary gland diseases

Terms 9 and 10, 5th year

Oral and maxillofacial surgery (concluding course)

Basic course in oral and maxillofacial surgery

Person in School who will explain and show this to the visitors:

Name: Prof Christian Lindqvist

E-mail: christian.lindqvist@helsinki.fi

fax: 09-19127 265

1. An introduction

1. The basic course in oral and maxillofacial surgery deals with dentoalveolar surgery and trauma 6th term

2. Primary Aims

The primary aims are to teach basics about surgical procedures that in involve teeth and supporting structures, associated with the oral cavity, including pathology, infection and trauma. Also facial bone traumatology is dealt with.

3. Main objectives

During the course students are taught the management of:

- erupted, unerupted and impacted teeth including autotransplantation
- periradicular pathology
- odontogenic infections including indications for referral to hospital, complications, post-operative care
- dental and dentoalveolar trauma including detailed information about fractured teeth, luxated teeth, alveolar process injuries
- maxillofacial trauma including basics about upper airway obstruction, mandibular injuries, condyle dislocation, maxillary injuries, zygomatic injuries, orbital injuries, nasal injuries, NOE complex injuries, frontal bone injuries, oral and perioral soft tissue injuries

4. Hours in the Curriculum

	3rd year	4th year
Lectures	16 h	27 h
Small groups	8 h	14 h
Independent study	16 h	23 h
Total	40 h	64 h

5. Method of learning/teaching

- lectures
- small group teaching
- hands on (i.e. arch bars on models)
- assisting in operations
- emergency room service

6. Assessment methods

Written examination at the end of course. Students will be evaluated before admittance into clinical work.

7. Strengths

- versatile teaching possibilities
- excellent facilities for laboratory training
- possibility to take part in various clinical activity

8. Weaknesses

- inadequate number of teachers to allow students' own clinical activity
- considerable distances, dental school, trauma center, maxillofacial surgery department
- lack of coordination

9. Innovations and Best Practices

- Regarding traumatology and acute dental emergencies (infection, postoperative bleeding) students are on call at the major trauma center of HUCH
- Regarding traumatology and acute dental infections students will be on call at the Trauma Center, Helsinki University Central Hospital.

10. Plans for future changes

- coordination of teaching with maxillofacial surgery department of HUCH
- all courses in surgery should be concentrated to one period during which the student has the possibility to focus on the therapy and practice of basic oral and maxillofacial surgery only.

Anaesthesia

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Pekka Ylipaavalniemi

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fax: +358-9-19127265

1. An introduction

The aim of the course is to teach the students general aspects of use of general anaesthesia in dentistry and to give detailed instruction in techniques used for local anaesthesia in the orofacial region.

5th and 6th terms before clinical work

2. Primary Aims

See item 1

3. Main objectives

- the indication and contraindications for local anaesthesia
- the technics used to make local anaesthesia in orofacial region
- to diagnose and handle the local complications related to local anaesthesia
- to diagnose and handle the general complications related to local anaesthesia.
- the general aspect of sedation techniques used in dentistry
- the give knowledge of indications of the use of general anaesthesia in dentistry

4. Hours in the Curriculum

Lectures	10 h
Small groups	2 h
Independent study	12 h
Total	24 h

5. Method of learning/teaching

After the lectures the students make local anaesthesia to each others before clinical work

6. Assessment methods

Written examination at the end of the course. Students are evaluated before they begin their clinical work.

7. Strengths

Students get ability to make local anaesthesia.

8. Weaknesses

The time is limited to give knowledge of only general principles of sedation techniques in dentistry.

9. Innovations and Best Practices

Except ability to handle local anaesthetic techniques students learn the principle of pre-emptic pain handling.

10. Plans for future changes

The course is based on long history and the methods used during teaching seem to work so there are no plans for radical changes.

Anaesthesia (Pain control in paediatric dentistry)

Person in School who will explain and show this to the visitors:

Name: Prof. Satu Alaluusua

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fax:0919127266

1. An introduction

The course contains lectures on practice management, pain control in paediatric dentistry, use of premedication in children and basics for the use of nitrous oxide sedation and general anaesthesia in the dental treatment of children

7th term

2. Primary Aims

Prepare the candidate for working with the difficult child patients.

3. Main objectives

After the course the candidate should be competent with the techniques of managing difficult child patients by using the techniques of tell show do and desensitization. The candidate should be familiar with the use of premedication and have knowledge of the psychology of dentistry as it applies to the treatment of children

4. Hours in the Curriculum

Lectures	6 h
Independent study	6 h
Total	12 h

Estimated hours spent treating children is 50 hours/year

5. Method of learning/teaching

Lecture course with several videos. Each student follows a treatment of the patient in general anaesthesia and may have an opportunity to do parts of the treatment

6. Assessment methods

Written examination at the end of the course.

7. Strengths

We have enough children to be treated and possibilities for the students to follow treatment also in Children's hospital. We can select patients who are suitable for the students. There is a positive attitude of children, parents, students and the staff of paediatric dentistry in the Institute.

8. Weaknesses

Theoretical training does not always follow the clinical training.

9. Innovations and Best Practices

The clinical hours in paediatric dentistry should be increased

10. Plans for future changes

The aim in the training of paediatric dentistry is to prepare the candidate for working as a paediatric general practitioner in the Public Dental Service, which includes planning and performing preventive as well as therapeutical dental care for all children aged 0-16 years in an area. Since the number of clinical hours devoted to paediatric dentistry is small the plan is to increase the number of hours and to see that the hours devoted are as effective as possible.

Cysts, tumours, bone diseases, orthognathic surgery, TMJ-surgery

Person in School who will explain and show this to the visitors:

Name: Prof Christian Lindqvist

E-mail: christian.lindqvist@helsinki.fi

fax: 09-19127 265

1. An introduction

To provide the student with the essential knowledge of cysts, tumours, bone diseases of oral regions and jaws including their treatment.

7th term

2. Primary Aims

The course deals with orthognathic surgery, TMJ-diseases, odontogenic and non-odontogenic cysts, odontogenic, osteogenic and oral soft tissue tumours and malignant tumours of the oral cavity and jaws.

Students are taught to diagnose the above-mentioned conditions and diseases and basic information about treatment methods are given.

3. Main objectives

- Radiology and pathology:
- the right diagnosis is the basis of correct treatment modalities.
- the right diagnosis can be reached by careful clinical, radiological and histopathological examination.
- classification and incidence of cysts of the jaws.
- cysts of the soft tissues.
- odontogenic tumours
- other than odontogenic tumours (benign and malignant).
- essential bone diseases for dentist
- the radiological examination methods and diagnostics of cysts, tumours and bone diseases.
- surgical treatment of benign and malignant tumours including reconstructions.
- essentials of orthognatic surgery.

Surgery:

Surgical correction of maxillofacial skeletal deformities

- mandibular asymmetry
- maxillary hypoplasia
- apertognathia

TMJ-disease

- masticatory muscle disorders
- internal derangement
- DJD
- rheumatoid arthritis
- mandibular dislocation
- ankylosis and restricted jaw motion
- condylar hyperplasia and hypoplasia
- tumors

Diagnosis and management of pathological conditions

- cysts of soft tissue and bone
- benign and malignant tumors of bone
- benign and malignant soft tissue tumors
- methabolic and dystrophic diseases of bone
- osteomyelitis and osteradionecrosis
- mucosal diseases
- reconstructive surgery

4. Hours in the Curriculum

Lectures and small groups	34 h
Independent study	34 h
Total	68 h

5. Method of learning/teaching

Integration in between Oral and Maxillofacial Surgery, Oral Radiology and Oral Pathology

6. Assessment methods

Written examination after the lectures.

7. Strengths

Integration of teaching allows each specialist to focus on radiological diagnosis, histopathological diagnosis and clinical diagnosis including therapy with respect to pathologic conditions.

The lectures where the radiologist and pathologist both are available at the same time have been very successful.

8. Weaknesses

Radiology and pathology:

The course is too short to provide even the minimum of this important field to the future dentist.

Surgery:

Lack of coordination between departments in teaching about skeletal deformities and TMJ diseases.

9. Innovations and Best Practices

Radiology and pathology:

- The dentist is responsible for right diagnosis of the oral diseases .
- The importance of biopsy cannot be underestimated
- The dentist is responsible for the treatment of oral diseases.

Surgery:

Students can take part in the clinical practice at the hospital which will:

- facilitate understanding of the combined orthodontic-orthognathic treatment
- make it possible for the teachers to give comprehensive information about oral cancer
- allow following of multidisciplinary management of the patient with facial pain/dysfunction.

10. Plans for future changes

Radiology and pathology:

- clinicopathological seminars of interesting patient cases might be interesting.

Surgery:

- The therapy of the surgical diseases and disorders dealt with during this course is in the hands of oral and maxillofacial surgeons. The diagnosis, referral, adjunctive therapy and in part follow-up is the responsibility for the general practitioner.

Teaching should be concentrated to the specialist care unit where the students can follow the work of surgeons, orthodontists, prosthodontists and other specialists in clinical dentistry. This course should be given during a period when the student has the opportunity to focus on the theory and practice of specialist level oral and maxillofacial surgery only.

Salivary gland diseases

Person in School who will explain and show this to the visitors:

Name: Prof Christian Lindqvist

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fax: 09-19127 265

1. An introduction

The purpose of this course is to give information to the pregraduate student about the occurrence, symptoms, clinical findings, diagnosis, therapy and other factors associated with different salivary gland diseases. The radiological aspects are covered by the maxillofacial radiologist, histopathology by the oral pathologist and the treatment, including surgical and non-surgical therapy, by the oral and maxillofacial surgeons. Special attention is focused on the dentist's capability to diagnose and treat different surgical diseases and the proper referral channels for further diagnostic and therapeutic measures in the Finnish health care system.
8th term

2. Primary Aims

The course deals with different salivary gland diseases. Students are taught to diagnose these conditions and diseases and basic information about their treatment methods are also given.

3. Main objectives

- basic anatomy and physiology
- surgical pathology
- clinical examination
- infections and chronic sialopathy
- principles and complications of surgical treatment
- obstructive and traumatic lesions.
- the classification of salivary gland tumours
- Sjögren's syndrome and dentist
- radiological diagnostics of various salivary gland diseases.
- treatment of salivary gland diseases including surgery of salivary gland cysts and tumours.

4. Hours in the Curriculum

Lectures	7 h
Independent study	5 h
Total	12 h

5. Method of learning/teaching

Integration in between Oral and Maxillofacial Surgery, Oral Radiology and Oral Pathology.

Students take part in imaging procedures, patient examination, surgery and microscopy of samples

6. Assessment methods

Written examination after the lectures and practicals.

7. Strengths

The combined teaching (surgeon, pathologist; radiologist) makes it possible for each specialist to elucidate one part of the whole entity. Pathology and radiology is partially taught together.

8. Weaknesses

Common obstructive disorders, infections and tumors are rarely seen at the Dental school. The students must come to the hospital to see several patient categories, which in certain instances is not easy in practice as the distance dental school - hospital is significant. Other radiologic examinations than native and sialographies are also not performed at the Dental school.

The course is too short.

9. Innovations and Best Practices

- The biopsy is essential for right diagnosis of salivary gland disease.
- The histopathological differential diagnosis between benign and malignant salivary gland tumour may cause difficulties.
- The integrated teaching model should be further developed
- Outpatient clinic for only salivary gland diseases would facilitate teaching
- Cooperation with oral medicine concerning problems associated with xerostomia and different diseases and medications resulting in hyposalivation. The topic "treatment of dryness of the mouth" should be addressed
- Cooperation with Dept. and teachers of radiation therapy to produce a program for dental students concerning the effects of radiation and other cancer therapy on the oral cavity and jaws

10. Plans for future changes

Seminar on interesting clinicopathological problem cases.

As a large part of patients with salivary gland disorders will be integrated in the health care system on the specialist level it is essential that students will be introduced with both in- and outpatients on different Clinics of the University hospital. Patients with salivary gland diseases will be treated among others at the Departments for internal medicine, radiotherapy, maxillofacial surgery and ENT. A combined program should be developed for both dental and medical students in order to cover all aspects of salivary gland disease.

Oral and maxillofacial surgery (concluding course)

Person in School who will explain and show this to the visitors:

Name: Prof Christian Lindqvist

E-mail: christian.lindqvist@helsinki.fi

fax: 09-19127 265

1. An introduction

The primary aim to this course is to repeat the basics of oral and maxillofacial surgery from the fundamentals of surgery to complex problems of the speciality. 9 th term

2. Primary Aims

See item 1.

3. Main objectives

- patient assessment
- anesthesia in outpatient facilities
- dentoalveolar surgery
- implant surgery, preprosthetic surgery
- surgical correction of maxillofacial skeletal deformities
- trauma surgery
- TMJ-surgery
- diagnosis and management of pathologic conditions
- reconstructive surgery
- complications

Special emphasis is put on the division of tasks and responsibilities for the general practitioner and specialist. Information is given about the health care system and proper routes of referral.

4. Hours in the Curriculum

Lectures	4 h
Independent study	4 h
Total	8 h

5. Method of learning/teaching

Lectures, demonstrations, discussions

6. Assessment methods

In written form as a part of the final examination in Oral and Maxillofacial Surgery

7. Strengths

Possibility to repeat the whole curriculum and to discuss unclear items

8. Weaknesses

Limited amount of hours

10. Plans for future changes

Individual discussions with each student about the comprehensive program in oral and maxillofacial surgery.

ENTITY 8 ORAL MEDICINE

Section 5.3 Genetics
Section 7.3 General Pathology
Section 8.1 General Medicine
Section 8.2 General Surgery
Section 14.1 Oral Medicine
Section 15.2 Dental Emergencies

Terms 5 and 6, 3rd year

Internal med. I and II, risk patient's dental treatment
Emergency first aid and first care
General and organ pathology
Clinical chemistry
General surgery

Terms 7 and 8, 4th year

Paediatric and preventive dentistry
Oral medicine
Skin diseases
Eye diseases
Ear, nose and throat diseases
Salivary glands' functional disorders

Terms 9 and 10, 5th year

Psychiatry
Chronic pain
Neurology
Concluding course in psychosomatics
Dental infections effect on general health
Genetics
Medication
Cancer treatments' oral complications
Emergency first aid and first care

Emergency first aid and first care

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax: +358-9-19127265

1. An introduction

5th and 10th terms

2. Primary Aims

After the course students are able to give alone immediate first aid and work in a first aid team.

3. Main objectives

- Patient´s examination in acute situation; estimate the level of consciousness, circulation and respiration
- Immediate first aid in respiratory difficulties, in chest pain, in arrhythmias
- Cardiopulmonary resuscitation (CPR)
- Hypoglycemic reaction in diabetics
- Anaphylactic reaction

4. Hours in the Curriculum

	5th term	10th term
Lectures	12 h	2 h
Group work	2 h	6 h
Independent study	10 h	4 h
Total		36 h

5. Method of learning/teaching

Lectures in close relation to practical training.

6. Assessment methods

Written examination and approved clinical practice

7. Strengths

Teachers are experienced first aid medical personnel.

9. Innovations and Best Practices

First part on the 5th term prior to starting clinical work and the latter part of the course in the end of the studies.

General and organ pathology

Person in School who will explain and show this to the visitors:

Name: Prof. Jarkko Hietanen

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fax:+358-9-19127

1. An introduction

The combined course of general and organ pathology gives to the student the basics of pathology, so that the student can understand the etiology and symptoms.

5th term

2. Primary Aims

- to provide an account of the fundamental processes of pathology in relationship to medical and dental practice.
- so that the student understands the causes, symptoms, diagnostics and pathogenesis of various common diseases.

3. Main objectives

3 a. Main objectives of general pathology

- an introduction to pathology.
- cell and tissue response to injury
- the inflammatory reaction and healing process.
- haemodynamic processes
- thrombosis and embolism.
- tumours: introduction and classification.
- carcinogenesis and metastatic process.
- some aspects of immunopathology.

3 b. Main objectives of organ pathology.

- diseases of oral cavity and esophagus.
- pancreatitis and inflammatory diseases of bowels.
- liver diseases.
- diseases of parathyroid glands
- diseases of thyroid glands.
- the classification of leukemias and lymphomas.

4. Hours in the Curriculum

Lectures	24 h
Group work	4 h
Independent study	24 h
Total	52 h

5. Method of learning/teaching

- mainly lectures
- one demonstration of autopsy

6. Assessment methods

- written examination.

7. Strengths

- the students have just passed their preclinical studies and therefore have good basic knowledge of the function of the human body.

8. Weaknesses

- the course is too short.
- at this early stage (5th term) the students do not know well various common general and oral diseases. Also the terminology of pathology seems to cause difficulties.

9. Innovations and Best Practices

- same pathological processes operate in oral tissues, teeth and elsewhere in the human body.

10. Plans for future changes

- the course of general and organ pathology is too short, eg. 14 hours lectures of general pathology cannot provide the dental student with the essentials of pathology.

Clinical chemistry

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

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1. An introduction

The course gives student abilities to use proper clinical chemistry laboratory methods that are relevant in dental work.

6th term

2. Primary Aims

Student should be able to order right laboratory tests, interpret their results and understand clinical significance.

3. Main objectives

- Clinical enzymology in diagnostics
- Most common laboratory hematology
- Most common urinary examinations and their use in diagnostics
- Liver function, lipid metabolism, endocrinological diseases, GI-tract disorders and calcium metabolism
- Anticoagulant treatment's follow-up

4. Hours in the Curriculum

Lectures	18 h
Group work	2 h
Independent study	32 h
Total	52 h

5. Method of learning/teaching

Lectures

6. Assessment methods

Written examination

7. Strengths

Lecturers from medical specialty.

8. Weaknesses

Integration with dental teachers weak.

10. Plans for future changes

Closer co-operation in between medical and dental fields.

General surgery

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

6th term

2. Primary Aims

To give students general view of surgical pathophysiology and how surgical procedure changes organ's normal function so that after the healing process desired functional result is achieved.

3. Main objectives

- Most common surgically treatable diseases
- Relevant examination methods
- Activities in an operating-room
- Surgical sterility

4. Hours in the Curriculum

Lectures	10 h
Group work	4 h
Independent study	10 h
Total	24 h

5. Method of learning/teaching

Lectures, demonstration in operating-room

6. Assessment methods

Written examination and demonstration

7. Strengths

Teacher is experienced surgeon from Helsinki University Central Hospital.
Demonstration is also on his ward

Paediatrics

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

Initiate students into childrens' normal development and their health services. Give basic knowledge of pediatric diseases and developmental disorders.

7th term

2. Primary Aims

See item 1.

3. Main objectives

- Childrens' health services
- Growth and development
- Pediatrics today
- Dealing with a child as a patient
- Taking the most common pediatric diseases into account in a dental office
- Pharmacology and toxications
- Pediatric hematology and oncology
- Chronically ill/disabled child
- Acute situations

4. Hours in the Curriculum

Lectures	14 h
Independent study	14 h
Total	28 h

5. Method of learning/teaching

Lectures

6. Assessment methods

Written examination

7. Strengths

Senior lecturer from childrens' hospital

Oral medicine

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

The course is to provide the 4-years students with sufficient knowledge to understand the interaction between oral and general health.

7th term

2. Primary Aims

The crucial aims are to teach the students

- 1.to be capable of diagnosing and treating oral symptoms caused by general diseases and
- 2.to understand the causal relation of oral diseases on general health.

3. Main objectives

The clinical part:

- infectious diseases
- local lesions
- symptoms of general diseases;dermatologic diseases,connective tissue diseases
- immune deficiencies etc.
- drug related lesions
- vitamine deficiencies
- tongue abnormalities etc.

The oral pathological part.

- the histopathology of premalignant lesions,ca in situ and ca.
- the definition of dysplasia
- the histopathology of lesions most commonly seen on the oral mucosa.

4. Hours in the Curriculum

Lectures	12 h
Small groups	10 h
Independent study	22 h
Total	44 h

5. Method of learning/teaching

The clinical part is taught by lectures, studies in small groups and by treating patients during study years 3 to 5. The histopathology is taught by a microscopic course for the 4-years students

6. Assessment methods

Written examination.

7. Strengths

The interaction between the clinician and pathologist in all instances of teaching.

8. Weaknesses

The lack of patients with a manifold types of diseases to be introduced to and treated by the students.

9. Innovations and Best Practices

The students should 1.get sufficient understanding in the human body as an entity with interaction between all tissues 2.be taught to understand their responsibility in diagnosing whatever symptoms and/or lesions in the oral tissues. The necessity of biopsies should be emphasized.

10. Plans for future changes

For last year students seminars on the most common problems should be arranged by representatives of all different specialists in the field.

Dermatology

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

The objective is to give students general practioner´s essential knowledge for the inspection, diagnostics and treatment of regular dermatological diseases.

8th term

2. Primary Aims

See item 1.

3. Main objectives

- Skin´s structure and function
- Regular dermatological diseases.
- Hypersensitive reactions on skin
- Dermatological diseases with oral manifestations

4. Hours in the Curriculum

Lectures	8 h
Small groups	2 h
Independent study	10 h
Total	20 h

5. Method of learning/teaching

Teaching is organized to take place in two successive days in the hospital for dermatological diseases and allergies.

6. Assessment methods

Written examination as a part of the final examination in oral medicine

7. Strengths

Real patients can be observed on lectures.

Ophthalmology

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

The course introduces most common ophthalmologic diseases, traumas, eye protection and trauma first aid.

8th term

2. Primary Aims

Students should be familiar with oral diseases and their connections with ophthalmology and identify illnesses that cause alterations both in eyes and oral cavity.

3. Main objectives

- Eye's anatomy and physiology
- External examination of the eye
- Inflammatory oral focuses from ophthalmologic point of view
- Combinations of symptoms causing alterations both in eyes and oral cavity.
- Eyeprotection in dental office
- Traumas' immediate first aid

4. Hours in the Curriculum

Lectures	10 h
Independent study	10 h
Total	20 h

5. Method of learning/teaching

Lectures

6. Assessment methods

Written examination

Ear, nose and throat diseases

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

The course gives students basic knowledge of ear, nose and throat anatomy and physiology and initiates them into etiology, pathophysiology and symptomatology, as well as the examination and treatment of otorhinolaryngological diseases.

8th term

2. Primary Aims

See item 1

3. Main objectives

- Diseases of throat and neck
- Diseases of nose and sinuses
- External, middle and internal ear diseases
- Obstructions in airways
- Rehabilitation of hearing and avoiding traumas.

4. Hours in the Curriculum

Lectures	14 h
Group work	4 h
Independent study	22 h
Total	40 h

5. Method of learning/teaching

Lectures, patient check-ups in admissions.

6. Assessment methods

Written examination and group work

7. Strengths

Same course is medical students' propedeutic course of this topic.

9. Innovations and Best Practices

Also dental students take apart to patient check-ups

Effect of dental infections on general health

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax: +358-9-19127286

1. An introduction

This course outlines dental infections as triggers or causative factors for general diseases focussing particularly on medically compromised patients.

10th term

2. Primary Aims

- a) Causal relation between oral and general health
- b) Dental treatment of medically compromised patients

3. Main objectives

See item 2

4. Hours in the Curriculum

Lectures	4 h
Independent study	4 h
Total	8 h

5. Method of learning/teaching

Traditional lecturing, seminar-type teaching and case report discussions. Clinical work with medically compromised patients.

6. Assessment methods

Part of final examination in oral medicine

7. Strengths

The important field is now finally emphasized in the curriculum.
Increasingly important topic in the "greying society"

8. Weaknesses

Time allocated is too short, the course should be extended.

9. Innovations and Best Practices

Application of interactive teaching methods in discussing case reports has shown highly efficient and is much liked by the students. Though, still more important is handling these patients personally in the clinic to avoid a quite theoretical approach to the problems.

10. Plans for future changes

More time needed for this topic. The change in clinic administration from the year 2000 which means better cooperation with the university central hospital will much improve the facilities for this area.

Special topics in medication

Person in School who will explain and show this to the visitors:

Name: Prof. Maria Malmström

E-mail: maria.malmstrom@helsinki.fi

fax:358-9-19127286

1. An introduction

The course emphasizes the most important aspects of clinical pharmacology in dentistry
10th term

2. Primary Aims

See item 1

3. Main objectives

- Difficulties in antimicrobial medication
- Treating pain, especially inflammatory pain
- Choosing local anesthetics
- Avoiding nausea
- Medication during pregnancy
- Directions by authority

4. Hours in the Curriculum

Lectures	10 h
Independent study	10 h
Total	20 h

5. Method of learning/teaching

Specialist key note lectures.

6. Assessment methods

Written examination as a part of the final examination in oral medicine

7. Strengths

Timing of the course.

ENTITY 9 ORAL PUBLIC HEALTH

Section 10 Oral Public Health

Section 15.3 Care of special need patients

Section 16.1 Behavioural Sciences

Section 16.2 Communications

Section 16.3 Ethics and Jurisprudence

Section 16.4 Practice Management

Person in School who will explain and show this to the visitors:

Heikki Murtomaa

E-mail: heikki.murtomaa@helsinki.fi

Fax: +358919127346

Section 10

Oral public health

1. An introduction

Oral Public Health is studied during the terms 7 and 9. This discipline establishes, with studies in Interpersonal Skills and Practice management and Communications, an educational entity to support students' learning in clinical dentistry. The first course introduces the basics of Finnish health politics including organization and financing of health services with special reference to oral health care. The second course guides the students to the problems of supply and demand for oral health services and factors related to them, to Forensic Dentistry and to Dentistry for Handicapped.

2. Primary Aims

Primary aim is to train socially responsible dentists, who understand their role as professionals within the Finnish health care system to well serve the society either as privately practicing or employed dentists.

3. Main objectives

In order to pass the courses a student should

- understand oral health care as a part of general health care system
- know organizations and activities of social and health care system
- know different delivery systems of oral health care and their developmental trends
- master basic concepts in health care economics
- understand factors influencing the utilization of oral health care services both on individual and community level
- understand special oral problems related to different population groups
- be aware of international oral health care systems

4. Hours in the Curriculum

The hours allocated for Oral Public Health in the curriculum are:

Lectures	31 h
Small groups	28 h
Independent study	45 h
Total	104 h

5. Method of learning/teaching

Lectures, visiting lecturers, seminar, small group working: interviewing of persons on their dental visit patterns, marketing plan for opening a new dental office.

6. Assessment methods

The knowledge and understanding of concepts covered is assessed in two written examinations, which are organized three times during each term

7. Strengths

Strengths of the courses rely on well-organized lectures and experts in the discipline visiting the school as lecturers. Particularly visitors from “real world“ are appreciated by the students.

8. Weaknesses

Weaknesses encountered stem from poor integration of the discipline with clinical training. During the dental studies students seem to have difficulties to see the relevance of the subjects covered.

9. Innovations and Best Practices

Hardly any

10. Plans for future changes

More real life cases for learning material is to be developed and timing of the courses should be reevaluated.

Section 16

Practice Management and Communications

1. An introduction

Behavioural Sciences, Communications, Ethics and Jurisprudence and Practice Management are covered as a part of learning entity Oral Public Health during the terms 8 and 10. All these disciplines establish an educational entity, which support students´ learning in clinical dentistry. The first course covers behavioural backgrounds of dentistry with special reference to dental fear, communication theories and health promotion. The second course concentrates on legal aspects of working as a dentist.

2. Primary Aims

Primary aim is to train socially responsible dentists, who understand their responsibilities and rights as well as professionals as citizens to well serve a community and an individual patient either as privately practicing or employed dentists.

3. Main objectives

In order to pass the courses a student should

- understand the significance of oral self care and health behaviour to an individual and a community
- understand the significance of a patient-doctor relationship
- know how to promote oral health both on individual and community level
- identify factors influencing a patients oral health behaviour
- know principles and guidelines of ethical dental work
- know legal and administrative aspects of dental profession, dental employer and employee
- master basic concepts of quality development and its possibilities in oral health care

4. Hours in the Curriculum

The hours allocated for these course in the curriculum are:

Lectures	20 h
Small group	10 h
Independent study	20 h
Total	50 h

5. Method of learning/teaching

Lectures, visiting lecturers, seminar, small group working: a survey related to personal experiences of dental visit from quality perspective.

6. Assessment methods

Personal logbook in each term

7. Strengths

Strengths of courses rely on active learning in terms of cases and seminar type of teaching

8. Weaknesses

Weaknesses encountered stem from poor integration of the subjects covered with clinical training. However, there seems to be a marked increase of interest in this learning entity when the graduation date gets closer.

9. Innovations and Best Practices

Hardly any

10. Plans for future changes

More real life case for learning is to be developed.

INTERPERSONAL SKILLS

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Miira Vehkalahti

E-mail: miira.vehkalahti@helsinki.fi

fax: +358-9-19127379

1. An introduction

To introduce students in practical way and in small groups how dental profession takes its responsibility and makes treatment decisions, and how patients experience these.

Terms 1 through 10

2. Primary Aims

See item 1.

3. Main objectives

- to support the student's professional identity
- to develop the students interpersonal skills needed as a dentist
- develop the students ability to ethical reasoning
- develop the students understanding of a dentist's position as a member of a team and as a leader
- familiarize the student with the use of scientific knowledge in the clinical practice (evidence based dentistry)

4. Hours in the Curriculum

Small groups	40 h
Independent studies	20 h
Total (per year)	60 h

5. Method of learning/teaching

Small group working; interviewing of persons at every age on their experiences in dental care; emphasis on discussions on dental fear. Observing clinical work in different clinics outside the university. Simulating and playing short episodes in dental offices, created by imagination or experienced during observation visits. Taking dental history and questioning of oral health habits. Carrying simple preventive measures on the 2nd year (before the "real" clinical training). Critical reviewing of articles on clinically related topics. Presentation of self selected scientific topic at a mini-congress held within the class: posters and oral presentations. Documentation practices, ethical cases, site visits to health care centers, hospital, old people's home, Institute for handicapped, private dental office.

6. Assessment methods

Personal study logbook in each term.

7. Strengths

This course is guiding students to develop and improve their professional self-knowledge and self-respect, individually from each student's own background and level of interpersonal skills.

8. Weaknesses

Too large "small" groups weaken the idea of individual teaching.

9. Innovations and Best Practices

Ways in giving responsibility to students themselves, such as playing, argueing, presenting a congress paper.

LANGUAGE STUDIES

- 1) Foreign language (Text Workshop)
- 2) Foreign language (Oral Command)
- 3) Second Domestic Language (Oral and Written)

Person in School who will explain and show this to the visitors:

Name: Dr. Juha Ruotoistenmäki

E-mail: juha.ruotoistenmaki@helsinki.fi

fax: +358-9-19127519

1) Foreign language (Text Workshop)

1. An introduction

See item 2.

2. Primary Aims

After the course the student should be able to read medical literature, understand spoken common and medical terminology and be able to manage discussions in one foreign language (English, Spanish, French, German or Russian).

3. Main objectives

See item 2

4. Hours in the Curriculum

	2nd term	6th term
Lectures	8 h	8 h
Small groups		16 h
Independent study	4 h	24 h
Total	12 h	48 h

5. Method of learning/teaching

Text assignments, lectures

6. Assessment methods

Student may get grading through a precourse placement test. If not there will be a written final examination after the course.

7. Strengths

On the 2nd term basic medical literature according to phase in preclinical studies.

On the 6th term in clinical phase dental vocabulary

Several choices for foreign language to study

10. Plans for future changes

Integration with other study topics.

2) Foreign language (Oral Command)

1. An introduction

Oral course in one foreign language (English, Spanish, French, German or Russian).

8th term

2. Primary Aims

After the course the student should be able to read medical literature, understand spoken common and medical terminology and be able to manage discussions in one foreign language (English, Spanish, French, German or Russian).

3. Main objectives

See item 2.

4. Hours in the Curriculum

Small groups	18 h
Independent study	22 h
Total	40 h

5. Method of learning/teaching

Working mainly in a language skills lab (taperecorders etc). In lab studies teacher's feedback to individual work.

6. Assessment methods

Student may get grading through a precourse placement test. If not there will be a written as well as oral final examination after the course.

7. Strengths

In the clinical phase of the dental studies to focus on professional foreign language skills.
Alternative languages.

10. Plans for future changes

Integration with the dental topics studied at the same time. Possibility will be given to teachers to consult language teacher prior to lectures.

3) Second Domestic Language (Oral and Written)

1. An introduction

Oral and written course in the domestic language other than student's mothertongue.
9th term

2. Primary Aims

After the course the student should be able to understand written and spoken Finnish/Swedish medical terminology and be able to discuss and write in Finnish/Swedish about subjects related to the medical field.

3. Main objectives

Normally a student must have such a knowledge of both Finnish and Swedish as is required of a graduate state official in a bilingual district, i.e. a complete knowledge of the language of the majority and at least satisfactory oral and written skills in the other language.

4. Hours in the Curriculum

Small groups	36 h
Independent study	44 h
Total	80 h

5. Method of learning/teaching

30 students divided into two groups. Half of the lessons in a classroom and the other half in a language skills lab (taperecorders etc). In lab studies teacher's feedback to individual work.

6. Assessment methods

Student may get grading through a precourse placement test. If not there will be a written and oral final examination after the course.

7. Strengths

In the clinical phase of the dental studies to focus on professional foreign language skills.

8. Weaknesses

Lack of integration with the dental topics studied at the same time.

Language skills lab in the city center 10 km away.

9. Innovations and Best Practices

Language skills lab

Precourse placement test

10. Plans for future changes

Integration with the dental topics studied at the same time.

SECTION 17: EXAMINATIONS, ASSESSMENTS AND COMPETENCES

Person in School who will explain and show this to the visitors:

Name: Dr. Juha Ruotoistenmäki

E-mail: juha.ruotoistenmaki@helsinki.fi

fax: +358-9-19127519

1. The overall approach to assessments

The school has defined the educational goals for knowledge, skills and attitudes that are required in order to achieve the dental diploma. These goals are set for each separate entity of learning and also common for all different fields of dentistry.

Even though traditional written examination is still most widely used method of assessment more and more alternative way have been developed to guide students' learning process. This mean a combination of assessment methods including both summative and formative aspects. More formative ways are introduced while supporting factors all along the students learning process are emphasized. This is best shown in the new clinical practice assessment. Also the so called common written examinations are more and more combinations of different kinds of assignments dealing both theoretics and practical questions. Exams are not necessarily always in the end of the courses giving students better change for feed back and making corrections.

2. How much does the school rely on exams to motivate students

We recognize assessment methods' guiding influence on students' way of studying and emphasize its meaningfulness as an important part in the overall work in curriculum development.

3. Strengths

Multiprofessional approach in the clinical work.

Teachers from each profession are represented all along learning process.

4. Weaknesses

At the moment teaching is organized according to the entities, but the final examinations are organized by disciplines.

5. Innovations and/or Best Practices

Clinical practice is assessed through three different dimensions which are i) time served ii) a list of clinical procedures that students need to accomplish iii) whole treatments. The method is student centered.

6. Plans for future changes

To improve dialogue in between dental skills lab and the clinical work.

To develop final examinations for entities of learning.

7. External examiners

So far there has been no external examiners at the institute.

8. What formal completion of an exam is required of the school/university for students to qualify and register as dentists

In preclinical studies there is a written examination after each entity. All these tests have to be passed before student is entitled to continue his/her studies in the clinical phase.

Preclinical final examination in the end of the first two years covering all the entities. This examination has to be passed by the beginning of the 4th study year.

In clinical phase final examinations are organized by disciplines.

There is no such one test in the end of the clinical studies as there is to complete the first two years.

9. The extent to which the school seeks those competences recommended by the EU Advisory Committee on the Training of Dental Practitioners.
The educational goals mentioned in item 1 are equal with those those competences recommended by the EU Advisory Committee.

SECTION 18: OTHER INFLUENCES

Person in School who will explain and show this to the visitors:

Name: Prof. Jarkko Hietanen

E-mail: jarkko.hietanen@helsinki.fi

fax: +358-9-19127

Description of how the following influence the students' curriculum and/or clinical training:

REGIONAL ORAL HEALTH NEEDS

Regional oral health needs do not influence on the student's curriculum very much. The Institute of Dentistry belongs to the University of Helsinki and is not a part of the National Health System. In the beginning of the year 2000 the clinical training which does not take place today will be integrated to this system, thereafter the regional oral health needs might influence the students' curriculum, nowadays such cannot be seen. The Institute of Dentistry selects its patients for teaching purposes. Those patients not suitable for either undergraduate or postgraduate training are anyhow treated by our dentists. There are annually nearly 10 000 patients and 50 000 visits.

EVIDENCE BASED TREATMENTS

In dentistry there are not so many evidence based treatments as in medicine. However, all our treatments are some way based on scientific evidence or long clinical practice.

INVOLVEMENT IN OTHER UNIVERSITY ACTIVITIES AND SPORT

STUDENT ORGANISATIONS

Student Union

The Student Union of the University of Helsinki (HYY) was founded in 1868. In 1997 there are more than 30.000 members, which makes HYY the biggest of all student unions in Finland. Every basic degree student enrolled at the University of Helsinki automatically becomes a member of HYY. Their basic purpose is to represent the members and to improve their study as well as social conditions. Over 200 organisations are within the compass of the Student Union. The Institute of Dentistry has also its own Student Union HLKS, which is a part of HYY. One afternoon in every week is reserved for the social activities out of the Institute.

HYY provides its members with a number of services, such as health care, student housing, low-cost meals and legal advice. The student card entitles the holder to a number of discounts in public transportation, theatres, opera and certain shops. Different organisations within HYY can apply for financial aid, conference rooms, independent transport and other services. All members receive the student magazine Ylioppilaslehti, which has a summary of the articles in English (see <http://www.helsinki.fi/ylioppilaslehti/eindex.html>).

The Central Office of HYY

tel. +358-9-13114211, fax +358-9-13114216

<http://www.hyy.helsinki.fi/hyy/>

Erasmus Students' Network (ESN)

The ESN has a special counselling office for the international students. The Finnish students in the network act as tutors for international students, giving guidance and help with everyday problems.

"Nations" and Other Organisations

Nations have traditionally been students associations for students coming from the same region in Finland. The tradition still continues, but also foreign students are welcomed as members. The fee to join is FIM 70. Most faculties and departments have their own student organisations.

Sports Facilities

The Sports Office of the University of Helsinki is responsible for arranging sports facilities for students of the University. For an annual fee of FIM 100, one has access to a variety of sports. The sports programme includes, among other things, aerobics, modern and jazz dance, gym facilities, badminton, tennis and squash. There are competitions series on different levels in basketball, volleyball, football and indoor hockey. Yoga, tai-chi, judo, aikido and karate are also available. The sports office publishes a programme of its activities each semester.

Social Life

Helsinki offers a wide variety of entertainment. There are dozens of theatres, several jazz clubs and two permanent symphony orchestras. The National Opera, performing in the new Opera House opened in 1993, has an orchestra and ballet which have won international acclaim. There are also numerous discos and night clubs as well as over forty cinemas offering a range of films from old American classics to new European experimental art films, all shown with their original sound-track with Finnish and Swedish subtitles. Discounts for theatres and opera performances are available to students upon presentations of the Students Union membership card. Social life within the University is concentrated within the different student organisations and Nations, which organise a great variety of activities and arrange parties at the Old and New Student houses in the heart of Helsinki.

STUDENT SELECTION PROCEDURES

ADMISSION REQUIREMENTS IN 1998

Those who have a secondary school certificate from any Finnish secondary school and those who have a professional secondary level degree without a secondary school certificate can apply. All applicants have to participate in the national entrance examinations in June. The examinations can be taken in Finnish or Swedish. Admission is based either on both success on the examinations and grades on the senior secondary school certificate (75%) or on success on the examination only (25%). Those who have finished their senior secondary school in the spring of 1998 or in the autumn of 1997 will get 4 extra points. Admission of those who have a certificate from a corresponding non-Finnish institution is based on the entrance examination.

Students who have an IB (International Baccalaureate), an EB (European Baccalaureate) or a Reifeprüfung-certificate will get points according to grades on their diploma. If they get their diploma after May they can still apply. The points must then be estimated on the application form.

The entrance examinations in medicine and dentistry include physics, chemistry, biology and a Learning-From-Text test (LFT-test) where the applicant is asked to read a text and answer questions without any opportunity to prepare for the test in advance. The applicant has to pass all parts of the examination in order to be admitted to the degree programme. In 1997 15% of the applicants were admitted to the degree programme in medicine and less than 30% of the applicants to the degree programme in dentistry. Foreign students interested in applying for admission to the Faculty of Medicine either as degree students or visiting students are advised to contact the ECTS Departmental Coordinator.

SECTION 19: STUDENT AFFAIRS

Name of Student representatives:

Final Year: Risto Närvänen
E-mail: risto.narvanen@helsinki.fi

Fourth Year: Meri Einola
E-mail: meri.einola@helsinki.fi

Third Year: Tero Tuokkola
E-mail: tero.tuokkola@helsinki.fi

Second Year: Nina Erno
E-mail: nina.erno@helsinki.fi

This will be the basis of a discussion with visitors.

BASIC DATA FROM DENTAL SCHOOLS

- a) Average number of dental students qualifying per year: 30
- b) Average number of dental students admitted to the first year: 30
- c) Length of course in years and/or semesters: 5 years / 10 semesters
- d) Is there a separate period of vocational training following graduation as a dentist in your country? YES
(6 months)
- e) If yes to d) above, is that organised by the University/Dental School
NO

THE POSTGRADUATE COURSES

- Specialist's degrees in dentistry in Finland
- Oral and maxillofacial surgery
- Orthodontics
- Clinical dentistry; subdivisions
 - Cariology and endodontics
 - Prosthetic dentistry
 - Periodontology
 - Radiology
 - Oral pathology
 - Oral microbiology
 - Cariology and pedodontics
- Oral public health

AUXILIARY/TECHNOLOGY/OTHER COURSES

The continuing education organized by the Institute of Dentistry is mainly focused on the development of clinical skills (the "hands-on" courses). The theory-oriented courses include mostly the series of evening seminars (4 in a term).

Courses and participants in 1998:

courses	16	130 participants
evening seminars	2 x 4	195 participants (approx.)

THE HELSINKI INSTITUTE FOR ORAL HEALTH

The Helsinki Institute for Oral Health was established by the Faculty of Medicine, January 23rd, 1996. It aims to facilitate and co-ordinate international co-operation in education, research and service development in the field of oral health. The Institute offers all level education in oral health, undergraduate, continuing and postgraduate training for professional and academic degrees. It provides expertise in planning, developing, evaluating and carrying out training projects and programs especially for developing countries but also in the countries where the need for development of training and/or training methodology is urgently felt. The Institute co-ordinates scientific research of different dental disciplines especially in co-operation with the institutes sending their staff for postgraduate studies.

In the year 1999 The Institute will organize a continuing education course (five weeks) on Modern Methods in Clinical Practice and shorter clinical courses directed especially for Russian doctors (with the interpreter).

The institute organizes Master of Science programs in Orthodontics, Restorative Dentistry and Dental Public Health. There are on the average 16 pg-students in these programs.

The Institute participates a Tempus Phare project "Development of Dental Education in Latvia to EU Standards" and offers expertise for several Eastern European Universities.

Several Experts from various countries participates teaching clinical or theoretical topics in the Institute.

Administrative staff:

Dr. Heikki Tuutti , Director of The Institute

Dr. Mikko Uusikylä, Secretary (part time) for postgraduate studies

Dr. Ravi Srinivas, Secretary (part time) for international co-operative projects

SECTION 20: RESEARCH AND PUBLICATIONS

- A. The Biological Sciences
Representative: Timo Sorsa
e-mail: timo.sorsa@helsinki.fi
- B. Anatomy, Physiology, Pharmacology, Microbiology, General Pathology
Representative: Jarkko Hietanen
e-mail: jarkko.hietanen@helsinki.fi
- C. General Medicine, General Surgery
Representative: Maria Malmström
e-mail: maria.malmstrom@helsinki.fi
- D. Orthodontics, Paediatric Dentistry
Representative: Sinikka Pirinen/Satu Alaluusua
e-mail: sinikka.pirinen@helsinki.fi
satu.alaluusua@helsinki.fi
- E. Public Dental Health
Representative: Heikki Murtomaa
e-mail: heikki.murtomaa@helsinki.fi
- F. Restorative Dentistry, including Periodontology, Conservative Dentistry, Endodontics, Prosthodontics
Representative: Jukka H Meurman/Mauno Könönen/Timo Sorsa
e-mail: jukka.meurman@helsinki.fi
mauno.kononen@helsinki.fi
timo.sorsa@helsinki.fi
- G. Oral Surgery, Oral Medicine, Oral Pathology
Representative: Christian Lindqvist
e-mail: christian.lindqvist@helsinki.fi

Each area set above is asked to have a set of reprints for visitors to see when they visit.

PUBLICATIONS

	1996	1997	1998	Total
A. Biological sciences				
Articles	21	14	16	51
Chapters	1	1	1	3
(Dissertations	1	1	2	4)
B. Anatomy, Physiology, Pharmacology, Microbiology, General Pathology				
Articles	14	24	19	57
Chapters	7	-	-	7
(Dissertations	1	-	-	1)
C. General Medicine, General Surgery				
Articles	7	8	10	25
Chapters	7	1	-	8
(Dissertations	1	1	2	4)
D. Orthodontics, Paediatric Dentistry				
Articles	3	6	2	11
Chapters	26	-	1	27
(Dissertations	-	-	-	-
E. Public Dental Health				
Articles	18	21	10	49
Chapters	20	1	3	24
(Dissertations	1	4	-	5)
F. Restorative Dentistry, including Periodontology, Conservative Dentistry, Endodontics, Prosthodontics				
Articles	6	12	9	27
Chapters	4	-	-	4
(Dissertations	-	1	1	2)
G. Oral Surgery, Oral Medicine, Oral Pathology				
Articles	21	18	13	52
Chapters	8	2	4	14
(Dissertations	2	1	1	4)

GRANTS 1996-1998

Euro		1996	1997	1998	Total
A					
B					
C	General medicine				
D	Orthodontics	27667	32500	14833	75000
	Pediatric Dentistry	5000	19167	62417	86583
E	Public Dental Health	5833	5000	7500	18333
F	Restorative				
	Periodontology			142667	142667
	Prosthodontics		8333	25000	33333
	Cariology	1667	50833	43500	96000
G	Oral Surgery	343500	171812	111333	626645
	Oral Medicine				
	Oral Pathology	8833	6667	35833	51333
	Radiology	2333	1667		4000
		394833	295978	443083	1133895

PARTICIPATION IN INTERNATIONAL CONGRESSES

	1996	1997	1998	Total
Oral Pathology	-	3	x	3
Oral Radiology	5	4	x	9
Dental Infectious Diseases	17	11	x	28
Pedodontic & Orthodontics	20	27	x	47
Periodontology	14	11	x	25
Stomatognathic Physiology & Prosthodontics	3	2	x	5
Oral & Maxillofacial Surgery	20	16	x	36
Oral Medicine	2	4	x	6
Oral Public Health	3	8	x	11
Participation in international congresses	84	86	41	211
Participation in national congresses	71	63	45	179

SECTION 21: QUALITY DEVELOPMENT

Person in School who will explain and show this to the visitors:

Name: Senior lecturer Miira Vehkalahti

E-mail: miira.vehkalahti@helsinki.fi

fax: +358-9-19127379

Quality assurance in clinical work

- is based on regular meetings held during working hours both for dental assistants and clinical instructors
- includes patient's final checking by senior teachers at the end of the treatment course
- includes one or more recall-visits as decided at the end of each treatment course

Quality assurance in theoretical teaching

- is based on regular seminars held during working hours
- includes courses for teachers organized by faculty

Quality assessment of clinical work

- there is a patient representative at the institute
- adult patients' opinions on treatment inquired in 1996

Quality assessment of theoretical teaching

- students' opinions and rating on each course and its teacher is collected by means of anonymously filled questionnaire including both open and fixed questions; data on these are summarized by the faculty which gives the feedback semi-annually, course by course.

DentEd Site Visitation

INSTITUTE of DENTISTRY, HELSINKI

Part II

Visitors Comments

REPORT of the VISITORS

Institute of Dentistry

UNIVERSITY OF HELSINKI, FINLAND

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DENTED VISIT **March 20 - 24, 1999**

Visitors	Prof. Arne Petersson	Malmö	Chairperson
	Prof. Keith Last	Liverpool	Rapporteur
	Prof. Wolfgang H. Arnold	Witten	
	Prof. Michele Giuliani	Rome	
	Prof. Mary Kelly	Dublin	
	Prof. Winfried Harzer	Dresden	

DENTED VISITATION to the INSTITUTE of DENTISTRY, HELSINKI

REPORT of the VISITORS

Prologue

The visitors very much appreciated and were greatly helped by the openness and frankness of all the staff of the Institute of Dentistry and wish to thank all those involved. We also congratulate the Institute on the completeness of the documentation provided for us. The warmth of the welcome and the hospitality was overwhelming.

The aim of DENTED visits is not to judge a school but to offer a great opportunity for visitors and the host school to exchange views on many aspects of curricula which is of mutual benefit and ultimately will lead to harmonisation of dental education within the EU.

Aims

The aim of the School is the production of well-educated oral health care professionals capable of meeting the challenges of the new millennium. The school interprets this as requiring a change in dental education to produce graduates who will function as oral physicians with an understanding of holistic and comprehensive care. This aim is fully consistent with international demographic and epidemiological projections for the future.

Objectives

Changes, which have been made in the dental course to achieve this end, include integration with medical education in the preclinical years. This expansion of the medical components should be reinforced in the clinical years of the course in parallel with advances in dentistry from improved technology and availability of biocompatible materials. It is of some concern to the visitors that we are unable to envisage the changes in administration and funding planned for January 2000 and how they will impact on the educational integrity of the dental curriculum. In particular, it is important that the Institute retains full control of the clinical training of all dental students. The visitors felt that the education and training provided by the current undergraduate course would produce many excellent dentists.

Developments Planned for January 2000

The changes to be implemented, following the reorganisation introduced by the Ministers of Health and Education, will allow dental students to be clinically trained in an environment that is closer to the community. It will also provide greater access to a broader spectrum of patients suitable for undergraduate teaching. However, it will undoubtedly produce a number of challenges for the Institute, including:

- the need to maintain close links between clinical training and theoretical teaching.

- the continuation of the strong association between undergraduate teaching and the asset of a superb research achievement.
- the possible enhancement of existing administrative structures, notably the Steering Committee, by the addition of representatives of the community.
- the design and introduction of mechanisms for close monitoring of quality and evaluation of the training process, particularly in the initial period.

Undergraduate Course Structure

It was noted that there is a division of the five-year course into two years of preclinical studies and three years of clinical studies, with no significant dental activity in the preclinical years. Furthermore, the preclinical course is shared with medical students for the study of basic and biological sciences. Although this may form a firm foundation for the aspiration of the Institute of training an oral physician, the Institute may wish to consider the following:

- the inclusion of dental educators in preclinical course design.
- the inclusion of greater dental activity in the preclinical course.
- greater emphasis on the integration of the basic sciences into the clinical situation in later years of the course.
- a complementary and greater clinical component in medicine and surgery in the clinical years of the course

Facilities

The clinical facilities are excellent and seem more than adequate to support the studies of an intake of thirty students per year. There appears to be sufficient capacity for additional usage by introductory clinical courses for preclinical students. The library resources are impressive, especially the number of journal subscriptions.

Student Selection

Admission is by a national examination, which is held jointly with medical students. Students see themselves as equal partners with medical students in the first two years and are currently treated as such by medical teachers. The concern of the dental teachers, shared also by the visitors, is that there may be a greater tendency for dental students to leave the course. However, there is no evidence to support this concern at this time.

Teaching Methods

The introduction of active student learning, inherent in PBL, into the preclinical course is much welcomed but currently may be over supported by lectures. Lecture courses also appear to dominate in the learning entities of the clinical course, but elements of PBL have been introduced in some subjects and more elements are

planned. The expansion of PBL in the clinical course would be greatly facilitated by participation of senior dental staff in the design and implementation of PBL learning entities in the preclinical course.

In the clinical course, the existing concept of teamwork within the groups, involving 3rd, 4th and 5th year students working on integrated patient care, appears to have the potential to allow maximisation of these practical experiences. The strong emphasis placed at present on the theoretical aspects in the clinical entities, particularly the lecture courses, should be reduced, to achieve a better balance with clinical activities.

The number of examinations in the courses is excessive. The purely written format of multiple, discipline-based final examinations is inconsistent with the concept of the integrated clinical course.

Students

The visitors found the student body to be well motivated, self confident and very satisfied in general with the course and their capacity to modify it and its delivery as necessary. They were obviously proud of the scientific achievements of their teachers. Furthermore, they had an international outlook as evidenced by their high participation in formal exchanges with other European dental schools and their widespread intention to consider working abroad after graduation.

Research

The research record of the Institute is impressive and may well serve as a model of successful organisation for other dental schools who have difficulty in developing a stronger research profile. It is hoped that the changes planned for January 2000 will not adversely affect the clinical research projects currently included in this profile.

Staffing

The visitors noted that three of the ten professorial positions in the Institute are occupied by acting appointments and a fourth is soon to be vacated. Budgetary restrictions make permanent appointments in the near future unlikely. Consequently, a small professorial team will be required to manage the imminent major curriculum changes and the associated uncertainty that the visitors detected in many members of the staff. Moreover, the staff will wish to maintain their enviable research achievements and in addition will be expected to develop structures for the provision of continuing dental education for practitioners. In the reorganisation of clinical teaching, it is important that the current distribution of duties between teaching and research among the junior staff is maintained. It is also important that a staff development plan, including didactic principles, is introduced for those appointed to clinical teaching duties in the reorganisation.

Despite economic restrictions, the staff of the central administration provides good support to the Institute of Dentistry.

Strengths of the undergraduate dental course

- The enthusiasm and commitment of the staff and their excellent relationship with students.
- Research achievements of the staff.
- Well-motivated and self-confident students.
- Integrated courses in comprehensive dental care.
- Language studies for students fostering an international outlook.
- Introduction of student-centred active learning.
- Mechanisms for quality assurance and rewards for achievements in teaching.
- Library and IT facilities.

Weaknesses of the undergraduate dental course

- Number and format of existing examinations.
- Dominance of lecture courses in all years.
- Lack of integration of basic sciences.
- Late patient contact in clinical dentistry.
- Under-representation of clinical medicine and surgery.

June 1999 (drafted at Helsinki, 24th March 1999)

Prof. Arne Petersson (Chairman)

Prof. Wolfgang H. Arnold

Dr. Mary Kelly

Dr Keith Last (Rapporteur)

Dr Michele Giuliani

Prof. Winfried Harzer