UNIVERSITA’ CATTOLICA DEL SACRO CUORE
FACOLTA’ DI MEDICINA E CHIRURGIA - ROMA

SCHOOL OF DENTISTRY
(Dean: Prof. Carlo M. MIANI)

DENTED VISIT
8-12 MAY 1999

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DENTED VISIT
8-12 MAY 1999

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Rome
# UNDERGRADUATE DENTAL CURRICULUM 1999

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Section 1:
INTRODUCTION AND GENERAL DESCRIPTION

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

Name: Carlo Mario MIANI
e-mail: carlom_miani@rm.unicatt.it fax: +39 06 3051159

The current organization of Italian Dental Schools is both confused and confusing, perhaps because it is in a state of rapid evolution. The organization we have may not be easily explained to those who come from Dental Schools with long traditions. For this reason I think it is opportune to give you a brief history of Italian Dentistry and to tell you that Dentistry in Italy is frequently subjected to fresh legislation much of which is simply not applied.

1.1 History
Modern Dentistry in Italy has a very short history. Only around the early nineteen-thirties Dentistry was recognised as being part of the Medical Profession. Until the mid nineteen-eighties Dentistry could be practised by any graduate in Medicine without the obligation of specializing. Nowadays Dentistry can be performed by someone who holds a degree in the subject or a degree in Medicine followed by post-graduate specialization or by Medical Doctors who graduated before 1985 and who have taken an exam to test their competence.

1.2 Access
Access to our private Dental School here is a little different to that of a State Dental School. A candidates’ suitability is judged on the basis of their Secondary School results; a multiple choice test in Chemistry, Physics, Biology and Mathematics; an aptitude test and an interview on general culture and religion. Without using the results to decide on the suitability of the candidates, we have also, for some years, been conducting a test of manual dexterity.

1.3 The Mission
Our goal is to create a dentist cultured and professional, ready to perform primary dental care as soon as he has graduated; a person ready to enter confidently into his profession. In addition he should be able to remain up-to-date, to organise completely a dental surgery, taking into account that only now are training Schools for Dental Hygienists and Auxiliaries opening.

1.4 The Commitment
The School is committed to producing undergraduate dentists and post-graduate orthodontists. This is done in close collaboration with University School for Dental Hygienists. The School organizes frequent conference and courses to keep staff and fellow professionals up-to-date.

1.5 The Future
The President of the Deans of the Italian Dental Schools is working hard with the relevant Government Ministries to design a complete revision of the curriculum. A new law should prohibit University staff from doing private work outside the University. The greatest attention is been given to the question of the independent existence of Dental Schools free from Medical Schools. A reduction in the number of Dental Schools is also under consideration.
Section 2:
FACILITIES

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

Name: Michele GIULIANI
E-mail: iclod@rm.unicatt.it  Fax: +39 06 3051159

2.1 Clinical Facilities

The School of Dentistry uses the units of the Institute of Dentistry, on the 5th floor of the Hospital Building:
- 5 units for Comprehensive Patient Care
- 4 units for Operative dentistry
- 2 units for Periodontology
- 3 units for Oral surgery
- 2 units for Paediatric dentistry
- 4 units for Orthodontics
- 5 units for Prosthodontics
- 2 units for Endodontics
- 3 units for Oral and Dental diseases

For radiological examinations:
- 5 devices for intraoral radiological imaging

The Clinic was refurbished in 1989 to facilitate the dental staff in the supervision of students.

2.2 Teaching Facilities

The School of Dentistry may use all of the teaching, cultural and recreational facilities in the Campus of Catholic University. In addition there are 3 lecture rooms devoted to dental teaching, on the 5th floor of the Hospital Building. There are also lecture rooms in the Basic Sciences building for all the non-clinical teachings.
2.3 Teaching Laboratory

The School has a 30 place teaching laboratory with phantom heads providing shared facilities for:

- operative dentistry
- endodontics
- prosthodontics
- orthodontics

2.4 Research Laboratories

The School of Dentistry may use all the centralized main laboratories of the Medical Faculty of Catholic University. In addition on the 6° floor of the Hospital Building there are two laboratories, one of them equipped with a Scansion Electron Microscope and the other equipped for histologic studies of hard tissues, normal and pathological.

2.5 Libraries

There are two main Libraries, belonging to the Medical Faculty, well equipped with one of the largest dental section available in Italy, which includes more than 90 current Journal subscriptions.
The libraries are located in the Hospital Building and in the Basic Sciences Building. There are 10 PC’s units to access to Medline in both of them.

2.6 Information Technology

Personal computer access for students:
20 PC’s in the Physics laboratories.
10 PC’s in Clinic (mostly used for appointments diary)
Medline access in the libraries
Most of the Institutes allow the students to use their own technology facilities.

2.7 Other Facilities

Auditorium (for graduations, meetings, performances and concerts).
Sports equipment (tennis courts, soccer fields, gymnasium).
Section 3:
ORGANIZATIONAL AND ADMINISTRATIVE STRUCTURES

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

Name: Michele GIULIANI
e-mail: iclod@rm.unicatt.it  fax: +39 06 3051159

On the 7 of December 1921, in Milan, opens the Catholic University of the Sacred Hearth. In 1961, at the presence of the Pope John XXIII, was founded the Faculty of Medicine, in Rome. In 1980 was founded in Italy the School of Dentistry: until then, to be a dentist, it was sufficient to be a Medical Doctor, with or without the specialization in Dentistry. The School of Dentistry of Catholic University was born in 1983. The Faculty of Medicine of Catholic University has two degrees:

1) Medical degree
2) Dental degree

The Dental School of Catholic University is the only private dental school in Italy. All other dental schools belong to State Universities. There is one more private Medical School in Italy, which belongs to the Opus Dei University “Campus Biomedico”, also in Rome.

The School of Dentistry uses all the clinical facilities belonging to the Institute of Dentistry. Formally the Institute of Dentistry has the own Chairman and the School of Dentistry the own Dean: at the moment Prof. Miani is the Chairman and the Dean.

FONDAZIONE TONIOLO - MILAN
(Founder and owner of Catholic University)
Steering Committee
UNIVERSITA’ CATTOLICA DEL SACRO CUORE - MILAN  
(Headquarters)  

Steering Committee  
Executive Committee  
- Rector Magnificus -  
Board of Deans of all the Faculties  

Different Faculties in different cities (Milan, Rome, Piacenza, Brescia)  

Faculty of Medicine - ROME  
- Dean -  
Board of all Full and Associate Professors  

Medical School (6 year course) – Dean  
Dental School (5 year course) – Dean  

School of Dentistry  
- Dean -  
Board of all the Teachers and representatives of the students.  

UNIVERSITY HOSPITAL “A. GEMELLI” - ROME  
- General Manager -  
“Board of Councillors”  

Linked with the National Health Service
Section 4: STAFF

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

Name: Michele GIULIANI

E-mail: iclod@rm.unicatt.it  Fax: +39 06 3051159

- Clinical Academic Staff
  - Full Professors 3
  - Associate Professors 4
  - Assistant Professors 6 + 1 (not attending the clinic)

- Tutors

- Attending Junior Staff

- Clinical Services Staff
  - Chief of the nurses 1
  - Nurses 14
  - Assistants 3

- Other Staff
  - Secretaries 3
  - Laboratory technicians 3
  - Assistant 1

All other staff are in common with the Medical Faculty and the Hospital. We heavily participate in the management of this personnel.
**Section 5:**
THE DENTAL CURRICULUM

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

**Name:**  Gaspare RUMI
**e-mail:**  grumil@hotmail.com  **fax:** +39 06 3051159

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**Introduction**

- The School of Dentistry of U.C.S.C. started in the Academic year 1983-’84.

- The school programme provides an opportunity for students to be educated in both the biologic basis for dental health care and technical skills of the dental profession.

- The general aim of our School is to graduate students who possess the basic knowledge and clinical skills necessary to provide quality dental care today and who have the intellectual capacity to understand, initiate and apply new concepts for the solution of problems related to the future dental needs of the patients.

- The course lasts 5 years and is divided into two phases:
  - PRECLINICAL  1\(^{st}\) and  2\(^{nd}\) year
  - CLINICAL  3\(^{rd}\),  4\(^{th}\) and  5\(^{th}\) year.

- In the first period the students attend classes in the basic medical sciences and in clinical dental sciences which are correlated to assure comprehensive understanding of dental medicine as is relates to the patient’s total health.
### FIGURE 1

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<tbody>
<tr>
<td>- BIOLOGY</td>
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<td>- CHEMISTRY</td>
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<td>- PHYSICS</td>
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<td>- ANATOMY</td>
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<td>- HISTOLOGY</td>
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<td>- ANAESTHESIOLOGY</td>
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<td>- PHYSIOLOGY</td>
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<td>- MICROBIOLOGY</td>
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<td>- BIOCHEMISTRY</td>
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<td>- PUBLIC HEALTH</td>
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<td>- GENERAL PATHOLOGY</td>
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</table>

All the courses of 2nd year are biannual, except Operative Dentistry I. These courses are held in Biological building except Operative Dentistry I and Dental materials.

In the second period the students usually attend classes in clinical dental sciences: these courses are held in the University Dental Clinic in the last three years. These courses are:
### FIGURE 2

<table>
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<td>-   GENERAL SURGERY</td>
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<td>-   PERIODONTALGY</td>
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<td>-   PROSTHODONTICS</td>
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### FIGURE 3

**Additional Courses**

- MAXILLOFACIAL SURGERY (4\textsuperscript{th} year)
- DERMATOLOGY (4\textsuperscript{th} year)
- INFECTIOUS DISEASES (4\textsuperscript{th} year)
- OTORHINOLARINGOLOGY (4\textsuperscript{th} year) compulsory
- PSICHIATRY
- PSYCOLOGY (1st year).

- The students are 25 each year since 1996 (until 1995 they were 15 students each year) and they are introduced to the profession of dentistry and its specialties, to current health care problems and to the basics of the practitioner - patient relationship.

- The students spend 8 months a year in dental clinic and they turn in the various specialties in small groups (2 or 3) for each unit.

- In the third year the students rotate in the sectors of Operative dentistry, Periodontology, Oral Surgery and Oral and Dental Diseases and, step by step, they treat patients under supervision of assistants professors and tutors.

- In the fourth year the students rotate in the sectors of Operative dentistry, Endodontics, Periodontology, Oral Surgery, Prosthodontics, Orthodontics and Comprehensive Dental Care.

- In the fifth year the students rotate in the sectors of Periodontology, Prosthodontics, Orthodontics, Pedodontics and Comprehensive dental care.

- The last course of the fifth year consists primarily of the complex treatment of patients. The students perform all of the necessary procedures on the patients that have been entrusted to them. At the end of clinical courses the students have to perform a standard set procedures before the oral or written examination.

- The number of treated patients in our Dental Clinic is about 100 daily: 80% of patients are treated by undergraduate students.

- In five years time, the students must acquire and learn to manage a large quantity of dental and medical knowledge. In addition, the student have to master a large number of skills necessary for the integrated treatment of patients. The total amount of the didactic hours for the students in the five years time is about 4000.

- The instructional forms in dental programme are:

  A. Lectures are given in all the cognitive courses. They do not function as the primary source of knowledge transfer, however, as the textbooks fulfill this role. Many of the lectures are intended to provide background information, make ties, clarify connections and explain complicated concepts.

  B. Seminars constitute an important educational medium for the different courses with a cooperation of interdisciplinary teachers.

  C. Preclinical and Clinical Training is directed at the acquisition of the skills essential for professional practice. Preclinical training begins on a laboratory room or so-called phantom unit. In this training, the students learn the subskills necessary for the subsequent treatment of the patients. Patient treatment occurs
under the supervision of a faculty member or tutor in the clinical practice, during which the student has access to his own dental treatment unit.

D. **Demonstrations** are essential in a dental programme because preclinical and clinical procedures must be shown.

E. **Audio-Visual Materials** such as video and slides are utilised in a great number of courses. Many clinical procedures are showed on video or in a slides series.

F. **Self-Study** is naturally an important facet of the programme. For every course the students are expected to spend a number of hours on the literature and processing of the information presented in the lectures.

(LIBRARY: 8.30 a.m. - 9.30 p.m.).

• To get the dental degree the students have to pass at least 29 courses (27 compulsory + 2 additional and one of these two must be OTORHINOLARINGOLOGY) and are also compulsory the courses of theology that are:
  - **INTRODUCTION TO CHRISTIANITY** 1\(^{st}\) year
  - **CHRISTIAN ANTHROPOLOGY** 2\(^{nd}\) year
  - **MEDICAL ETHICS** 3\(^{rd}\) year.

• The students have the opportunity to benefit of **SOCRATES PROGRAMME** that initiates the international students exchange among European Universities.

• After the dental degree the students may follow postgraduate courses: up to now our School has the speciality in Orthodontics (Oral Surgery is been approved by our Faculty Committee).
## DENTAL CURRICULUM

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<th>Instructor</th>
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<td>Molecular Biology</td>
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<td>Psycology</td>
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</table>
Name of course: Chemistry

Name: Massimo F.L. POMPONI, Associate Professor

Number: Preclinical

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An Introduction

Molecules modulate our psychophysical activity. The knowledge of the molecular action is fundamental to the development of a consolidation mechanism of the understanding. There is a serious lack of knowledge of how chemical bonds work. How the human body functions is not a somewhat personal point of view. Chemistry is how molecular structures perform what we call physiological and the pathological functions.

What is beauty? A better way to assemble molecules. What is café? An easy way to start in the morning. What is cancer? How wrong DNA can work. What is creative thinking? What is love? What is addiction? Molecules at work. What am I? May be just a very impressive chemical lab.

Primary Aims

Every student is part of a common project: the knowledge. The learning is a critical activity. The student should learn the art of the scientific approach and become conscious of his potentiality. This aim is obtained through the use and the application of the general principles of the chemistry in order inflect the student and let him capable of answering to the assiduous progressions in the professional field.

6 - 10 main objectives

The course is aimed at creating a two levels approach with the following main objectives:
- the increase in knowledge of the traditional subjects (for example, where the elements come from? The elementary particles (quarks, electrons...) and the quantum energy (Plank); the periodical table; acids, bases and pH; the equilibrium constant and the second law of thermodynamic (Gibbs equation); the ionization of a typical local anesthetic (charged and uncharged amine); the Nernst equation and the Donnan equilibrium; the effect of the temperature on the velocity of a reaction (Arrhenius equation));
- an understanding of the molecular basis of various biological phenomena. Conformation, shape, structure, conformational changes, and interactions of molecules and macromolecules. This part deals with the structure of biological molecules and the binding interactions that determine this structure and function. The goal is to convey the major principles and concepts that are at the base of the molecular actions.
The final part summarises:
- basic principles of the nuclear magnetic resonance and visit at a Varian Gemini 300 instrument operating for 1H, 13C, 31P;
- molecular modelling studies using Sybyl software (TRYPOS Associates. Inc.) running on a Silicon graphics workstation; the stereographic view of proteins.

Hours in the Curriculum

- Lectures ex catedra and seminars: 73h
- Tutoring: 20h
- Laboratory work: 8h
- Examination in itinere: 8h
- Final examination: 10h
Total: 119h
**Method of learning/teaching**

The concepts focus on structure and function of molecules with particular reference to the intermolecular relationships. A number of reasonable drills are codified (generally 3 for year) that endure and strengthen the theoretical approach. Lectures and visual aids are used.

**Assessment methods**

Students are subjected to two written examinations at the end of each parts of the course (General Chemistry and the first part of Biochemistry). A final oral examination is also required to pass through.

**Strength**

Preclinical curriculum is addressed to dental students to give a basic knowledge more specifics for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student's needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Weaknesses**

Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.

**Innovations and Best Practices**

See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Plans for future changes**

A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
Name of course | Dental Materials
---|---
Name | Luca RAFFAELLI, Acting Professor
Number | Preclinical
e-mail | raffaelli@hotmail.com
Fax | +39 06 3051159

**An introduction**

There are no other Medical field such Dentistry in which materials & instruments have an impact. Indeed in the past they were not considered as important as today. The science of Dental Materials is taught since the first year in Dental school and its continue evolution needs to be update so to be able to reach an adequate level of professionism.

**Primary Aims**

- Knowledge of the main elements that allows to distinguish Dental Materials.
- Knowledge of the basic principles of biocompatibility of dental products.

**6 - 10 main objectives**

- to gain relevant information on the phisico-chemical composition of the materials
- to be able to evaluate the performance of the materials base upon scientific literature
- to know the production technique and the clinical usage of the materials
- to be ware of the medical and allergic interactions dental materials
- to allow a correct choice of dental product.

**Hours in the Curriculum**

The science of Dental Materials include 40 hours partly devoted to theory and partly to practice exercitations.

**Method of learning/teaching**

Classes developed with the use of luminous table and slides.

**Assessment methods**

An oral examination is administrated annually at the completion of the year.

**Strength**

Dental Materials represents the first applied subject which they students encounter during the first year. This will give to the subject a good impact on the student interest.

**Weaknesses**

The weak point of the subject is to be included in the Ist year of course and this causes problems to the students who ignore any basic aspect of clinical dentistry.

**Innovations and Best Practices**

To introduce the students in the study of the subject through the most recent references and not only through the study of text-books.

**Plans for future changes**

To insert the subject in the 2nd or better 3rd year of course in order to make this subject more suitable for the goals of the course.
Name of course: Physics

Name: Francesco ANDREASI BASSI, Associate Professor

Number: Preclinical

e-mail: iclod@rm.unicatt.it

Fax: +39 06 3051159

An introduction
The objective is to learn the principles of classical physics and the basic elements of the theory of measure.

Primary Aims
Applications of physical principles to biomedical cases.
To learn how to solve mathematical exercises on simple physical problems.

6 - 10 main objectives
Lectures cover particle mechanics, fluid mechanics, thermology, thermodynamics, electromagnetism and optics.

Hours in the Curriculum
- lectures: 40 h
- tutorials: 30 h
- laboratory work: 5 h
TOTAL: 75 h

Method of learning/teaching
Complex subjects are further discussed in the tutorials and explained using numerical exercises. Students are invited to interact with the teacher and to make questions.

Assessment methods
Oral and written examination on the topics of the course.

Strength
Preclinical curriculum is addressed to dental students to give a basic knowledge more specifics for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student’s needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

Weaknesses
Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.

Innovations and Best Practices
See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

Plans for future changes
A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
Name of course: Biochemistry

Name: Edoardo MENINI, Associate Professor

Number: 5.1

e-mail: emenini@rm.unicatt.it

Fax: +39 06 3051159

An Introduction
The Biochemistry course is taught in the 1st term of the 2nd year of the curriculum and it is intended to give the students a broad knowledge of general biochemistry and of the biochemical processes that occur in the oral cavity.

Primary Aims
- The students should be familiar with the structure and function of the main biomolecules and biochemical reactions, and should also know the main metabolic pathways.
- The students should have clear the fundamental biochemical concepts to understand the molecular basis of normal and pathological processes in the body and in particular in the oral cavity.

6 - 10 main objectives
- the students should know the relationship between the chemical structure and biological function of the biomolecules as well as the nature of their interactions
- the role of the enzymes, their kinetics and actions
- the nature, origin and actions of the vitamins
- the metabolism of carbohydrates, lipids, aminoacids and proteins, in particular collagen, proteoglycans and glycoproteins
- the metabolism of calcium, phosphorus, and fluorine
- the functions of the hormones and their role in the control of metabolism, in particular of calcium and phosphorus
- the composition, properties and the biochemical aspects of saliva
- the phases and hypothesis about the mineralization process
- the composition, structure and changes in the calcified tissues: bone, dentine, cementum, enamel
- the formation, properties and metabolism of the dental plaque.

Hours in the Curriculum
- Lectures of 2 hours are delivered twice a weeks (total about 48 hours). It is expected that the students work independently on notes and recommended textbooks for 5/6 hours after every lecture.
It is estimated that a student needs to spend about 200 hours to pass the end-of-term examination in Biochemistry.

Method of learning/teaching
Biochemistry is taught by means of lectures. During the lectures the students are encouraged to ask questions about the subject that is being treated and they are asked questions to see whether they have grasped the essential points. In order to arouse the interest of the students, whenever it is possible, a special effort is made to correlate the biochemical topics that are being presented with common events of every day's life, with pertinent aspects of dental biology or with the aberrant biochemistry of the disease states.

Assessment methods
The end-of-term examination consist of:
- multiple choice questions test that covers all the items of the programme,
- exercises in which the students are asked to write down simple biochemical reactions and
- an oral examination on some of the questions of the test.
**Strength**

Preclinical curriculum is addressed to dental students to give a basic knowledge more specifics for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student’s needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Weaknesses**

Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.

**Innovations and Best Practices**

See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Plans for future changes**

A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
Name of course | Biology
---|---
Name | Carlo GANGITANO, Associate Professor
Number | 5.3
E-mail | cgangitano@rm.unicatt.it
Fax | +39 06 3051343

An Introduction
The objective of the course is to learn various organization levels of living organisms, with special regard to the cell structure and its basic functions. Besides, the student must learn the principles and techniques of scientific method in the biological research.

Primary Aims
To learn the dynamic properties of cellular activities and the relationship between the structure and function at molecular and cellular level. To learn the organization, expression and trasmission of the genetic information, as well as molecular bases of cell differentiation.

6 - 10 main objectives
- chemical composition of living cells and biological properties of macromolecules
- organization and functional activities of cellular organelles
- energetic metabolism
- morphofunctional features of bilogical membranes, signal transduction, cell interactions
- cell movement, endo - and exocytosis
- Gene structure, DNA replication, RNA transcription and protein synthesis
- cell reproduction
- elements of general and human genetics
- principles of developmental biology and differentiation
- the student must learn the structural and ultrastructural main features of tissues and cells

Hours in the Curriculum
- Lectures 60 h
- Tutor groups 6 h
- Other instructions 6 h
- Total 72 h

Method of learning/teaching
Lectures, seminars and tutorial activities are given from October to May for a total of 72 hours

Assessment methods
Oral examination at the end of the course on themes covering all the topics of program. An exhaustive talk allows a good evaluation of the student on specific issues, as well as his capability to synthesize and integrate the various aspects of general and cellular biology.

Strength
Preclinical curriculum is addressed to dental students to give a basic knowledge more specifics for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student’s needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.
**Weaknesses**

Difficulty to motivate the dental student to detail the study of topics not directly related to oral system.

**Innovations and Best Practices**

See item 7, In the first year the teaching given during a relatively long time period (eight months) allows a more physiologica formative time for students coming from very different secondary schools.

**Plans for future changes**

A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
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<tr>
<td><strong>Name</strong></td>
<td>Gabriella DE RENZIS, Associate Professor</td>
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**An Introduction**
The course means to give the student a basic knowledge of structural organisation of the human body, from macroscopical to microscopical and ultrastructural level. It is a first year course, and it is divided in two terms: the first one is focused on the main systems of the human body, the second is specifically focused on anatomy of the stomatognatic apparatus.

**Primary Aims**
- A detailed knowledge of the topographical anatomy of the head and neck, with particular emphasis on oral anatomy, as a basis for clinical practice.
- A basic knowledge of the major systems of the human body, appropriate to the understanding of important diseases.

**6 - 10 main objectives**
Students are required to have an appropriate understanding of the following:
- skeletal system and joints, with particular reference to the cranium, mandible and temporomandibular joint.
- the muscles of head and neck.
- the oral cavity.
- vascularization of head and neck.
- the cranial nerves, with particular attention to trigeminal, facial, glossopharyngeal, hypoglossal, accessory and vagus.
- central peripheral and autonomous nervous system.
- main systems: digestive, respiratory, cardiovascular, urinary and endocrine

**Hours in the Curriculum**
- lectures: 90
- workshops: 20
- selfstudy: 15

**Method of learning/teaching**
Lectures with the help of slides and handouts. Workshops intended to enable the students to learn how to use the microscope and how to study histological sections. Selfstudy using bones, atlases and other related materials such as videos.

**Assessment methods**
Student assessments take place both in progress and at the end of the course. During the year three written tests are performed on three different topics concerning: osteoarthrology, thorax and abdomen. The final exam consists of individual, oral questions, on at least 5.6, topics of the program. Final mark is the mean of the cumulative marks for all the assessments.

**Strength**
From this point on, see common answers on behalf of all the Preclinical subjects to the questions 7-10.

**Weaknesses**
Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.
**Innovations and Best Practices** See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Plans for future changes** A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
Name of course: Physiology

Name: Rita VESTRI, Associate Professor - Guido FILIPPI, Associate Professor

Number: 6.2

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Fax: +39 06 3051159

An Introduction

Physiology, one of the most formative among the basic sciences, is taught in the first six months of the second year, following Anatomy, Biology and Biochemistry courses.

The course is divided in two sections, the first one specifically focused on oral physiology, the second one on the other main systems.

Primary Aims

- analysis of structural and functional aspects of stomatognathic districts
- providing the fundamentals notions on the functions of circulatory respiratory, renal and digestive system.

6 - 10 main objectives

- cellular physiology of the excitable tissues
- somatic and visceral sensitivity
- masticatory movement definition in a two- and three - dimensional space
- masticatory muscle basic functions
- masticatory cycle analysis
- stomatognathic structure special functions
- heart. Hemodynamic parameters, arterial pressure, nutritive exchanges (dental microcirculation)
- mechanics of respiration, gas exchanges, respiratory controls, upper airways, voice production
- kidney: glomerular filtration, tubular reabsorption and secretion, clearance, renal contribution to the homeostasis
- digestive processes, secretions and motility in the gastro intestinal tract, deglutition, salivary secretion.

Hours in the Curriculum

The course lasts 66 hours: 33 devoted to neurophysiology and to specific oral physiology and 33 bearing on the other apparatus physiology.

Method of learning/teaching

The method is based on classic lectures, helped by the use of designs and slides. Interaction among teacher and student is possible and encouraged because of the small number (25) of students.

Assessment methods

Student evaluation is performed at the end of the course by individual and oral questions on at least 5-6 topics of the program. Each test lasts about 50 minutes.

Strength

Preclinical curriculum is addressed to dental students to give a basic knowledge more specifics for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student’s needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.
Weaknesses

Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.

Innovations and Best Practices

See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

Plans for future changes

A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
**Name of course** | Hystology and Embriology (including Cytology)
---|---
**Name** | Franco Oreste RANELLETTI, Associate Professor
**Number** | 6.3
**e-mail** | iclod@rm.unicatt.it
**Fax** | +39 06 3051159

**An introduction**
The objective is to learn the structural and ultrastructural aspects of cells and how they participate in the formation of tissues.

**Primary Aims**
To learn how various functional differences are reflected in the structure of the cells and basic tissues and to understand the general embryogenetic process leading to the development of human body, with particular attention to teeth and associated oral tissues.

**6 - 10 main objectives**
- knowledge of cell structures and of morpho-functional correlates in mammalian cells (cytology).
- knowledge of the structure of differentiated cells and of tissues which they build up, with particular attention to oral tissues (histology).
- knowledge of the early steps in the human embryonic development from the fertilisation to the formation of the three germ layers and their relative fates. Particular attention is focused on the development of head, face, and oral cavity and on the relative developmental malformations (embryology).

**Hours in the Curriculum**
- lectures are given weekly from October to May for a total of about 80 hours subdivided in: 20 hours for cytology; 40 hours for histology; 20 hours for embryology.

**Method of learning/teaching**
- at the end of each lecture, students are invited to discuss some aspects of the topics presented during the lecture
- some written notes on the more important topics are furnished to students.

**Assessment methods**
- oral examination at the end of the course on some of the pre-established themes covering all the topics of the course program. At the end of the assessment, those students, who eventually did not pass the examination, are informed about the objectives which they failed to reach.

**Strength**
Preclinical curriculum is addressed to dental students to give a basic knowledge more specific for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student’s needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Weaknesses**
Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.

**Innovations and Best Practices**
See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.
**Plans for future changes**

A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
**Name of course**  Pharmacology

**Name**  Giovanni CIABATTONI, Associate Professor

**Number**  7.1

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**Fax**  +39 06 3050159

**An introduction**
In its entirely, the course of pharmacology embraces the knowledge of the mechanisms of action, absorption, distribution, biotransformation and excretion, and therapeutic uses of drugs. The dental student is interested primarily in drugs that are useful in the prevention, diagnosis, and treatment of human disease. Study of the pharmacology of these drugs can be reasonably limited to aspects that provide the basis for their rational clinical use.

**Primary Aims**
Although pharmacology is a basic medical science in its own right, it borrows freely from and contributes to the subject matter and techniques of medical disciplines, clinical as well as preclinical. Therefore, the correlation of strictly pharmacological information with medicine as a whole for a proper presentation of pharmacology to students is a primary aim of the course. Furthermore, the interpretation of the actions and uses of well-established therapeutic agents in the light of recent advances in the medical sciences is as important a function of a modern course of pharmacology as is the description of new drugs.

**6 - 10 main objectives**
- pharmacokinetics (adsorption, distribution, biotransformation, and excretion of drugs)
- pharmacodynamics (study of the biochemical and physiological effects of drugs and their mechanisms of action)
- pharmacoterapeutics (the use of drugs in the prevention and treatment of disease): drugs acting at synaptic and neuroeffector function sites, drugs acting on the central nervous system, drug therapy of inflammation, drugs affecting renal and cardiovascular function, drugs acting on the blood and the blood-forming organs, drugs for immunomodulation, chemotherapy of microbial and viral diseases.
- toxicology (the aspect of pharmacology that deals with the adverse effects of drugs).

**Hours in the Curriculum**
- lectures: 54 hours
- independent study: 200 hours
- examinations: 25 hours.

**Method of learning/teaching**
The basic pharmacological concepts apply to the characterization, evaluation, and comparison of drugs. A clear understanding and appreciation of these principles is essential for the subsequent study of the individual drugs.

**Assessment methods**
Preclinical final examination at the end of the course. This examination has to be passed by the beginning of the 3rd study year.

**Strength**
The course has been designed for the practicing dentistry. The emphasis throughout the course in those drugs specifically required by dental physicians.

**Weaknesses**
To the student, pharmacological data per se are valueless unless he is able to apply his information in the clinical practice. Dental students in the preclinical stage may not recognize the importance and the relevance of pharmacology from the standpoint of
actions and uses of drugs in the prevention and treatment of disease.

**Innovations and Best Practices** The course offers to dental student an opportunity to keep abreast of recent advantages in therapeutics and to acquire the basic principles necessary for the rational use of drugs in his daily practice.

**Plans for future changes** A more integrated of pharmacology and therapeutics with clinical stages.
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<tr>
<td>Name</td>
<td>Aldo NACCI, Associate Professor</td>
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**An Introduction**

Basic course of medical microbiology includes: bacteriology, virology, mycology, parasitology and immunology, with special emphasis on dental diseases and prevention of cross-infections.

**Primary Aims**

- to understand the biology of these organisms and how they interact with the human body
- to understand the immune response and the mechanisms used to prevent infectious diseases including vaccines and antimicrobial agents.

**6 - 10 main objectives**

- to describe the morphology, structure and metabolism of bacterial cells, including how they grow and how to recognize them in the laboratory
- to introduce how specific bacterial species can cause oral disease (e.g. caries, gingivitis, periodontal diseases and so on)
- to describe the morphology and pathogenesis of viruses
- to describe the morphology and pathogenesis of fungal pathogens
- to describe how the humoral and cell-mediated immune system recognize and eradicate micro-organisms and the consequences of immune deficiency syndromes
- to describe the development and mode of action of vaccines.

**Hours in the Curriculum**

- lectures: 50 hrs
- Small group (lab.): 5 hrs
TOTAL 55 hrs.

**Method of learning/teaching**

Lecturing, laboratory experiments and training of basic bacteriological skills.

**Assessment methods**

Oral examination.

**Strength**

Students can be regarded as a small group.

**Weaknesses**

The low lecturer/student ratios.

**Innovations and Best Practices**

Course on la. Techniques, where individual's own serum can be analysed for the presence of bacterial and viral antibodies.

**Plans for future changes**

More laboratory work and more lecturers.
<table>
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<tr>
<th><strong>Name of course</strong></th>
<th>General Pathology</th>
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<tr>
<td><strong>Name</strong></td>
<td>Gianna Maria BARTOLI, Acting Professor</td>
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**An Introduction**

This course is taught as an independent course in the second year. The course is mainly organised as basic pathology lectures, a small number of microscopy practicals, allowing illustration of pathological processes and independent study.

**Primary Aims**

- to develop an appreciation of the underlying basic principles of disease, covering mechanisms of tissue damage, inflammation, immune processes, neoplasia
- to understand the pathological processes underlying the commoner systemic diseases.

**6 - 10 main objectives**

The student should:

- understand the different types of insult which may result in tissue damage
- know the various reactions to insult at a cellular and gross pathological level
- understand the consequences of insults, such as healing and repair, chronic inflammation, scarring, neoplasia
- understand the concept of premalignant states and benign and malignant tumours
- know the molecular mechanisms of tumour growth and understand the biology of tumour cell
- understand the pathology of vascular disease, thrombosis and embolism
- appreciate the pathology to understand ischaemic heart disease and heart failure
- understand the consequences of pathology of red blood cells and bleeding disorders.

**Hours in the Curriculum**

The students attend 50 hours of formal lectures and 8 hours of practical sessions. To achieve the main objectives the students need independent study, that is estimated in approximately 200 hours.

**Method of learning/teaching**

The theoretical teaching is mostly delivered by lectures. The lectures are given for the whole course by one teacher. The teaching is largely interactive due to the small number of students (25) and the presence of only one teacher. Contemporary at the theoretical lectures practical microscopy sessions are given.

**Assessment methods**

Pathology is assessed by oral examination.

**Strength**

Preclinical curriculum is addressed to dental students to give a basic knowledge more specifics for the next clinical phase. The organisation of preclinical courses by individual entities gives a more adequate formation of biomedical knowledge. Small class size allows the teachers to interact with students and to adequate the teaching to the student’s needs. In the first year the instruction/tutoring given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

**Weaknesses**

Difficulty to motivate the dental students to detail the study of topics not directly related to oral system.
Innovations and Best Practices
See item 7. In the first year the teaching given during a relatively long time period (eight months) allows a more physiological formative time for students coming from very different secondary schools.

Plans for future changes
A larger integration between the preclinical and the clinical components is hoped. We have to improve the facilities, such as computers and interactive CD-ROM programs to assist students in their autonomous study.
<table>
<thead>
<tr>
<th>Name of course</th>
<th>General Medicine</th>
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<tbody>
<tr>
<td>Name</td>
<td>Vincenzo MUSUMECI, Associate Professor</td>
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**An Introduction**
The theoretical part of this course is thought throughout the third year with 1-hour informal lectures twice a week. The lectures provide a comprehensive account of internal medicine with systematic review of diseases. The practical part of the course consists in small group clinical problem solving sessions held at the bedside of an internal medicine ward.

**Primary Aims**
To provide background information which assists the dentistry when confronted with an acute-ill patient or with a patient who suffers certain conditions and is under treatment with a given drug.

**6 - 10 main objectives**
The student should be able to:
- prevent, recognise and manage life-threatening situations which may occur in the practice of dentistry, occasionally or following dental procedures
- detect the significance of oral pathology as a possible herald of internal medicine problems
- take into due account the implications of internal medicine diseases and their therapies in the dental procedures.

**Hours in the Curriculum**
50 hours of informal lectures + 50 hours of bedside problem-solving.

**Method of learning/teaching**
- informal lectures consist in the schematic presentation of essentials of internal diseases (definition, mechanisms and causes, diagnostic items, therapeutic lines) with interactive discussion focused to recall previous physiopathological knowledge and to consider differential diagnosis.
The media used during the lectures (text, tables, figures, diagrams, video-clips, sounds) are stored in an intranet web server which students can explore individually whenever they like.
- bed-side problem-solving sessions involve training of the students in history taking, physical examination, formulation of diagnostic hypotheses and diagnostic plans.

**Assessment methods**
The level of student progression in understanding internal medicine problems in assesses throughout the course by informal questions in order to have a feedback on topics which need to be refreshed. Individual evaluation is performed at the end of the course assessing practical skills and theoretical knowledge.

**Strength**
The course is organised by an associate professor of Internal Medicine, who works in an internal medicine ward and thus the possibility to select cases relevant to the course and to involve other clinicians as tutors for the bed-side problem-solving sessions.

**Weaknesses**
difficulties in matching the shedules of bed-side problem solving sessions with other activities of the students. Difficulties in involving, on a voluntary basis, other clinicians as tutors for students of dentistry.
Innovations and Best Practices  Possibility for the students to review the content of informal lectures on intranet Web.

Plans for future changes  Increased involvement of the students in the clinical work of internal medicine wards with possible rotation on subspecialty wards. Enrichment of the web site with quiz sessions, for the individual monitoring of learning progresses.
**Name of course**  
General Surgery

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Rocco BELLANTONE, Associate Professor

**Number**  
8.2

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**An Introduction**  
The educational course of Surgical Pathology and Clinical Propaedeutics is treated during the 3rd year of degree including general principles (clinical approach, main times of the interventions, pre-postoperative problems, infections, shock, elements of immunology, oncology, traumatology) as well as some specific elements (recalls of Anatomy and Physiology, physical and instrumental Semeiotics, clinical course and therapeutical treatment of the main pathologies, correlations among the pathologies treated and those concerning the dental field specifically). Beside the theoretical course, a particular evidence is given to the practice arranging small groups of students assisted by some tutors during the surgical, diagnostic and ward activity.

**Primary Aims**  
- diagnostic and clinical classification of the main surgical pathologies  
- acquirement of basic surgical techniques (medication, first aid, venous incannulations).

**6 - 10 main objectives**  
- acquirement of the semeiologic methods and elective and emergency diagnostic techniques  
- differential diagnosis  
- main elements of the surgical treatment  
- correlation with the odontostomatologic pathology  
- the risk in surgery.

**Hours in the Curriculum**  
- Theoretical lessons: 28 hours  
- training activity: 20 hours.

**Method of learning/teaching**  
Theoretical lessons, films, self-evaluation, quiz, training.

**Assessment methods**  
Training judgement, quiz, oral examination.

**Strength**  
Participation to clinical and emergency activity.

**Weaknesses**  
Informatic assistance lack.

**Innovations and Best Practices**  
- Performance of "minor surgery"  
- assistance to emergency duties.

**Plans for future changes**  
Training time increase. The final examination takes into particular consideration the tutors' opinion concerning the period of training. The oral examination consists of a verification of the procedures acquired.
Name of course: Anaesthesiology

Name: Domenico CAMAIONI, Associate Professor

Number: 8.3

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An introduction

The course takes place in the second year of lessons. The topics are fundamental for
the student and for their professional up-grading. The most important topics are
planned to explain:
The techniques, the drugs, the indications and the complications of the general
anaesthesia.
The pre-operative evaluation and the correlate fundamental diagnostic analysis.
The premedication
The intra-operative monitoring, the awake and the post-operative care.
The general anaesthesia applied to maxillo-facial surgery and to the dentistry.
The anaesthesiological emergencies
The day-surgery.
The drugs: Local anaesthetics, blood vessel constrictors, local anaesthetics systemic
effects.
The main loco-regional anaesthesia techniques, local complications and adverse
poisonous reactions.
The basic principles of cardio-pulmonary resuscitation(CPR).
The acute respiratory failure and respiratory obstructions.
The miocardial stroke, pulmonary embolism, anaphylactic reactions.
The ambulatorial management of the patient with:
- Allergy
- Hypertension
- Diabetes
- Previous miocardial shock
- Arrhythmias
- Pregnancy
- Epatic and renal failure.
Pain
- Pain pathophysiology and his pathways.
- Post-operative pain
- Cranio-facial pain
- Typical and atypical neuralgias
- Phantom Tooth Pain syndrome.

Primary Aims

- To know the CPR basic principles following the international guidelines (ACLS:
  Advanced Cardiopulmonary Life Support)
- To manage and to verify the emergencies (anaphylactic shock, allergic reactions,
  hypertensive crisis, hypotensive crisis).

6 - 10 main objectives

- Management and monitoring of the critical care patient
- Right use of emergency drugs
- Right use of LRA techniques
- Knowledge of analgesia and sedation techniques
- Pain control
- Quality control of the services

**Hours in the Curriculum**
- Theoretical teaching: 40 hours
  Theoretical-practical teaching with clinical applications and exercises.

**Method of learning/teaching**
- “Open” teaching with interactive clinical exercises

**Assessment methods**
- Control in progress of the learning

**Strength**
- Learning of CPR techniques

**Weaknesses**
- Prevalence of theoretical aspects over the practical applications (“at bed”).

**Innovations and Best Practices**
- Steadiness in the operatory room
- Steadiness and training in the intensive care unit
- Steadiness and training in the emergency department

**Plans for future changes**
- Steadiness and training of theoretical-practical courses of BLS (Basic Life Support) and ACLS (Advanced Cardiopulmonary Life Support).

The final merit-rating of the student is based on an oral examination (exploring theoretical learning) and on a theoretical-practical examination (exposition and management of a clinical case).
We notice the special attention and inquisitiveness by student relatively to anaesthesiology, resuscitation and critical care medicine.
An introduction

The educational course of Otorhinolaryngology is treated during the 4rd year of degree. The course is organized in order to explain the general principles (recalls of Anatomy and Physiology; natural hystory, physical, and instrumental Semeiotics; clinical approach) as well as diagnosis and treatment of the main pathologies (traumatic, inflammatory, degenerative, and tumoral diseases) of the head and neck, with particular regard of the nose and paranasal sinuses, the oral cavity, the oropharynx, and maxillo-facial region. Furthermore, correlations among the pathologies treated and those concerning the odontoiatric field are well instigated. Diagnosis and treatment of malignant tumors are particularly stressed, according to the initial cancer control as well as the current concepts of function or organ preservation (mandible), and other new parameters for the success of treatment such quality of life, quality of preserved function, and cost-effectiveness which are now desiderable secondary goals. Beside the theoretical course, a particular evidence is given to the practice arranging small groups of students during the diagnostic, surgical, and ward activity.

Primary Aims

- diagnostic and clinico-pathological classification of the main treated Otorhinolaryngologic pathologies
- acquisition of basic medical and surgical procedures.

6 - 10 main objectives

- acquisition of the semeiologic methods and elective and emergency diagnostic tools
- differential diagnosis
- correlation with the odontostomatologic pathology
- main elements of the medical treatment
- main elements of the surgical treatment
- diagnosis and treatment of head and neck tumors
- concepts of conservative and demolitive surgery
  concepts of reconstructive surgery
- prosthetic surgery and riabilitatation
- function and organ preservation (mandible)
- ethical aspects of treatment
- prevention and detection of primary and secondary head and neck tumors.

Hours in the Curriculum

- Theoretical lessons : 28 hours
- Training activity : 20 hours

Method of learning/teaching

Theoretical lessons, films, training discussion of the cases

Assessment methods

Training judgement, oral examination

Strength

Partecipation to clinical activity in the division and in the operative room

Weaknesses

Informatic assistance lack
Innovations and Best Practices

Hands-On Anatomy Teaching Laboratory with full instrumentation on specially "life like" prepared cadavers.

Plans for future changes

Training time increase. In the constantly changing medical world, health care professionals are faced with increasing demands to strengthen their knowledge of practical anatomy and procedures, to refine their clinical skills, and to explore new methods. A specially prepared specimen is available to review anatomy and procedures or to explore new surgical techniques of this many complex structures. The final examination takes into particular consideration the tutors opinion concerning the period of training. The oral examination consists of a verification of the knowledge and procedures acquired.
**Name of course**  Infectious Diseases

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**Number**  8.5

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**An introduction**  It is a course which focuses on some specific issues of Ids of large interest for future Dentists. It is taught at the 5th year course. The students follow this course on a pure voluntary basis.

**Primary Aims**
- to provide information on selected topics on IDs of general interest for students of the Dental School
- to emphasise on prophylaxis and transmission of IDs.

**6 - 10 main objectives**
- knowledge of Ids of great impart (AIDS, Hepatitis)
- specific knowledge on oral manifestations of Ids
- measures of prevention of IDs
- correct use of antibiotics related to oral diseases
- relevance of Ids in relationship to immunology, internal medicine, hygiene for the management of the patient with dental / oral diseases.

**Hours in the Curriculum**  12 hours in the Curriculum i.e. 6 lessons of 2 hours each.

**Method of learning/teaching**  The method of teaching is the traditional lesson. In addition, students are invited to prepare one topic (of those presented during the course) to discuss at the final exam.

**Assessment methods**  The assessment method includes:
- the evaluation of the work on a topic in I.D. individually prepared by the student
- the classic questions and answer method.

**Strength**  - the course provides general information on the most frequent Ids currently observed on an every-day practice by are individual dentist
- the student receives information on the current methods for preventing the most frequent Ids.

**Weaknesses**
- it is a course followed by the students on a voluntary basis only. This is the major criticism
- it should be expanded in term of hours and topics to be discussed
- some practical expertise should be provided.

**Innovations and Best Practices**
- to expand the number of topics providing some additional information on Ids
- to have a better interaction with the every day practice
- to have a number of hours devoted to practical skills.

**Plans for future changes**  The future innovation depends on the characteristic of the course: voluntary/compulsory.
Assuming that the course will be compulsory for all students, it
should be reconsidered both the theoretical and practical aspects to implement the hours dedicated to both these skills.
<table>
<thead>
<tr>
<th>Name of course</th>
<th>Neurology</th>
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<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Amelia EVOLI, Associate Professor</td>
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**An Introduction**
The course deals with:
- anatomy and physiology of the central nervous system (CNS), peripheral nervous system (PNS) and musculo-skeletal system (MSS)
- pathogenic mechanisms, clinical picture and diagnosis of neurological disorders.
The course is taught in the 2nd semester of the 4th year.

**Primary Aims**
Students should achieve a comprehensive knowledge of the structure and function of the CNS, PNS and MSS in order:
- to recognise, in their clinical practice the most frequent neurological disorders
- to diagnose those conditions which must be differentiated from oral and internal disease

**6 - 10 main objectives**
- Structural organisation of the nervous system
- Methods in neurological examination
- Cranial nerves: anatomy and pathology
- Headache, migraine and neuralgia
- Higher cognitive functions
- Demyelinating diseases
- Cerebrovascular disease
- The epilepsies and convulsive disorders
- Movement disorders
- Diseases of the peripheral nervous system
- Main neuromuscular disorders.

**Hours in the Curriculum**
- Lectures: 20 h.
- Tutorial groups for patients' examinations: 6 h.

**Method of learning/teaching**
- Teaching is on the basis of academic lectures (duration of each lecture: 2 hours), followed by general discussion
- Clinical examination of patients with neurological disorders followed by general discussion.

**Assessment methods**
- Final oral examination
- General discussion at the end of each lesson

**Strength**
Students can be closely tutored and are able to observe a large number of clinical cases.

**Weaknesses**
The course is short in duration; clinical work (examination of patients and case discussion) is not provided for the curriculum.
<table>
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<tr>
<th>Name of course</th>
<th>Dermatology</th>
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<tbody>
<tr>
<td>Name</td>
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**An Introduction**
The course is carry out of 2 hours of theoretic lessons, 12 seminars keep in collaboration with others colleagues of a different speciality in order to treat the confines patologies; 4 hours of clinical activities during which the patients will frequent the clinical and surgical ambulatory.

**Primary Aims**
Students should be familiar with Dermatologic diseases especially the patologies of the buccal cavity. Method of a differential diagnostic.

**6 - 10 main objectives**
To know the Dermatologic Semiotic. Objective exam of the patient. Instrumental and laboratory exam, prevention and epidemiology.

**Hours in the Curriculum**
4 hours in curriculum.

**Method of learning/teaching**
The course is carry out with theoretical and practical lessons. The pathology is dealt with under a etiopathogenetic, epydemiologic clinical, diagnostic and therapeutical differential point of view. During the course of lesson will be screen also the audio-visual materials in order to show the clinical treated cases under a clinical and pathological point of view. Besides the patients during the hours of a clinical activity have the possibility to get in touch directly with the pathologies showed during the course of a theoretical lessons.

**Assessment methods**
The final evaluation will be done on the base of active participation and frequency to the theoretical course and on the base of an oral examination at the end of a quartely course.

**Strength**
The students have the possibility to know on a nosological and nosographical point of view all the skin diseases of the buccal cavity.

**Weaknesses**
It would be necessary to dedicate more time to the practical lessons.

**Innovations and Best Practices**
To introduce to the student the histopathology and the surgery of the skin and mucous membrane.

**Plans for future changes**
Organisation multidisciplinary lessons to teach the diseases concerning much more
Name of course: Orthodontics I

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Number: 9.1

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An Introduction
In Italy this course is named: Orthodontics and Gnathology (masticatory function) I. That means the study is comprehensive of the orthodontic and the functional fields. In the first section, that is taught throughout the fourth study year, the topics are propaedeutic for the second course of orthodontics, hold during the fifth study year. In the first section of Orthodontics students learn thoroughly the knowledge of dental occlusion, craniofacial growth and masticatory function they already had in previous courses. The theoretical clinical part gives the knowledge of diagnostic instruments and their application in the study of clinical cases. Patient work starts when the students achieve a good theoretical level in diagnosis and a good manual skill: they learn how to perform the first approach to an orthodontic patient.

Primary Aims
Primary aim is to prepare the student to detect signs and causes of malocclusions and other alterations of craniofacial complex. Student must be able to collect anamnestic and instrumental data and clinical signs needed to perform a diagnosis. The course can be divided into three sections:
- Anatomical, functional, auxological knowledge of the patient, concerning the cranio-facial environment.
- Relationships between anatomy and function, aimed to diagnosis and auxological prediction.
- Orthodontic pathology.

6 - 10 main objectives
In section 1 it is pointed out the topics of anatomy of head and neck, that students received in the course of Human Anatomy and Anatomy of Stomatognatic system, and the topics of Dental Anatomy, previously treated in the course of Restorative Dentistry. Radiographic anatomy of cranio is taught to examine radiographs used in orthodontic diagnosis. Students learn methods to detect and analyse anatomical cranio-facial features. Then the study goes throughout craniofacial growth and the steps of the development of occlusion. The topics treated are:
1A.
- Cranio facial normal anatomy
- Soft tissue anatomy and aesthetic analysis
- Radiographic human anatomy
- Observation and analysis of anatomical craniofacial features (photographic and cephalometric analysis)
1B.
- Dental anatomy
- Anatomy of dental arches and occlusion
1C.
- Study of the growing patient (auxology)
- Stages of growth and growth sites (Enlow, Petrovic)
- Cranial embryology
- Growth curves
- Dental eruption (Factors determining dental position)
- Occlusion development.
In section 2 the intention of the course is to teach the principles of normal and...
pathological occlusion and function. Occlusal ratio are studied in their development and in their function of “comparator”, according to Petrovic’s Theory on Craniofacial Growth. The topics treated are:

2A. Dental occlusion as physiologic system
2B. Dental occlusion in orthodontic and gnathologic field

The role of dental occlusion in craniofacial growth. the “comparator”. In section 3 the aim is to consider dental relationships, and to put in evidence the signs of occlusal stability or instability. The topics treated are:

3A. Genetic and environmental factors in facial morphogenesis: etiopathogenesis of Malocclusion
3B. Extraoral Clinical examination

- Intraoral clinical examination
- Pathological signs in radiographic exam
- Variables elements during development
- Comprehensive evaluation of the patient’s pathology (clinical judgement).

**Hours in the Curriculum**
Theoretical par: 20 hours
Seminars: 24 hours
Laboratory and preclinical training: 35 hours
Clinical training: 10 hours
Total 89 hours.

**Method of learning/teaching**
The theoretical part of the course is performed by means of magistral lectures and p.b.i.. The laboratory and preclinical training takes place in groups of five students, under the guide of a teacher specialist in orthodontics. Students learn the method to collect all the data requested for diagnosis. They take dental impressions from each other, draw cephalometric traces and perform other practical trials. At the end of the course students have the first approach to dental clinic, where they examine patients.

**Assessment methods**
The skills of students are assessed in two written examinations. The clinical skills are assessed continuously during the clinical sessions. The teacher takes care that every student has had the possibility to perform the most common procedures.

**Strength**
The strength of the course is the possibility to execute the practical trials in small groups of students. We also have disposable an archive of cases for the students organised according to the topics of the exercitations. Year by year we improve the material usable for didactic purposes.

**Weaknesses**
Students are not very interested in studying orthodontics, because they will have the final exam at the end of the whole course of degree. We have few spaces for self study.

**Innovations and Best Practices**
We use Orthodontic treatment need index in the evaluation of orthodontic problems. Students use a computer program to collect data.
Plans for future changes

More Problem Based Learning.
Use of multimedia device.
Name of course: Orthodontics II

Name: Roberto DELI, Associate Professor

Number: 9.2

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An introduction

In Italy this course is named: Orthodontics and Gnathology (masticatory function) II. That means the study is comprehensive of the orthodontic and the functional fields. The course is taught throughout the fifth and last study year. On the base of theoretical knowledge students received in the course of “Orthodontics I”, it is taught the clinical application of cranio-facial growth and orthodontic diagnosis principles. By means of theoretical lessons and more problem based learning, students approach patients’ problems and take a general view in the aim to choose the best treatment for patients’ welfare. Therefore it is taught that Orthodontics is not apart, but it is a mean for patient dental and functional health. For this purpose, during the first six months, the programme includes the study of methodology and problem solving lessons. Clinical and preclinical parts start in the second six months. Aiming to give students a wide vision of orthodontics, they attend to seminars hold by orthodontists or biologists from our University or from other Universities. According to decisions from Orthodontic teacher committee, and to respect the laws that will control orthodontic activity in the future, the clinical part of the course is limited to those procedures that involve the skill to manage emergencies occurring to patients wearing orthodontic appliances.

Primary Aims

Primary aim is to allow students to detect orthodontic problems and to formulate a clinical judgement on pathologies. After the degree, the student will be able to communicate with a specialist in orthodontics and evaluate clinical results, and to provide first aid to orthodontic patients. The course is divided into three parts: - Semiotic in orthodontics and diagnostic methodology to formulate the clinical judgement. - Objectives and limits of orthodontic therapy - Prevention, epidemiology, clinical and experimental research in orthodontics.

6 - 10 main objectives

In section 1 the aim is the knowledge of the method to analyse diagnostic data. The sequence that begins from the first visit, and goes on the first elaboration of a clinical judgement and a therapeutic program is taught. Hence, the student assesses the possibility to operate following the programme and elaborates the final therapeutic planning. It is underlined the role of logical systems for the communication of clinical data and the structure of the semiotic in an algorithmic or heuristic configuration. The topics treated are: 1A. - Methodology of clinical judgement - Compilation of the report - Informatic in Medicine and in Dentistry - Computer aided clinical reports 1B. - Diagnostical radiology - Dental casts - Diagnostical photographs
In section 2 the applications of orthodontic therapy are studied. The fundamental principles of orthodontics in healthy child and in children with cranio-facial handicaps, in young man and in adulthood are explained. Orthodontic therapies are shown in clinic to small groups of students and in preclinic time, studying reports of clinical cases. The primary aim is to recognise the opportunity to use the orthodontic therapy in different clinical situations.

The topics treated are:

2A.
- The objectives of the therapy
- Different therapies

2B.
- Priority of the treatments
- Sequence of the treatment
- Notices on the therapy of dental crowding studied.
- Notices on the therapy of sagittal discrepancies.
- Notices on the therapy of vertical discrepancies
- Notices on the therapy of transversal discrepancies
- Notices on the therapy of severe craniofacial malformations
- Notices on the therapy of TMJ dysfunction
- Notices on the application of the orthodontic therapy in other fields.

2C.
- Notices on removable appliances
- Notices on activators
- Notices on orthognatic surgery.

In section 3 the course is aimed to update the students on the state of the art in the clinical and in the research fields. In this course, teachers of various disciplines keep seminars on specific topics. The topics treated are:

3A.
- Epidemiology of malocclusions
- Prevention of malocclusions
- Alternatives to orthodontic therapy

3B.
- Clinical research
- Experimental research.

**Hours in the Curriculum**

- Theoretical part: 50 hours
- Seminars: 42 hours
- Laboratory and preclinical training: 42 hours
- Clinical training: 10 hours
- Total 144 hours

**Method of learning/teaching**

The training is comprehensive of theoretical lessons, to introduce the main topics, seminars and problem based learning to study clinical problems. Groups of two students, under the guide of a tutor specialist in orthodontics, examine the reports of patient during preclinical time. Then they prepare a short relation that they show in occasion of the seminar about the kind of pathology of the patient studied. The students also attend to weekly lectures, hold by authors of different disciplines and to some programmes of the Orthodontic continuing Education. Besides, every year Prof. Petrovic has a three days seminar on Methodology in scientific research and on craniofacial growth.
Assessment methods

The skills of students are assessed in two written examination. The clinical skills are assessed continuously during the clinical sessions. The teacher takes care that every student has had the possibility to perform the most common procedures. The final examination is based on the presentation of a clinical case, used to start the exam.

Strength

The strength of the course is the possibility to execute the practical trials with small groups of students. We also have disposable an archive of cases for the students organised according to the topics of the exercitations. Year by year we improve the material usable for didactic purposes. We give a method for diagnosis and communication.

Weaknesses

We have few spaces for self study.

Innovations and Best Practices

Informatic systems.
Prediction of growth according to Petrovic.

Plans for future changes

More use of multimedia devices.
Name of course: Paediatric Dentistry

Name: Massimo CORDARO, Associate Professor

Number: 9.3

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An introduction
The student have to listen to 40 hours of lectures during the first semester of the fifth year of course. 100 hours of clinical work during the last three years of course. In our clinic we have separate room for pedodontics. In which there are two chairs. Junior student assist senior ones. The student that are considered able to, can treats cases whit no special problems and that show a reasonably collaboration.

Primary Aims
The aim of the course is to form doctors able to make precise and sure diagnosis and treatment plan of the problems that are directly linked to oral health and also the of the symptoms that can lead to general decease. They must be able to recognise when to treat and when to send patients to other specialist. They stingily have to be confident whit the concepts related to caries and periodontal prevention. A full knowledge of concepts as normal growth and development and the factors that cam impair or disturb it are also requested to our students.

6 - 10 main objectives
- Doctors have also to be able to manage and treat urgent problems as dental and m.facial injuries, pulpitis and abscesses in child. They have to be confident whit behavioural management and pulp therapy and restoration of primary and young permanent teeth.

Hours in the Curriculum
- 40 hours of lectures
- 100 hours of clinical practice as said
- 15 hours of seminars based on the paers produced by the students.

Method of learning/teaching
The skills of the students are continuously evaluated talking and asking questions to them.

Assessment methods
The final evaluation consist in one oral and one practical session. Student are also requested to produce one paper during the course on a specific topic, for example: injuries of the conyle during growth. They also have to do a 45 minutes lesson to their colleagues on that.

Strength

Weaknesses
The clinical accomodation in insufficient. We don't have enough chairs and people helping during clinical hours, comparison to the number of students.

Innovations and Best Practices
For the future we want to enhance our collaboration whit the other paediatric specialists in our hospital.
Plans for future chang
**Name of course** | Public Oral Health and Preventive Dentistry  
---|---  
**Name** | Fausto ORECCHIO, Associate Professor  
**Number** | 10  
**e-mail** | oreccchio_fausto@rm.unicatt.it  
**Fax** | +39 06 35019535  
**An introduction** | This Public Health course includes, as essential cultural components, preventive, social community, epidemiological, ethical and economic issues. The course includes the study of epidemiology as a tool of knowledge to carry out strategies and programmes of prevention. The different approaches to health promotion and health education are studied.  
**Primary Aims** | The Primary Aims of the undergraduate training programme are:  
- to provide students with a broad knowledge on different environmental diseases’ determinants and health  
- to give each one the correct professional behaviour in therapy and prevention.  
**6 - 10 main objectives** | - to provide a general knowledge on the epidemiological link existing between environment and human health  
- to study the main capacities enabling human organisms to tolerate the different stimuli coming from environment  
- to provide both a general and a detailed epidemiological knowledge on main infectious diseases of particular significance in odontostomatology  
- to create an understanding on strategies to avoid crossing infections.  
**Hours in the Curriculum** | each course consists approximately of 55 hours (25 hours for theoretical lessons and 30 for practice groups).  
**Method of learning/teaching** | The course provides for learning through the approach of practical problems. Consultation of literature data bank to stress the most interesting topics in odontostomatology is carried out. Lectures and seminars.  
**Assessment methods** | Only oral exams are envisaged.  
**Strength** | Each student is supplied with Public Health and Prevention education as public service in Society.  
**Weaknesses** | The most relevant weaknesses is due to the limited availability of technical and assistant teaching people in the school.  
**Innovations and Best Practices** | Computer assisted simulations in epidemiology would be advisable.  
**Plans for future changes** | No changes in next future are expected.
<table>
<thead>
<tr>
<th>Name of course</th>
<th>Operative Dentistry I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Antonia BOARI, Acting Professor</td>
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</tbody>
</table>

**An introduction**
The course is the first of three courses (1 academic year each) which comprehend the whole program of Operative Dentistry. This course is for students of the second year and provides them with the first theoretical and practical basis to enter into the clinical phase of Operative Dentistry. To reach this the students have lectures on the main arguments of the course. More in laboratory they draw teeth morphology, make soap sculpture of teeth and make preparation for amalgam and resin in chalk teeth. In the last months they work on phantom heads, preparing I - II - V class cavities for amalgam and III - IV class cavities for composite resin.

**Primary Aims**
General objective of the course is to teach the students both theoretical and practical basics in the treatment of dental caries.

**6 - 10 main objectives**
- dental caries
- teeth anatomy and morphology
- instrumentation, hand and rotary, used in Restorative Dentistry
- principles of class I - II - III - IV and V cavity preparations
- preparation design for class I - II and V amalgam restorations
- preparation design for class III and IV composite restorations
- dental materials in Restorative Dentistry.

**Hours in the Curriculum**
- lectures 52
- phantom head 104

**Method of learning/teaching**
- lectures
- laboratory.

**Assessment methods**
- drawing verification
- phantom head verification
- written tests

**Strength**
- good student facilities
- small group teaching
- full-time teachers.

**Weaknesses**
- little teaching staff
- lack of information technology

**Innovations and Best Practices**

**Plans for future changes**
Examination for each course and not only at the end of the third year.
Name of course | Operative Dentistry II
---|---
Name | Gaspare RUMI, Associate Professor
Number | 11.2
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An Introduction
The course of Restorative Dentistry II (3rd year) teaches skills and attitudes relating to the etiology, prevention, diagnosis, therapy and maintenance of the health of the dentition and well-being of the patient through programs in operative dentistry. Restorative dentistry II represents the continuation of the dental students experience into the area of Clinical Restorative Dentistry. As such, the general objective of the course is to further refine those skills to which the student was exposed to in Restorative Dentistry I in simulation laboratory. The student will be exposed to data collection and formation of a sequential treatment plan for the patient's restorative dental needs, a system of clinical evaluation of procedures and products based on a set of predetermined quality evaluation criteria involving new restorative techniques and materials, maintenance of dental records, and preservation of existing oral tissue health. This will be accomplished through both a didactic and clinical component.

Primary Aims
To teach the student the basic of didactics, techniques and skills to entry into the area of clinical restorative dentistry and to treat patients.

6 - 10 main objectives
- biocompatibility of dental materials in Restorative Dentistry
- database, diagnosis, treatment plan and therapy of dental caries on patients
- the use of liners and basis in pulpal therapy
- clinical properties of dental amalgam and composite resin
- clinical procedures relative to the use of dental amalgam and composite resin materials
- direct and indirect pulp capping
- principles for the use of preventive measures

Hours in the Curriculum
- Lectures 26
- Seminars 4
- Laboratory 52
- Clinics 414 (in 26 weeks)

Method of learning/teaching
- Lectures
- Seminars
- Simulation laboratory
- Patient treatment under supervision of tutors.

Assessment methods
Clinical credits: the students have to perform a standard set before of clinical procedures at the end of courses. Oral and practical examination.

Strength
- Excellent student facilities
- Small group teaching
- Full-time teachers
Weaknesses
- Little teaching staff
- Lack of informatic supplies for students

Innovations and Best Practices

Plans for future changes
- Faculty of dentistry
- Textbook and syllabus of Restorative Dentistry
An Introduction
Clinical Endodontics, 4th year (first and second semester).
Endodontics is a dental science that studies the morphology, physiology and pathology of the pulp and periapical tissues.
Theory and practice involve basic and clinical sciences closely correlated, that specifically include the biology of normal pulp, aetiology, prevention and treatment of pulp diseases and their pathological periapical conditions.
An endodontist must have a good knowledge and ability of the following issues:
- differential diagnosis, pulpal and periradicular oral pain control and all the endodontic treatment procedures. The endodontist is also responsible for the advancement in this field of basic research and public education on the relevance of this discipline in the attempt to maintain a good oral and systemic health.

Primary Aims
Create dentists with:
- a global approach to endodontics and to its relationship to other dental branches
- a good working knowledge of basic endodontics.

6 - 10 main objectives
- the histology and physiology of pulp in healthy and pathological conditions
- the anatomy of the pulp chamber and root canals, their relationship to the external anatomy of the tooth and the variations in relation to physiologic and pathologic phenomena
- the pulpal and periapical pathosys and their prevention
- clinical examination and diagnosis
- the clinical correlation between endodontics and periodontics
- endodontic therapy. Indications, contra-indications and technique
- endodontic materials
- a basic working knowledge of endodontic surgery
- a basic working knowledge of radiology and radio-protection.

Hours in the Curriculum
- 30 hours of theoretical lectures
- each student will receive a full laboratory training in practical endodontics of about 60 hours
- each student will be involved in clinical endodontic practice for 6 hours per week for a total of about 150 hours throughout the entire academic year.

Method of learning/teaching
The student will be guided through a series of parallel theoretical seminars and laboratory exercises aimed at the acquisition of the basic principles of endodontics that will allow him/her to be able to perform clinical therapy on patients.
More specifically we may able to identify:
- preclinical phase: getting through the pre-clinical phase (First semester) requires: an attendance of at least 80% in the lectures/laboratory sessions, 3 completed endodontic treatments carried out on extracted teeth, and a passing grade of 70% in the course final test (completion of the first phase is mandatory in order to progress to clinical phase)
- clinical phase: getting through the clinical phase (Second semester) requires: an attendance of at least 80% in the lectures/clinical sessions, 3 successfully
well-documented endodontic treatments carried out on patients.

**Assessment methods**

Pre-clinical final Examination: multichoice test and more each endodontic therapy will be given a specific written evaluation which will be recorded in a course register. The final exam will include two separate parts. A theoretical exam and a practical test which will be based on the following subjects:
- radiography
- dental and medical examination
- diagnosis and treatment plan
- anaesthesia and rubber dam
- access cavity and working length
- mechanical cleaning, shaping and filling of the root canal
- chair assistance
- approach to the patient and behaviour.

**Strength**

I believe that the course’s principal strength lies in the close working between the didactic staff and our students. This relationship enables the students to perform better in the acquisition of the theoretical aspects of the subject and will give them the enthusiasm to continue their path of education in the clinical practice.

**Weaknesses**

The drawbacks of the course may be considered as the distribution of the didactical hours through the academic year. From my experience I believe that a full-immersion training concentrated in one specific time would give the student a greater insight of the endodontic science. Besides, because the administration of the pre-clinical course is scheduled during the first semester of the fourth year, will not give enough time to the students to be involved with a number of patients as they should.

**Innovations and Best Practices**

Enhanced and improved practical laboratory training involving recent advancement in the use of new instrumentation, procedures and techniques.

**Plans for future changes**

As we specified before in the weak point section, I would be interested in anticipating the endodontic course to the second semester of the third year. In my opinion this will give the students a greater exposure to endodontic clinical practice on patients during the fourth year.
<table>
<thead>
<tr>
<th>Name of course</th>
<th>Prosthodontics</th>
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<tbody>
<tr>
<td>Name</td>
<td>Renzo RAFFAELLI, Full Professor - Armando MANNI, Acting Professor</td>
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</table>

**An Introduction**

Prosthodontics and masticatory-functional rehabilitation are taught during third, fourth and fifth year.

During third year students are lectured about rehabilitative techniques on fixed partial dentures, joining theoretical lectures (50 hours) and clinical skills lab together (80 hours).

During fourth year students are lectured about occlusal derangement of patients affected by partial dental loss; they are made competent in restoration techniques of partial dentures. Lessons include theoretical lectures (40 hours), clinical skills lab (20 hours), clinical works (100 hours).

During fifth year students are taught about technical and rehabilitative techniques in total dentures attending theoretical lectures (50 hours), clinical skills lab (10 hours), placing extended emphasis trials with patients’ approach (200 hours).

**Primary Aims**

Combining laboratory and clinical training to make students independent and properly qualified in morphological, aesthetic and functional treatment of partial or total edentulous patients.

**6 - 10 main objectives**

- Prosthetic rehabilitation project and its indications.
- Competence in:
  - clinical and instrumental diagnostic techniques, necessary for learning prosthetic rehabilitation
  - treatments stages from diagnosis to final integration with stomatognatic apparatus of prosthetic rehabilitation
  - selection and clinical application of prosthetic materials
  - deep knowledge of prosthetic successes and failures
  - malocclusions
  - tmj pain, dysfunctional disease and correct utilisation of articulation principles in prosthetic rehabilitation.
  - commonly used implant dentistry techniques.

**Hours in the Curriculum**

Third year:
- lectures: 50 h
- skills lab.: 80
TOTAL 130 h

Fourth year:
- lectures: 40 h
- skills lab.: 20 h
- clinics: 100 h
TOTAL: 160 h

Fifth year:
- lectures: 50 h
- skills lab.: 10 h
- clinics: 200 h
TOTAL: 260 h.
<table>
<thead>
<tr>
<th><strong>Method of learning/teaching</strong></th>
<th>Most of lectures take place combined with practical activity in dental skills lab and clinics to allow students apply learned techniques immediately.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment methods</strong></td>
<td>Skills are tested throughout theoretical final examination, at the end of fifth year. It includes evaluation in acquired practical attitude together with reached clinical maturity in patients treatment.</td>
</tr>
<tr>
<td><strong>Strength</strong></td>
<td>Possibility for continuous individual testing of students, clinical skills learned during theoretical lessons. Possibility for continuous individual testing of students’ knowledge and individual growth both in lab and clinics.</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
<td>Lack of dental laboratory where students might follow step-by-step technical approaches to dental prosthesis realisation. Insufficient number of clinical staff.</td>
</tr>
<tr>
<td><strong>Innovations and Best Practices</strong></td>
<td>A greater use of informatic systems.</td>
</tr>
<tr>
<td><strong>Plans for future changes</strong></td>
<td>The plans for future are to add problem-based learning in prosthodontics and use of informatical resources.</td>
</tr>
</tbody>
</table>
An Introduction

Periodontology is a two-years course that is taught during fourth and fifth year. This placing in the end of the course allows to make many links with other subjects (orthodontic, prosthetic, pathology, implants). During the fourth year the students learn the effect of scaling and root planning with concomitant plaque control; they drill to the use of hand instruments and of ultrasonic instruments. During fifth year a lot of time is spent to understand evaluation methods whether in clinic or in topics of literature, because they continuously.

Primary Aims

Primary aims of fourth year are a good knowledge of prevalence, correct diagnosis and therapy (pharmacological, corrective or regenerative surgery).

6-10 main objectives

- normal and phatologic structure of periodontium
- oral biology and microbiology
- etiopathogenesis of periodontal diseases
- epidemiology
- diagnosis and treatment
- surgical techniques
- implants as option

Hours in the Curriculum

- fourth year: lectures 32
  seminars 8
  lab skills (m.scope/phantoms) 24
  clinical activity 40 TOTAL 204
- fifth year: lectures 36
  seminars 8
  lab skills (phantoms/animal's tissues) 20 TOTAL 64
TWO YEARS TOTAL 268

Method of learning/teaching

The method used follow the pattern:

Lecture-teaching……training on phantom……Lab. Practice……Thorough analysis of lecture……Student's reports on literature topics and discussion…..Any lecture of outside teaching.

Example: scaling/root planing (4 lectures); practical on phantom and extracted teeth (6 hours); stereomicroscopic evaluation of results (2hours); sharpening problems and root's lesions (slides or SEM lecture); reports of students on literature topics; the opinion of Scandinavian school on maintenance therapy (outside teaching)

Assessment methods

During the fourth year the clinical training is assessed continuously considering the relations with patients, correct position of work, dexterity, knowledge of instruments. Evaluation of literature review and lab skills final test. Instrument grip, dexterity and participation at lectures. In the end of fifth year written (multiple choice) and oral examination.

Strength

Every topic is treated completely.
Weaknesses  It is not possible to make surgical practice on patients.

Innovations and Best Practices  The use of the Web for the consultation during clinical training.

Plans for future changes  To increase the biological training (microbiology, immunology, histology)
Name of course: Oral Surgery

Name: Domenico PISELLI, Acting Professor

Number: 13.1

e-mail: piselli_domenico@rm.unicatt.it

Fax: +39 06 3051159

An Introduction

The teaching course is divided into basic and concluding, 3rd and 4th years, respectively (4 terms). The general aim of the course is to teach the students how to establish a good relationship with patients and be in control of the situation in order to be able to perform oral operations under safe conditions after having correctly established the indications. There is only the final oral examination at the end of the concluding course. The course includes practical experience on patients: before each new procedure (local anesthesia, dental extraction) students must pass a written and oral test. Students are not admitted to the final oral examination without having attended almost all lectures, performed the set number of standard procedures and having studied and presented to their fellow students in summarised form an internationally published paper on a relative topic.

Primary Aims

To teach the student the basics of diagnosis, indications and techniques for surgical procedures involving teeth, supporting structures and the oral cavity in general, including those relative to oral pathology and implantology.

6 - 10 main objectives

- Methods of clinical assessment
- Organisation of operating room
- Surgical instruments and sterilisation
- Preparation of operative field
- Local anesthesia
- Surgical flaps
- Suture materials and techniques
- Dental extraction - erupted, unerupted and impacted teeth
- Apicoectomy - retrograde filling technique
- Treatment of jaw cysts - cystotomy and cystectomy
- Treatment of odontogenic tumours and other neoformations
- Preprosthetic and preorthodontic surgical treatment - fraenulectomy, soft and hard tissue management in preparation of the mouth for dentures, lines of treatment for unerupted teeth
- Oral implantology - osseointegration, GBR techniques, implant system selection
- Laser CO2 utilisation
- Handling intra- and post-op complications.

Hours in the Curriculum

- Lectures: 52
- Seminars: 20
- Treating patients: 200 (in 52 weeks).

Method of learning/teaching

- Lectures
- Seminars
- Assisting in operations
- Operating under supervision of tutors
- Suturing practice (on simulators).

Assessment methods

Oral examination at the end of the course. Students are evaluated by written and oral
test before being admitted to clinical work. The urge to treat patients after two years of theoretical studies incites students to study throughout the entire course and not just before the final examination. Not being admitted to the final examination without having performed a set number of clinical procedures ensures that these are effectively learned from a practical point of view. The dental profession is so closely linked to oral surgery that students appreciate the need for serious application in this field, as regards both theoretical study and clinical experience.

**Strength**
- Considerable supervised operating experience, also in day hospital activities.
- Seminars held by guest speakers on specialised topics.
- Teaching programme, both theoretical and practical, carried out in the same building, that is the University Policlinico A. Gemelli.
- Students can observe the whole range of human pathologies and their relationship to the oral cavity since patients are referred to us from all wards of the large university hospital.
- Possibility to observe and/or work on experiments in the animal house.
- Possibility to collaborate with all other institutes of the Faculty of Medicine and Surgery of the same university.

**Weaknesses**
Absence of permanent teaching professor's chair.

**Innovations and Best Practices**
- Before each lesson a 15-minute discussion and question period is left to the students to clear up their doubts, compare and share their experiences, learn to formulate questions and appear in public. Moreover, in this space of time they can denounce any deficiencies in the teaching system and point out their needs to the lecturer.
- Internationally published papers - knowledge and critical analysis, development of ability to synthesise, overcoming shyness in public speaking, expanded knowledge of problems in international research, possibility of “inspiration” for innovative experimental work both for their own theses and for their teacher.

**Plans for future changes**
- Clinicopathological seminars on interesting clinical cases.
- New operating room for oral surgery, with its own anaesthetist, and hospital beds for admission of patients.
**Name of course** | Maxillofacial Surgery  
---|---  
**Name** | Antonino DI GIOVANNI, Acting Professor  
**Number** | 13.2  
**e-mail** | iclod@rm.unicatt.it  
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**An Introduction**  
The teaching course is held in the first semester of the 4th year (1 term). 
The general aim of the course is to provide knowledge of maxillofacial traumatology, surgery of tumours of the oral cavity, salivary glands, temporo-mandibular joint, maxillary sinus and maxillofacial malformations. There is only a final oral examination at the end of the course. Students are admitted to the final examination after having attended almost all lectures and performed simulated procedures.

**Primary Aims**  
To teach the student the basics of diagnosis and surgery, indications and techniques for surgical procedures involving the maxillofacial area.

**6 - 10 main objectives**  
Surgical basics of:  
- maxillofacial traumatology  
- oral cancer  
- salivary glands  
- craniomaxillofacial malformations  
- maxillary sinus  
- temporo-mandibular joint

**Hours in the Curriculum**  
- Lectures: 15 h  
- Seminars: 5 h

**Method of learning/teaching**  
- Lectures  
- Seminars  
- Assisting operations

**Assessment methods**  
Oral examination at the end of the course. Students are evaluated by oral and practical test during the semester without having performed a set number of simulated procedures, such as sutures and intermaxillary fixation by teeth ligature techniques.

**Strength**  
- Supervised operating experience, also in day hospital activities.  
- Seminars held by guest speakers on specialized topics.  
- Hospital ward experience.  
- Students can observe the whole range of human maxillofacial pathology.  
- Possibility to observe and/or work on experiments in the animal house.  
- Possibility to collaborate with all other Institutes of the Faculty of Medicine and Surgery of the same University.

**Weaknesses**  
Absence of permanent teaching professor's chair.

**Innovations and Best Practices**  
Extensive practical experience on patients.
Plans for future changes

- New operating room for maxillofacial surgery
- Greater number of teaching hours.
Name of course: Radiology

Name: Tommaso PIRronti, Acting Professor

Number: 13.3

e-mail: iclod@rm.unicatt.it

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An introduction
The course of general and special odontostomatologic radiology goes on during the third year second semester of the degree in odontostomatology and dental prosthesis. This course is based on theoretical lessons and practical training in radiological rooms to give the necessary knowledge for doing a radiological diagnosis and establishing correct terapeutical item, respecting the radioprotection laws (DL.230/1995).

Primary Aims
- Knowledge of the interaction with the organic substance and of the physics on which is based the image diagnostic and radiotherapy.
- Knowledge of the modality of extraction of the image from the human body, the methods and techniques to interpret the images.

6 - 10 main objectives
- Knowledge of the radiobiology, radioprotection and related laws
- Knowledge of the normal radiologic anatomy of the same district
- Knowledge of pathologic radiology anatomy of the same district
- Definition of the diagnostic item
- Comparison between images and semeiotic of the patient
- Correlation of the radiological signs and symptoms to express a diagnosis
- Correct execution of the diagnostic procedures.

Hours in the Curriculum
- Theoretical lessons: 30 h
- Multimedia laboratory: 10 h
- Training: 24 h
- Seminars: 16 h
TOTAL: 80 h

Method of learning/teaching
- Theoretical lessons with slides on the most important subjects of the course
- Training in radiological rooms to apply the theoretical knowledge to daily practice.

Assessment methods
Evaluation of the student knowledge by a final test.

Strength
The odontostomatologic radiology develops by the introduction of new instruments (Echography, CT, MR) which improve the knowledge of the normal and pathological conditions of the odontostomatologic and facial district. During the course, great importance is due to integrate and interpret the images.

Weaknesses
The vastness of the arguments and methods, do not permit the correct discussion of all disease. This is in part offset by the practical exercitation in radiological rooms.

Innovations and Best Practices
Anonymous multiple choice tests evaluate the level of knowledge of the students during the course.

Plans for future changes
New theoretical/practice lessons about Dentascan, a new CT methods, recently
acquired by the Institute of Radiology of the University of the Sacred Hearth.
Name of course: Pathology

Name: Guido MASSI, Associate Professor

Number: 14

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An Introduction: The course is intended to convey a complete information about the surgical pathology aspects and anatomical pathology of oral cavity; teaching focuses mostly on the practical aspects of the surgical pathology of oral cavity with stress given to the anatomo-clinical correlation.

Primary Aims

6 - 10 main objectives

Hours in the Curriculum: The total amount of hours of lectures is about 32.

Method of learning/teaching: An interactive method of learning is used during lectures, with students continuously requested to comment clinical and pathological pictures

Assessment methods: assessment is done during lectures and at final examination

Strength: The major strength of the course is the correlation always done between the clinical and pathological aspects of the oral cavity diseases. Dentist should be aware of the importance of oral patology in his practice.

Weaknesses: The major weaknesses is the short time dedicated to the course and lack of motivation and economic incentive for the teach.

Innovations and Best Practices: The importance of the practical aspects of oral pathology in a school of dentistry is a quite big innovation in Italy.

Plans for future changes: Improvement can be one only if major changes occur in career organization and salary of the faculty.
**Name of course**  
Comprehensive Patient Care

**Name**  
Carlo M.MIANI-Full Professor, Michele GIULIANI - Acting Professor

**Number**  
15.1

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iclod@rm.unicatt.it

**Fax**  
+39 06 3051159

**An introduction**  
The course is mostly aimed to allow the students to make decisions about the best treatment for the patient. The course takes place in the fourth and fifth year and a single student is asked to treat a single patient for all his/her needs, depending on the difficulty of the treatments requested. The aim of the course is also to simulate a typical private practice or community dental service situation in which the dentist may be alone and have to make a diagnosis, to draw a clinical plan and, possibly, to fulfill the desires of the patient. Oral Medicine is also taught during the fourth and fifth year.

**Primary Aims**  
1) To allow the students to make an oral diagnosis, giving them the methodology to collect a good medical and dental history and to collect oral and dental signs from the patients.
2) To evaluate from a "comprehensive" point of view the oral needs of the patients, having in mind that oral health is a part of whole health. We insist on the fact that they are not treating teeth or periodontium, but they are treating the mouth in its totality.

**6 - 10 main objectives**  
1) To take a good medical and dental history.
2) To carry out a physical examination of the mouth, the head and neck.
3) To plan further laboratory tests, radiological and/or other imaging procedures and consultations from other physicians.
4) To evaluate the results of those tests.
5) To collect samples for microbiological and mycological cultures.
6) To take a biopsy.
7) To make a differential diagnosis.
8) To take care of special needs patients.

**Hours in the Curriculum**  
**Fourth year:**
1) Lectures 26 hours
2) Seminars 11 hours
3) Clinical training 45 hours

**Fifth year:**
1) Lectures 13 hours
2) Seminars 11 hours
3) Clinical Training 130 hours

**Method of learning/teaching**  
Formal lectures, seminars and workshop on practical cases. During the clinical training all the cases are discussed with the staff.

**Assessment methods**  
"In itinere" evaluation, final written and oral exam on practical cases.

**Strength**  
The students are encouraged to draw their own treatment plans and to discuss them with the staff and with other students.
| Weaknesses | The time dedicated to the comprehensive patient care is quite short. Because of the short time sometime the student cannot complete the treatment plan. |
| Innovations and Best Practices |
| Plans for future changes | May be useful, at least from a clinical training point of view, to try to join together the students from third, fourth and fifth year for Clinical Patient Care. |
Name of course: Oral and Dental Diseases

Name: Adolfo SACCHI - Full Professor

Number: 15.2

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An Introduction
This teaching is very peculiar in the Italian dental curriculum. There is nothing like this teaching in European dental curricula. In this teaching there are lectures on the basic diseases which can affect the teeth, the bone and the oral mucosae. Most of these topics, however, are also treated in other teachings.

Primary Aims
To know and to be able to recognise the most important oral and dental diseases.

6 - 10 main objectives
1. Dental caries.
2. Anomalies of teeth.
3. Pulpitis.
4. Gingivitis and periodontitis.
5. Benign neoplasms.
6. Malignant neoplasms and oral cancer.
7. Salivary glands diseases.

Hours in the Curriculum
1. Lectures 48 hours
2. Seminars 5 hours
3. Clinical training 120 hours

Method of learning/teaching
Traditional lectures, seminars, workshop.

Assessment methods
Analysis of clinical cases during the course (so called "in itinere evaluation"). Final oral examination.

Strength
During the clinical training the students can treat patients, from the third year, within the concept of comprehensive dental care. Small class size allows the teacher to interact with students.

Weaknesses
The third year students are not able yet to treat patients on their own so they can only give simple fillings and superficial scaling.

Innovations and Best Practices

Plans for future changes
To modify the program of this teaching in the near future, to make this teaching more useful for the students.
<table>
<thead>
<tr>
<th>Name of course</th>
<th>Forensic and Legal Dentistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Ernesto D'ALOJA, Associate Professor</td>
</tr>
<tr>
<td>Number</td>
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**An Introduction**

The forensic medicine course is a mandatory teaching is the last year (5th years) of curriculum; in this course all the main juridical information concerning the profession of dentist are provided in order to let students fully understand the legal context in which their profession will be performed. This program has been suggested by the increasing number of suits against dentists either as penal or as civil malpractice ones.

**Primary Aims**

To give students the forensic background they need to reduce the malpractice's suit risks and to stress some aspects of human remains identification procedures commonly employed in the forensic scenario.

**6 - 10 main objectives**

- an average knowledge of the main principles on which our civil organisation is founded (Constitutional Principles, Penal Code and Civil Code rules related to medical/dentist profession)
- an adequate understanding of the legal framework which consents the practice of dentist activity (informed consent, penal and civil professional liability, etc.)
- an exhaustive scenario of the main penal rules a dentist should be aware to be part of the Community and to serve as a judge collaborator
- an overview of the civil code items related to the dentist-patient relation-ship
- an explanation of the criteria commonly adopted in civil court to evaluate the permanent impairment of dental and maxillo-facial apparatus and a discussion on the main "baremes" actually employed in Europe and in the United States
- an insight to forensic pathology with a special mention to traumatic events to the skull and the maxillo-facial area
- a basic explanation of human remains identification procedures routinely employed to correlate corpses - retrieved in mass disasters - to know persons including dental identification and more recent laboratory tools such as DNA profiles by the means of either nuclear or haploid markers.

**Hours in the Curriculum**

60 hours for year concentrated in a six-months period, several practical lessons are also planned to let students face some of the most common situation of claiming toward dentist and to perform few oral autopsies in smaller groups.

**Method of learning/teaching**

The main body of teaching is based on academic lessons although a problem related approach has been proposed for selected items (mainly on identification problems).

**Assessment methods**

An oral examination of the student is performed at the end of the course but this step it's considered as an occasion to discuss forensic details of practical situation in which each student has been involved during his/her clinical training.

**Strength**

The relative small number of students.

**Weaknesses**

The practical approach has been so far too limited.
Innovations and Best Practices The attempt to perform several oral autopsies with the students divided into small groups and to let students be critical part of few clinical forensic medicine cases.

Plans for future changes A computer-aid program for interactive lessons is under way.
Name of course: Psychology

Name: Carlo SARACENI, Associate Professor

Number: 16.2

e-mail: iclod@rm.unicatt.it

Fax: +39 06 39366501

An introduction: The course is situated in the first year of the school; it is actually 25/30 hours long and it is an hour every week. The course is additional.

Primary Aims: The aim of the course is to present a psychological perspective to the students about the matters of psychological diagnosis and emotional development.

6 - 10 main objectives:

Hours in the Curriculum: 1 hour a week for 25 - 30 weeks.

Method of learning/teaching: The methods are demonstrative and expositive with lectures in class.

Assessment methods: Evaluation method consists in a final oral examination.

Strength:

Weaknesses:

Innovations and Best Practices:

Plans for future changes: The weak point of the course could be its set in the first year of the training, it could be more effective after the study of anatomy and physiology.
Section 17:
EXAMINATIONS, ASSESSMENT AND COMPETENCES

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

Name: Fausto ORECCHIO & Domenico PISELLI
e-mail: orechhio_fausto@rm.unicatt.it  fax: +39 06 3051159

Academic Year is divided into 2 terms (2 semesters) with the exception of the first year of the Dental Course, which is on annual basis. Teaching courses may have a duration of 1, 2, 4 terms (2 years) or 6 terms (3 years) and one teaching course may be the prerequisite for other teaching courses. There is a final oral examination for each teaching course; in some cases other evaluations may contribute to the result of the exam:

\[ W_1 = \text{final written test combined with final oral examination} \]
\[ W_2 = \text{written test during the teaching course, prerequisite for clinical work and/or final examination} \]
\[ P_1 = \text{final practical test combined with final oral examination} \]
\[ P_2 = \text{set number of clinical procedures, prerequisite for final examination} \]
\[ P_3 = \text{tooth drawing and soap sculpture test; evaluation of simulated procedures on phantom head} \]
\[ C = \text{continuous assessment (in itinere evaluation).} \]

The different combinations are listed in table I.

The examining board is made up of 3 members with no external examiners involved.
The maximum score is 30 points with or without “cum laude”.
To pass an exam the minimum requested is 18 points.

The Graduation Exam consists of the disputation of a thesis before the Professors Board led by the Rector Magnificus of the Catholic University of the Sacred Heart. To be proclaimed “Doctor in Dentistry” the minimum requested is 66 points.
The maximum score is 110 points with or without “cum laude”. The final score is the synthesis of the exam score average (examination scores obtained during the years of the Dental Course) plus the score obtained by thesis disputation.

To qualify and register as a Dentist the new Graduates are required to be approved by a State Committee.
### TABLE I - EXAMINATIONS, ASSESSMENTS, COMPETENCES

<table>
<thead>
<tr>
<th>Teaching Course</th>
<th>O</th>
<th>W₁</th>
<th>W₂</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
<th>C</th>
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<tbody>
<tr>
<td>1. Physics</td>
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<td>3. Dental Materials</td>
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<td>4. Biochemistry</td>
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<td>5. Biology</td>
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<td>6. Anatomy</td>
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<td>7. Physiology</td>
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<td>8. Histology</td>
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<td>9. Pharmacology</td>
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<td>10. Microbiology</td>
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<td>11. General Pathology</td>
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<td>12. General Medicine</td>
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<td>13. General Surgery</td>
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<td>14. Anaesthesiology</td>
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<td>15. E.N.T.</td>
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<td>16. Infectious Diseases</td>
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<td>17. Neurology</td>
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<td>18. Dermatology</td>
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<td>19. Paediatric Dentistry</td>
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<td>20. Orthodontics</td>
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<td>21. Public Health and Preventive Dentistry</td>
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<td>22. Operative Dentistry</td>
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<td>23. Prosthodontics</td>
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<td>24. Periodontology</td>
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<td>25. Oral Surgery</td>
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<td>26. Maxillofacial Surgery</td>
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<td>27. Radiology</td>
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<td>28. Pathology</td>
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<td>29. Oral and Dental Diseases</td>
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<td>30. Comprehensive Patient Care</td>
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<td>31. Psychiatry</td>
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<td>32. Psychology</td>
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<td>33. Forensic Dentistry</td>
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<td>34. Introduction to Christianity</td>
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<td>35. Christian Anthropology</td>
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<td>36. Medical Ethics</td>
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**O** = final oral examination  
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**P₃** = tooth drawing and soap sculpture test; evaluation of simulated procedures on phantom head  
**C** = continuous assessment *(in itinere evaluation)*
Section 18:
OTHER INFLUENCES

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

Name: Francesco SOMMA
e-mail: iclod@rm.unicatt.it    fax: +39 06 3051159

1. National Health Service

Our University provides dental service on the behalf of the National Health System.

It determines some effects on the our undergraduate course, that may be classified as:

“Negative” Effects:

a) the dental staff is heavily involved in clinical patient care. This may penalize the time dedicated to specific university activities (mostly research and teaching)

b) patient fees and the reimboursment provided by the national health service is not adequate to cover the effective costs of the therapies. This determine a chronic economic deficit that may be difficult, at the current rates, to be covered up.

Because of this the hospital administration requires a continuos increment of the number of treatments; this may aggravate the already shaky balance between the clinical patient care activities and the teaching goals of the institution.

A further consequence of this situation is:

1) it is difficult to create new faculty positions for teachers and young and junior clinicians
2) furthermore it is difficult to refurbish existing structures and budget for new equipment as air conditioning in the clinical departments, new instruments and medical supplies.

“Positive” Effects:
a) the students have the chance to treat many patients during the clinic training in some fields of dentistry and particularly in primary dental care.

2. Economical Crisis

It is important to acknowledge that the recipients of the national health system are very often people who belong to an economical low level. This patient stratification determines that the largest part of treatments required are basic scaling and root planing, operative dentistry and teeth extraction. Other forms of therapies such as prevention, prosthetics, orthodontics and oral implantology, not covered by the national health service, are not required as much.

3. Low Support for the Research from Public Administration And/Or Privat Sponsor

4. Overloading of the Teaching Faculty

Sometime the limited number of teachers requires that a single faculty may be involved in several courses spread throughout the postgraduate and undergraduate courses. This may overload the teacher.
Section 19: STUDENT AFFAIRS

Representatives of Fourth year: Davide Berardi, Chiara Piantelli
Representative of Third year: Ester Delli Carpini

Basic data from Dental School
a) Average number of dental students qualifying per year: 15 (so far).
b) Average number of dental students admitted to the first year: 15 (until 1995) – 25 (since 1996).
c) Length of course in years and/or semesters: 5 years: one term (8 months long) for the first year; 2 semesters every year from the second year.
d) Is there a separate period of vocational training following graduation as a dentist in your country: NO
Section 20: RESEARCH AND PUBLICATIONS

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

Name: Roberto DELI

e-mail: rdeli@rm.unicatt.it    fax: +39 06 3058198

The Dental Institute only performed the research in dentistry, up to 1983. The collaboration with biological Institutes was very occasional. Traditionally, our Institute was interested on the histologic and biologic aspects of dental pulp. Prof. Baratieri, Prof. Miani and all the senior staff drew many experiments on the reaction of the pulp to the direct or indirect contact with dental materials. After 1983, when the CLOPD was born, the Institute was organised in several sections according to the didactic necessities. Each section developed different research lines and the researches belonging to the biologic area of the medical school occasionally contributed with their experience to the dental research. Today, a better integration between clinical and basic science researchers is developing for many research fields, but is still rare to observe a peculiar interest on dental problems. The Institute of Physiology that has a tradition of research on the motor control of the trigeminal area represents an exception. Up to now, the CLOPD staff results to be constituted of professors and researches with medical background allowing a more complete approach to the clinical and experimental problems, but, on the other hand, restricting an excellent super specialist approach.

Problems

1) Because of the primary importance of the didactic activities, the time dedicated to the research is reduced. A particular example is the research for dental curriculum. At the end of the dental course each student has to develop and to present a thesis which in 60% of cases is an experimental work. On one hand this contribute to develop many protocols, on the other hand to spend a lot of time to prepare and follow each student.

2) Staff exclusively dedicated to the research do not exist and postgraduated young researchers are very few because of the difficulties of the academic careers and the major attraction of the professional activities.
3) Difficulties to obtain **private or public grants**

**Facilities**

1) In UCSC exists a very rich **Library** with Italian and foreigner books
2) A Centre for **Electron Microscopy**
3) An equipped **experimental Centre with surgical rooms** (and dental unit, x-rays apparatus)
4) An excellent **stabularium** for small and large animals (dogs, cats, sheeps, and monkeys).
5) The microfilm Centre for **photographic recording**.
6) In the Dental Institute there is a very good **laboratory for histology**, histochemistry, electron microscopy, analysis of hardness.
7) Since 1982 there is also a **modern SEM**.
8) **Computer equipment** with peripheral tools for recording and data analysis.

**Some Research Dental Fields**

**Orthodontics**

1) **BASIC RESEARCH = CRANIOFACIAL GROWTH**
   a) Human craniofacial growth according to Petrovic's theories on rotational groups and types and auxologic categories
   b) Architectural facial changes in rabbits and rats in different experimental conditions, such as: Asymmetric extractions
      Obstruction of upper airways
      Diets
   c) Anatomical relationship between TMJ and internal ear in rabbits.
   d) Oxytalan fibres in fibrous layer of condilar cartilage in rats
   e) Oxytalan fibres in periodontal ligament of dogs and rats.
   f) Modifications of proteases inhibitors in different experimental conditions in masticatory muscles of rabbits.
   g) Experimentally induced cleft palate in rats.
   h) Physical properties of new cements for bonding brackets

2) **CLINICAL RESEARCH**
a) Effects of functional appliances (Fraenkel, Andresen, Bass, Sander's spring activator, Teutscher)
b) Timing for orthopaedic and functional treatment
c) Mandibular growth in cleft palate patients
d) Cranio-facial growth in severe malformations
e) Relationship between somatic (standing height) growth and craniofacial development
f) Clinical use of lingual appliances
g) Comparison on the efficiency of different orthodontic appliances

**Periodontology**

1) Microbiological aspects of periodontal disease: PCR (nucleic acid) study of subgengival bacterial flora in 80 cases
2) Serin-protheases in human healthy and pathological gingiva.
3) Use of tetracycline and substitutes as synthetic inhibitors of the metallo-proteinases
4) Optical microscopy of rabbits' monoclonal antibodies.
5) Biomaterials:
   - use of bioglasses as a material for osteoconduction in cranial vault of rabbits: observation of hard methacrylate sections (Exakt) by means of optical and fluorescence microscopy.
   - variations of hardness and composition of bioglass

**Operative Dentistry**

1) Study on the ultrastructure of resin used as dentine protection
2) Evaluation of enamel and dentinal adhesion of composite resins in comparison with amalgam
3) Clinical researches of new materials in operative dentistry:
   - laboratory observations by means of Electron Microscope, Microhardness analyser.

**Prosthodontics**

1) Study on the materials for crown and bridge: E.M. observations.
2) Epidemiological research on the frequency of TMJ disorders.
3) Electromyographic studies on patients suffering of TMJ disorders.
4) Allergic response on dental materials.

**Oral Medicine**

**GRANTS**

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CNR 1998
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G. Almadori, C. Colosimo, M. Del Ninno, J.Galli, F. Ottaviani
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Romanini A., Paludetti G., Mancuso S.: 
Prognostic significance of epidermal growth factor receptor in laryngeal squamous cell carcinoma. 

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Telomerase activity in human laryngeal squamous cell carcinomas. 

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Induction of prostaglandin endoperoxide synthase-2 in human monocytes associated with cyclo-oxygenase-dependent F₂-isoprostane formation. 

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Tachykinin NK₂ receptor antagonists decrease eicosanoid release in lung anaphylaxis. 

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"Valutazione quantitativa tra Streptococcus Mutans, lattobacilli salivari e placca batterica durante uno studio epidemiologico attuato in un campione di popolazione scolastica" 

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Section 21:
QUALITY DEVELOPMENT

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

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The Dean and the Senior Staff think that the points to work on are the followings:

Strengths
- enthusiasm;
- self-criticism;
- a good library;
- good research facilities;
- good Information Technology system;
- good general services;
- much voluntary support;
- good opportunities to gain practical experience.

Weaknesses
- few staff (for each discipline there is at most only one teacher);
- few career opportunities;
- few resources;
- low salaries compelling private practice;
- heavy workload imposed by the NHS;
- few and old clinical facilities;
- only 15 years tradition;
- lack of motivation for young dentists to become teachers;
- private work remains very attractive.
Section 22: VISITORS COMMENTS

Prologue

DENTED is a thematic network project supported by the European Union aiming at convergence in standards of European Dental schools. Towards this aim, dental schools are invited to host visitors appointed by DENTED in their schools. It is to the credit of the Dental School of the Universita’ Cattolica del Sacro Cuore in Rome that this is only the second visit by DENTED to an Italian Dental School.

The visitors very much appreciated the co-operation of the staff of the School and the enthusiasm shown by the staff throughout the visit. It was a particular pleasure to sense the unity of purpose of the students and staff. This preliminary report incorporates the views of the staff, students and the visitors.

Aims

It is the aim of the school to produce biologically broadly based general dentists with a holistic approach to dental care in the context of the Catholic ethos of the University. The secondary aims are the education of dental hygienists, conducting post-graduate training of orthodontics and oral surgeons and continuing education for dentists in the country. The aims are broadly in accord with those accepted for dental education within the European Union.

Objectives

- train undergraduate dental students with a strong emphasis on clinical skills to enable them to meet the needs of the general dental practice
- evolve an innovative process of student selection involving aptitudes particularly suitable for general dental practice
- develop staff structure and facilities to allow further curricula advancement
- conduct research in a number of relevant clinical disciplines
• involve undergraduates in the process of scientific inquiry leading to the production of theses
• enhance opportunities for interactive and self-learning

The future

At the moment there are negotiations in progress with relevant Ministries in Italy regarding a complete revision of the dental curriculum on a national level. It is hoped that this will lead to more harmonisation of dental education in Italy and within the European context. This would, hopefully, result in the adoption of the clinical competences set out by the EU Advisory Committee on Dental Education in Europe. The visitors welcomed the fact that the School is considering the problems related to low salaries in the School and the consequent loss of talented academic staff to lucrative general practice.

The administration

The visitors recognised that this university is unique in Italy; its central administration is in Milan with faculties in many cities. The Christian ethos of the university fosters a holistic approach to patient care. Moreover, it is the only private dental school in Italy. This uniqueness is a strength and allows flexibility to meet the challenges of the rapidly changing society and constantly evolving educational needs. The close links with the general hospital allow for a wide clinical exposure for the students; a beneficial feature of this Dental School of which most others would be envious. On the other hand, the Dental School falls within the Faculty of Medicine with administrative structures which leave the Dental School with limited influence on decision making central to its own function. It was particularly interesting to the visitors that the School had no full-time administrator. Furthermore within the dental school there seems to be only one committee – the Council of the Dental School. This may relate to the small number of people on the staff. However, it may be more efficient to share the duties with sub-committees, whose remit would include functions such as curriculum development, co-ordination for research and clinical activities etc. Despite these problems the visitors recognised the tremendous work of the limited number of the staff involved in the current very centralised running of the dental school.
Undergraduate course structure

It was apparent to the visitors that the students are being provided with a comprehensive biologically orientated training reflecting the aims of the Dental School. A particular strength of the School cited by the students and evident to the visitors was the quality of the basic science and para-clinical courses, which were developed specifically for the dental students. Collectively these areas may have been overemphasised and it was felt by the visitors that some streamlining would be beneficial. The scope of the elective courses was considered forward thinking from the educational point of view.

The staff impressed the visitors with their enthusiasm, commitment and professionalism. An interesting example of staff commitment related to some of them seeking instruction in modern teaching methods. These new methods are now being applied to the benefit of the dental students as was confirmed when the visitors met the students without staff present. The students also unconditionally expressed their appreciation of their school and in particular the exposure to clinical practice; far beyond that which is usual in Italian Dental Schools. A concern of the visitors related to the heavy workload of the staff and the reliance on voluntary part time clinical teachers. It was apparent to the visitors upon visiting the clinics that the standards of patient care being provided were high. Nevertheless, it must be difficult to maintain the high levels of staff enthusiasm and effectiveness in the face of very obvious constraints on facilities and human resources.

It should be emphasised that the following points should not be interpreted as criticisms. The visitors recognised the progress actively being made on many of these areas. Many apparent problems within the curriculum related to outside pressures from nationally dictated regulations and specialist professional bodies. For instance, even though the students displayed excellence in orthodontic case presentations, the School is discouraged from active student participation in clinical orthodontic treatment.

The School should consider the following points

- incorporation of the clinical competences set out by the EU Advisory Committee on Dental Education in Europe
- greater emphasis on interactive, computer-based learning
- broadening of the methods used to assess students should be considered
• introduction of external examiners
• more integration of theoretical and clinical activities
• more exposure to clinical dentistry in the first two years of the course
• more opportunity for the students to perform clinical dentistry
• greater emphasis on preventive dentistry on an individual and a community basis
• provision of English language courses to help students with self-learning
• reducing the number of lectures and increasing small group interactive teaching
• possibility of increasing student exposure to dental team work including technical aspects of prosthodontics and working with auxiliaries

**Facilities/staff**

The visitors were aware of the relatively short history of specific dental training in Italy and particularly in the Universita’ Cattolica del Sacro Cuore in Rome. Progress made during this short time has been remarkable. However, the visitors were concerned with the limited resources available to this hard working staff. The number of salaried staff is far below that of the visitors expectations and experience, particularly given that the Dental School has increased its intake from 15 to 25 students per year. The visitors were also concerned that the facilities were inadequate for the functions of a Dental School. The number of dental units, approximately 30, is low for the clinical training of 25 students per class. This problem is compounded by the failure to use 3 new dental units and an impressive surgical unit, presumably owing to lack of financial support. It seems that the hard-pressed staff find themselves fulfilling an impossible number of roles: clinical teacher, researcher, administrator, lecturer, clinician, continuing education teacher and professional role model for students. There is no doubt that more clinical/teaching staff is urgently needed.

There is a total of only 13 full-time clinical teaching staff in the School. To complement the much needed increase in staffing the structures for staff development is urgently needed. While the commitment of the numerous voluntary staff is admirable, such a system is not sustainable. Clinical teaching and overall curriculum development cannot be improved in such circumstances. More positions, both on junior and senior levels, should be immediately established. It is difficult for the visitors to see that the enthusiasm and commitment of the staff will continue if the present staffing circumstances persist.
Student selection

The visitors were particularly impressed by the developments in the School regarding the multifactorial and innovative selection procedures of the students. It was explained to the visitors that the academic achievement alone may not necessarily reflect the needs for dental practice. The methods for assessing aptitude and attitude may also be important. The visitors were pleased to hear that the school is actively involved in developing suitable broadly based methods for selection of the students.

Research

Incorporation of a student thesis as an integrated part of the curriculum impressed the visitors. Examples of the theses made available to the visitors were of very high standard. The research output of the School in general appeared to be highly influenced by basic sciences and medically related disciplines. However, shortages of funds, personnel and time were clearly reflected in a lack on publications in dental journals despite the obvious ability and equipment availability.

Strengths

- enthusiasm and commitment of the staff and the students
- developing use of IT including computer assisted learning
- fruitful collaboration with medical hospital
- good research facilities
- relatively strong clinical training
- holistic biological approach in student learning
- integration of research to undergraduate training
- high of standard of clinical care
- innovative student selection procedures
- good library facilities

Weaknesses

- lack of autonomy hinders decision making in the School
- shortage of clinical facilities and teaching resources
- lack of career development plan and obstacles for recruitment
- shortage of practical training in some disciplines
• heavy workload imposed by the health service
• lack of integration in the curriculum

Concluding remarks

The visitors would like to commend both the University and Dental School on the standard of the dental education provided, despite resource shortcomings. From the point of view of DENTED, the philosophy of which is not based on inspection but rather on exchange of ideas and harmonisation of standards in dental education throughout Europe, the dental school in Universita’ Cattolica del Sacro Cuore in Rome can be proud of its undoubted achievements in so limited a time. However, it was thought important by the visitors that increased resources and more autonomy in decision making were important for the continued development of this unique and forward looking school. Finally the visitors would wish to thank the Dean and staff of the Dental School and the Dean of the Medical Faculty for their faultless co-operation in the important work of DENTED on the occasion of this visit.

May 12 1999

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