



“Ss. Cyril and Methodius” University
FACULTY OF DENTISTRY
Skopje, Macedonia



GENERAL INFORMATION REGARDING THE
STUDY PROGRAM:

MASTER OF SCIENCE IN DENTISTRY (MSD)
AT THE FACULTY OF DENTISTRY,
“Ss. CYRIL AND METHODIUS” UNIVERSITY
SKOPJE, REPUBLIC OF MACEDONIA

SHORT VERSION





1. INTRODUCTION

For the purpose of coordination with the new Law on Higher Education (Official Gazette no. 35/2008 and no. 103/2008) and implementation of the recommendations of the Bologna Declaration, the Academic Council of the Faculty of Dentistry has made a decision for establishing a study program of the II cycle of studies, for Masters of Science in Dentistry at the Faculty of Dentistry in Skopje. This study program enables the students who have completed the first cycle of higher education at the Faculty of Dentistry (5 years and 300 ECTS) to be qualified for research work, as an independent researcher, and after acquiring 60 credits, to obtain the professional title Master of Science in Dentistry.

The second cycle of studies at the Faculty of Dentistry includes research work in all the dental scientific disciplines, by which the main objective of these studies is not quantity, but creating quality staff. The primary aim of the education in this study program is preparation of the candidates with a higher education degree in the methods of research work, for the modern technologies and achievements in dentistry and their application in every day practice. At the same time, the doctors in dental medicine acquire skills in initiating, implementation and evaluation of the research projects from the field of oral health and diseases of the orofacial region.

The following were used as basis for making of the Draft Program for the II cycle of studies at the Faculty of Dentistry in Skopje:

1. Bologna Declaration ("The European Higher Education Area", a conference held in Bologna on 19 June 1999);
2. Conference of Ministers in Berlin for creating a single research and education area ("European Higher Education Area - Two Processes of Knowledge-Based Society" - conference held in September 2003);
3. Bergen Communiqué for reaching the aims for creating European education process ("European Higher Education Area - Achieving the Goals", Communiqué of the Conference of the European Ministers Responsible for Higher Education" held in Bergen, 19-20 May 2005);
4. Lisbon Declaration ("Fourth EUA Convention of Higher Educational Institutions", conference held on 29-31 March 2005); London Communiqué for creating a common education area as a response to the challenge for globalization of the world ("Towards the European Higher Educational Area: Responding the Challenges in a Globalised World", held on 18 May 2007);
5. Brussels Convention for the future of the universities beyond the year 2010 ("Europe's Universities Beyond 2010: Diversity with a Common Purpose"- conference held on 13 April 2007).

Considering the fact that in all dental schools in Europe, and in our vicinity, there are differences in the structure of the study programs, this program is designed by modifying the existing curriculum of the Faculty of Dentistry, and in accordance with the new Law on Higher Education, the EU Directives for education of licensed dentists [Directive 2005/36/EC of the European Parliament and of the Council of 7th September 2005 I European Communities (Recognition of Professional Qualifications) Regulations 2007 of 19th October 2007)], as well as the recommendations of the ADEE (Association for Dental Education in Europe).

At designing of this study program, the experiences of several European universities were taken into consideration, especially the programs of the Universities in Zagreb, Ljubljana, Belgrade, as well as the University in Norway, where the studies in dentistry take place (The Faculty of Dentistry in collaboration with the Centre for International Health, University of Bergen), and the Estonian too (The Estonian ENIC/NARIC Baku, 20-21 April 2005). These experiences were taken into consideration for the purpose of creating a modern educational program that will provide easy recognition of the diploma and wider mobility of the professors/students in the frames of the European educational area.

The first postgraduate Master's Studies in Dentistry were introduced at the Faculty of Dentistry in Skopje in 1972/73, and were established as two-year studies, i.e. postgraduate tuition in four semesters.

2. GENERAL PART

A. Name of the Proposer:

"Ss. Cyril and Methodius" University, Faculty of Dentistry - Skopje.

B. Name of the Study Program:

Study Program for Master of Science in Dentistry

C. Duration of Studies:

The study program in duration of one year (2 semesters) or 60 credits is outlined in accordance with the European system of point transfer.

With the postgraduate Master's studies, the student is qualified for applying the methods for research work and is enabled to learn and implement new methods in diagnostics and therapy of oral diseases from the following fields:

- Dental Prosthodontics,
- Orthodontics,
- Oral Surgery,
- Maxillofacial Surgery,
- Pediatric and Preventive Dentistry,
- Cariology and Endodontics,
- Oral and Periodontal Patology.

In addition to the skills for research activity, the doctors of dental medicine acquire skills in initiating, implementation and evaluation of the research projects from the field of oral health and diseases of the orofacial region.

By passing all course exams of the first semester of studies, the defense of the Master's Thesis and acquiring 60 credits, the students obtain the scientific degree Master of Science in Dentistry and have an opportunity to continue the studies in the III cycle of studies (Ph.D. studies).

D. Conditions for Enrollment in the Studies:

The conditions and the manner of enrollment in the studies are in accordance with the Law on Higher Education, as well as the accurately established criteria published in the Advertisement of Vacant Positions by the "Ss. Cyril and Methodius" University in Skopje.

E. Specification of the Generic (General) and Specific Competences that the Student will Acquire after Finishing the Studies and Employment Qualifications:

After finishing the studies of the second cycle for Masters of Science in Dentistry, the candidates acquire the following general competences:

- suitable knowledge in the sciences on which dentistry is based and solid understanding of the scientific methods, including the principles for determining the biological functions, evaluation of the scientifically proven facts and the data analysis
- suitable scientific knowledge of the constitution, physiology, and behavior of healthy and ill individuals, as well as the influence of the natural and social environment on the health state of the person
- suitable knowledge of the structure and function of teeth, mouth, jaws and the other oral tissues, and their relation with the general health state and with the physical and social wellbeing of the patient
- suitable knowledge of the methods for prevention, diagnosis and treatment of anomalies, diseases of teeth, mouth, jaws and other oral tissues.

Specific competences which the candidates acquire after finishing the postgraduate Master's studies refer to deeper knowledge and skills in:

- methods of research work;



- understanding of methods for searching and consulting professional and scientific, domestic and foreign literature;
- current technologies and achievements in modern dentistry;
- initiating, implementation and evaluation of the research projects from the field of oral health, diseases of the orofacial region and their connection with the general health;
- applying team work and interdisciplinary approach in every day practice, for the purpose of advancement and preservation of the oral and general health of every individual;
- collecting data from routine practice that can be scientifically processed;
- research and pedagogy work.

Employment qualifications:

- research work in a public or private healthcare institution,
- participating in scientific projects for caries prevention, irregularities and traumatic injuries of the orofacial system, dental education of the population and motivating individuals to take care of their health and creation of healthy new generations,
- research work in companies dealing with production, supplies, distribution and sales of dental materials and equipment,
- research work in public institutions (ministries, agencies, etc.) dealing with promotion of oral health.

Although the Bologna process of studying recommends the 3-5-8 model (Graduate Doctor of Dental Medicine - Master of Science in Dentistry - Doctor of Dental Science), there are specific professions, mainly in the healthcare sector, which are regulated with specific Directives of the EU Parliament defining the titles and degrees, and which could be recognized out of the boundaries, but at the same time they represent minimum educational requirements for achieving a certain degree in the titles. The Directive includes educational requirements which refer to mutual recognition of diplomas, certificates and other records obtained as previous qualifications of the dentists.

Following the European directives for recognition of the regulated professions [Directive 2005/36/EC of the European Parliament and of the Council of 7th September 2005 I European Communities (Recognition of Professional Qualifications) Regulations 2007 of 19th October 2007], the first cycle of studies at the Faculty of Dentistry in Skopje is carried out in duration of five years and the student acquires 300 credits. By acquiring these credits, the Graduate Doctors of Dental Medicine are qualified for independent work with patients. Therefore, this study program is suggested as a study program of the second cycle, and it consists of theoretical and clinical studies at the Faculty of Dentistry in Skopje as part of the "Ss. Cyril and Methodius" University in Skopje.

F. Scientific Title or Degree Obtained after Finishing the Studies:

- Master of Science in Dentistry (with 60 credits acquired)

3. STUDY PROGRAM:

A. Scientific Area and Field: Dentistry - Medical Sciences and Healthcare

B. Scope and Organization of the Study Program:

The study program is realized in 2 semesters with a total number of 60 credits. The tuition in all course programs is performed in the frames of one semester.



4. COURSE CURRICULA

I Semester					
Code	Courses	Lecture	Practice	Total	ECTS
Compulsory Courses					
MC 1101	Biostatistics	15	15	30	5
MC 1102	Introduction to Research Work	45	15	60	6
MC 1103	Biomedical Informatics	30	15	45	5
MC 1104	Oral Epidemiology	30	15	45	5
	Total Compulsory Courses	120	60	180	21
Optional Courses					
	Optional Course - 1	20-30	0-15	20-45	3
	Optional Course - 2	20-30	0-15	20-45	3
	Optional Course - 3	20-30	15	35-45	3
	Total Optional Courses	60-90	15-45	75-135	9
	Total of I Semester	180-210	75-105	255-315	30

II Semester					
MC 1105	Master's Thesis				30
	Total of all I & II Semester	180-210	75-105	255-315	60

Code	Optional Courses				
MC 1201	Current Events in the Orofacial Region	30	15	45	3
MC 1202	Diagnostics and Therapy of Orofacial Pain	20	15	35	3
MC 1203	Modern Materials in Dentistry	30	0	30	3
MC 1204	Modern Surgical Concepts in Dentistry	30	15	45	3
MC 1205	Modern Restorative Aesthetic Dentistry	30	15	45	3
MC 1206	Diagnostic Procedures in Oral Medicine	20	15	35	3
MC 1207	Saliva as a Diagnostic Medium	25	0	45	3

5. COMPULSORY PROGRAMS

MC 1101 BIostatISTICS

Theoretical tuition: Statistic analysis of series with attributive features; Descriptive analysis; Measures for variability of numerical data; Frequency and probability distribution; Hypotheses; χ^2 -square test; Regression analysis and linear correlation; Determining occurrence dynamics; Demographic statistics; Mortality, General rate, Specific rate; International classification of diseases, injuries, and death causes; Indices of population dynamics; Natural increase; Morbidity, incidence and prevalence, specific morbidity; Informatics.

Practical tuition: Ratios, proportions, rates, indices; Indices of dynamics; Arithmetic mean; Standard deviation, coefficient of variation; Mode and median; Assessment of sample parameters; Student's t-test, Task practice: χ^2 -square test; Correlation; Linear trend of the time series; Seasonal index; Practical application of the terms from the field of demographic and vital statistics; Statistics for Windows, SPSS.

Literature: M.Z, I.P, Biostatistics, Skopje, 2008, Manual: Internet Explorer, Word, Excel, Power Point, Statistics for Windows.

MC 1102 INTRODUCTION TO RESEARCH WORK

Theoretical tuition: Sources and ways of scientific idea; Scientific action; Approach to the research; Statistical foundations of the research work; Data processing and display; Transfer of medical information; Sources of medical information; Information needs and searching information; Organization of literature; Manner of presentation of results from the research work; What to be aware of before writing the research work; Structure and contents of the original scientific work; Publishing the work in a journal.

Literature: Marushikj M. Petrovechki M. Petrak J. Marushikj A. Introduction to Scientific Work in Medicine. Skopje. Kultura, 2003

MC 1103 BIOMEDICAL INFORMATICS

Theoretical tuition: Introductory terms; History of computers; Manner of computer operation; Elements of hardware; Operating systems - Windows; Internet; Application software for office work (Word, Microsoft Office, Excel, Publisher, Power Point); Application software for image processing; Application software for statistics; Application software for graphic design.

Practical tuition: Manner of computer operation; Elements of hardware; Using the Internet; Document preparation: Microsoft Office, Word, Power Point, Excel.

Literature: Introduction to informatics for chemists and biologists - professor's notes, K. Zdravkov; Manual: Internet Explorer, Word, Excel, Power Point.

MC 1104 ORAL EPIDEMIOLOGY

Theoretical tuition: Introduction to oral epidemiology; Diagnostic testing in oral epidemiology; Indications of oral diseases; Epidemiological indices or oral diseases; Risk factors of oral diseases; Epidemiology of dental caries, periodontitis, oral carcinoma and other oral-mucous diseases, orthodontic irregularities and traumatic injuries; Prevention of oral diseases; Types of epidemiological studies in dentistry; Keeping medical records.

Practical tuition: Making a seminar paper based on the course.

Literature: M. Z, I. P, Special Epidemiology, Skopje, 2009, Community Dentistry, Faculty of Dentistry, Skopje, 2006, Oral Health, Faculty of Dentistry, Skopje, 2008

6. OPTIONAL PROGRAMS

MC 1201 CURRENT EVENTS IN THE OROFACIAL REGION

Tuition contents: By selecting this course, the student becomes familiar with the latest achievements in the following fields of dentistry: Oral medicine and pathology; Periodontology; Conservative dentistry; Oral and maxillofacial surgery; Reconstructive and restorative dentistry; Pediatric and preventive dentistry and Orthodontics.

MC 1202 DIAGNOSTICS AND THERAPY OF OROFACIAL PAIN

Tuition contents: Neurophysiology of pain in the orofacial region, generating and transmission of pain from that region, diagnostic procedures, clinical and paraclinical (anamnesis, CT, MRI, EEG, necessary for differential diagnosis of the orofacial pain), therapeutic protocol.

MC 1203 MODERN MATERIALS IN DENTISTRY

Tuition contents: Introduction to dental biomaterials; Temporary materials and cements; Preventive materials; Adhesives; Direct aesthetic anterior restorations; Direct posterior restorations; Whitening means and methods (internal and external whitening); Means for temporary closure; Endodontic materials; Materials for inlays, onlays, laminates, crowns, and bridges; Materials for prints; Plaster casts and waxes; Polymers in prosthodontics; Metal alloys in orthodontics, prosthodontics and pediatric dentistry; Implants (patient selection, criteria for clinical success); Clinical detection and manipulation with materials.

MC 1204 MODERN SURGICAL CONCEPTS IN DENTISTRY

Tuition contents: Modern surgical concepts in all the fields of dentistry, including periodontology, orthodontics, implantology, oral medicine, maxillofacial surgery, pre-prosthodontic care, patient selection, indications and contraindications.

MC 1205 MODERN RESTORATIVE AESTHETIC DENTISTRY

Tuition contents: Aesthetics as a function of the stomatognathic system, principles of aesthetics, elements of dentofacial aesthetics, analysis and dynamics of the facial features, aesthetics of teeth and teeth orders, aesthetic restoration of very destroyed teeth, aesthetic rehabilitation of teeth with hypoplasia, fluorosis, trauma, erosion, attrition, and abrasion, aesthetic diastema correction, traumatic injuries, morphological and minor orthodontic irregularities, whitening of vital teeth, whitening and aesthetic solution of discolored vital teeth in the frontal region. The tuition contents of this course also include corrections of shape, colour, position, adhesive technique, technique by layers with using several colours (dentin, enamel...) as well as application and manner of application of dental posts. The students are actively involved in the practical performance of the aesthetic interventions from the field of restorative aesthetic dentistry.

MC 1206 DIAGNOSTIC PROCEDURES IN ORAL MEDICINE

Tuition contents: Introduction to oral medicine, subtle diagnostic procedures, clinical, clinical-laboratory and laboratory procedures, the Nickolsky's test, Tzanck smear for Candida albicans, laboratory blood method and count, diagnostic research, aims (hematological finding, differential serologic indirect and direct immunofluorescence, etc.).

MC 1207 SALIVA AS A DIAGNOSTIC MEDIUM

Tuition contents: By selecting this course, the student becomes familiar with: physiology of salivary glands, collecting and processing of saliva for diagnostic purposes, diagnostic technologies based on the saliva examination, investigating the risk of caries, saliva as a diagnostic tool for the periodontal disease, saliva as a diagnostic tool for oral carcinoma, dysfunction of the salivary glands and systemic disorders, new technologies for examining the saliva for diagnostic purposes.

7. DESCRIPTION

In the first semester of the Master's studies, the candidates are introduced to the research work, biostatistics and biomedical informatics, as well as knowledge in the elements of oral epidemiology. The purpose of these courses is for the candidates to gain the basic knowledge of the scientific work and the procedures in the biomedical research. It is anticipated to have flexibility in the education of the candidates through a selection of three of the seven offered optional courses for broadening of knowledge in particular fields of the dental science. The specialized dental courses include the contemporary scientific findings, achievements and problems in the more precise fields of dental medicine, biomedicine and health. The combined theoretical and practical tuition provides optimal conditions for education through interactive education, seminars and making of professional (seminar) papers. In the second semester, the student selects the field of engagement, and the tuition is focused on searching and consulting the latest professional and scientific literature relevant for the selected field, experimental work, consultations with the mentor, summing up personal knowledge and conclusions, review, continuous scientific activity, making and defending the Master's Thesis, by which the candidate acquires 30 credits.

The advancement of the student through the postgraduate studies is under the mentorship of one or more mentors (co-mentorship). The mentor can be a professor who, with his/her previous engagement in the research work, has established himself/herself and the course.

The subject for making the Master's Thesis is assessed and approved by a committee of three professors designated by the Board for the Postgraduate Studies of the Faculty. The candidate will defend the Master's Thesis in public, before the committee.

The final objective of this program is to prepare the candidates to acquire theoretical and practical knowledge and skills in the application of contemporary scientific and technological achievements which refer to undertaking preventive measures, making diagnosis of oral diseases, prescribing a therapy plan and carrying out suitable therapeutic measures for curing oral diseases and irregularities in the orofacial region, for employment in a public healthcare institution, in a private healthcare institution, and/or to continue their studies in the program for Doctoral (Ph.D.) studies.

Structure of the Studies, Dynamics of Studying and Responsibilities of the Students

The studies are organized in two semesters, winter and summer semester. In the first semester, the study program contains 20 classes at least, and 30 classes at the most, of lectures, practice and seminars weekly. In the second semester, the student's work includes: searching and consulting the latest professional and scientific literature relevant for the selected field, experimental work, consultations with the mentor, summing up personal knowledge and conclusions, review, making and defending the Master's Thesis, by which the candidate acquires 30 credits.

The tuition in all course program is carried out within the frames of one semester.

The students in one semester enroll for a maximum of 30 to 35 ECTS credits.

Student's Advancement:

The students advance in their studies through meeting the responsibilities anticipated with the study program, taking the exams, through administrative validation of the acquired ECTS credits, enrollment in the following semester, searching and consulting the latest professional and scientific literature relevant for the selected field, consultations with the mentor, summing up personal knowledge and conclusions, review, making and defending the Master's Thesis. The student meets the condition for enrollment in the second semester if he/she has acquired a minimum of 24 credits from the anticipated compulsory and optional courses in the first semester.

Dean,

Prof. Ljuben N. Guguvchevski, Ph.D.
(signed)

Round seal affixed:

"Ss. CYRIL AND METHODIUS" University in Skopje
FACULTY OF DENTISTRY - SKOPJE
Republic of Macedonia

Skopje, 10. 02. 2014