

REGULATIONS FOR THE DEGREE OF MASTER OF SCIENCE IN ORAL AND MAXILLOFACIAL RADIOLOGY & DIAGNOSTIC IMAGING (MSc[OMFR&DI])

These regulations apply to candidates admitted in 2020-2021 and thereafter.

(See also General Regulations and Regulations for Taught Postgraduate Curricula)

Any publication based on work approved for a higher degree should contain a reference to the effect that the work was submitted to the University of Hong Kong for the award of the degree.

The degree of Master of Science in Oral and Maxillofacial Radiology & Diagnostic Imaging (MSc[OMFR&DI]) is a postgraduate degree awarded following the satisfactory completion of a prescribed course of study and research related to advanced diagnostic imaging in the oro-facial region.

Admission requirements

D344 To be eligible for admission to the curriculum for the degree of Master of Science in Oral and Maxillofacial Radiology & Diagnostic Imaging, a candidate shall:

- (a) comply with the General Regulations and the Regulations for Taught Postgraduate Curricula;
- (b) hold the degree of Bachelor of Dental Surgery or the degree of Bachelor of Medicine and Bachelor of Surgery from this University, or a degree or other qualification of equivalent standard from another university or comparable institution accepted for this purpose;
- (c) for a candidate who is seeking admission on the basis of a qualification from a university or comparable institution outside Hong Kong of which the language of teaching and/or examination is not English, shall satisfy the University English language requirement applicable to higher degrees as prescribed under General Regulation G2(b); and
- (d) satisfy the examiners in a qualifying examination if required.

Qualifying examination

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- (a) A qualifying examination may be set to test a candidate's formal academic ability or his or her ability to complete the prescribed courses of study. It shall consist of one or more written papers or the equivalent and may include any or all of a project report, practical examination or oral examination.
 - (b) A candidate who is required to satisfy the examiners in a qualifying examination shall not be permitted to register until he/she has satisfied the examiners in the examination.

Award of degree

D346 To be eligible for the award of the degree of Master of Science in Oral and Maxillofacial Radiology & Diagnostic Imaging, a candidate shall

- (a) comply with the General Regulations and the Regulations for Taught Postgraduate Curricula; and
- (b) complete the curriculum and satisfy the examiners in accordance with the regulations set out below.

Period of study

D347 The curriculum shall normally extend over one academic year of full-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of two academic years of full-time study, unless otherwise permitted or required by the Board of the Faculty.

Completion of curriculum

D348 To complete the curriculum, a candidate shall

- (a) satisfy the requirements prescribed under TPG 6 of the Regulations for Taught Postgraduate Curricula;
- (b) follow instruction in the courses prescribed and complete satisfactorily all prescribed coursework requirements, including practical work;
- (c) satisfy the examiners in all examinations as may be required; and
- (d) complete and submit a dissertation that satisfies the examiners.

Dissertation

D349 The title of the dissertation shall be submitted for approval not later than April 30 in the final academic year of study, and the dissertation shall be submitted not later than August 15 in the same year; the candidate shall submit a statement that the dissertation represents his/her own work undertaken after registration as a candidate for the degree. The examiners may prescribe an oral examination on the subject of the dissertation. It is the goal of the dissertation to meet quality requirements for a publication to be submitted to a peer-reviewed journal in the field.

Assessments

D350 Any assessment of the candidate's coursework during the course of study, including written assignments, shall be taken into account in determining the candidate's overall result.

D351 Assessments may be held in each year of study and may take the form of written papers; oral, practical, and clinical examinations; assessments of coursework; or a combination of these methods.

D352 A candidate who has failed to satisfy the examiners in any part of the assessments may be permitted to present again for assessment at a time to be determined by the Board of Examiners; or he or she may be recommended for discontinuation of studies under the provisions of General Regulation G12.

D353 A candidate who has presented a dissertation which has failed to satisfy the examiners may be permitted to revise and re-present the dissertation within a period to be determined by the Board of Examiners; or he/she may be recommended for discontinuation of studies under the provisions of General Regulation G12.

D354 In accordance with TPG 5(c), a candidate who has exceeded the maximum period of registration specified in Regulation D347 shall be recommended for discontinuation of studies.

D355 Failure to take any examination as scheduled normally shall result in automatic course failure. A candidate who is unable, through illness, to be present at an examination may apply in writing within 2 weeks of the examination for permission to be examined at some other time to be determined by the Board of Examiners.

Grading system

D356 Individual courses shall be graded as “Pass” or “Fail”.

Assessment results

D357 Upon successful completion of the curriculum, candidates who have shown exceptional merit may be awarded a mark of distinction, and this mark shall be recorded in the candidates' degree diploma.

SYLLABUSES FOR THE MASTER OF SCIENCE IN ORAL AND MAXILLOFACIAL RADIOLOGY & DIAGNOSTIC IMAGING

The one-year full-time Master of Science in Oral and Maxillofacial Radiology & Diagnostic Imaging [OMFR&DI] is a postgraduate curriculum that is designed to enable medical and dental practitioners to acquire advanced training in the theory and practice of diagnostic imaging of health and pathology in the oral and maxillofacial region. The courses/modules are assigned with credits at a multiple of 3 credits as summarized below. The curriculum includes *Faculty Core Courses*, *Oral and Maxillofacial Radiology & Diagnostic Imaging Courses*, *Medical Imaging Courses*, and a *Dissertation*.

The prescribed course of study has a minimum of 63 credits of coursework and includes seminars, tutorials, clinical work, together with project assignments and training in research.

Curriculum structure:

A. Faculty Core Courses (9 credits)

- DENT6023 Oral Epidemiology and clinical research methodology (3 credits)
- DENT6024 Introduction to statistical analysis in dental research (3 credits)
- DENT6025 Multivariable statistical analysis in dental research and use of statistical software (3 credits)
- DENT7030 Dissertation writing for Master of Dental Surgery and Master of Science – an Induction Course (non-credit bearing)

B. Discipline Specific Courses (27 credits)

- DENT7701 Digital imaging in OMFR (3 credits)
- DENT7702 Basic principles of advanced imaging modalities: 3D and more (3 credits)
- DENT7703 Anatomy as seen in advanced imaging modalities in OMFR (3 credits)
- DENT7704 An introduction to oral and maxillofacial pathology (6 credits)
- DENT7705 Image interpretation and differential diagnosis including case discussions (6 credits)
- DENT7706 Training of diagnostic imaging by using CBCT and reporting (6 credits)

C. Medical Science Courses (9 credits)

- DRAD6202 Advance radiological physics and dosimetry (3 credits)
- DRAD6204: Health physics with focuses on radiological protection in medical sectors (3 credits)
- DENT7707: Observation / shadowing of advanced medical diagnostic imaging (3 credits)

D. Research Component (18 credits)

- DENT7708: Capstone experience: MSc(OMFR&DI) Dissertation (18 credits)

Description of courses

DENT6023 Oral epidemiology and clinical research methodology (3 credits)

This course aims to introduce the students to the various types of epidemiological studies and how to conduct clinical trials. On completion of this course, a student should be able to critically appraise reports from oral epidemiological studies and the level of evidence generated. The student should also be able to choose an appropriate design for a clinical study on a specific topic of interest.

Assessment: *One 2-hour written paper; 100% examination*

DENT6024 Introduction to statistical analysis in dental research (3 credits)

This course aims to introduce the students to the basic statistical methods used in dental research; the interpretation of results of statistical analysis and the statistical content of published research papers. On completion of this course, a student should be able to address statistical issues when formulating a research project, and to appraise the basic statistical content of a published dental research paper.

Assessment: *One 2-hour written paper; 100% examination*

DENT6025 Multivariable statistical analysis in dental research and use of statistical software (3 credits)

This course aims to introduce the students to the multivariable statistical methods used in dental research and to provide basic training to the students in using the software SPSS for Windows to analyze dental research data. On completion of this course, a student should be able to appraise the statistical contents of a published dental research paper, and be able to carry out basic analysis of the data collected in a dental research using the software SPSS for Windows.

Assessment: *One 2-hour written paper; 100% examination*

DENT7030 Dissertation writing for Master of Dental Surgery and Master of Science – an induction course (non-credit bearing)

This Induction Course of 7.5 hours aims to raise course participants' awareness of essential aspects of academic writing, which contribute to the overall communicative success in dissertations (impact). Its ultimate aim is to provide a useful induction experience so that you will be able to approach your writing with more confidence and skill at key stages of your research. Specific objectives are listed as themes in the course schedule.

Assessment: *No formal assessment*

DENT7701 Digital imaging in OMFR (3 credits)

This course aims to obtain the knowledge and skills of digital image processing methods and procedures as used for diagnostic imaging in the oral and maxillofacial region. On completion of this course, the students will be able to handle DICOM formatted images as well as understand the characteristics of digital images, image receptors, display options, and storage devices. The students will also be able to identify, generate and use MPR formatted images as provided by different software options. This course will also offer an introduction to the use of the "OsiriX"-viewer system.

Assessment: *One 2-hour written paper; 100% examination*

DENT7702 Basic principles of advanced imaging modalities: 3D and more (3 credits)

This course introduces the various advanced imaging modalities used in oral and maxillofacial and also medical diagnostic imaging, i.e. cone beam computed tomography (CBCT), medical / multi-slice computed tomography (CT), magnetic resonance imaging (MRI), ultrasound imaging (US), and positron emission tomography (PET)/CT. On completion of this course, the students will be able to explain their basic principles and application with special relevance to oral and maxillofacial diagnostic imaging.

Assessment: *One 2-hour written paper; 100% examination*

DENT7703 Anatomy as seen in advanced imaging modalities in OMFR (3 credits)

This course aims to introduce the students to the normal morphological and functional status of the oral and maxillofacial structures in the respective radiographic images (2D and 3D). On completion of this course, students will be able to identify normal anatomical structures in the cross-sectional and MPR images of the advanced imaging modalities such as CBCT, CT, and MR, as well as of plain X-rays (2D; intra- and extra oral). The students will also be able to recognize the fascial spaces, which are necessary to understand the spreading pathways of pathologies.

Assessment: *One 2-hour written paper; 100% examination*

DENT7704 An introduction to oral and maxillofacial pathology (6 credits)

This course provides the students the typical and frequent image findings of clinically relevant pathological conditions (e.g. benign, reactive, cystic, malignant, systemic, etc.) using the typical and different diagnostic imaging techniques in DMFR such as conventional X-rays, CBCT, CT, and MRI. On completion of this course, students will be able to describe the typical image features of oral and maxillofacial pathologies.

Assessment: *One 2-hour written paper; 100% examination*

DENT7705 Image interpretation and differential diagnosis including case discussions (6 credits)

This course provides the students with an introduction to the principles of image interpretation and to the procedures of differential diagnosis through discussions of the real cases. On completion of this course, students will be able to name a tentative diagnosis, mention the most likely differential diagnosis, and also discuss these interpretations of the various lesions and pathologies in the oral and maxillofacial region.

Assessment: *30% oral exam and 70% in class discussion*

DENT7706 Training of diagnostic imaging by using CBCT and reporting (6 credits)

This course provides the actual exercise and practice of diagnostic imaging using advanced radiographic imaging modalities. Upon completion of this course, the students will be able to perform CBCT examinations, assess indications, select appropriate fields of view and exposure settings, process the image data for image reading, formulate potential diagnoses and their interpretation (including treatment planning aspects) and write a diagnostic imaging report, correctly and appropriately.

Assessment: *100% written diagnostic imaging reports*

DENT7707 Observation / shadowing of advanced medical diagnostic imaging (3 credits)

This course aims to expose the students to the modalities and range of advanced imaging techniques in a hospital setting (medical diagnostic imaging) and to introduce the application of these in daily practice. The students are to observe the actual examinations at the Department of Diagnostic Radiology, Li Ka Shing Faculty of Medicine, and to learn about possibilities and limitations of advanced radiographic imaging in medicine. The students will learn the importance of teamwork within medical and dental doctors, radiographers and/or nurses through the performance of various image examinations. Furthermore, students will be also able to prescribe the relevant medical imaging technique in cases, where advanced dental imaging such as CBCT is not sufficient (referral of patients by specialists in DMFR).

Assessment: *50% written daily report and 50% in class discussion*

DENT7708 Capstone experience: MSc(OMFR&DI) Dissertation (18 credits)

Under the guidance of supervisors, the students are required to carry out a research project on a topic within oral and maxillofacial radiology (or interdisciplinary / clinical or in-vitro), involving collection of relevant information or original data and data analysis, and to submit a dissertation that fulfills the requirements to be submitted / published in a peer-reviewed journal in the field.

Assessment: *70% dissertation (4,000 words) and 30% oral exam*

DRAD6202 Advance radiological physics and dosimetry (3 credits)

This course provides the students with background knowledge in radiological physics in order to understand the initial steps and process of making radiographic images. The students will learn the concept of radiation dosimetry and the various techniques used. Through this course, the students will be able to explain the concept of radioactivity, the interaction of radiation with matter, and radiation dosimetry including radiation quantities and units for measurement.

Assessment: *20% assignment, 10% Report writing, 20% Test, 50% Examination*

DRAD6204 Health physics with focuses on radiological protection in medical sectors (3 credits)

This course provides the students fundamentals of health physics and an introduction to radiation protection in hospitals. The course includes 16 lectures regarding radiation protection, radiation chemistry and radiation biology. The students will be able to explain sources of radiation exposure, the biological effects of radiation, detection of radiation, basics of radiation protection, and practical radiation protection in different medical sectors, and risk assessment. The students will also able to consider and apply the knowledge and skills to dental radiation reduction at the end of this course (concept of dose optimization).

Assessment: *15% Practical, 35% Assignment, 50% examination*

December 16, 2021