

**REGULATIONS FOR THE DEGREE OF  
MASTER OF DENTAL SURGERY IN ENDODONTICS  
[MDS(Endo)]**

These regulations apply to candidates admitted in 2023-2024 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 Dental Surgery in Endodontics [MDS(Endo)] is a postgraduate degree awarded following the satisfactory completion of a prescribed course of study and research/clinical applications related to dental practice.

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**Admission requirements**

**D88** To be eligible for admission to the curriculum for the degree of Master of Dental Surgery in Endodontics, 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 from this University, or a degree of 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.
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**Qualifying examination**

- D89** (a) A qualifying examination may be set to test a candidate's formal academic ability or his/her ability to complete the prescribed curriculum of study and practice. It shall consist of one or more written papers, or the equivalent, and may include a project report, practical examination and oral examinations.
- (b) A candidate who is required to satisfy the examiners in a qualifying examination shall not be permitted to register until he has satisfied the examiners in the examination.
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**Award of degree**

**D90** To be eligible for the award of the degree of Master of Dental Surgery in Endodontics, a candidate shall

- (a) comply with the General Regulations and the Regulations for Taught Postgraduate Curricula; and
  - (b) complete the curriculum, complete and present a written dissertation or project report or research paper in publication format, and satisfy the examiners in accordance with the regulations set out below.
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## **Period of study**

**D91** The curriculum shall normally extend over thirty-six months of full-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of sixty months of full-time study, unless otherwise permitted or required by the Board of the Faculty.

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## **Completion of curriculum**

**D92** 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 coursework requirements;
- (c) satisfy the examiners in all examinations as may be required; and
- (d) complete and submit a dissertation, project report or research paper in publication format which satisfies the examiners.

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## **Dissertation or project report or research paper**

**D93** The title of the dissertation or project report or research paper in publication format shall be submitted for approval not later than April 30 in the final academic year of study, and the dissertation or project report or research paper in publication format shall be submitted not later than August 1 in the same year; the candidate shall submit a statement that the dissertation or project report or research paper in publication format 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 or project report or research paper in publication format.

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## **Assessments**

**D94** Assessment 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. 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.

**D95** A candidate who has failed to satisfy the examiners in any part of the assessments may be permitted to present himself/herself again for assessment at a time 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.

**D96** A candidate who has presented a dissertation or project report or research paper in publication format which has failed to satisfy the examiners may be permitted to revise and re-present the dissertation or project report or research paper in publication format within a period to be determined by the Board of Examiners; or he/she may be recommended for discontinuation of studies under the provision of General Regulation G12.

**D97** In accordance with TPG 5(c), a candidate who has exceeded the maximum period of registration specified in Regulation D91 shall be recommended for discontinuation of studies.

**D98** Failure to take any examination as scheduled normally shall result in automatic course failure.

**D99** 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.

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### **Grading system**

**D100** Individual courses shall be graded as “Pass” or “Fail”.

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### **Assessment results**

**D101** 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.

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December 5, 2022

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## **SYLLABUSES FOR THE MASTER OF DENTAL SURGERY IN ENDODONTICS**

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### **A. PREAMBLE**

1. The objectives of the MDS(Endo) curriculum are to enable candidates to achieve an advanced level of knowledge and competence in a branch of dental surgery by means of
  - (a) a prescribed curriculum of study (i.e., lectures, seminars, related written and practical and/or clinical work); and
  - (b) additionally, a supervised research project and the submission of a written project report, dissertation or research paper in publication format.

The prescribed curriculum of study will include certain core subjects to be taken by all candidates, but otherwise it will be designed, in accordance with the syllabuses, to take account of the needs of individual candidates. The supervised research projects will also be related to each candidate's course of study in Endodontics.

2. Candidates must attend for clinical practice for at least four sessions a week in such programme area or areas as are prescribed.
3. The methods and pattern of assessment and examination of each candidate will be determined by the Postgraduate Programme Directors concerned, having regard in each case to the nature and particular emphases of the candidate's course of work.

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### **B. SYLLABUSES FOR THE DEGREE OF MASTER OF DENTAL SURGERY IN ENDODONTICS**

The curriculum shall normally extend over thirty-six months of full-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of sixty months of full-time study, unless otherwise permitted or required by the Board of the Faculty. The curriculum has a minimum of 1800 hours of coursework per year. The curriculum may consist of lectures, tutorials, written assignments, clinical and laboratory work and training in research method. It may also include courses in other related disciplines.

The MDS(Endo) is a curriculum of advanced study, supervised clinical practice, and research into the theory and practice of endodontics, which include the biology of the normal pulp, root and periradicular tissues and the aetiology, prevention, diagnosis and treatment of diseases and injuries that affect these tissues. The curriculum is composed of Faculty-based core courses, laboratory modules on operative dentistry, non-surgical and surgical root canal treatments and the use of surgical operating microscope, and the clinical practice of Endodontics. Management of refractory lesion by non-surgical and surgical means will be practiced in the clinical setting under guidance.

This taught curriculum is intended specifically for dentists who intend to pursue specialist endodontic training. The curriculum will enable students to acquire knowledge of the relevant clinical literature, to develop a scientific approach to problem solving, to learn to assess scientific papers, and to develop clinical endodontic skills to an advanced level. A research project and dissertation will be required. The curriculum will provide a foundation for successful clinical practice, or a stepping stone towards an academic career. Clinical training is done in a setting fully equipped with surgical operating microscope and the latest armamentarium for instrumentation, obturation, and periradicular surgery. A good working knowledge of periodontology, occlusion, implantology, and prosthodontics to enable sound treatment planning will be emphasized.

## **Courses**

All the components of the curriculum are compulsory. Emphasis is placed on the scientific basis and the clinical practice of Endodontics, as well as the interface with other disciplines of dentistry.

## **Curriculum structure**

The curriculum consists of the following courses/ components:

### **A. Faculty Core Courses (21 credits)**

These courses introduce the scientific method and aims to help the students develop advanced scientific skills, including competences required to critically evaluate research outcomes as well as design and execute biomedical research. Furthermore, these courses will help the student to develop a thorough understanding of biomaterials and material science as applied in rehabilitation disciplines. Students will also attend certain courses at the LKS Faculty of Medicine.

- DENT7505 Biomaterials I (3 credits)
- DENT7506 Biomaterials II (3 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)
- DENT7031 Insights into stem cells and tissue engineering in dentistry (3 credits)
- DENT7032 Diagnostic & Advanced Dental & Maxillofacial Imaging (3 credits)

### **B. Discipline Specific Courses (72 credits)**

This set of courses introduces students to the practice of Endodontics and is designed for acquisition of basic and advanced skills required for surgical and nonsurgical endodontic treatment, as well as those necessary to restore the tooth before and/or after such treatment.

Those multidisciplinary courses aim to help the students comprehend the past and current research in Endodontics, and the outcomes and evidence base of endodontic treatments. It may take the form of tutorials, joint seminars or clinical discussions. It includes course components offered in other disciplines of dentistry.

## Year 1

- DENT7110 Operative technique fundamentals (3 credits)
- DENT7106 Endodontics introduction (6 credits)
- DENT7111 Practical endodontic techniques (6 credits)
- DENT7121 Tutorials in the discipline (6 credits)
- DENT7159 Implant Dentistry in Comprehensive Dental Care I (9 credits)
- DENT7107 Joint (interdisciplinary) seminars (3 credits)

## Year 2

- DENT7112 Practical endodontic techniques (6 credits)
- DENT7122 Tutorials in the discipline (6 credits)
- DENT7160 Implant Dentistry in Comprehensive Dental Care II (9 credits)
- DENT7108 Joint (interdisciplinary) seminars (3 credits)

## Year 3

- DENT7113 Practical endodontic techniques (6 credits)
- DENT7123 Tutorials in the discipline (6 credits)
- DENT7109 Joint (interdisciplinary) seminars (3 credits)

### **C. Clinical components (99 credits)**

The clinical component includes dedicated consultation clinics for the diagnosis and treatment planning of unfamiliar cases, and supervised clinical practice for the development of the skills and competences necessary for management of complex endodontic cases. It covers approximately 40% of all scheduled sessions of the curriculum, may involve multidisciplinary clinical activities, and includes the production of a portfolio as capstone experience throughout the study.

## Year 1, 2 and 3

- DENT7103, DENT7104 and DENT7105 Endodontic consultation clinic I, II and III (6 credits each)
- DENT7118, DENT7119 and DENT7120 Supervised clinical practice I, II and III (21, 27 and 33 credits)

### **D. Research components (63 credits)**

This component involves the design, execution and dissemination of original research project by the student. Such a process typically includes an extensive systematic literature review within the given topic, design and execution of a research project and dissemination of the research outcomes in the form of a dissertation or a peer reviewed publication.

## Year 1, 2 and 3

- DENT7115, DENT7116 and DENT7117 Research I, II and III (9, 24 and 24 credits)

## Year 3

- DENT7114 Publication and presentations (6 credits)

### **DENT7100, DENT7101 and DENT7102 Capstone Experience: Clinical Portfolio I, II and III (3, 6 and 6 credits)**

Clinical log diary and portfolios

## **Course description**

### **DENT7505 Biomaterials I (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

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### **DENT7506 Biomaterials II (3 credits)**

The course Biomaterials II aims to introduce and guide the students to silicon chemistry and its vast amount of applications in dental materials and biomaterials. Moreover, the course explains various biomechanical features in dentistry. Dental ceramics and some novel synthetic materials for clinical use are described in details and introduced to the student to critically appraise them. The use of diverse dental cements with their indications will be explained for the student for critical selection in the clinic. On completion of this course, a student should be able to address biomechanics, adhesion and durability aspects in contemporary dentistry.

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

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### **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

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### **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

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**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

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**DENT7030 Dissertation writing for Master of Dental Surgery and Master of Science – An Induction Course (Non-credit bearing)**

This Induction Course aims to raise course participants’ awareness of essential aspects of academic writing which contribute to overall communicative success in dissertations. 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

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**DENT7031 Insights into stem cells and tissue engineering in dentistry (3 credits)**

The faculty core course “Insights into stem cells and tissue engineering in dentistry” aims to enhance the students’ knowledge about dental derived stem cells and their potential applications in dental and systemic diseases. Various topics will cover dental stem cells’ isolation and characterization, materials and stem cells function, angiogenesis and microenvironment on tissue engineering, etc. On completion of this course, a student should be able to understand the role of stem cells, scaffold materials, local microenvironment (inflammation, infection, and hypoxia) and angiogenesis on tissue engineering.

Assessment: Coursework (60%) and Examination (40%)

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**DENT7032 Diagnostic & Advanced Dental & Maxillofacial Imaging (3 credits)**

This course will introduce students to the art and science of diagnostic imaging in dental medicine, and will also cover advanced imaging modalities in dento-maxillofacial radiology (DMFR). The course will focus on three-dimensional (3D) imaging using cone beam computed tomography (CBCT), and its use and limitations for various disciplines in dental medicine including periodontology, orthodontics, paedodontics, prosthodontics, and oral and maxillofacial surgery.

Assessment: 60% two-hour written examination and 40% coursework

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**DENT7110 Operative technique fundamentals (3 credits)**

This course aims to introduce the students to the fundamental principles and practice of operative and restorative dentistry. On completion of the course, students should be able to assess the patient and perform the clinical procedure for teeth requiring direct restorations or occlusal coverage restorations. Students should also be able to apply the knowledge to formulate appropriate operative treatment plan.

Assessment: 100% coursework



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**DENT7106 Endodontics introduction (6 credits)**

This course aims to introduce the students to the basic principles and practical skills of endodontic treatments. On completion of this course, the student should be able to explain the rationale for endodontic therapy, apply the knowledge to formulate an appropriate treatment plan, and describe the clinical procedures for endodontic treatment and retreatments.

Assessment: 100% coursework

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**DENT7111, DENT7112 and DENT7113 Practical endodontic techniques (6 credits each)**

This course aims to introduce the students to the technologies and techniques for root canal instrumentation, obturation and surgical treatment. On completion of this course, the students should be able to perform the clinical procedures and apply the techniques for managing complicated endodontic conditions.

Assessment: 100% coursework

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**DENT7121 Tutorials in the discipline – Year 1 (6 credits)**

These tutorials enable students to acquire knowledge of the relevant literature pertaining to the clinical practice of endodontics, to learn to assess scientific papers, and to develop a scientific approach to problem solving. On completion of this course, a student should possess the knowledge and scientific basis for making diagnosis, assessing the clinical difficulty level, applying various treatment modalities and providing an assessment of the prognosis for various endodontic conditions.

Assessment: One 3-hour written paper, 100% examination

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**DENT7122 Tutorials in the discipline – Year 2 (6 credits)**

These tutorials enable students to acquire knowledge of the relevant literature pertaining to the clinical practice of endodontics, to learn to assess scientific papers, and to develop a scientific approach to problem solving. On completion of this course, a student should possess the knowledge and scientific basis for making diagnosis, assessing the clinical difficulty level, applying various treatment modalities and providing an assessment of the prognosis for various endodontic conditions.

Assessment: One 3-hour written paper, 100% examination

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**DENT7123 Tutorials in the discipline – Year 3 (6 credits)**

These tutorials enable students to acquire knowledge of the relevant literature pertaining to the clinical practice of endodontics, to learn to assess scientific papers, and to develop a scientific approach to problem solving. On completion of this course, a student should possess the knowledge and scientific basis for making diagnosis, assessing the clinical difficulty level, applying various treatment modalities and providing an assessment of the prognosis for various endodontic conditions.

Assessment: Two 3-hour written paper, 100% examination

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### **DENT7159 Implant Dentistry in Comprehensive Dental Care I (9 credits)**

The course will provide a clinically relevant overview of implant dentistry and all related basic, biological and clinical sciences. It defines the role of implant dentistry as part of modern comprehensive care and will elaborate all stages of implant treatment, from patient assessment, treatment planning, implant surgical and restorative procedures, maintenance and management of complications. The course covers Scientific Foundations of Oral Implantology, through which, students will gain critical understanding of the fundamentals at the basis of competence and proficiency in dental implantology. The course also covers Diagnosis Design of Implant Retained Dentures, through which, students can have critical understanding of the of evidence-based choices for implant tooth replacement and individual diagnosis and treatment planning.

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

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### **DENT7160 Implant Dentistry in Comprehensive Dental Care II (9 credits)**

The course will provide a clinically relevant overview of implant dentistry and all related basic, biological and clinical sciences. It defines the role of implant dentistry as part of modern comprehensive care and will elaborate all stages of implant treatment, from patient assessment, treatment planning, implant surgical and restorative procedures, maintenance and management of complications. The course covers Surgical Implant Placement, through which, student will gain critical understanding of the of evidence-based choices for surgical implant placement under the different clinical conditions. The course also covers Prevention and Management of Implant Complications, through which, students can gain critical understanding of the of evidence-based choices for the prevention and management of implant complications.

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

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### **DENT7107, DENT7108 and DENT7109 Joint (interdisciplinary) seminars I, II and III (3 credits each)**

Students will be managing a wide range of cases who may require multidisciplinary teamwork on patient assessment and diagnosis, treatment planning and delivery of therapeutic procedures. Active discussion of clinical topics arising will be held in these seminars. On completion, a student should be able to recognize and explain the interrelationship of various related disciplines and contribute to assessment and treatment planning for patients.

Assessment: 100% in-class assessment

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### **DENT7103 Endodontic consultation clinic I (6 credits)**

This course aims to introduce the students to the clinical examination and diagnosis of endodontic and related conditions. One completion of the course, a student should be able to assess various cases referred for endodontic consultation, perform any necessary diagnostic tests, give a comprehensive diagnosis and formulate an appropriate treatment plan.

Assessment: 100% in-class assessment

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**DENT7104 Endodontic consultation clinic II (6 credits)**

This course aims to introduce the students to the clinical examination and diagnosis of endodontic and related conditions. One completion of the course, a student should be able to assess various cases referred for endodontic consultation, perform any necessary diagnostic tests, give a comprehensive diagnosis and formulate an appropriate treatment plan.

Assessment: 100% in-class assessment

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**DENT7105 Endodontic consultation clinic III (6 credits)**

This course aims to introduce the students to the clinical examination and diagnosis of endodontic and related conditions. One completion of the course, a student should be able to assess various cases referred for endodontic consultation, perform any necessary diagnostic tests, give a comprehensive diagnosis and formulate an appropriate treatment plan.

Assessment: 100% in-class assessment

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**DENT7118 Supervised clinical practice I (21 credits)**

This consists of clinical training done in a setting fully equipped for endodontic procedures, including root canal instrumentation, obturation and retreatments. On completion of the course, student should be able to provide appropriate primary endodontic treatment and nonsurgical retreatment for patients.

Assessment: 100% continuous assessment

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**DENT7119 Supervised clinical practice II (27 credits)**

This course aims to introduce the students to the advanced clinical procedures for endodontic retreatment. It consists of clinical training done in a setting fully equipped for endodontic procedures, including root canal instrumentation, obturation, retreatments and periradicular surgery. On completion of the course, student should be able to provide appropriate primary endodontic treatment and to perform nonsurgical and surgical endodontic procedures.

Assessment: 100% continuous assessment

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**DENT7120 Supervised clinical practice III (33 credits)**

Students will continue their practice, under supervision, of advanced clinical procedures for endodontic treatments and retreatments. On completion of the course, student should be able to manage complex endodontic conditions, such as management of ledges, perforation repair, broken file removal, and microsurgical endodontic treatment.

Assessment: 100% continuous assessment

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### **DENT7115 Research I (9 credits)**

This course aims to introduce the students to various research topics on endodontics; introduce the student to search and assess scientific papers on Endodontics and to develop a scientific approach to formulate a research question. On completion of the course, the student should be able to identify a potential research project, and complete a comprehensive review on the potential topic.

Assessment: 100% continuous assessment

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### **DENT7116 Research II (24 credits)**

Students will go through the process of designing a research project and performing a pilot study to collect preliminary data using the proposed methodologies. On completion of the course, a student should have completed a preliminary study and submit a refined proposal for further study.

Assessment: 100% continuous assessment

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### **DENT7117 Research III (24 credits)**

This course aims to introduce the students to conduct scientific experiments, to collect and analyze the data, and to interpret the results to draw a conclusion. On completion of this course, a students should be able to complete data collection and statistical analysis, and to produce write-ups of the research project.

Assessment: 100% continuous assessment

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### **DENT7114 Publication and presentations (6 credits)**

This course aims to introduce the students to the dissertation writing based on the conducted experiments conducted for a research project. On completion of this course, a student should be able to submit a dissertation in publication format.

Assessment: 75% Dissertation and 25% oral examination

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### **DENT7100, DENT7101 and DENT7102 Capstone Experience: Clinical Portfolio I, II and III (3 credits for DENT7100; 6 credits each for DENT7101 and DENT7102)**

This course aims to introduce the students to document the clinical cases treated during the period of study. On completion of the course, a student should be able to submit a portfolio including a list of clinical cases that can demonstrate the breadth and depth of the clinical work and experience.

Assessment: 75% Clinical log diary and portfolios assessment and 25% oral examination

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January 13, 2023