

**CENTRE FOR ADVANCED DENTAL EDUCATION (CADE)
FACULTY OF DENTISTRY
NATIONAL UNIVERSITY OF SINGAPORE**

Graduate Diploma in Dental Implantology Course Outline

Course Details

AIM

1. The Graduate Diploma in Dental Implantology is aimed at providing a sound scientific grounding and clinical training in implant dentistry. This course is designed mainly for practising general dental practitioners who are interested in the field of dental implantology. This course will be a part-time course to cater to the needs of dental practitioners who will usually only be able to embark on part-time programmes.

OBJECTIVES

2. On completion of the course the participant should be able to demonstrate the following competencies:

- Understand the science of implant dentistry and to apply the knowledge in clinical practice.
- Diagnosis and treatment planning in implant dentistry.
- Applying a multidisciplinary approach to the management of patients requiring implants.
- Skills in performing the surgical stages of implant dentistry.
- Skills in performing the restorative or rehabilitative phases in implant dentistry.

ACCREDITATION

3. The Graduate Diploma will be awarded to successful candidates who have met the didactic clinical requirements of the programme and have passed the necessary prescribed assessments. The programme has received professional accreditation from the Singapore Dental Council – as “additional qualification”.

DESCRIPTION OF COURSE

4. This will be a two-year (non-modular) part-time programme. The programme will be conducted through lectures, seminars, literature reviews, pre-clinical and clinical skills training. Candidates will attend some didactic sessions of the existing specialty programmes. Students will be expected to treat all patients in NUS under supervision. All clinical work will be tracked through a clinical log book. The programme will run for 40 weeks per year.

COURSE DURATION

5. The minimum and maximum candidature for the programme will be two years and five years respectively.

COURSE COMPONENTS

6. The course consists of five components :

6.1 Didactic

- Lectures and seminars will be conducted over two years.

6.2 Preclinical

This will be implant system specific.

- Practical training on surgical and prosthetic procedures.

6.3 Clinical

Candidates will spend at least one day per week in NUS. This will include various aspects of clinical training.

- Case reports of ten completed patients with treatment details are to be submitted for final assessment.
- During this period, candidate will undergo clinical training at the Faculty. They will assist in surgical procedures, do clinical discussion and treat their own patients under supervision at these sessions.
- All patients treated under this programme will be informed that they are treated by dentists under supervision and this is part of the training programme. This will be included in the consent form.

6.4 Assignment

- Including Literature reviews, seminar and presentations

GRADUATION REQUIREMENTS

7. The graduate diploma will be awarded to successful candidates who have -

- completed all didactic and clinical requirements of the programme, including the presentation and completion of ten cases
- passed all the necessary prescribed assessments
- passed the Final Examination

RESIDENCY REQUIREMENTS

8. The University has established a minimum residency requirement and maximum candidature for all NUS degrees. Residency, in this instance, is defined as payment of fees for the programme of study. All graduate coursework students are expected to meet 50% of the minimum residency requirements.

IMPLANT SYSTEMS

9. A number of established implant systems available in the market will be used for the purpose of teaching in the duration of this course. At present the following are being used:
- a) Ankylos
 - b) 3i
 - c) Nobelbiocare
 - d) Strauman ITI

SYLLABUS

10. Didactic Component

10.1 Introduction and Basic Sciences

Development and Evolution of Implants
Classification and Design
Material Science
Bone physiology and Healing
Surface Modifications
Success Criteria
Contemporary Implant Systems
Clinical Applications
Longitudinal case studies

10.2 Clinical Decisions (RTP – TP/TS)

Periodontal Disease – current concepts
Periodontal Disease – diagnosis and treatment planning
Endodontic Examination – clinical signs & symptoms
Endodontic Examination – diagnostic tests & diagnosis
Management of the Medically Compromised Patient
Occlusion

10.3 Patient Selection and Diagnosis and Treatment Planning

Objectives of Implant Procedures
Indications and Contra-indications
Medical and Psychological Evaluation
Extraoral and Intraoral examination
Bone Quality and Quantity
Multidisciplinary Approach to Treatment Planning
General Surgical, Prosthetic and Periodontal Considerations
Diagnostic Wax-up
Treatment of various edentulous situations
Sample Cases Discussions

10.4 Diagnostic Imaging

Anatomy and Physiology
Landmark References
Panoramic and Lateral Cephalograph
Periapical, Bitewing and Occlusal Film
Tomogram and Reformatted CT Scan
Precision and Resolution
Radiographic Interpretations
Images of implant Fixtures
Practical using implant models
Patient observation

10.5 Implant Practice Set-up, Ethics and Liability

- Setting up an Implant Practice
- Practice Management and Marketing
- Clinical Records
- Catalogue, Stock Control
- Photographic Records
- Informed Consent
- Risk Management
- Ethics and Liability
- Referral to Specialists

10.6 Surgical Procedures

- Instrumentation
- Step-by-step surgical Stage I procedures
- Soft Tissue Management
- Hard Tissue Management
- Anatomic Limitations
- Guided Tissue/Bone Regeneration
- Basic Augmentation and Grafting
- Bone Spreading
- Prescriptions and Pharmacology
- Immediate Implants
- Stage II Surgery

10.7 Restorative Procedures

- Healing and Progressive Loading
- Provisional Prosthesis
- Impression taking
- Transfer pick-up and repositioning Technique
- Abutment Selection
- Screw or Cement Prosthesis
- Single Tooth, Partial and Full Cases
- Fixed and Removable Designs
- Biologic Width and Periodontal Conditions
- Occlusal and Loading Considerations
- Laboratory Procedures
- Immediate Loading

10.8 Management of Complications and Implant Maintenance

- Surgical Complications
- Delayed Surgical Complications
- Prosthetic Complications
- Periodontal Considerations
- Professional monitoring
- Home Care and Hygiene
- Removal of Implants

10.9 Management of the Deficient Alveolar Ridge

- Atrophic Ridges
- Height and Width Deficiencies
- Sinus Lifting and Augmentation
- Grafting Materials
- Soft Tissue Management

Enhanced Healing
Distraction Osteogenesis
Recall Patients
Complications Management

10.10 Hi-tech and Further Applications in Implant Dentistry

Cerec ceramic Restorations
Procera system
CT Scan and Software Analysis
CAD/CAM applications
Computer Guided Implant Placement
Image Guided Implant Surgery
Stereo Modelling
Maxillofacial Prosthesis
Researches in Implantology

10.11 Clinical Photography Course (elective)

Clinical Photography – Conventional and Digital
Images Management
Preparations for presentation
Publication requirements

11. Preclinical Component

Concept of the Implant System of choice
Armamentarium and components
System specific Surgical Procedures
Surgical Hands-on Workshop with Jaw Models
System specific Prosthetic Procedures
Prosthetic hands-on workshop
Trouble shooting
Live Patient Surgical Stage I & II Demonstrations
Live Patient Prosthetic Stages Demonstrations
Team Work with Specialists and Other Members
Comparison between different implant systems

12. Clinical Component

12.1 Patient Management

Case Consultations and Discussions
Supervised Surgery to Case Completion
Chairside-assistant Training
Laboratory Technical Training
Completion of surgical and prosthetic phases
Course of Maintenance

12.2 Clinical Conference

Combined Sessions of Treatment Planning Discussions
Assignments, Tutorials and Presentations
Free-papers / Table clinics / Posters

12.3 Attachment

- 12.4 Elective** (optional – at candidates' own travel expenses)
Visits to other overseas recognised institutions and training centres
Attending implantology related conferences, symposia and lectures
Visit to manufacturer:
 Manufacturing Process of Implants and Components
 Quality Control Processes
 Product Update
Visit to specialized Dental Laboratory:
 Telescopic Designs
 Precision Castings
 Spark Erosion Technology
 Laser Welding
Cadaver / animal practice (where available)

13. Assignments

- 13.1 Documentation**
Clinical Assessment (Compilation of 10 documented, completed cases)
 Single Tooth Replacement
 Partial Edentulous, Bounded Saddle/Free-end
 Edentulous Arch
- 13.2 Literature Review Seminars**
20 Literature Review Seminars
- 13.3 Self study**

14. Assessment/ Examination

- 14.1 Yearly Assessment**
Progress of candidate will be assessed annually. At the end of first year, students undergo an oral examination. Students are given 2 cases to diagnose and treatment plan and are examine on these.
- 14.2 Final Examination**
Candidate must fulfil all clinical requirements as specified by the curriculum as a pre-requisite for consideration for Final Examination. The Final Examination consists of -
- written paper,
 - presentation of completed case; and
 - an oral examination.

TEACHING STAFF

- 15.** The following individuals will be involved in the teaching of the programme either in clinical supervision* or lecturing for the didactic programme:

Prof (Dr) Chew Chong Lin
Adj Assoc Prof (Dr) Ansgar Cheng
Adj Assoc Prof (Dr) Chung Kong Mun
Adj Assoc Prof (Dr) Go Wee Ser
Adj Assoc Prof (Dr) Loh Fun Chee
Adj Assoc Prof (Dr) Loh Poey Ling

Assoc Prof Asher Lim Ah Tong
Assoc Prof (Dr) Keson Tan
Assoc Prof (Dr) Yeo Jin Fei
Dr Ang Chee Wan
Dr Chan Siew Luen
Dr Fu Jia Hui
Dr Henry KL Ho
Dr Ho Kok Sen
Dr Henry SN Kwek
Dr Lewis Lee Kim Chuan
Dr Dominic Leung
Dr Lim Sze Kheng
Dr Neo Tee Khin
Dr Shahul Hameed
Dr Benjamin Tan
Dr Tan Min Seet
Dr Winston Tan
Dr Alphonsus Tay
Dr Marlene Teo
Dr Victoria Yu
Dr Wong Keng Mun
Dr Aidan Yeo
Ms Kuah Boon Theng

*There will be 2 clinical sessions (half day) assigned for both the oral surgery and prosthodontic clinical procedures each, totalling 4 sessions (2 full days) per week.

Updated Aug 2014