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
Prosthodontic 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 prerequisite 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.

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