Programme Specification

Level 7 Diploma in Implant Dentistry (Grad Dip)

Cambridge Academy of Dental Implantology (UK)

The Implant Institute (Australia)

Programme Summary	
Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7 (RQF)
Programme length	900 notional hours 90 credits
Programme aims	• Competency in 'Straightforward' implant dentistry • Adherence to General Dental Council requirements • Application of Teaching Standards in Implant Dentistry
Delivery and assessment	Online learning using the Canvas VLE Contact classes - 10 days
Modules	1. Patient Assessment, Diagnosis and Treatment Planning 2. Preclinical Practical Skills 3. Implant Prosthodontics and Occlusion 4. Clinical Cases 5. Basic sciences relevant to implant dentistry 6. Evidence Based Dentistry

MODULE 1: Patient assessment, diagnosis and treatment planning

Module Summary	
Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7
Unit length	150 notional hours 15 credits
Unit aims	• Understanding of the patient assessment process • Interpretation and justification of dental CBCT • Application of patient assessment to treatment planning
Delivery and assessment	Online learning using the Canvas VLE Written and practical assignments
Essential resources	1. Canvas VLE with access to tutors 2. Online library facilities 3. Access to a Windows based PC 4. Provision of CBCT viewing software and anonymised CBCT cases

Learning Outcomes:

Learning Outcome 1: Demonstrate an ability to conduct and analyse a patient assessment for the provision of implant dentistry			
Assessment criteria *On completion of this unit, the learner can*	**Indicative content**	**Delivery**	**Assessment**
1.1 Critically analyze all data derived from a thorough patient assessment **1.2** Understand how medical, social and demographic factors affect general and implant dentistry. **1.3** Develop a detailed knowledge of immediate and long term complications in dental implantology and show an ability to evaluate management options. **1.4** Critically assess a patient's suitability for implant treatment and carry out a comparative risk analysis of all treatment alternatives	- Patient history taking - Clinical assessment - Evaluating patient expectations - Dental photography - Clinical record keeping - Imaging techniques - Medical considerations - Operative risks and complications - Long term risks and complications - Evaluating treatment options	- Online program using Canvas VLE - Weekly online sessions with learner participation and interaction - Tutor lead formative feedback	Formative assessment: - Weekly tutor feedback on learners' discussion posts Summative assessment: - Weekly discussion posts (30%) - CBCT reporting assignment (20%) - Essay assignment of 2,000 words (50%)

1.5 Develop a detailed knowledge of immediate and long term complications in dental implantology and show an ability to evaluate management options.			

Learning Outcome 2: Demonstrate an understanding of the factors involved in CBCT justification and interpretation

Assessment criteria *On completion of this unit, the learner can:*	**Indicative content**	**Delivery**	**Assessment**
2.1 Appreciate the rationale for CBCT scans and understand the limitations of CBCT imaging	- Development of CT and CBCT - CBCT physics - Radiation doses relevant to CBCT examinations - Radiation protection and CBCT dose optimization - CBCT diagnosis and reporting - Biological effects of CBCT radiation - Selection criteria - CBCT quality assurance - CBCT artifacts - CBCT regulations and guidelines in the UK	- Online program using Canvas VLE - Weekly online sessions with learner participation and interaction - Tutor lead formative feedback	Formative assessment: - Weekly tutor feedback on learners' discussion posts Summative assessment: - Weekly discussion posts (30%) - Essay assignment of 2,000 words (50%)
2.2 Demonstrate an understanding of the physics and principals involved with CBCT imaging			
2.3 Explain the risks of CBCT and undertake a risk to benefit analysis in order to determine the suitability of a patient for a CBCT examination			
2.4 Explain radiation protection and optimisation procedures relevant to CBCT			

2.5 Understand the professional team roles involved in CBCT imaging			
2.6 Assess the comparative differences between CBCT and 2D imaging			
2.7 Identify common CBCT artefacts and explain their causes and limitations			
2.8 Identify normal and abnormal anatomy on CBCT scans of the dentoalveolar region	- Using CBCT viewing software - CBCT anatomy and pathology - Radiological terminology - Reporting on CBCT scans	- Provision of 30 anonymized cases	- CBCT reporting assignment (20%)
2.9 Demonstrate competence in writing a formal CBCT report			

MODULE 2: Preclinical Practical Skills

Module Summary	
Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7
Unit length	150 notional hours 15 credits
Unit aims	To provide learners with the foundational skills required prior to planning and treating clinical cases under supervision • Develop skills in digital case planning procedures using CBCT and STL data • Enhance existing surgical and prosthodontic skills for their application in implant dentistry • Teaching of advanced skills in soft tissue management and wound closure
Delivery and assessment	Small group classroom Canvas VLE Summative assessment by OSCE
Essential resources	1. Teaching room of adequate size, with audio visual facilities (macro video camera and large screen) 2. Laptops loaded with CBCT planning software 3. Selection of anonymized cases with DICOM and STL datasets 4. Synthetic bone models and pig jaws 5. Implant drill machines 6. Implant surgical and prosthodontic training kits 7. Surgical instrumentation 8. Sutures and associated instrumentation

Learning Outcomes:

Learning Outcome 1: Developing the skills required for digital implant planning			
Assessment criteria *On completion of this unit, the learner can*	**Indicative content**	**Delivery**	**Assessment**
1.1 Demonstrate the ability to import DICOM and STL files and merge the datasets using dedicated digital planning software **1.2** Understand the applications and limitations of digital planning **1.3** Design the required prosthodontics for straightforward cases **1.4** Plan accurate implant placement and design a surgical guide	- Development of DICOM and STL formats and their applications in healthcare - The methods for acquiring DICOM and STL datasets - Limitations of CBCT, common algorithmic and physical artefacts and errors in STL acquisition - Practical use of digital planning software to import and merge CBCT scans and STL files from intraoral and dental cast scanners - Prosthodontic virtual 'waxups' and determining the required prosthodontic dimensions and positions - Determining the correct implant length and width for different	This is a practical skills unit, which is delivered in a group environment using a problem-based learning approach. Participants will have access to digital planning software (e.g., Blue Sky Plan, SMOP etc.) Asynchronous webinars will be provided to enable learners to undertake foundational self-directed training on use of the digital planning software prior to the contact class.	**ACs 1.1 – 1.4** will be assessed via: **Summative** Tutor feedback **Formative** Objective Structured Assessments of Technical Skills (OSATS)

	surgical and prosthodontic situations - Determining the correct angulation and depth for implants and understanding the rationale for this decision tree - Design requirements for a stable surgical guide - Methods of surgical guide production: 3D printing technologies		

Learning Outcome 2: Enhancement of existing surgical and prosthodontic skills for applications in implant dentistry			
Assessment criteria *On completion of this unit, the learner can:*	**Indicative content**	**Delivery**	**Assessment**
2.1 Determine a suitable soft tissue flap design for various surgical scenarios	- Flap design and required instrumentation - Soft tissue management techniques for raising a mucoperiosteal flap - Suture materials and instrumentation - Suturing techniques and their different applications - Requirements of the surgical assistants	This is a practical skills unit, which is delivered in a group environment under direct tutor supervision with individual and immediate feedback. Participants will have access to implant machinery, implants, surgical drills and instrumentation, bone models, pig jaws, suture materials and instruments, and prosthodontics materials and instruments. Asynchronous webinars will be provided to enable learners to undertake self-directed training on surgical and prosthetic protocols.	**ACs 2.1 – 2.6** will be assessed via: **Summative** Continual tutor feedback **Formative** Objective Structured Assessments of Technical Skills (OSATS)
2.2 Raise and close a mucoperiosteal flap suitable for straightforward implant treatment			
2.3 Understand the correct drill sequence and techniques for specific case requirements	- Necessary team skills for implant treatment - Machinery set-up and drill sequences - Drilling techniques for safe osteotomy preparation - Hand positioning and methods for visualization to ensure correct implant placement - Use of surgical guides and their limitations		
2.4 Demonstrate knowledge and use of the instrumentation and skills required to ensure correct implant positioning			

2.5 Demonstrate the ability to assess and record a patient's occlusion and show competence in the use of a semi-adjustable articulator	- Occlusal charting - Taking a facebow registration - Correct use of a semi-adjustable articulator		
2.6 Enhance existing knowledge and skills in fixed prosthodontics for applications in dental implantology	- Impression taking techniques (open and closed tray) - Use of appropriate impression materials - Occlusal registration - Fitting an implant retained prosthesis (screw and cement retained)		

MODULE 3: Implant Prosthodontics and Occlusion

Module Summary	
Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7
Unit length	150 notional hours 15 credits
Unit aims	• Understanding of the prosthetic and laboratory processes • Ability to apply occlusal principles to dental implantology
Delivery and assessment	Online learning using the Canvas VLE Written assignments
Essential resources	1. Canvas VLE with access to tutors 2. Online library facilities

Learning Outcomes:

Learning Outcome 1: Demonstrate an ability to evaluate and apply prosthodontic requirements in implant dentistry			
Assessment criteria *On completion of this unit, the learner can*	**Indicative content**	**Delivery**	**Assessment**
1.1 Understand the scientific rationale behind the prosthodontic aspects relevant to dental implantology **1.2** Demonstrate an ability to investigate, evaluate, analyze and disseminate basic research findings related to implant prosthodontics **1.3** Demonstrate use of the scientific literature relevant to implant prosthodontics **1.4** Critically assess a patient's prosthodontic suitability for implant treatment and carry out a comparative risk analysis of all treatment alternatives	- Prosthodontic protocols - Impression techniques - Impression materials - Prosthodontic planning for surgery - Digital wax-ups - Biomechanical prosthodontic theories - Abutment materials - Laboratory fabrication methods - Veneering materials - Prosthodontic attachment methods - Evaluation of cement and screw retention - Shade taking	- Online program using Canvas VLE - Weekly online sessions with learner participation and interaction - Tutor lead formative feedback	Formative assessment: - Weekly tutor feedback on learners' discussion posts Summative assessment: - Weekly discussion posts (30%) - Essay assignment of 3,000 words (70%)

1.5 Develop a detailed knowledge of immediate and long-term prosthodontic complications in dental implantology and show an ability to evaluate management options.			

Learning Outcome 2: Understand and apply theoretical and practical knowledge of occlusion in dental implantology

Assessment criteria *On completion of this unit, the learner can:*	**Indicative content**	**Delivery**	**Assessment**
2.1 Describe the anatomical structures of the human masticatory system	- Anatomy and physiology of the TMJ - Anatomy and physiology of the muscles of mastication - TMJ dysfunction syndrome - Occlusal terminology - Comparative analysis of theories in occlusion - Recording occlusal parameters - Use and theory of facebow - Toothwear: aetiology and treatment	- Online program using Canvas VLE - Weekly online sessions with learner participation and interaction - Tutor lead formative feedback	Formative assessment: - Weekly tutor feedback on learners' discussion posts Summative assessment: - Weekly discussion posts (30%) - Essay assignment of 2,000 words (50%)
2.2 Describe common occlusal terminology			
2.3 Explain the normal physiology and common pathology of the human masticatory system			
2.4 Discuss and critically appraise theories of dental occlusion and their clinical implications			
2.5 Describe the management of toothwear and parafunctional activity			

2.6 Understand the rationale and functioning of dental articulators	- Parafunctional activity and its relevance to dental implantology - Disorders of the TMJ		

MODULE 4: Clinical Cases

Module Summary	
Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7
Unit length	150 hours 15 credits
Unit aims	Competency in the clinical planning and treatment of dental implant cases
Delivery and assessment	Clinic based patient treatment
Essential resources	Suitably equipped dental clinic Suitably trained clinical and administrative support staff Clinical supervisors for Beginners Pathway Patients Access to CBCT radiography Access to intraoral digital scanner or cast scanner Digital planning software

Learning Outcomes:

Learning Outcome 1:			
Assessment criteria *On completion of this unit, the learner can*	**Indicative content**	**Delivery**	**Assessment**
1.1 - Able to act autonomously as a practitioner in the provisional of straightforward implant dentistry, using an understanding of Evidence Based Dentistry **1.2 -** Able to integrate all aspects of clinical dentistry into the discipline of implant dentistry and show competence in the diagnostic process, treatment planning and restoration of dental implants. **1.3 -** Communicate effectively to meet the needs of patients, ancillary members of the treatment team and other practitioners. **1.4 -** Able to define own strengths and weaknesses for targeted and continual	- Knowledge of basic principles of dental implantology - Complete patient assessment - Formulation of treatment options - Application of the consent process - Competency in devising the treatment plan - Surgical and prosthetic competency - Management of complications - Planning and instigation of long-term maintenance program	This is an entirely practical unit. This unit is delivered in a fully equipped dental clinic with a full complement of support staff	- Summative assessment of clinical competency using a grading rubric

development of clinical knowledge and skills			

MODULE 5: Basic sciences related to implant dentistry

Module Summary	
Customised Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7
Unit length	150 notional hours 15 credits
Unit aim	• Understanding of the scientific rationale behind surgical implantology • Development of skills in critical appraisal • Understanding the importance of a team approach to implant dentistry • Appreciate the importance of reflective practice
Delivery and assessment	Online learning using the Canvas VLE Written assignments
Essential resources	1. Canvas VLE with access to tutors 2. Online library facilities

Learning Outcomes

Learning Outcome 1: Understanding of the scientific rationale behind surgical implantology			
Assessment criteria *On completion of this unit, the learner can*	**Indicative content**	**Delivery**	**Assessment**
1.1 Demonstrate an understanding of the basic sciences relevant to implant dentistry **1.2** Understand the basic methods of accessing, analyzing and utilizing research findings in clinical care and patient management **1.3** Demonstrate an ability to investigate, evaluate, analyze and disseminate basic research findings. **1.4** Demonstrate use of the scientific literature relevant to implant dentistry	- Historical development of implantology - Discovery of osseointegration - Bone biology and physiology - Bone biochemistry - Pathology of bone - Bone healing around titanium implants - Soft tissue healing around titanium abutments - Implant surface technology - Dentoalveolar anatomy - Neural and vascular supply to the dentoalveaolar region - Pharmacology in implant dentistry - Implant loading protocols	- Online program using Canvas VLE - Weekly online sessions with learner participation and interaction - Tutor lead formative feedback	Formative assessment: - Weekly tutor feedback on learners' discussion posts Summative assessment: - Weekly discussion posts (30%) - Essay assignment of 3,000 words (70%)

Learning Outcome 2: Understanding of self-reflection and continued professional development			
Assessment criteria *On completion of this unit, the learner can:*	**Indicative content**	**Delivery**	**Assessment**
2.1 Able to define own strengths and weaknesses for targeted and continual development of clinical knowledge and skills	- Management of the surgical team - Application of research findings to clinical practice - Retrospective and prospective reflective practice	- Online program using Canvas VLE - Weekly online sessions with learner participation and interaction - Tutor lead formative feedback	Formative assessment: - Weekly tutor feedback on learners' discussion posts Summative assessment: - Weekly discussion posts (30%) - Essay assignment of 3,000 words (70%)

MODULE 6: Evidence Based Dentistry

Module Summary	
Course title	Level 7 Diploma in Implant Dentistry (Grad Dip)
EduQual level	Level 7
Unit length	150 hours 15 credits
Unit aim	Understanding of the research process and its limitations
Delivery and assessment	Online tutor lead, interactive distance learning
Essential resources	PubMed Access to Broadband Access to Mac or PC Canvas VLE Course books

Learning Outcomes

Learning Outcome 1: Demonstrate an understanding of Evidence Based Dentistry			
Assessment criteria *On completion of this unit, the learner can*	**Indicative content**	**Delivery**	**Assessment**
1.1 Develop a detailed knowledge of different study designs and evaluate their applications	- Research design - Research bias and its implications - Data acquisition - Statistical analysis - Critical evaluation of methodology - The research hypothesis - Ethical considerations in research - Planning a research protocol - Research approval		- End of module essay (50%) - Graded weekly discussion posts (50%)
1.2 Understand how bias may affect research validity			
1.3 Describe different statistical methods used to analyse quantitative and qualitative data			
1.4 Explain the ethical requirements for healthcare research			
1.5 Undertake a comparative analysis of qualitative and quantitive research			
1.6 Develop a detailed knowledge of critical appraisal skills required to	- Systematic reviews - Meta-analyses		

analyse systematic reviews and meta-analyses			

Learning Outcome 2: Apply the principles of Evidence Based Dentistry to the practice of implant dentistry			
Assessment criteria *On completion of this unit, the learner can:*	**Indicative content**	**Delivery**	**Assessment**
2.1 Able to act autonomously as a practitioner in the provisional of straightforward implant dentistry, using an understanding of Evidence Based Dentistry	- critical reading in dentistry - professional guidelines - database research - sensitivity analysis - applying research to clinical practice with Evidence Based Dentistry	- online webinars - textbook reading - tutor lead discussions (online) - online learning via Canvas platform	- End of module essay (50%) - Graded weekly discussion posts (50%)
2.2 Apply Evidence Based Healthcare principles to clinical practice			
2.3 Understand how to assess research validity			
2.4 Describe the limitations of sample populations and their application to clinical practice			