

**MINIMUM STANDARD REQUIREMENT FOR A SETTING UP OF
A DENTAL COLLEGE LEGALLY AFFILIATED TO A UNIVERSITY HAVING A
DENTAL FACULTY**

1. **Short title and commencement:** Minimum Requirements for 40. B.D.S.
2. **Objective:** The objective of these requirements is to prescribe for a Dental college approved for 40 admissions of B.D.S. students annually, the minimum requirements of accommodation in the college and its associated teaching hospitals, staff (teaching and technical both) and equipment in the college department and hospitals.

1. Administrative Block

Accommodation shall be provided for – Principal/Dean’s office, Staff Room, College Council Room, Office Superintendent’s room office, record room, examination hall and Assembly Hall, common rooms for men and women students, cafeteria and other necessary accommodation.

2. General Library – with sufficient space for at least 50 students for reading and having good lighting and ventilation and adequate space for stacking and display of books and journals.

There should be provision for:

- (a) Staff reading room
 - (b) Rooms for librarian and other staff
 - (c) Room for copying facilities
 - (d) Audiovisual room
 - (e) Journal room
 - (f) Computer room with internet facilities for 25 students or more
3. Dental workshop with accommodation and facilities for repair of mechanical, electrical and electronic equipment. Facilities for carpentry and plumbing should also be available.

NB. Adequate sanitary facilities must be provided for the teaching staff, students (men and women) technical and other staff in all sections as required, as well as for the patients.

Accommodation

General Remarks

The College should be housed in a unitary building having adequate dental hospital facilities within the premises of the dental college or other health institutions as approved by relevant authorities. Patients will be treated free of charge. The College should be located near a hospital or private clinic with 100 beds.

The College grounds should have room for future expansion with a minimum land space of 2 acres.

There should be 3 theatres in the college with adequate seating capacity. They should be with good acoustics. Lecture theatres and demonstration rooms should be provided with necessary audio-visual aids.

In addition to the lecture theatre, there should be an auditorium of proper capacity and size.

Ample space shall be provided in each department for research work and further expansion of its activities.

Adequate number of store-rooms should be provided in each department.

Hostels for men and women students be provided. Provision of quarters for staff is desirable.

Facilities for indoor and outdoor games with physical instructors and play grounds should be provided.

Teaching Hospitals

1. Departments in a dental college

The following will be the teaching departments of a Dental College/Wing:

1. Oral Medicine & Radiology
2. Oral and Maxillofacial Surgery
3. Prosthodontics
4. Periodontics
5. Conservative Dentistry
6. Pedodontics
7. Oral Pathology & Microbiology
8. Orthodontics
9. Community Dentistry (Public Health)
10. Dental Anatomy
11. Dental Materials

In an institution where the 11 Departments as enumerated above do not exist at present, any two allied departments may be combined for teaching and administrative purposes under one Professor.

2. Year-wise Requirements for starting a New Dental College:

It is recommended that while the year-wise teaching staff for starting a new Dental College with 40 admissions to the BDS Course be as Appendix-I the following be clubbed together under one Head forming the full blocks by the College authorities:

Block I	:	Prosthetics/Dental Materials
Block II	:	Operative Dentistry/Pedodontia/Dental Materials
Block III	:	Oral & Dental Pathology/Oral Medicine, Dental Radiology & Oral Diagnosis
Block IV	:	Oral Surgery/Dental Anatomy

Block V : Periodontia/Community Dentistry
Block VI : Orthodontia/Pedodontia/Dental Anatomy

With a note that: Not more than 2 subjects should be under one Head of the Department and not more than 2 subjects be clubbed together.

3. General

1. Accommodation be provided for Dean/Medical Superintendent's office/Hospital offices, staff nurse's room. Waiting hall for men and women visitors.
Enquiry office
Reception office
Store rooms
Central Record Section
Hospital and Staff Committee room
2. Central Registration Department should be provided
(Sanitary Annexes to be provided as required)
3. Either in the Dental College & Hospital or in a Medical College & Hospital associated with dental college teaching programme provision should be made for a minimum of 5 beds for in-patients.

Required Dental and Medical Staff should be appointed by way of Residents to attend on these patients as well as on other emergencies by rotation throughout the day. They should be provided with residential accommodation.

The number of dental chairs and dental units shall be 80 (i.e. twice the number of students admitted annually). The distribution of the chairs and units should be left to the discretion of the Head of the Institution according to the need.

Demonstration room – one room for audiovisual aids should be provided for demonstration purposes.

There should be dental laboratories for the Department of prosthetics and Conservative Dentistry with sufficient working space and equipment.

There should be a well-equipped laboratory attached to the Prosthetic clinic.

There should be a well-equipped dental Radiology Department with necessary facilities for protection against radiation hazard.

The physical requirements of the basic department viz Anatomy, Physiology, Biochemistry, Pharmacology, Pathology and Microbiology. General Medicine and General Surgery would be the same as stipulated by Medical Council of Mauritius.

MINIMUM STAFFING PATTERN FOR UNDERGRADUATE DENTAL STUDIES FOR 40 ADMISSIONS TO A BDS COURSE

(a) Dental Staff:

There shall be a 3 tier system of uniform designations for Dental teaching staff throughout Mauritius in all dental institutions. They shall be:

1. Professors
2. Lecturers/Senior Lecturers
3. Tutor-demonstrators

The Principal/Dean should teach one of the subjects and he will be the Professor and Head of the Department in his speciality.

The teaching strength for 40 admissions shall be as follows:

Professors: not less than 6 of which one will be principal.

NOTE: (1) Each Department should be headed by a Professor. However, in case persons with requisite qualifications etc. for the post Professors are not available to head the different departments of a dental college then a provisional post of an Associate Professor may be considered adequate to head the department to tide over this difficulty and that this post be upgraded to that of a Professor as and when the incumbent attains the qualifications.

(2) The 6 Professors including Principal/Dean/Head of the dental institution in those dental institutions where the admissions are less than 40 may be allocated various subjects after keeping in view the quantum of workload of both the major and minor subjects.

Lecturers/Senior Lecturers	9 (one each of the 9 depts)
Tutor/Demonstrators	16

Break-up as follows:

Prosthetics – Dental Material	3
Conservative Dentistry	3
Oral Surgery	2
Periodontics	2
Orthodontics	1
Pedodontics	1
Oral Pathology/Oral Anatomy	2
Oral Medicine	1
Community Dentistry	1

16
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(b) Medical Staff

It would be in the interest of the dental students to have full time staff to teach medical subjects also. However, if such arrangement cannot be made, the services of the teachers of the medical college could be availed. The Head of each department in both the cases cited above be in-charge of the training programme of the dental students.

The following will be the staffing pattern in (medical subjects fulltime) for admission of 40 candidates per year:

Anatomy	Lecturer	1
	Demonstrators /Tutor	2
Physiology & Biochemistry	Lecturer	1
	Demonstrators /Tutor	2
Pharmacology	Lecturer	1
	Demonstrators /Tutor	2
Medicine	Lecturer	1
	Demonstrators /Tutor	2
Surgery	Lecturer	1
	Demonstrators /Tutor	2
Anaesthesia	Lecturer	1
	Demonstrator/Tutor	1

(c) Other Staff

1. Dental Surgery Assistant Two in each clinical department
2. Dental Mechanics Minimum (7) 3 for Prosthetics, 1 for Conservative Dentistry, 1 for Oral Surgery & Periotontia, 2 for Orthodontia
3. Histopathology Technicians 2
4. Laboratory Assistants Two in each clinical and one in each non-clinical department
5. Clinic/Lab. Cleaners One up to 10 chairs or 10 students in each laboratory
6. Dental Technician 2
7. Radiographer/X-ray Technician One
8. Plumber-cum-Mechanic One
9. Electrician One
10. Office Superintendent One
11. Head Clerk One

12.	Accountant	One
13.	Cashier	One
14.	Word Processing Operators	Three
15.	Store keeper	One
16.	Assistant store keeper	One
17.	Librarian	One
18.	Assistant librarian	One
19.	Library Attendants	Two
20.	Clerks/Record keeper/Telephonist	Three
21.	Office Attendants	Four
22.	Watchman	Four
23.	Sweepers	12
24.	Private Secretary	One
25.	Store Clerk	One for each clinical department

MINIMUM BASIC QUALIFICATION AND TEACHING EXPERIENCE REQUIRED FOR TEACHERS FOR UNDERGRADUATE DENTAL STUDIES

(a) Dental Staff

Principal/Dean

Same qualification as prescribed for a professor. Experience as Professor for not less than 5 years

Professors

A BDS degree of recognized by the Dental Council of Mauritius or an equivalent qualification with Post-graduate qualification in the subject, and with 8 years teaching experience after the postgraduate as lecturer.

However, for the purposes of teaching Oral Anatomy and Histology, Dental Material and Community Dentistry a candidate with BDS or equivalent qualification with 10 years' teaching experience in that subject may be considered for the post of lecturer. The professorship should be awarded by a recognized university. However, such a candidate without post-graduate qualification cannot be considered for the post of a Professor.

Lecturer/Senior Lecturer

A BDS degree or an equivalent qualification with postgraduate qualification in the subject plus 2 years experience after post graduate teaching qualification.

Demonstrator/Tutor

A recognized BDS degree or equivalent qualifications.

(b) Medical Staff

Professor
Lecturer/Senior Lecturers for, Anatomy, Biochemistry Physiology, Pathology, Microbiology & Pharmacology/ Medicine, Surgery and Anaesthesia, General Medicine, General Surgery

As will be prescribed by the Medical Council of Mauritius for such posts

Note:- BDS with post graduate qualification in the subject should be preferred.

Demonstrators for Anatomy, Physiology MBBS or M.Sc. (in the subject) or BDS Biochemistry, Pathology, Microbiology with M.Sc. in the subject. and Pharmacology teaching experience nil

PROFESSIONAL (B.D.S) EXAMINATIONS

Examinations are to be conducted to assess whether the candidate has acquired the necessary minimum skill and clear concepts of the fundamentals essential to his day to day professional work.

Examinations shall be held twice in a year. Each examination shall be conducted by a team of internal and external examiners.

To inculcate the habit of progressive day-to-day learning, introduction of frequent tests are essential. These tests must be held at least four times in each year (class) or twice in each semester and 25% of the total marks in each subject theory and practical/clinical – individually must be set apart in the professional examination for this.

Maximum marks and duration of examination

Each subject will have a maximum of 200 marks as follows:-

	Theory		Practical/Clinical
University Examination	Written	50	75 – University Examination
	Orals	25	
Internal Assessment		25	25 – Internal assessment

- (1) For a pass the candidate must secure a minimum of 50% marks in the university examination and 50% marks in the aggregate, i.e. university examination and internal assessment in each division viz. theory and practical and or clinical separately.
- (2) First class and distinction etc. to be awarded by the university as per their respective rules.
- (3) Any candidate who fails in one subject in an examination is permitted to go to the next higher class and appear for the subject and complete it successfully before he can appear for the next higher examination. If semester system is followed, the candidate can carry one subject from one semester to the next semester only, and appear for both semester examinations simultaneously.

Duration of written examination at the discretion of the University

Attendance

- (i) 75% in theory and 75 % in practical/clinical in each subject in each year.
- (ii) In case of a subject in which there is no examination at the end of the academic year/semester, the percentage of attendance shall not be less than 70%. However, at the time appearing for the professional examination in the subject, the aggregate percentage of attendance in the subject should satisfy condition (i) above.

Field programme in Community Dentistry

With a view to expose the student to problems of rural urban areas, field programmes equivalent to 100 hours during year III and final years should be arranged.

It is recommended that the field programmes be arranged suitably by the institution.

GUIDELINES FOR REGULATIONS AND SCHEME OF EXAMINATIONS (B.D.S Course)

The scheme of examination for the B.D.S course shall be divided into 4 professional examinations, namely, 1st B.D.S examination at the end of 1st academic year, 2nd at the end of IInd academic year, IIIrd at the end of 3rd academic year and IV and final B.D.S examination at the 4th academic year.

Where semester system exists, there shall be 2 examinations in each year, designated as parts I & II of the respective examinations.

The Examination shall be open to a candidate who satisfies the requirement of attendance, progress and conduct as stipulated by the respective university.

Certificates to the above effect should be produced from the Head of the Institution by the candidate along with the application for examination and the prescribed fee.

I BDS Examination

1. General Human Anatomy including Embryology and Histology
2. General Human Physiology and Biochemistry
3. Dental Materials

II BDS Examination

Regulations are the same as for the I year BDS examination. However, no candidate who has not successfully completed the I BDS examination, can appear for the IInd BDS examination.

1. General Pathology and Microbiology
2. Human Oral Anatomy including Embryology and Histology.
3. General and Dental Pharmacology and Therapeutics.

III BDS Examination

Regulations are the same as for the IInd year BDS examination. A candidate who has successfully completed the IInd BDS examination, can appear for the IIIrd BDS examination.

1. General Medicine
2. General Surgery
3. Oral Pathology and Microbiology
4. Preventive and Community Dentistry

Final BDS Examination

Regulations are the same as for the 3rd year BDS examination. A candidate who has not successfully completed the IIIrd BDS examination, cannot appear for the final BDS examination.

1. Prosthodontics and Crown and Bridge
2. Conservative Dentistry including Endodontics
3. Pedodontics
4. Oral Surgery
5. Periodontics
6. Orthodontics
7. Oral Medicine (Oral diagnosis) and Radiology

It is recommended to have a separate examination for each of the above subjects

The teaching of a subject may be spread over one or more terms (one or more classes of BDS) depending upon the local facilities. However, taking care to see that excessive load is not placed on candidates during any one year.

Internship

Every candidate will be required after passing the final BDS examination to undergo one year paid rotating internship in a dental college.

**MINIMUM WORKING HOURS FOR EACH SUBJECT OF STUDY
(B.D.S COURSE)**

SI NO.	Subject	Hours of lectures	Total		Total
			Practical & Clinical hours	Available clinical hours	
1.	General Human Anatomy	70	130		200
2.	General Human Physiology and Biochemistry	50	40		145
3.	Dental Materials	35	30		65
4.	General Pathology and Microbiology	45	60		195
5.	General and Dental Pharmacology	40	20		60
6.	Oral Anatomy, Histology & Physiology	40	90		130
7.	General Medicine	40	90	(90)	130
8.	General Surgery	40	90	(90)	130
9.	Oral Pathology & Microbiology	50	90	-	140
10.	Orthodontics	40	150	(120)	190
11.	Periodontics	45	205	(150)	250
12.	Pedodontics	40	150	(100)	190
13.	Prosthodontics & Crown & Bridge	100	900	(540)	1000
14.	Conservative Dentistry & Endodontics	70	600	(360)	670
15.	Oral Surgery, Local Anaesthesia & General Anaesthesia	60	220	(150)	280
16.	Oral Medicine & Roentgenology	40	90	(90)	130
17.	Community Dentistry	30	100		130
	Total	890	3145	(1690)	4035

SYLLABUS B.D.S

GENERAL HUMAN ANATOMY INCLUDING EMBRYOLOGY OSTEOLOGY AND HISTOLOGY

1. Introduction
2. Detailed Anatomy and Osteology of head & neck.
3. Gross Anatomy of thorax, abdomen and extremities.
4. Embryology of head, neck with emphasis on development of face, jaws, tongue, palates, salivary glands, pharyngeal arches and pouches.
Lymphatic and blood vessel system
G.I system
5. Paranasal air sinuses
6. (a) Gross Anatomy of the brain;
(b) Study of cranial nerves – in detail extra cranial course 5th, 7th and 9th nerves and upper cervical nerves.
7. Genetics: Fundamentals of genetics.
8. Anthropology: General principles

HISTOLOGY

A course of 30 lectures – demonstrations and practical covering the following:

1. Epithelium including gland and of gastro-intestinal tract.
 2. Muscle
 3. Periosteum
 4. Bone
 5. Cartilage
 6. Adipose tissue
 7. Fibrous tissue
 8. Elastic tissue
 9. Lymph tissue
 10. Blood
 11. Blood vessels
 12. Nerves
 13. Lung
 14. Kidney
 15. Spleen-liver-thymus-pancreas
 16. Endocrine glands
- Dissection of head and neck excluding opening of skull and demonstrations of wet and dry specimens including brain.
- | | |
|--|-----------------|
| Lectures | 70 hours |
| | Total 200 hours |
| Dissection and practical demonstration | 130 hours |

GENERAL HUMAN PHYSIOLOGY, BIOCHEMISTRY NUTRITION AND DIETETICS

THEORY	Introduction to Physiology – the cell, the components of cell and their functions. Tissues of the body – functions of epithelial issues, glandular tissues, connective tissues and other tissues.
BLOOD	Fundamentals of muscle nerve physiology, composition and functions of RBC – variations in number physiological and pathological states – life span and development of RBC, blood volume, methods of measurement and variation. Haemoglobin: Basic chemistry and fate of Hb. Blood groups, WBC types, number, variations, functions, formation, circulation. Functions of lymph, physiology of clotting.
CARDIO-VASCULAR SYSTEM	Basic haemodynamic principles, arterial blood pressure and factors affecting it. The structure and physiology properties of cardiac muscle. Origin and conduction of heart beat. Cardiac cycle, heart sounds, ECG. Regulation of heart's action Vasomotor system and its regulation – Physiology of shock.
RESPIRATORY	Mechanics of respiration. Sub-divisions of lung. Transport of respiratory gases in blood. Anoxia – types and physiological changes in artificial respiratory.
EXCRETION	Urine – volume, normal and abnormal constituents. Mechanism of urine formation.
DIGESTION	Digestion in the mouth, digestion in the stomach and intestines, enzymes of the gastro-intestinal tract and their functions. Movements of the gastro-intestinal tract. Physiology of liver, pancreas, absorption and assimilation of food.
ENDOCRINES	Thyroid – Iodine metabolism – functions of thyroid gland, hyper and hypo function of thyroid. <i>Adrenal Cortex</i> – secretion of the cortical cells. Actions of gluco and minerals corticoids, hyper and hypo functions of adrenal cortex. Adrenaline and nor adrenaline action on various systems. <i>Pituitary gland</i> – hormones, actions, abnormal functions of pituitary gland. Physiology of posterior diabetes insipidus. <i>Parathyroid</i> – actions of parathromone and

calcium metabolism.

REPRODUCTION

Ovary – ovarian hormone – their actions
Menstrual cycle, pregnancy, hormonal changes in pregnancy. Tests for pregnancy. Functions of tests, actions of testosterone. Physiological basis of Family Planning methods.

CENTRAL NERVOUS SYSTEM

Reflex action, spinal cord, conditional reflex, ascending and descending tracts, cerebral cortex, various areas and functions of cerebellum.
Cerebellum – physiology of thalamus and hypothalamus, automatic nervous system. Cerebro-spinal fluid. Fundamental knowledge of C.N.S and special senses – regulation of body temperature.

SPECIAL SENSES

Fundamental knowledge of vision, hearing, taste and smell.

NUTRITION

General metabolism, principles of colorimetry. Basal metabolic rate, metabolism of proteins fats and carbohydrates. Vitamins – sources, requirements and actions. Basic principles of diabetics.

Biochemistry

The course should provide the students with a sound knowledge on concepts of Biochemistry which are applied to Dental Science. The students should be conversant with the principles and clinical application of Biochemistry – the structure and properties of aminoacids, peptides and proteins and introduction to the nature of enzymes and enzymatic reactions, mineral metabolism, whole body metabolism, biological carbohydrates and fats.

Physiology Practical

1. Enumeration of Red blood cells
2. Enumeration of white blood cells and differential count
3. Determination of haemoglobin
4. Determination of blood groups
5. Determination of pulse and blood pressure
6. Determination of bleeding time, and clotting time.

Demonstrations

1. Determination of packed cell volume.
2. Clinical examination of chest.
3. Properties of excitable tissue.
4. Activity of frog's heart and effects of vagus stimulation and of atropine and adrenaline.

5. Perfusion of frog's heart effects on Na, Ca and K ions.
6. Demonstration of deep and superficial reflexes.

Biochemistry Practical

1. Reactions of carbohydrates proteins, fats, bile, salts and bile pigments.
2. Gastric analysis.
3. Pathological constituents of urine – detection and estimation of reducing sugars.

Lectures	-50 plus 25=75	Total – 145
Practical	-40 plus 30=70	

Dental Materials

Lectures 35 hours: Practical & demonstration = 30 hours

1. Introduction:
Aims and scope of the science of dental material
2. Structure and behaviour of matter.
3. Important physical properties applicable to dental Materials including their biological considerations.
4. Gypsum products used in dentistry including casting investment materials with or without gypsum binder.
5. Impressions materials used in dentistry including duplicating materials
6. Synthetic resins used in dentistry
 - (a) General properties and physical characteristics.
 - (b) Resins as denture base materials, repair and relined materials, soft liners, tissue conditioners.
 - (c) Resins as restorative materials: unfilled and filled resin restorative materials, tissue sealant.
 - (d) Direct-bonding cement materials
7. Metals and alloys: the structure and behaviour, some important physical properties.
 - (a) Dental amalgam alloys;
 - (b) Gold foil
 - (c) Dental casting gold alloys
 - (d) Stainless steel, chrome-cobalt alloys
8. Dental waxes including inlay casting wax.
9. Gold inlay casting procedures
Preparation of the die-wax pattern, investing-control of shrinkage compensation. Wax elimination – casting machines, casting, defects in castings.
10. Welding and soldering – materials used.

11. *Dental Cements: classification, composition, manipulation, properties and uses.*
Zinc cements, copper cements, zinc-oxide eugenol cements, silicate cements, cavity liners, cavity varnishes, resin cements.
12. Dental porcelain including porcelain fused to metal. Porcelain furnace and fusing.
13. Mechanics of tooth cutting. Burs and points.
14. Abrasives and polishing agents.
15. Die & counter die materials including electroforming & electro-polishing. Practical & demonstration to be arranged in the manipulation of the more common materials.

GENERAL PATHOLOGY

Introduction to Pathology as a scientific study of disease and some techniques used in the same.
Cause of disease with special reference to our prevailing conditions.

Cellular structure and Metabolism.

Disturbances in Metabolism of cells

Retrogressive changes – degeneration, necrosis and gangrene, amyloidosis, lipidosis and disorders of pigmentation, calcification.

Inflammation – acute and chronic inflammation. Repair with special emphasis on repair of bones, wounds and the effects of modern treatment on repair.

Hypersensitivity and allergic reactions.

Hemorrhage, shock, reaction of body to injury

Circulation disturbance and hypertension

Pathology of bacterial infections with reference to the common diseases prevalent in our country, e.g. Pyogenic infection Enteric fever, Toxemias Tuberculosis Leprosy, Syphilis and some examples of epidemic infections of public health interest and hospital infections. Common diseases of the bone.

Injuries due to chemical and physical agents including ionizing radiations.

Disturbances of nutrition. Metabolic disorders, e.g. Rickets, Scurvey, Diabetes, Mellitus, etc.

General biology of Tumours, spread of malignant tumours

A course of lectures, lecture demonstrations and practical in clinical pathology comprising of Anemias and their laboratory investigations, blood disorders including Leukemias, bleeding disorders and their investigations. Laboratory investigations commonly required by dental surgeons.

Lectures	45 hours
Practical and demonstrations	60 hours

Microbiology

A course of lectures, lecture demonstrations and practical in general bacteriology and elementary virology, mycology and parasitology.

Introduction to bacteriology with special reference to medical and dental bacteriology including public health and preventive aspect of infection and infectious diseases.

Pyanaemia, septicemia and toxemia

Immunity and immunizing agents – vaccines, sera

Auto-immunity with special emphasis on practical application

Morphology, physiology and classification of microorganisms in general and of the following in particular pus forming organisms – cocci and bacilli

Normal flora of the mouth and upper and lower respiratory tracts.

Organisms causing meningitis diphtheria, tetanus, gas gangrene, tuberculosis syphilis.

Organisms related to dental caries.

Elementary knowledge of virology and mycology with examples of lesions of orofacial region

Common parasites and parasitic diseases – amoebiasis. malaria, helminthic infections:

Lectures	30 hours
Practical and demonstrations	60 hours

GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

LECTURES

I. General Pharmacology

1. General principles of pharmacology: dosage forms, prescription writings, pharmacokinetics (absorption, distribution, metabolism and excretion of drugs), mode of action of drugs, factors modifying drug response, adverse drug reactions, drug interactions.
2. CNS drugs: general anaesthetics, hypnotics, analgesics, psychotropic drugs, antiepileptic, muscle relaxants, local anaesthetics.
3. Autonomic drugs: sympathomimetics, antiadrenergic drugs, parasymphomimetics, parasympatholytics, histamine and antihistaminics.
4. Cardiovascular drugs: cardiac stimulants and antiarrhythmic drugs, antihypertensive drugs, vasopressor agents and treatment of shock.
5. Drugs acting on blood: coagulants and anti-coagulants, hematinics
6. G.I.T drugs: purgatives anti-diarrhoeal, antacids, anti-emetics.
7. Endocrines: emphasis on treatment of diabetes and adrenal cortical steroids.
8. Chemotherapy: sulfonamides and antibiotics, chemotherapy of tuberculosis, leprosy and malignancy.
9. Vitamins
10. Miscellaneous drugs: such as diuretics, heavy metal antagonists (B.A.L and E.D.T.A) etc.

II Dental pharmacology & therapeutics

1. Anti-septics, astringents, obtundents, mummifying agents, bleaching agents, styptics, disclosing agents, dentifrices and mouth washes.
2. Treatment of common oral condition
Practical and demonstrations: to familiarizes the student with the methodology: prescription writing and dispensing.

Lectures	40	}	60 hours
Practical & Demonstrations	20		

ORAL AND DENTAL ANATOMY, PHYSIOLOGY AND HISTOLOGY

Introduction

Development and growth of jaws. Development of the teeth and surrounding structures and calcifications (including theories) of hard tissues. Microscopic anatomy of hard and soft tissue of the tooth and surrounding structures, oral mucous membrane, the lips, tongue, floor of the mouth, palate and the salivary glands.

Eruption and shedding of teeth

Morphology of teeth occlusion

Saliva, calcium metabolism, mastication and deglutition

Age changes in teeth and surrounding structures

Clinical consideration where applicable

Practicals and demonstrations

1. Demonstration of preparation of dental tissues for microscopic examination.
Ground and stained sections.
2. Microscopic study of normal oral and dental tissues.
3. Microscopic study and identification of teeth.
4. Tooth carving
Lectures 40 hours
Practicals 60 hours

GENERAL MEDICINE

Introduction

Aims of medicine

Definition of diagnosis, prognosis and treatment.

History taking and physical examination of a medical case

Medical emergencies in dental practice

G.I. Disorders

Stomatitis, glossitis, gastritis, diarrhea, amobiasis, ascites, malabsorption syndrome

Liver

Jaundica, viral hepatitis, cirrhosis liver. Tender hepatomegaly

Cardiovascular System:

Congenital heart disease, classification rheumatic heart disease, subacute bacterial endocarditis

Congestive heart failure, left ventricular failure

Coronary artery disease

Respiratory System

Pneumonia, bronchitis, emphysema, lung abscess, eosinophilia, pulmonary embolism, pulmonary tuberculosis, respiratory failure.

Renal Diseases

Nephritis, nephritic syndrome

Hematology

Anaemia, coagulation defects, bleeding disorders
Agranulocytosis, leukaemia, oral manifestations or hematological disorders,
lymphadenopathy and splenomegaly

Central Nervous System

Meningitis, facial palsy, facial pain, epilepsy, headache, syncope

Nutritional and Metabolic

Balanced diet normal daily
Protein caloric malnutrition requirements
Avitaminosis
Calcium homeostasis

Endocrine Disorders

Thyroid-hypo and hyper pituitary
Hypo and hyper parathyroid

Infections

Enteric fever
Mumps
Viral exanthemata
Diphtheria
Syphilis
Gonorrhoea
Aids

Miscellaneous

Allergy
Drug reactions
Drug interactions
Evaluation of a case for general anaesthesia

Lectures	40	} 130 hours
Clinicals	90	

GENERAL SURGERY

1. Introduction to surgery, surgery especially relate to Oro-dental surgery, classification of diseases.
2. Inflammation, soft tissue, hard tissue-cause, varieties, sequelae and treatment.
3. Infections: acute and chronic abscess, carbuncle sinus, fistula, ulceration, gragrene, cellulites, erysipelas, septicaemia, pyaemia, toxaemia, cancurm oris, tuberculosis, syphilis, gonorrhoea, actinomycosis, anthrax, tentanus.
4. Wounds-complications, treatment, repairs. Asepsis and antiseptic measures and procedure with particular reference to the oral cavity. Haemorrhage and its treatment. Haemophillia, syncope, shock, collapse, head injury-introduction.
5. Cysts and new growths – their general consideration with special reference to those occurring in the buccal cavity.
6. Diseases of the lymphatic glands, especially of the neck.
7. Outline of diseases of the mouth, lips, tongue, palate, tonsils and salivary glands.
8. Infections and diseases of the larynx, tracheostomy.
9. Nervous system – injury to facial nerves, paralysis trigeminal neuralgia.
10. Principles of surgical treatment, diathermy and radium treatment.
11. Fracture – general principles of treatment, diathermy and healing.
12. Thyroid and parathyroid.
13. Swelling of jaws.
 - (i) Case sheet writing and demonstration
 - (ii) Ward procedure, including wound dressing

Lectures	40	} Total 130 hours
Clinicals	90	

ORAL PATHOLOGY AND MICROBIOLOGY

1. Aims and Objectives
2. Development disturbances of dental, oral and para-oral structures, including hereditary disorders.
3. Dental caries
4. Pulpal and periapical pathosis and their sequelae
5. Environmental lesions of the oral and para-oral structures
6. Defence mechanism of oral tissues and healing following injuries
7. Diseases of periodontal ligament, gingivae and cementum
8. Effects of nutritional disturbances and normal disorders on the oral and para-oral structures.
9. Infections: diseases of oral mucosa
10. Bone disorders affecting jaws
11. Cysts of oral cavity
12. Pre-cancerous lesions etiology and pathology
13. Noeplasms of oral cavity
14. Diseases of salivary and lymph glands
15. Diseases of temporo mandibular joint
16. Diseases of nerves, skin, blood and their implications to oral tissues
17. Effects of radiation on oral and para-oral tissues
18. oral microbiology

PRACTICALS

1. Identification of hard and soft tissue specimens
 2. Identification of histopathological, microbiological slides
 3. Biopsy and exfoliative cytology techniques
- | | | | |
|------------|----------|---|-----------|
| Lectures | 50 hours | } | 140 hours |
| Practicals | 90 hours | | |

ORTHODONTICS

The following syllabus is suggested with a view to make the students understand the types of cases he can select for treatment as a general practitioner and how best he can guide the patient and parents. Hence stress should be on the preventive and interceptive principles of orthodontics.

1. Definition, aims, objects and scope of Orthodontics
 2. Growth and development of jaws, teeth, face and skull and establishment of normal occlusion
 3. Genetics as applied to Orthodontics.
 4. Normal occlusion and its characteristics. Factors responsible for establishment and maintenance of normal occlusion.
 5. Malocclusion type & different classification.
 6. Aetiology of malocclusion.
 7. History taking and examination of patient and case analysis and differential diagnosis including cephalometrics and treatment planning.
 8. (a) Preventive and interceptive treatment of malocclusion
(b) Extraction in Orthodontics
 9. Appliances used in Orthodontic treatment – adequate knowledge of Removable appliances, mechanical appliances and functional appliances and elementary knowledge of fixed appliances.
 10. Tissue changes incident to Orthodontic treatment
 11. Retention after treatment and relapse.
 12. Materials used in Orthodontia
 13. Habit breaking appliances
- | | |
|------------------------|-----------|
| Lectures | 40 hours |
| Practicals & Clinicals | 150 hours |

The teaching of Orthodontics clinics and practicals should be arranged during pre-final and final BDS years.

PERIODONTICS

1. Introduction: scope and applicability of the subject, historical background of Periodontology
2. Maintenance of health – role and scope of Oral Physiotherapy measures, patient education programme and periodic check.
3. Classification of gingival and periodontal disturbances.
4. Gingival enlargement
5. Infection muco-gingival conditions – specific and non-specific.

6. Degenerative conditions – gingivitis and periodontitis
7. Atrophic conditions affecting gingival and periodontal tissues.
8. Local and systemic factors in the causation of gingival and periodontal lesions.
9. Periodontitis and sequelae.
10. Malocclusion, mal-alignment and traumatic occlusion Bruxism and temporomandibular joint disturbances. Occlusal equilibration.
11. Diagnosis and diagnosis aids including reontgenography and its uses and limitations.
12. Prognosis
13. Morphological defects of the muco-gingival structures influencing periodontium and their treatment.
14. Treatment of all gingival and periodontal disturbances. Treatment planning phases and rationale. Different available therapeutic procedures. Healing mechanism.
15. Role of nutrition in aetiology and treatment
16. Drugs in Periodontics
17. Instrumentation
18. Splints
19. Preventive periodontics, concept of focal infection.
20. Materials used in Periodontia.

CLINICALS

Varied approaches towards plaque control.

Treatment of the sufficient number of cases of scaling and root planning.

Approach, examination, diagnosis (including differential/diagnosis) and analysis of periodontal and other cases, clinically

Treatment planning including surgical treatment and execution of the same

Occlusal equilibration

Lectures 40 hours

Practicals/Clinicals 250 hours

Pedodontics

- I. Introduction, definition, scope and importance of pedodontics.
- II. Growth & development of dental and oral facial structures and normal occlusion. Development anomalies.
- III. Morphology of dentitions and its application.
 - (a) Applied Morphology and Histology of deciduous and permanent teeth.
 - (b) Importance of first permanent molar.
- IV. Fundamentals of dental health.
- V. Biological factors responsible for maintenance of dental and oral health.
- VI. Contributory local factors affecting oral health plaque etc.
- VII. Child psychology and management of child patient
- VIII. Examination, diagnosis and treatment planning.
- IX. Clinical pedodontics
 - Set up of pedodontics clinic
 - Teething disorders
 - Development anomalies
 - Dental caries in Children
 - Restorative dentistry
 - Pulp therapy and endodontics
 - Space maintainers
 - Treatment of traumatized teeth

Management of problems of the primary and mixed dentition period		
Gingival disorders in Children		
Stomatological conditions in Children		
Management of handicapped Children		
Mouth habits and their managements		
Lectures	40 hours	} Total 190 hours
Practicals & Clinicals	150 hours	

PROSTHETICS AND CROWN & BRIDGE

A. Complete Dentures

1. Introduction & Scope
2. Applied anatomy
3. Examination, diagnosis treatment, planning and desiduary prognosis
4. Principles of retention & stability.
5. Principles and techniques of impression making
6. Preparation of casts, trays and temporary denture bases.
7. Jaw relations and methods or registration.
8. Artificial teeth, their selection and arrangements and esthetics.
9. Articulators and face bows.
10. Occlusion and articulation in complete denture.
11. Trying in of complete denture
12. Processing and finishing of dentures
13. correction of occlusal discrepancies
14. Delivery and adjustments of complete dentures.
15. Sequelae of ill-fitting dentures.
16. Repair, rebasing and relining
17. Immediate dentures
18. Implant dentures

B. Removable partial dentures

1. Introduction and scope
2. Classification
3. Examination, diagnosis and treatment planning
4. Components of removable partial dentures & their function
5. Surveyors
6. Mouth preparations for partial dentures
7. Impression procedures
8. Designs of removable partial dentures & its associated problems
9. Fabrication of cast metal framework
10. Jaw relation record
11. Selection and arrangement of teeth
12. Acrylic partial denture
13. Trying in of partial dentures
14. Processing, finishing, delivery and maintenance of partial dentures
15. Immediate partial dentures.

C. Elements of Crown and Bridge Prothesis

1. Introduction definitions
2. Indication and contra- indicators
3. Examination, diagnosis and treatment planning
4. Selection and choice of abutment teeth
5. Principles of tooth reduction
6. Indication, contraindications and procedures of preparation of abutment teeth for receiving various types of retainers
7. Temporary protections of a prepared tooth.
8. Gingival retraction and impression procedures
9. Construction of dyes and working models, direct and indirect technique
10. Technique of fabrication of retainers
11. Selection & fabrication of pontics
12. Connectors stress breakers and assembly of fixed bridges
13. Finishing cementing and maintenance of crowns and bridges

D. Maxillo-facial Prothesis

1. Splints
2. Obturators
3. Carriers

Lectures 80 plus 20 = 100 hours

Practicals/Clinicals

360 (techniques) plus

540 (clinical)

1000 hours

CONSERVATIVE DENTISTRY AND ENDODONTICS

Definition & Scope

Oral hygiene in relation to conservative dentistry

Instruments – nomenclature design and formulae, care and sterilization

Examination diagnosis and treatment planning

Charting and recording of cases

Cavities classification and nomenclature

Choice of filling materials

Principles of cavity preparation, control of pain, prevention of damage to hard and soft tissues during operative procedures

Methods employed for exclusion of saliva

Biomechanics of cavity design and restoration with filling materials

Filling materials. Pulp and soft tissue protection

Air-rotors and high-speed equipment

Cavity preparation for various types of restoration including inlays and onlays restorative procedures

Matrices

Drugs used in conservative dentistry

Fractured teeth and their treatment

Sensitive dentine, its treatment
Ceramics in conservative dentistry
Endodontics
Rational of endodontic therapy
Diagnostic aids in endodontics
Care and sterilization of instruments for endodontics
Treatment of vital and non-vital pulp
Tests for sterility of the root canal
Drugs used in root canal therapy
Bleaching of teeth
Restoration of endodontically treated teeth
Surgical treatment in endodontics

Lectures	70 hours
Techniques	240 hours
Practicals	360 hours

Note: In view of the importance of the digital dexterity more number of hours is provided for techniques work.

ORAL SURGERY LOCAL ANAESTHESIA AND GENERAL ANAESTHESIA

Local Anaesthesia

1. Introduction
2. Properties of an ideal local anaesthetic drug
3. Properties of common local anaesthetic drugs in use
4. Choice of anaesthesia, local or general anaesthesia
5. Indications and contraindications, advantage and disadvantage of local anaesthesia.
6. Components of a standard local anaesthetic solution and the part played by each component.
7. How does local anaesthetic act.
8. Pre-anaesthetic medication
9. Technique of infiltration anaesthesia, nerve block anaesthesia. Symptoms and signs of anaesthesia.
10. Complication associated with local anaesthesia and their management

General Anaesthesia

1. Properties of general anaesthetic drugs commonly used.
2. Pre-anaesthetic preparation of a patient and pre-medication
3. Evaluation of a patient for general anaesthesia
4. Short anaesthesia in a dental chair, endotracheal anaesthesia, intravenous anaesthesia
5. Symptoms and signs of general anaesthesia
6. Complications arising during the administration of general anaesthesia and their management.

Exodontia

1. Objectives
2. Indications for tooth extraction
3. Pre-operative assessment
4. Forceps extraction
5. Surgical extraction (trans-alveolar extraction)
6. Extraction technique under general anaesthesia in the dental chair

7. Complication of tooth extraction and their management

Oral Surgery

1. Definition and scope
2. Diagnosis on Oral Surgery
 - (a) History taking
 - (b) Clinical examination
 - (c) Special investigations
3. Importance of general condition of the patient in relation to oral surgery
4. Treatment planning
5. Sterilization
6. Use of antibiotics in oral surgery
7. Diagnosis, pre-operative assessment and treatment of impacted teeth
8. Pre-prosthetic surgery
9. Surgical aid to Orthodontics
10. Pro-facial infections, their diagnosis and treatment
11. Inflammatory diseases of jaw bone and their management
12. Diagnosis and management of cysts of oral cavity
13. Diagnosis and treatment of the fracture of the mandible
14. General outline of the fracture of the middle third of the facial skeleton
15. Diagnosis and treatment of benign neoplastic lesions of the oral cavity-Odontogenic and non-odontogenic
16. Surgical procedure in relation to endodontic therapy, apicectomy
17. Surgical treatment of tumour like lesions of the oral cavity including odontome
18. Diseases of maxillary sinus, with special reference to pro-antral fistula
19. Management of haemorrhage in oral Surgery
20. Diseases of salivary glands, diagnosis treatment of salivary calculi and neoplasms arising from minor salivary glands
21. Surgical aspect of histopathological diagnosis
22. Oral surgical complications and their management
23. Diagnosis of malignant condition of oral cavity, a broad outline about the different methods of treatment
24. Diseases of temporommandibular joint, such as arthritis, hypoplasia, subluxation, dislocation, anxylosis. Other causes of inability to open the mouth.
25. Affections of trigeminal and facial nerves

Lectures

Anaesthesia (local and general) 10

Exodontias 10

Oral Surgery 40

60

Clinical 120 hours

ORAL MEDICINE AND ROENTGENOLOGY

Oral Medicine

1. Scope and importance of the subject
2. Methods of diagnosis including special investigations
3. Acute infections of oral and para-oral structures
4. Blood dyscrasias and their management
5. Management of cardiac patient in dentistry
6. Metabolic and endocrine disturbances, their oral manifestations
7. Nutritional deficiencies and their significance in dentistry
8. Oral sepsis and its effect on general system
9. Disfunctions of temporo-mandibular joints
10. Cervico-facial lymphadenopathy
11. Diseases of salivary glands
12. Facial pain
13. Cysts and tumors of the oral cavity]
14. Oral manifestations of dermatological and other systemic disturbances
15. Special investigations
16. Immune concepts of oral lesions
17. Forensic odontology

Roentgenology

1. Physics of radiation-production and properties of X-Rays
 2. Principles of X-ray techniques and factors for radiography and fluoroscopy
 3. Technique of intra-oral and extra-oral radiography and normal anatomical land marks
 4. Radiological interpretation of abnormal dental and jaw conditions
 5. Elements of radiation treatment in oral and facial conditions and their sequelae
 6. Contrast radiography and recent advances in dental radiology including radioactive tracers
- | | |
|------------|----------|
| Lectures | 40 hours |
| Practicals | 90 hours |

COMMUNITY DENTISTRY

1. Biostatistics
Introduction and general principles of Biostatistics, statistical procedures
2. Psychology
Introduction, psychological development from birth to adolescence, management of child in the dental office – parent counseling in respect of dental health and hygiene of the child
3. Public Health
Concept and philosophy of public health, public health in Mauritius
General epidemiology, health education, environment health, disposal of wastes
Water: norms for potability, purification
4. Preventive Dentistry

Prevention, levels of prevention, various measures in the prevention of dental and oral diseases at individual and mass level

5. Public Health Dentistry

Introduction, definition, objectives, functions of public health dentist, procedural steps in dental public health, indices for dental diseases, surveying and evaluation, epidemiology of dental cares, periodontal diseases, oral cancer. Utilization of dental manpower, payment for dental care, public dental health programme. School dental health programme. Private practice administration, ethics, Dental Council and Association.

6. Social Sciences

As applied to health, social structure concepts, groups, social institution, urban and rural societies, their concept of health. Application of sociology in health programme, social environment.

Cultural anthropology objective, different aspects of folk medicine and popular medicine. Cultural pattern and complexes, taboos as related to health.

Field Programme

1. In rural areas to conduct survey of dental diseases, provide dental health education, emergency treatment.
2. School – health programme, dental care for school children and preventive programme – topical fluoride application and oral hygiene demonstrations.

Lectures	30 hours
Field programme	100 hours

BENCHMARK STATEMENTS ACADEMIC STANDARDS DENTISTRY

1. DEVELOPED A HOLISTIC VIEW OF PATIENT CARE,
2. ACCEPT THEIR PROFESSIONAL RESPONSIBILITIES,
3. ACKNOWLEDGE THEIR LIMITATIONS,
4. COMPETENT TO DEAL WITH COMPLEX ISSUES BOTH SYSTEMATICALLY AND CREATIVELY,
5. MAKE SOUND JUDGEMENTS ON BASIS OF AVAILABLE DATA,
6. ACQUIRE A COMMITMENT TO CONTINUING PROFESSIONAL DEVELOPMENT.

7. IMPLEMENTATION OF EVIDENCE-BASED HEALTHCARE AND CLINICAL
GOVERNANCE

ACADEMIC STANDARDS

1. The nature and extent of programmes in dentistry

- 1.1 Dentistry is a professional clinical discipline concerned with prevention, detection, management and treatment of oral and dental diseases and maintenance of oral and dental health, in individuals and in society. It is based on sound scientific and technical principles with the clinical aspects of dentistry underpinned by knowledge and understanding of the biological and clinical medical sciences.
- 1.2 It is essential that all dentists understand the need to act at all times reasonably, responsibly and within the public interest, putting the interests of their patients before those of themselves. Graduates from dental schools are required to demonstrate a thorough understanding of the importance of ethical practice and professionalism, high levels of ability in communication skills and competence in the clinical and technical aspects of dentistry.
- 1.3 The educational environment should inspire the dental undergraduate to maintain high professional and personal standards and to recognise the importance of lifelong learning in a caring profession. This requires the graduate to appreciate the importance of participation in further formal education and training.
- 1.4 The educational environment should allow the dental undergraduate to develop an analytical approach to both the theory and practice of clinical dentistry. This will be derived from their education both in the basic and clinical sciences. Required components of student-selected study and project work aim to stimulate critical thought, and allow students to acquire research methods skills in collection, evaluation and presentation of evidence. This form of educational provision should allow students to develop an adaptable approach to the practice of dentistry so that they can respond effectively to the individual; needs of patients and o the communities that they will serve.
- 1.5 The relationship between dentist and their patients is based on trust. During the undergraduate programme students must be made aware of their responsibilities in relation to confidentiality of information obtained in a professional capacity.
- 1.6 It is essential that graduating dentists understand the limitations of their current knowledge and clinical abilities. They should be aware of the range of treatments available, and of the current evidences to support their choices, but not be expected to be able to provide them all. In such circumstances they must be able to refer for an opinion on treatment and management by a suitably experienced/qualified individual. They must understand how management regimes may need to take account of patients with special needs.
- 1.7 Graduating dentists must be aware of the necessity for provision of information to patients on the variety of treatment options that might be available, including the risks involved, so that informed consent can be obtained.
- 1.8 Graduating dentists must appreciate the need to deliver dental care in a safe environment for both patients and staff in compliance with health and safety regulations. They must be familiar with the principles and practice of infection control and radiation protection,

the control of substances hazardous to health and the need to maintain the safety of equipment.

- 1.9 The delivery of oral and dental care is very much based on a team approach. In addition to dentists, professionals complementary to dentistry (PCDs) are also permitted to undertake certain clinical procedures. It is expected that the dentist should lead that team and accept personal responsibility for decision-making. The dentist should be capable of communicating clearly what treatment should be provided by each of the individual members of the team and must not permit any treatment to be undertaken by any member of the team who does not have the requisite training and experience. To assist in the development of a team approach to oral and dental care, it is helpful to provide joint teaching, where appropriate, to dental students and other members of the dental team.
- 1.10 It is expected that graduating dentists will have had experience of a wide range of clinical tasks during their undergraduate programme. They will not be highly skilled in all clinical procedures. Flexibility exists within the programme of study to take account of the varying patterns of dental and oral health throughout the island.

2. Subject knowledge and understanding

Graduates who successfully complete an undergraduate programme in dentistry in MAURITIUS should be able to integrate material from all parts of their undergraduate curriculum to demonstrate knowledge and understanding of the following areas and topics:

- 2.1 biomedical sciences which form the basis for understanding human growth, development and health;
- 2.2 integration of human body systems, normal homeostasis and mechanisms of responses to insults including trauma and disease;
- 2.3 oral biology, to include detailed knowledge of the form and function of teeth and associated structures, in health and disease;
- 2.4 modern developments in bio molecular sciences that may impact upon the practice of dentistry;
- 2.5 human diseases and pathogenic processes, including genetic disorders, and the manifestation of those diseases which are particularly relevant to the practice of dentistry;
- 2.6 diseases and disorders of the oral cavity and associated structures, their causes and sequelae together with the principles of their prevention, diagnosis and management;
- 2.7 sources of infection and the means available for infection control;
- 2.8 medical emergencies that may occur in the dental surgery and their prevention and management, including basic life support and resuscitation;
- 2.9 communication between dentist and patients, their families, other health professionals and the public in general;

- 2.10 patients' responses to dental care and an understanding of how these may be affected by experience and psychological, social and cultural influences;
- 2.11 interpersonal skills appropriate for working within a multi-skilled team;
- 2.12 the medico-legal and ethical principles upon which the practice of dentistry is based, especially those relating to treatment of patients and involvement of patients in research;
- 2.13 the principles and importance of health promotion, health education and prevention in relation to dental disease, and how these principles are applied;
- 2.14 the safe and effective management of patients;
- 2.15 specific dental topics including behavioural sciences, biomaterials science, pain and anxiety control, dental public health, oral and maxillo-facial surgery, oral medicine, oral microbiology, oral pathology, oral radiology, orthodontics, paediatric dentistry, pharmacology and therapeutics, preventive dentistry, restorative dentistry;
- 2.16 when, how, and to whom to refer a patient for specialist advice or treatment;
- 2.17 the system for the delivery of health care in the MAURITIUS with special reference to oral health care;
- 2.18 the oral health needs of different sections of the community, such as those with special needs;
- 2.19 the broad principles of scientific research and evaluation of evidence that are necessary for an evidence-based approach to dentistry;
- 2.20 the importance of clinical audit, peer review and continuing professional education and development.

3. Skills and attributes of the graduating dentist

Key Skills

In addition to the subject-specific skills itemised in the following sections, the undergraduate programme in dentistry encourages the development of key transferable skills, which underpin the lifelong educational and training process. Graduating dentists should, therefore, have the ability to:

3.1 Transferable skills

- exercise initiative and personal responsibility;
- communicate effectively at all levels in both the scientific and professional contexts using verbal, non-verbal and written means;
- work effectively as members of a team;
- use information technology as a means of communication, for data collection and analysis, and for self-directed learning;
- analyse and resolve problems, and deal with uncertainty;

- manage time, set priorities and work to prescribed time limits;
- make decisions based on sound ethical, moral and scientific principles;
- manage their learning in the context of establishing a philosophy of continuing professional development;
- acquire, analyse, process and communicate information in a scientific manner to solve problems and to guide clinical decision-making;
- evaluate the evidence published in refereed scientific journals and other publications for sound experimental design and statistical analysis;
- evaluate the validity of claims related to products or techniques.

Professionalism

3.2 Professional behaviour and clinical governance

Graduating dentists should be able to:

- understand the role and function of the GDC in regulating the dental profession, and be familiar with its issued guidelines;
- understand the role, function and obligations of the National Health Service;
- manage the ethical issues that may arise in dental practice;
- apply jurisprudence to the practice of dentistry;
- understand the implications of and obtain informed consent;
- understand the ethical and legal basis of confidentiality, including the need to maintain accurate and complete patient records in a confidential manner;
- provide empathetic care for all patients, including members of diverse and vulnerable populations, and respect the principle of patient autonomy;
- provide and receive constructive criticism;
- recognise and take appropriate action to help incompetent, impaired or unethical colleagues and their patients.

3.3 Behavioural science and communication

Graduating dentists should base their care of patients on a sound knowledge and experience of the psychological aspects of human behaviour. They should be able to:

- agree dental treatment plans with patients of all ages and, where necessary, through the intermediate consent of a parent, guardian or carer;
- display appropriate behaviour towards all members of the dental team;
- understand the role of psychological development in the management and treatment of the child patients;
- apply the principles of dental anxiety management (behavioural and pharmacological) to the treatment of the anxious dental patient;
- appreciate the importance of psychological and social factors in the delivery and acceptance of dental care by patients;
- recognise the responsibility and demonstrate the ability to share information and professional knowledge verbally and in writing;
- understand the principles of occupational stress and its management.

3.4 Becoming a reflective dentist

Graduating dentists should be dedicated to the principle of lifelong learning and continued professional development. They should be able to:

- identify and use sources of continuing professional development and apply critical thought to a continually expanding knowledge base such that professional competence is maintained;
- discharge the obligations incumbent upon every professional person including contributions to, and support for, the profession's collective initiatives in self-regulation, maintenance of standards, and the advancement of knowledge and expertise;
- assess personal progress, including the identification of strengths and weaknesses;
- evaluate all treatment outcomes, including the unexpected, and undertake remedial action where appropriate;
- recognise and fulfil their responsibilities both as adult learners and as teachers;
- use the principles of peer review and quality assurance in dental practice.

Dental health and society

3.5 Dental public health

Graduating dentists should understand the health care system in which they will work, and should be able to:

- evaluate social and economic trends and their impact on oral health care;
- recognise their role in and responsibility for improving the general and oral health of the community through treatment strategy, education and service;
- describe and understand the prevalence of oral disease in the UK adult and child populations;

3.6 Oral health promotion

- recognise predisposing and aetiological factors that require intervention to promote oral health;
- understand the pattern of oral disease in society and be able to contribute to health promotion;
- assess the need for, and provide, preventive procedures and instruction in oral health methods that incorporate sound biological principles in order to preserve oral hard and soft tissues, and to prevent disease;
- use and provide appropriate therapeutic agents and treatment modalities.

Assessment of the patient and oral environment

This section and the following sections cover the full range of subject-specific skills which relate to the primary care level of clinical dentistry. Graduating dentists should be able to”

3.7 Biomedical science

- apply their knowledge and understanding of biomedical sciences, oral biology and biomolecular sciences to the management of their patients;
- recognise the changes that occur with normal growth and ageing and apply their knowledge in the management of the oral environment;
- apply their knowledge of the aetiology and processes of oral diseases in prevention, diagnosis and treatment;

3.8 History, examination and diagnosis

- obtain and record a relevant medical history which identifies both the possible effects of oral disease on medical well-being and the medical conditions that affect oral health or dental treatment;
- assess and appraise contemporary information on the significance and effect of drugs and other medicaments, taken by the patient, on dental management;
- obtain a detailed dental history to include chief complaint and history of present illness;
- make a general evaluation of a patient's appearance, including the identification of abnormalities in their physical, emotional or mental status;
- recognise signs of physical, emotional and substance abuse and seek advice from appropriate authorities;
- perform a physical and oral examination to include head and neck, oral hard and soft tissues, vital signs, and recognise disease states and abnormalities including detrimental oral habits;
- establish and maintain accurate patient records;

3.9 Oral radiology

- prescribe, take and process appropriate intra-oral and dental panoramic radiographs;
- derive diagnoses by interpreting and relating findings from the history' clinical and radiographic examinations and other diagnostic tests;

3.10 Treatment planning

- identify patient expectations and goals of oral care;
- develop, present and discuss prioritised individual treatment options for patients of all ages, including the integrated treatment by PCDs and the need for referral to a specialist;
- explain and discuss the patient's responsibilities and time requirements;
- use their knowledge of the properties of modern dental materials to select and use appropriate materials for treatment;
- manage circumstances where the patient's wishes are considered by the dental team not to be in his/her best interests.

Establishment and maintenance of a healthy oral environment

Graduating dentists should be able to:

3.11 Anxiety, pain control and sedation

- recognise the common signs and symptoms of oro-facial pain, anxiety and apprehension;

- assess the level of anxiety in adult and child patients and have experience of using recognised psychological inventories;
- use local analgesia for pain management and recognise and manage potential complications relating to its use;
- assess patients for and inform patients or guardians of the indications, contraindications, limitations, risks and benefits of conscious sedation and general anaesthesia;
- manage fear and anxiety with behavioural techniques and, when appropriate, with conscious sedation techniques;

3.12 Dental emergencies

- identify and manage dental emergencies and appropriately refer those that are beyond the scope of management by a primary care dentist;

3.13 Dental caries and tooth surface loss – the restoration of teeth

- assess patient risk for dental caries and non-bacterial tooth surface loss and be able to provide dietary counselling and nutritional education for the patient relevant to oral health and disease, based upon knowledge of disease patterns and aetiology;
- restore teeth to form, function and appearance with appropriate materials, using techniques that preserve the health of the pulp and avoid the unnecessary loss of tooth tissues;
- manage diseases and conditions involving the pulpal and periradicular tissues in both primary and permanent teeth;

3.15 Prosthodontics

- manage and integrate the procedures necessary to provide biocompatible, functional and aesthetic dental prostheses (fixed and removable) in sympathy with patient requirements or needs;

3.16 Occlusion

- apply their knowledge of functional occlusion in health and disease to manage the aetiological factors associated with the disordered occlusion;

3.17 Oral medicine, oral pathology and oral surgery

- manage patients with facial pain, disease and disorders of the oral cavity and associated structures, including a recognition of when it is appropriate to refer for specialist help and advice;
- manage basic dento-alveolar surgical procedures, including intra- and post-operative complications and recognise when it is appropriate to refer for specialist help and advice;
- understand the importance of and procedures for submitting specimens for laboratory diagnosis and demonstrate the ability to interpret diagnostic reports;

3.18 Orthodontics

- recognise abnormalities of facial growth and development in dental patients and arrange appropriate management of such disorders either within the dental practice or by referral to the relevant specialist;

3.19 Paediatric dentistry

- manage the oral health of children and adolescents and perform treatment for them in a manner that incorporates consideration for their expected growth and development, involving parents or guardians as required;

3.20 Periodontics

- manage the health and care of the supporting structures of the teeth;

3.21 Therapeutics

- recommend and prescribe appropriately pharmaco-therapeutic agents, monitor their effectiveness and safety, and be aware of drug interactions;

3.22 Special needs

- recognise their duty of care to manage the oral health of the patient with special needs (including the additional considerations for the dental team) and involve the patient's carer where appropriate;
- manage the dental health care needs of those who may be considered to be socially excluded.

Working environment

Graduating dentists should:

3.23 Health and safety/infection control

- adhere to health and safety legislation as it affects dental practice;
- understand the legal basis of radiographic practice;
- implement and perform satisfactory infection control and prevent physical, chemical or microbiological contamination in the practice of dentistry;
- arrange and use the working practice environment in the most safe and efficient manner for all staff and patients;

3.24 Medical conditions and emergencies

- evaluate patients for fitness to undergo routine dental care, modify treatment plans to take account of general medical status, and recognise those patients who are beyond the scope of their management;
- provide basic life support for medical emergencies.

4. Teaching, learning and assessment

Teaching and learning

Teaching and learning in undergraduate programmes in dentistry use a variety of different approaches including:

- lectures;
- tutorials/seminars/workshops;
- practical and laboratory classes;
- group work and problem-oriented learning;
- projects;
- directed self-study;
- the use of communications and information technology;
- the acquisition and development of practical clinical skills;
- observation and treatment of patients;
- reflective practice and integration of learning.

The emphasis on different approaches is dependent upon the philosophy of each individual curriculum, but direct clinical treatment of patients is central to all.

- 4.1 Traditional lectures provide a means for delivering core information and an introduction to issues, themes or relevant clinical aspects of subjects to be studied. Lectures are used to develop student skills in listening, note taking, understanding and reflection. Such 'formal' presentations can be increased in value by the incorporation of varied presentation techniques, such as encouragement of student participation and planned activity within lectures.
- 4.2 Tutorials, seminars and workshops are often related to clinical issues or problems and are designed to provide an interactive focus for learning. They are concerned with the development of skills such as communication, teamwork, reasoning and critical appraisal.
- 4.3 Practical and laboratory classes are an important means of reinforcing deeper understanding of topics as well as developing skills in scientific methodology and in methods of observation relevant to diagnosis and treatment.
- 4.4 Student engagement in group work or specific educational approaches such as problem-based learning fosters skills such as the location, sifting and organisation of information, time management, task allocation, team working and preparation of reports.
- 4.5 Dental students need to acquire the facility for directing their own learning. This is an essential attribute of the practising dental surgeon. Directed self-study and the process of undertaking projects independently encourage the development of study skills, self reliance, independence of thought and the ability to manage time effectively.
- 4.6 Dental students should acquire transferable skills, including the use of communications and information technology (C&IT) for word-processing, sending electronic mail and accessing information by the world-wide web; working with others in teams; making verbal and written presentations using appropriate audio-visual aids; communication with

colleagues and the public. CAL programs can be part of the learning process and a means of delivering and reinforcing IT skills.

- 4.7 Opportunities must be provided for the identification and acquisition of practical clinical skills. The most common methods adopted are for students to spend time in a clinical skills laboratory or an appropriately equipped clinical area where they rehearse the procedures they will be required to perform on patients.
- 4.8 Great emphasis is placed on the quality of student management of patients who attend university dental hospitals and outreach facilities for oral health care. The clinical environment can provide an ideal focus for active learning, as each patient presents a unique combination of parameters that affect proposed management. The development of students' oral communication skills and listening skills is of utmost importance in this. The transfer and continued development to clinical reality of practical clinical skills is fundamental to the successful progression of the dental student, as is the acquisition of professional, attitudinal; and ethical attributes appropriate to the practice of dentistry.
- 4.9 An attitude of reflection needs to be fostered so that dental students become increasingly motivated in their search for accuracy of self-assessment. The creation of progress files or reflective logbooks, in which students build a personal portfolio of learning, self-assessment and how they learn, may help. In this respect, integration of knowledge, understanding and skills, acquired from different sources and at different times, will be improved, fostering the first stages of lifelong learning.

Assessment

Assessment is recognised as an important factor in the way in which students learn and manage their time. There should be both formative and summative assessments. Summative assessments can be used formatively. The processes of assessment should be transparent: explicit criteria facilitate effective and meaningful feedback. In the development of knowledge, skills and attitudes appropriate to the clinical practice of dentistry, the importance of student progression during the programme must be acknowledged. Whilst, in a global sense, competence is seen to be achieved at the threshold level of graduation, students and teachers must see the value of 'staging posts' along the way.

The attainment of learning outcomes should be demonstrated by clear links with methods of both teaching and learning, with methods of assessment and with the specific tasks of assessment.

4.10 Methods of assessment adopted in dental schools should:

- be relevant to the purposes of undergraduate dental education;
- reflect student progression through the programme;
- encourage integration of knowledge, understanding, skills and attitudes;
- enable students to demonstrate their understanding, level of attainment and to demonstrate a full range of clinical and other abilities;
- provide accurate, constructive feedback to students on their performance;
- indicate whether a student has reached an appropriate standard;
- examine students' communication skills;
- allow records of student academic and clinical performance to be collated;
- allow the participation of external examiners;

- engage in mechanisms of quality assurance;
- provide information for course and programme organisers on the quality of provision;
- reflect the intended learning outcomes of a course.

5. Standards

Upon successful completion of the undergraduate programme of study graduating dentists are eligible to apply for registration with the General Dental Council and then to practise without supervision. Graduating dentists, therefore, will have the professional qualities, attitudes and attributes necessary for this role. As a minimum they will have demonstrated a systematic understanding of the knowledge outlined in the previous part of this statement. They will be able to apply the key and professional skills gained during the undergraduate programme, being aware of their limited experience, and able to develop new skills to a high level.

Professionalism

5.1 Graduating dentists must practise dentistry and conduct their personal lives with professional integrity such as to command the respect and trust of both colleagues and patients, and justify the confidence placed in them through the demonstration of good clinical practice (section 3.3). They should be able to act autonomously in tackling and solving problems and in planning and implementing tasks at a professional level (section 3.3). They should be dedicated to the principle of lifelong learning and continued professional development (section 3.4).

Knowledge

5.2 Graduating dentists will demonstrate:

- systematic understanding of the subject knowledge (sections 2.1 – 2.20);
- comprehensive understanding of the basis of professional practice;
- practical understanding of the evidence base of clinical practice and the ability to evaluate new information.

Skills

5.3 Graduating dentists will demonstrate:

- key transferable skills including information appraisal and technology (section 3.1);
- initiative and personal responsibility, making decisions based on sound ethical, moral and scientific principles, and applying an independent learning ability;
- the ability to evaluate critically the health care system in which they will work, and to assume responsibility for oral health promotion of individual patients and social groups (sections 3.5 – 3.6);
- the ability to deal with complex issues in diagnosis and planning treatment, make sound judgements, sometimes using incomplete information, and communicate those decisions to patients and professional colleagues (sections 3.7 – 3.10);
- competence in, and comprehensive understanding of, the skills outlined in this *statement* (sections 3.11 – 3.24).

Consent of Patients To Participate In Dental Education

The success of clinical education depends upon the co-operation and trust of patients. Particular care must be taken to obtain their consent for participation in educational activities on behalf of dental college. In dentistry, unlike medicine, students must provide dental treatment for patients, and they must have personal practical experience of all but the most complex dental tasks before they qualify. This is always done under the close supervision of their clinical teachers with the agreement of the head of dept concerned. Patients have a moral and legal right to exercise control over the circumstances in which they receive such care, in which personal and clinical information is obtained from them, in which such information is communicated to others and in which they are examined and provided with dental treatment. Therefore, both students and clinical teachers must:

1. Ensure that patients are at all times treated under the direct supervision of a clinical teacher.
2. Explain to patients that students are not qualified dentists and their co-operation in educational activities is entirely voluntary. Students should always be described as “dental students” or “student dentists” and not, for example, as “young dentists”, “my colleagues” or “assistants”.
3. Remind patients of the primarily educational purpose of any clinic and/or case presentations in which they participate. **STUDENTS SHOULD OBTAIN EXPLICIT TRUST WRITTEN CONSENT** from patients before carrying out any clinical examination or taking or presenting their case histories. Patients should understand that they do not have to participate and any resistance of patients to do so should be respected. However, it is very important to clarify the desire by the patient not to be seen by a student at the very earliest stage of consultation, due to existing contractual obligations. Those patients who do not wish to be seen by students may be referred back to a general dental practitioner.
4. Respect the confidentiality of all clinical information about patients. Trust case notes must not be removed from the clinic and must always be returned for filing on the same day. Also, case notes must not be copied for educational purposes unless the approval of the Consultant concerned has been obtained and all identifying links with patients have been removed. Case reports should always be written up anonymously. Students must respect the confidentiality of all personal information communicated by patients which is not related to their condition or treatment. However, patients should understand that students may be obligated to inform a responsible clinician about information which is so related.
5. Obtain the explicit written consent of patients for all items of their dental treatment. A full explanation of any complications which may arise from treatment must be brought to the attention of the patient concerned and be clearly documented on the consent form, prior to signature. All treatment must be supervised by a member of staff. Consent forms are available for completion in the Dental School.
6. Never present cases which are potentially embarrassing or distressing without the patient’s explicit written consent. If the patient wishes other students should be excluded

from the presentation. (Trust consent forms are available in the Dental School for completion in respect of the above paragraphs).

7. A specific patient consent form is available and must be obtained if illustrative clinical records are required for internal teaching and research purposes. It is also necessary to obtain Trust approval before requesting secondary consent for publication of any identifiable photograph and patient details.

Clinical teachers are responsible for ensuring that the preceding guidelines are followed. If students are asked by anyone to do the contrary they must politely refuse making specific reference to these guidelines. Encouragement of students to ignore these guidelines is unacceptable.

