



தமிழ்நாடு டாக்டர் எம்.ஜி.ஆர். மருத்துவப் பல்கலைக்கழகம்
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#

Allied Health Science

Diploma in Dental Assistance

**Regulation, Curriculum and Syllabus
(2010-2011)**

Course Guideline & Framework

Eligibility	12th Pass, 17 years completed
Duration	2 Yrs
Institution Norms	4 Chairs with Basic Dental Lab, Sterilizer unit, Dental X-ray >5 years of track record of existence, with tie up to a >30 bed hospital with at least one major OT
No. of OT	Hospitals with at least one major Operating Theatre, with 2 Dental Chairs, Dental X-ray, Basic Dental Lab, Sterilizer unit
Maximum Student Intake	10
Dental College	Dental Colleges affiliated to the Tamil Nadu Dr. MGR Medical University can start this course with maximum student intake of 20
Student Common room	1
Class room(25x10sq ft)	2
Multimedia	LCD Projector, Computers
Library	Minimum of 250 sq.ft. Minimum of 100 books, Internet
Teaching responsibility	Designated Course Director-Dentist > 5 years experience to be named
Faculty	In addition to above, following members as Part-time Lecturers – 1 Oral Surgeon, 1 Oral Pathologist, 1 Prosthodontist, 1 Physician
Training Modality	
1st Year	Theory
2 nd Year	Practical's and Log Book
Examinations	
1st Year	Theory examinations
2 nd Year	Theory, Practicals –External

BRIEF SUBJECT TITLE TO BE COVERED

Anatomy	Pharmacology
Physiology	Microbiology
Biochemistry	Medical Outlines
Pathology	Dental Emergencies
Principles of Management	Sterilization, Dental Radiology
English	Medical Ethics
Basics of Computer	Dental Equipments and Attachments
Principles of Operation Technology	Principles of Anaesthesia
Introduction to surgery	Dental lab materials and procedures

Diploma in Dental Assistance

DIPLOMA IN DENTAL ASSISTANCE

Course Description:

A stimulating fast – paced dental assisting program designed to prepare you to function

Effectively as an integral member of the dental health care team. Focus will be on

Leading the techniques of: dental theory and terminology, four – handed chair side

Procedures, exposing and processing dental radiographs (X-rays) to include:

Introduction

To digital and panoramic radiology, infection control standards, obtaining impressions of

The oral cavity for the fabrication of study models and custom trays used for vital

Bleaching procedures, preparing dental materials, and fabrication of provisional coverage

(Temporary crowns). The program is designed to prepare you to function effectively as an

Integral member of the dental health care team. This course is designed to help prepare

Standards, waste management, and techniques to prevent cross contamination.

Licensing, relevant legal terminology, ethics and Radiology techniques will also be taught.

Prerequisite(s):

Student must have completed the first of a series of a three shot HepatitisB Series before Beginning class.

Please bring proof of shot(s) to the first class.

Course Objectives:

1. Understand oral anatomy and dental terminology.
2. Understand x-ray theory and techniques (exposure methods, darkroom care and Maintenance x-ray safety.
3. Develop x-rays.
4. Understand different impression materials and their uses.

5. Pour models and trim. Use different sterilization techniques.
6. Participate in chair side assisting and suctioning.
7. Know different dental instruments and materials and their proper care and Sterilization.
8. Make temporaries and wax bites.
9. Discuss dental emergencies and appropriate procedures.
10. Use proper telephone techniques and appointment book control.
11. Understand all aspects of billing. File insurance forms and pre-treatment Estimates.
12. Prepare effectively for job interview.

Textbook Recommended(S):

Text book and materials available in class

Lessons:

Session 1: General introduction to terminology, equipment, and charting.
Office tour, sterilization, demonstration of equipment and panex machine.

Session 2: Amalgam and composites, cements liners.
LAB: Mixing amalgam, composites, cements liners.

Session 4: Dental specialists, endodontic and orthodontic instruments, materials, Rubber dam and procedures.
LAB: Alginate impressions (upper & lower arches), model pouring.

Session 5: Four-handed dentistry, aspiration, instrument transfer, isolation (dry field),
Local methods, pt.
Positioning, infection control, OSHA
LAB Session

Session 6: Exam, crown and bridge instruments and materials, impression materials, Making tempopraries, and wax bites.
LAB: Making temporaries.

Session 7: Oral surgery and periodontal instruments and materials, dental Emergencies, pharmacology.
LAB: Patient treatment, hands-on assisting, model trimming and surgical instruments.

Session 8: Job interview and placement assistance. Dos and don'ts during the interview , what to expect.
LAB: Patient treatment, hands-on assisting and model trimming.

Session 9: Front Desk Office Mht: Phone techniques and appointment book control,
 Preboard billing and accounting systems, billing – accounts receivable and Payable, collections, filing ins. Forms and pre – treatment, estimates, computer system practice. Open review.

Session 10: Final exam and practical exam, review final.
 Graduation and awarding of certificates.

DENTAL ASSISTANT PROGRAMME

SUBJECTS – TEACHING HOURS

	I Year	Practical	
		Lecture	Practical
1. Basic General Anatomy and Dental Anatomy		25 hrs	50 hrs (Total 75 hrs)
2. Physiology, Embryology & Histology		25 hrs	50 hrs (Total 75 hrs)
3. Overview of dentistry (Posting in each department)		50 hrs	450 hrs (Total 500 hrs)
4. Tooth Morphology		25 hrs	50 hrs (Total 75 hrs)
5. Pathology & Microbiology		25 hrs	50 hrs (Total 75 hrs)
6. Food & Nutrition		10 hrs	(10 hrs)
7. Dental Materials		25 hrs	100 hrs (Total 125 hrs)
8. Communication Skills in English			50 hrs
9. Computer Skills			50 hrs
10. Pharmacology		10 hrs	25 hrs (Total 35 hrs)

COURSE SYLLBUS

I – Year Theory

1) SCIENCES IN DENTISTRY:-

a) BASIC ANATOMY : General Anatomy (Head and Neck/Landmark of face & Oral Cavity)

(i) Embryology:-

Basic knowledge of development of Face, Nose, Lips, Oral Cavity and Jaw.
Development of teeth

(ii) General Anatomy:-

Elementary knowledge of upper limb, Thorax, Abdomen, Skin, Respiratory System (Trachea, Lungs), Urinary system (Kidney, Ureter, Urinary Bladder), Nervous System (Spinal cord, Cerebrum, Cerebellum, Medulla, Pons), Endocrines (Pituitry, Thyroid, Parathyroid)

(iii) Dental Anatomy:-

Tongue Muscles of mastication and facial expression
Temporo – Mandibular Joint
Course and distribution of Vth and VII th Cranial nerves
General structure of mucous membrane, bones, muscles, blood vessels, lymphatics , glands and nerves.

Blood and nerve supply in relation to face in general and teeth associated structure .

Relationship of teeth investing tissues.

PRACTICAL

Demonstrations on dissected body – head & neck region Ostology of Head & Neck.

B. GENERAL PHYSIOLOGY:

- Cell Structure of the human body
- Salivary glands, ducts and their functions
- Composition and function of Saliva
- Mastication, deglutition and Phonation
- General Outline on Circulatory system

- (i) Blood: - Blood Volume, Composition of blood and Plasma, Blood group system.
 - Haemorrhage

(ii) Cardiovascular System:

- Blood Pressure
- Radial pulse
- Heart rate
- Physiology of Shock

(iii) Respiratory System:-

- Mechanism of Respiration
- Artificial Respiration

PRACTICAL

ROUTINE BLOOD INVESTIGATION & URINE EXAMINATION

Total Count, Different Count	Sugar
ESR, Bleeding Time, Clotting time	Albumin

Introduction to Embryology and Histology:-

Brief description of the histology and function of various dental and Oral tissues.

- Gingiva, Periodontal membrane, Alveolar Process, Cementum, enamel, dentine, Pulp, Oral mucous membrane.

PRACTICAL

Study of histological slides of Oral and dental tissues. Section of a tooth.

D. Over View of the Dentistry

- Maintenance of the Records of the patient.
- Identification of instruments and forceps those re-quired for diagnosis, extraction, minor surgical procedure, filling, scaling, polishing, trays for impression making, pliers and other instruments used in dentistry.
- Basic knowledge in wire bending in Orthodontics.
- Knowledge of instructions given to the patient before, during and after surgical procedures, Conservative procedures, Periodontal procedures, Prosthetic procedures and Orthodontic Procedure.

PRACTICAL

Study of Instruments used in dentistry.

E. Tooth Morphology:

- Eruption of Primary and Permanent dentition
- Resorption of Primary roots and Exfoliation.
- Occlusion of teeth
- Structure, nomenclature and Morphology of human teeth.

PRACTICAL

Morphology of teeth and identification of teeth.

2. Oral Health and Prevention of Dental Diseases

A. Dental Caries:

Prevalence and Prevention

B. Periodontal Disease:

- Dental Plaque
- Dental Calculus
- Gingivitis, Periodontitis
- Role of Oral Prophylaxis

C. Prevention Dentistry:

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

D. Nutrition Councelling:

- BMR – Specific dynamic action
- Caloric Value of foods
- Balanced diet
- Carbohydrate Fat, Protein, Vitamins & Minerals in diet.
- General food requirements for growth maintenance and repair of body
- Dietic habits and Dental Health
- Assessment & Charting of individual diet and counseling.

E. Oral Pathology:

General Principles of Pathology – Inflammation, degeneration & repair.
Dental Anomalies
Abscesses – Periapical, Periodontal, Pericoronal, Gingival.
HIV/AIDS, Hepatitis B infections and manifestation of AIDS.
Oral manifestations of systemic disease like diabetes, anemia, Vitamin
Deficiency & infectious disease.

F. Pharmacology:

Brief description, nomenclature, derivation, dosage, Pharmacological action
and therapeutic uses of drugs commonly used in dentistry.

PRACTICAL

Preparation of gumpaints, mouth washes and dentifrices.

3. Infection Control in Dentistry:-

A. Micro Biology:

- Elementary knowledge of Bacteriology, Virology, Fungal infection, Asepsis, Infection, Immunity.
- Basic Characteristics of Micro Organism
- Oral Microbial Flora
- Media, Culture and sensitivity methods

PRACTICAL

- Staining methods

B. Disease Transmission and Infection Control

C. Principle and Technique of Disinfection and Instrument Processing and Sterilisation

D. Occupational Health and Safety

- Biomedical Waste management
- Disposal of developed and fixed used in Radiology.

E. Chemical and Waste Management

F. Dental Unit – Water Line

- Electrical line
- Gas connections
- Compressor functions
- Airtor, Airmotor, micromotor

- Light cure
- Ultrasonic Scaler
- Intensities of light used
- suction apparatus

Knowledge of all the adjustments that can be done on a dental chair.

4. Dental Materials

A. Restorative and Esthetic Material

- Dental amalgam
- Dental Cements for Restoration and Pulp Protection
- Light Cure restorative materials

B. Dental liners, Bases and Bonding systems

C. Dental Cements

D. Impression Materials

E. Laboratory Materials and Procedures

- Dental Casting alloys
- Inlay Casting wax
- Casting procedures for Dental alloy

F. Ceramics

G. Soldering & Welding

H. Finishing & Polishing materials

F. Instruments used for cavity cutting, bone cutting, tooth preparation

I. Plastic, Stone & Investments.

PRACTICAL

Manipulation and Mixing of the Dental Materials:-

1. Dental Plastic
2. Dental Stone
3. Investments – all types
4. Impression Materials –
 - a) Impression Compound
 - b) Reversible & Irreversible hydrocolloids
 - c) zinc Oxide Eugenol Paste
 - d) Elastomeric impression materials

5. Denture Base Materials
 - a. Heat Cure acrylic resin
 - b. Cold Cure acrylic resin
6. Cements:
 - a. Zinc Oxide Eugenol Cement
 - b. Zinc Phosphate Cement
 - c. Zinc Polycarboxylate Cement
 - d. Glass ionomer Cement
 - e. Resin Cement
 - f. Silver Amalgam
7. Welding, Soldering, investing, Casting procedures.

ASSISTING IN COMPREHENSIVE DENTAL CARE

- Reception of Patients
- Storing the data of the patients on Computer
- Layout of Reception room
- Chairside assistance and Technique.
- Clinical/Operating Room Technique
- Local Anaesthetic equipment
- Identification and use of instruments in dental practice
- Methods of sterilization and Care of dental instruments
- Instructions to patients and recall.

I Year Practical

- Dental Materials – Mixing and disposal.
- Identification of Surgical instruments, Forceps, filling instruments, Periodontal Instruments, impression trays.
- Basic wire bending exercise
- Fixed appliance parts

PHOTOGRAPHIC SYLLABUS

UNITS OF STUDY (activities)

1. Looking for good light-learning how the camera works, using a light meter.
2. Learning quality of light through texture – use of light and different surfaces
3. Distance – how lines intersect
4. Shutter speed influence on motion
5. Self portraits – Creative expression
6. Use of natural light and portrait photography
7. Photo tricks – Prints showing various manipulative performed in the darkroom
8. Large format printing
9. Various alternative processes
10. Digital Photography and manipulation
11. White on White
12. 2/3 Black
13. Design a contact sheet
14. Joiners
15. Photo essay
16. Portrait story
17. Self Portrait series
18. Digital Imagery
19. Portfolio contents and presentation

	<u>II Year</u>	
	Lecture	Practical
Radiology -	50 hrs	50 hrs
Prosthetics -		50 hrs
Postings in each Department for hands on a assisting	50 hrs	800 hrs

IInd year Theory

1. FOUNDATIONS OF CLINICAL DENTISTRY:

- Delivering Dental Care
- Dental Health Instrument (Hand Pieces & accessories)
- Moisture Control
- anesthesia and Pin Control

2. DENTAL RADIOLOGY:

- Elementary knowledge of Radiation Physics, Radiation biology
- Radiation Protection – Patient, Personnel and Public
- Radiographic film and Processing Techniques
- Dark room equipments
- Intra oral radiographic Tech – Paralling
 - Bisecting angle technique
- Extra Oral radiographic Tech – PA View skull, mandible
 - PNS
 - TMJ projections
 - Lateral Projections
 - OPG
- Digital Radiography
- Legal issues, quality Assurance and Infection Control
- Disposal of Radiographic waste

3. PATIENT INFORMATION AND ASSESSMENT:

- Introduction of Psychology
- Patient Record
- Emergency Care and assisting in Medical needs
- Emergency drugs used

4. General Dentistry:

- Oral Medicine & Diagnosis
- Restorative Dentistry
- Fixed and Removable Prosthodontics
- Provisional Coverages
- Dental Implants
- Endodontics and Periodontics
- Oral Maxillofacial Surgery
- Pediatric Dentistry
- Orthodontics
- Public Health Dentistry

5. Oral Medicine and Diagnosis:

- Scope and importance of the subject
- Methods of diagnosis including special investigation

6. Conservative Dentistry:

- Definition & Scope
- Oral hygiene in relation to Conservative Dentistry
- Instruments and nomenclature
- Care and Sterilisation
- Charting and recording of cases
- Fill up materials

7. **Prosthodontics:**

- Introduction & Scope
- Principles and Techniques of impression making
- Preparation of Casts, trays and temporary denture
- Bases Occlusal resins
- Artificial teeth, their selection

8. **Orthodontics:**

- Introduction & Scope
- Appliances used in Orthodontic Treatment
 - Removable
 - Fixed
 - Functional

9. **Periodontics:**

- Introduction & Scope
- Infection Control
- Periodontal Instrument
- Chair position & Principles
- Maintenance of Instruments (Sharpening)
- Ultrasonic scaling
- Motivation of Patients

10. **Pedodontics:**

- a. Introduction & Scope
- b. Biological factors for maintenance of Dental and Oral Health
- c. Child Psychology and management of child patient
- d. Importance of Oral Hygiene in children

11. Public Health Dentistry:

- Concept and Philosophy of Public Health
- School Health Programme
- Dental Health Education

12. Oral & Maxillofacial Surgery:

- Introduction & Scope
- Importance of General Condition of Patient in relation to Oral Surgery
- Sterilisation
- Complication of extractions

PRACTICAL

Routine postings in each department in cycle for hands on assisting.

Dental administration and Communication Skills:

- Dental Ethics and Business English
- Business Skill & Operating systems
- Computer Skill and application
- Financial Management in Dental Office
- Dental Photography

II Year – Laboratory

CLINICAL

- Lab Taking X-Ray, Processing and Mouting films
- Making Temporary Crowns
- Patient Treatment, hands on assisting
- Front Desk Office Management – Open Review

PRINCIPLES OF MANAGEMENT

(a): PRINCIPLES OF MANAGEMENT

Development of Management: Definitions of Management – Contributions of F.W.Taylor, Henry Fayol and others

Functions of Management: Planning - Organising – Directing – Controlling

Planning: Types of Planning – Short term and long plans – Corporate or Strategic

Planning – Planning Premises – Policies – Characteristics and sources – Principles of Policy making – Strategies as different from policies – Procedures and methods - Limitations of Planning

Organising: Importance of Organisation – Hierarchy – Scalar chain – Organisation relationship – Line relationship – Staff relationship – Line Staff relationship – Functional relationship – Committee Organisation – Management Committees – Departmentation

Motivation: Motivation theories – McGregor’s theory X and theory Y – Maslow’s and Herzberg’s theory – Porter and Lawler model of complex view of motivation – Other theories – Diagnostic signs of motivational problems – Motivational Techniques.

Communication: Types of Communication – Barriers of effective communication – Techniques for improved communication

Directing: Principles relating to Direction process – Principles and theories of leadership – Leadership styles – Delegation of authority.

Controlling: Span of control – Factors limiting effective span of Control – Super management, General managers, Middle Managers and supervisors – Planning and controlling relationships – Management control process – Corrective measures – Strategic control points – Budgetary control – Types of budgets.

Co-ordination: Co-ordination and co-operation – Principles of Co-Ordination – Techniques of co-ordination charts and records - Standard Procedure instructions

(b): PERSONNEL MANAGEMENT

Objective of Personnel Management – Role of Personnel Manager in an organization – Staffing and work distribution techniques – Job analysis and description – Recruitment and selection processes – Orientation and training – Coaching and Counselling – disciplining – Complaints and grievances – Termination of employees – Performance appraisal – health and safety of employees – Consumer Protection act as applicable to Health Care Services

(c) FINANCIAL MANAGEMENT

Definition of financial Management – Profit maximization – Return maximization – Wealth maximization – Short term Financing – Intermediate Financing – Long term Financing – Leasing as a source of Finance – Cash and Security Management – Inventory Management – Dividend policies – Valuations of shares – Financial Management in a hospital – Third party payments on behalf of patients.
Insurance – health schemes and policies

ENGLISH

Communication:-

Role of communication
Defining communication
Classification of communication
Purpose of communication
Major difficulties in communication
Barriers to communication
Characteristics of successful communication – The seven Cs
Communication at the work place
Human needs and communication “ Mind mapping”
Information communication

Comprehension Passage:-

Reading purposefully
Understanding what is read
Drawing conclusion
Finding and analysis

Explaining:-

How to explain clearly
Defining and giving reasons
Explaining differences
Explaining procedures
Giving directions

Writing business letters:-

How to construct correctly
Formal language
Address
Salutation
Body
Conclusion

Report Writing:-

Reporting an accident
Reporting what happened at a session
Reporting what happened at a meeting

Basics of Computer

Course Content:-

Introduction to computer – I/O devices – memories – RAM and ROM – Different Kinds of ROM – kilobytes, MB, GB their conversions – large computer – Medium, Micro, Mini Computers – Different computer languages – Number system – Binary and decimal conversions – Different Operating system – MS DOS – Basic commands – MD, CD, DIR, TYPE and COPY CON commands – Networking - LAN , WAN, MAN (only basic ideas)

Typing text in MS word – Manipulating text – Formatting the text – Using different font sizes, bold, italics – Bullets and numbering – Pictures, file insertion – aligning the text and justify – Choosing paper size – adjusting margins – Header and Footer , inserting page No's in a document – Printing a file with options – Using spell check and Programmer – Find and replace – Mail merge – inserting tables in document.

Creating table in MS Excel – Cell editing – Using formulas and functions – Manipulating data with excel – Using sort function to sort numbers and alphabets – Drawing graphs and charts using data in excel – auto formatting – Inserting data from other worksheets.

Preparing new slides using MS-POWERPOINT – Inserting slides – Slide transition and animation – Using templates – Different text and font sizes – Slides with sounds – Inserting clip arts, Pictures, tables and graphs – Presentation using wizards.

Introduction to Internet – Using search engine – Google search – Exploring the next using Internet Explorer and Navigator – Uploading and Download of files and images – E-mail ID creation – Sending messages – attaching files in E-mail – Introduction to “C” language – Different variables, declaration, usage – writing small programs using functions and sub-functions.

PRACTICAL

- Typing a text and aligning the text with different formats using MS-Word
- Inserting a table with proper alignment and using MS-Word
- Create mail merge document using MS-word to prepare greetings for Ten friends.
- Preparing a slide show with transition, animation and sound effect using MS-Powerpoint.
- Customizing the slide show and inserting pictures and tables in the slides using MS-Powerpoint.
- Creating a worksheet using MS-Excel with data and sue of functions
- Using MS-Excel prepare a worksheet with text, date time and data.
- Preparing a chart and pie diagrams using MS-Excel
- Using Internet for searching, uploading files, downloading files, Creating e-mail ID.
- Using C language writing programs using functions.

Examination Pattern for Dental Assistant

I – YEAR – THEORY

PAPER - I	Basic Sciences in Dentistry
PAPER – II	Oral Health and Prevention of Dental Diseases
PAPER – III	Infection Control in Dentistry
PAPER – IV	Dental materials

II – YEAR– THEORY

PAPER – I	Foundations of clinical dentistry
PAPER – II	Dental radiology and patient information and assessment
PAPER – III	General dentistry
PAPER – IV	Dental administration and communication skills

Examination Pattern

I YEAR

Subject	IA		University Exam		Practical	
	Max	Min	Max	Min	Max	Min
Basic Sciences in Dentistry	50	25	100	50	50	25
Oral Health and Prevention of Dental Diseases	50	25	100	50	50	25
Infection Control in Dentistry	50	25	100	50	50	25
Dental materials	50	25	100	50	50	25

II YEAR

Subject	IA		University Exam		Practical	
	Max	Min	Max	Min	Max	Min
Foundations of clinical dentistry	50	25	100	50	50	25
Dental radiology and patient information and assessment	50	25	100	50	50	25
General dentistry	50	25	100	50	50	25
Dental administration and communication skills	50	25	100	50	50	25

Internal Assessment	Marks
Internal test theory	20
Log book	10
Record work	10
Seminar	10
Total	50

Question Paper Pattern

	No. of questions	Marks per question	Total Marks
Essays	3	10	30
Short Notes	10	5	50
Short Answers	10	2	20
Total			100

I – YEAR – Practical Examinations – PreClinical -50 Marks(30 Marks and 20 marks for spotters)

5 Spotters should be identified and three lines written (5X4 =20)

- Dental materials - mixing amalgam, composites, cement liners
- Alginate impression and model pouring and trimming
- Mixing of dental plaster, stone and investment
- Demonstration -in heat cure resin, cold cure resin, soldering and welding.

II – YEAR – Practical Examination – Clinical -50 Marks(30 Marks and 20 marks for spotters)

5 Spotters should be identified and three lines written (5X4=20)

- Lab- Taking X-ray, processing and mounting films
- Making temporary crowns
- Patient treatment, hands on assisting
- Front Desk Office Management - Open Review

REFERENCE BOOKS AND LEARNING PROGRAM MATERIAL

ESSENTIALS OF PROGRAM ASSISTING, 4th EDITION (2007)

Text Book by D. Bird and D. Robinson,

DENTAL INSTRUMENTS GUIDE, 3rd EDITION(2009)

