YENEPOYA UNIVERSITY

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Deralakatte, Mangaluru -575018

REGULATIONS AND CURRICULUM GOVERNING POSTGRADUATE PROGRAM (MDS) IN PUBLIC HEALTH DENTISTRY

(CURRICULUM – EFFECTIVE FROM 2008-09)

YENEPOYA
UNIVERSITY

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Ref: No.YU/REG/ACA/1-ACM/2008 10.07.2008

NOTIFICATION

Sub: Syllabus for the BDS and MDS

Ref: Resolution of the Academic Council at its 1st Academic Council meeting held on 10.07.2008, vide agenda - 1

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The Academic Council at its 1st meeting held on 10.07.2008 and subsequently the Board of Management at its 4th meeting held on 30.08.2008 have resolved to approve the syllabus as recommended by the DCI and followed for the BDS and MDS students admitted for the academic year 2008-2009.

This notification is issued for implementation with effect from the academic year 2008-2009.

REGISTRAR

To:

The Principal - YDC

Copy to:

1. Controller of Examinations
2. Academic Section

Contents

OBJECTIVES

At the end of 3 years of training the candidate should be able to:

KNOWLEDGE:

- Apply basic sciences knowledge regarding etiology, diagnosis and management of the prevention, promotion and treatment of all the oral conditions at the individual and community level.
- Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of community oral health programme.
- Ability to conduct oral health surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach.
- Ability to act as a consultant in community oral health, teach, guide and take part in research (both basic and clinical), present and publish the outcome at various scientific conferences and journals , both national and international level.

SKILLS

The candidate should be able to

1. Take history, conduct clinical examination including all diagnostic procedures to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis.
2. Plan and perform all necessary treatment, prevention and promotion of oral health at the individual and community level.

3. Plan appropriate community oral health program, conduct the program and evaluate at the community level.
4. Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.
5. Develop appropriate person power at various levels and their effective utilization.
6. Conduct survey and use appropriate methods to impart oral health education.
7. Develop ways of helping the community towards easy payment plan, and followed by evaluation of their oral health care needs.
8. Develop the planning, implementation, evaluation and administrative skills to carry out successful community oral health programs.

VALUES:

1. Adopt ethical principles in all aspects of community oral health activities.
2. To apply ethical and moral standards while carrying out epidemiological researches.
3. Develop communication skills, in particular to explain the causes and prevention of oral diseases to the patient.
4. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed and promote team work approach.
5. Respect patient's rights and privileges including patients' right to information and right to seek a second opinion.

COURSE CONTENTS:

PAPER-1: Applied Basic Sciences

I. APPLIED ANATOMY AND HISTOLOGY:

A. Applied Anatomy in relation to:

- Development of face
- Bronchial arches
- Muscles of facial expression
- Muscles of mastication
- TMJ
- Salivary gland
- Tongue
- Hard and soft palate
- Infra temporal fossa
- Paranasal air sinuses
- Pharynx and larynx
- Cranial and spinal nerves- with emphasis on trigeminal, facial, glossopharyngeal and hypoglossal nerve
- Osteology of maxilla and mandible
- Blood supply, venous lymphatic drainage of head and neck
- Lymph nodes of head and neck
- Structure and relations of alveolar process and edentulous mouth
- Genetics-fundamentals

B. Oral Histology

- Development of dentition, innervations of dentin and pulp
- Periodontium-development, histology, blood supply, nerve supply and lymphatic drainage
- Oral mucus membrane
- Pulp- periodontal complex

APPLIED PHYSIOLOGY AND BIOCHEMISTRY

- Cell
- Mastication and deglutition
- Food and nutrition
- Metabolism of carbohydrates, proteins and fats
- Vitamins and minerals
- Fluid and electrolyte balance
- Pain pathway and mechanism- types, properties
- Blood composition and functions, clotting mechanism and erythropoiesis, blood groups and transfusions, pulse and blood pressure
- Dynamics of blood flow
- Cardiovascular homeostasis- heart sounds
- Respiratory system: normal physiology and variations in health and disease, Asphyxia and artificial respiration
- Endocrinology: thyroid, parathyroid, adrenals, pituitary, sex hormones and pregnancy, endocrine regulation of blood sugar.

III.A. APPLIED PATHOLOGY

- Pathogenic mechanism of molecular level
- Cellular changes following injury
- Inflammation and chemical mediators
- Oedema, thrombosis and embolism
- Hemorrhage and shock
- Neoplasia and metastasis
- Blood disorders
- Histopathology and pathogenesis of dental caries, periodontal disease, oral mucosal lesions, malignancies and HIV
- Propagation of dental infection

B.MICROBIOLOGY

- Microbial flora of oral cavity
- Bacteriology of dental caries and periodontal disease
- Methods of sterilization
- Virology of HIV, Herpes, Hepatitis
- Parasitology
- Basic immunology- basic concepts of immune systems in human body

  -Cellular and humoral immunity

  - Antigen and antibody system

  - Hypersensitivity

  - Autoimmune diseases

C. ORAL PATHOLOGY:

- Detailed description of diseases affecting the oral mucosa, teeth, supporting tissues and jaws

IV. PHYSICAL AND SOCIAL ANTHROPOLOGY:

- Introduction and definition
- Appreciation of the biological basis of health and disease
- Evolution of human race, various studies of different races by anthropological methods

V. APPLIED PHARMACOLOGY:

- Definition, scope and relations to other branches of medicine, mode of action, bioassay, standardization, pharmacodynamics, pharmacokinetics.
- Chemotherapy of bacterial infections and viral infections- sulphonamides and antibiotics.
- Local anesthesia
- Analgesics and anti-inflammatory drugs
- Hypnotics, tranquilizers and antipyretics
- Important hormones-ACTH, cortisone, insulin and oral antidiabetics.
- Drug addiction and tolerance
- Important pharmacological agents in connection with autonomic nervous system-adrenaline, noradrenaline, atropine
- Brief mention of antihypertensive drugs
- Emergency drugs in dental practice
- Vitamins and haemopoetic drugs

VI. RESEARCH METHODOLOGY AND BIOSTATISTICS

HEALTH INFORMATICS-basic understanding of computers and its components ,operating software(windows), Microsoft office, preparation of teaching materials like slides, project, multimedia knowledge.

RESEARCH METHODOLOGY- Definitions, types of research, designing written protocol for research, objectivity in methodology, quantification, records and analysis.

BIOSTATISTICS- Introduction, applications, uses and limitations of biostatistics in Public Health dentistry, collection of data , presentation of data, measures of central tendency, measures of dispersion, measures of summarizing, parametric and non parametric tests of significance, correlation and regression, multivariate analysis, sampling and sampling techniques-types, errors, bias, trial and calibration

COMPUTERS- Basic operative skills in analysis of data and knowledge of multimedia.

PAPER-II-Public health

1. PUBLIC HEALTH:

- Definition, concepts and philosophy of dental health
- History of public health in India and at international level.
- Terminologies used in public health

2. HEALTH:

- Definition, concepts and philosophy of health
- Health indicators
- Community and its characteristics and relation to health.

3. DISEASE

- Definition, concepts
- Multifactorial causation, natural history ,risk factors
- Disease control and eradication, evaluation and causation, infection of specific diseases.
- Vaccines and immunization.

4. GENERAL EPIDEMIOLOGY

- Definition and aims, general principles
- Multifactorial causation, natural history, risk factors
- Methods in epidemiology, descriptive, analytical, experimental and classic epidemiology of specific diseases, uses of epidemiology.
- Duties of epidemiologist
- General idea of method of investigating chronic diseases, mostly non infectious nature, epidemic, endemic and pandemic.
- Ethical conversation in any study requirement.
- New knowledge regarding ethical subjects.

- Screening of diseases and standard procedures used.

5. ENVIRONMENTAL HEALTH:

- Impact of important components of the environment of health
- Principles and methods of identification, evaluation and control of such health hazards.
- Pollution of air, water, soil, noise, food.
- Water purification, international standards of water.
- Domestic and industrial toxins, ionizing radiation.
- Occupational hazards
- Waste disposal-various methods and sanitation.

6. PUBLIC HEALTH EDUCATION:

- Definition, aims, principles of health education
- Health education, methods, models, contents, planning health education programs.

7. PUBLIC HEALTH PRACTICE AND ADMINISTRATION IN INDIA:

8. ETHICS AND JURISPRUDENCE:

- Basic principles of law
- Contract laws- dentist-patient relationships and legal forms of practice.
- Dental malpractice
- Person identification through dentistry
- Legal protection for practicing dentist.
- Consumer protection act

9. NUTRITION IN PUBLIC HEALTH

- Study of science of nutrition and its application to human problem
- Nutritional surveys and their evaluations.

- Influence of nutrition and diet on general health and oral health, dental caries periodontal disease and oral cancers.
- Dietary constituents and cariogenicity
- Guidelines for nutrition.

10. <u>BEHAVIOURAL SCIENCES:</u>

- Definition and introduction
- Sociology: social class, social group, family types, communities and social relationships, culture, its effect on oral health.
- Psychology: definition, development of child psychology, anxiety, fear and phobia, intelligence, learning, motivation, personalities, fear, dentist-patient relationship, modeling and experience

11. <u>HOSPITAL ADMINISTRATION:</u>

- Departmental maintenance, organizational structures
- Types of practices
- Biomedical waste management

12. <u>HEALTH CARE DELIVERY SYSTEM:</u>

- International oral health care delivery systems – review.
- Central and state system in general and oral health care delivery system if any
- National health policy
- National health program
- Primary health care – concepts, oral health in PHC and its implications.
- National and international health organizations
- Dentists act 1928,Dental Council of India , Ethics , Indian Dental Association
- Role of W.H.O. and Voluntary organizations in Health Care for the Community.

13. <u>ORAL BIOLOGY AND GENETICS:</u>

- A detailed study of cell structure
- Introduction to Genetics, Gene structure, DNA, RNA
- Genetic counseling, gene typing
- Genetic approaches in the study of oral disorders

- Genetic engineering- Answer to current health problems

PAPER-III- : Dental public health

1. DENTAL PUBLIC HEALTH

- History
- Definition and concepts of dental public health
- Differences between clinical and community dentistry
- Critical review of current practice
- Dental problems of specific population groups such as chronically ill, handicapped and institutionalized group

2. EPIDEMIOLOGY OF ORAL DISEASES AND CONDITIONS:

- Dental caries, gingival, periodontal disease, malocclusion, dental fluorosis, oral cancer, TMJ disorders and other oral health related problems.

3. ORAL SURVEY PROCEDURES:

- Planning
- Implementation
- WHO basic oral health methods 1997.
- Indices for dental diseases and conditions
- Evaluation

4. DELIVERY OF DENTAL CARE

- Dental person power-dental auxiliaries
- Dentist- population ratios
- Public dental care programs
- School dental health programs-Incremental and comprehensive care
- Private practice and group practice
- Oral health policy- national and international policy

5. PAYMENT FOR DENTAL CARE

- Prepayment
- Post- payment
- Reimbursement plans
- Voluntary agencies
- Health insurance.

6. EVALUATION OF QUALITY OF DENTAL CARE

- Problems in public and private oral health care system program
- Evaluation of quality of services, governmental control.

7. PREVENTIVE DENTISTRY.

- Levels of prevention
- Preventive oral health programs screening, health education and motivation
- Prevention of all dental diseases- dental caries, periodontal disease, oral cancer, malocclusion and dentofacial anomalies.
- Role of dentist in prevention of oral diseases at individual and community level.
- Fluoride
  - History
  - Mechanism of action
  - Metabolism
  - Fluoride toxicity
  - Fluorosis
  - Systemic and topical preparations
  - Advantages and disadvantages of each
  - Update regarding fluorosis
  - Epidemiological studies
  - Methods of fluoride supplements
  - Defluoridation techniques.
- Plaque control measures

  -Health Education

  -Personal oral hygiene

  -Tooth brushing techniques

-Dentifrices, mouth rinses

- Pit and fissure sealant, ART
- Preventive oral health care for medically compromised individual.
- Update on recent preventive modalities.
- Caries vaccines
- Dietary counseling

8. PRACTICE MANAGEMENT

- Definition
- Principles of management of dental practice and types
- Organization and administration of dental practice
- Ethical and legal issues in dental practice
- Current trends

STRUCTURED TRAINING SCHEDULE:

FIRST YEAR:

SEMINARS:

- 5 seminars in basic science subject.
- 5 seminars in Public health.
- To conduct 5 journal clubs.
- Library assignment on assigned topics-1
- Submission of synopsis for dissertation within 6 months.
- Periodic review of dissertation at 2 monthly intervals.

CLINICAL TRAINING:

1. Clinical assessment of patient
2. Learning different criteria and instruments used in various oral indices-5 cases each
    - oral hygiene index-Greene and Vermillion
    - Oral hygiene index-Simplified
    - DMF-DMF(T),DMF(S)

- Def t/s
- Fluorosis indices- Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index.
- Community periodontal index
- plaque index- Silness and Loe
- WHO oral health Assessment form-1997
- Carrying out comprehensive oral health care of 10 patients and maintaining complete records.

FIELD PROGRAMME:

1. Carrying out health education programme for school children of adopted school.
2. Carrying out school based preventive programme
    - topical fluoride application-sodium fluoride, stannous fluoride, acidulated phosphate fluoride preparations, fluoride mouth rinses, fluoride varnishes
    - Pit and fissure sealant-chemically cured(GIC) and light cure.
    - Minimal Invasive Treatment-Preventive Resin Restorations, Atraumatic Restorative Treatment.
    - Organizing and carrying out dental camps in both urban and rural areas.
3. Visit to Primary health centre, Milk Diary, Water treatment plant, sewage treatment plant, Public health institute and submitting reports
4. In addition guide the under graduate students in their clinical and field work.

SECOND YEAR:

SEMINARS:

- Seminars in public health and dental public health topics.
- Conducting journal clubs.
- Short term research project on assigned topics-1
- Periodic review of dissertation at monthly intervals.

CLINICAL TRAINING-CONTINUATION OF THE CLINICAL TRAINING:

1. Clinical assessment of patient
2. Learning of different criteria and instruments used in various oral indices-5 cases each
    - Oral hygiene index-Greene and Vermillion
    - Oral hygiene index-Simplified
    - DMF-DMF(T),DMF(S)
    - Def t/s
    - Fluorosis indices- Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index.
    - Community periodontal index
    - Plaque index- Silness and Loe
    - WHO oral health Assessment form-1987
    - Carrying out comprehensive oral health care of 10 patients and maintaining complete records.

FIELD PROGRAMME- CONTINUATION OF FIELD PROGRAMME:

1. Carrying out health education programme for school children of adopted school

2. Carrying out school based preventive programme

    - topical fluoride application-sodium fluoride, stannous fluoride, acidulated phosphate fluoride preparations, fluoride mouth rinses, fluoride varnishes
    - Pit and fissure sealant-chemically cured (GIC) and light cured.
    - Minimal Invasive Treatment-Preventive Resin Restorations, Atraumatic Restorative Treatment.
    - Organizing and carrying out dental camps in both urban and rural areas.

3 Assessing oral health status of various target groups like school children. Expectant mothers, handicapped, underprivileged, and geriatric populations. Planning dental manpower and financing dental health care for the above groups.

4. Application of the following preventive measures in clinic-10 cases each

- topical fluoride application-sodium fluoride, stannous fluoride, acidulated phosphate fluoride preparations, fluoride mouth rinses, fluoride varnishes
- Pit and fissure sealant

5. Planning total health care for school children in an adopted school:
   a) Periodic surveying of school children.
   b) Incremental dental care.
   c) Comprehensive dental care.
6. Organizing and conducting community oral health surveys for all oral conditions.
7. In addition guide the undergraduate students in their clinical and field programs.
8. To take lecture classes (2) for undergraduate students in order to learn teaching methods(pedagogy) on assigned topics.

THIRD YEAR

SEMINARS:

- Seminars on recent advances in preventive dentistry and dental public health.
- Critical evaluation of scientific articles-10 articles.
- Completion and submission of dissertation

CLINICAL TRAINING:

1. Clinical assessment of patient

2. Learning of different criteria and instruments used in various oral indices-5 cases each

- Oral Hygiene index-Greene and Vermillion
- Oral hygiene index-Simplified
- DMF-DMF(T),DMF(S)
- Def t/s

- Fluorosis indices- Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index.
- Community periodontal index
- Plaque index- Silness and Loe
- WHO oral health Assessment form-1987
- Carrying out comprehensive oral health care of 10 patients and maintaining complete records.

3. Carrying out health education programme for school children of adopted school.

4. Carrying out school based preventive programme

- topical fluoride application-sodium fluoride, stannous fluoride, acidulated phosphate fluoride preparations, fluoride mouth rinses, fluoride varnishes
- Pit and fissure sealant
- Minimal Invasive Treatment-Preventive Resin Restorations, Atraumatic Restorative Treatment

5. To take lecture classes (2) for undergraduate students in order to learn teaching methods (pedagogy) on assigned topics

6. Exercise on solving community health problems-10 problems

7. Application of the following preventive measures in clinic-10 cases each.

- Topical fluoride application-sodium fluoride, stannous fluoride, acidulated phosphate fluoride preparations.
- Pit and fissure sealants.

8. Dental health education training of school teachers, social workers, health workers.

9. Posting at dental satellite centers/ nodal centers

10. In addition guide the undergraduate students in their clinical and field programs.

Before completing the third year M.D.S a student must have attended two national conferences. Attempts should be made to present 2 scientific papers, publication of a scientific article in a journal.

MONITORING LEARNING PROCESS

It is essential to monitor the learning process of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students but also students to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching/ learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in section IV

SCHEME OF EXAMINATION

A. Theory : 300 Marks

Written examination shall consist of four question papers each of 3 hours duration. Total marks for each paper will be 75. Paper I, II and III shall consist of two long questions carrying 20 marks each and 5 short essay questions each carrying 7 marks. Paper IV will be on essay. Question on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows: *

PAPER I: Applied basic sciences: applied anatomy and histology, applied physiology and biochemistry, applied pathology, microbiology, oral pathology, physical and social anthropology, applied pharmacology and research methodology and biostatistics.

PAPER II: Public Health

PAPER III: Dental Public Health

PAPER IV: Essay

Topics of current interest in community oral health

*the topics assigned to the different are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of the topics is inevitable. Students should be prepared to answer overlapping topics.

B. Practical/ clinical examination: 200 marks

Clinical examination of at least 2 patients representing the community- includes history main complaints, examination and recording of the findings, using indices for the assessment of oral health and presentation of observation including diagnosis, comprehensive treatment planning, (50 marks—1 1/2 hrs)

2. Performing

a. One of the treatment procedures as per treatment plan.
(Restorative, Surgical, rehabilitation)

b. Preventive oral health care procedure.

c. One of the procedures specified in the curriculum

(50 marks—1 1/2 hrs)

3. Critical evaluation of a given research article published in an international journal (50 marks—1hrs)

4. Problem solving-a hypothetical oral health situation existing in a community is given with sufficient data. The student as a specialist in community dentistry is expected to suggest practical solutions to the existing oral health situation of the given community.

(50 marks—1 1/2 hrs)

C. viva voce: 100 marks

***i*. Viva-voce examination: 80 marks**

All examiners will conduct viva- voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy exercise: 20 marks

A topic is given to each candidate in the beginning of the clinical examination. He/ she is asked to make a presentation on the topic for 8-10 minutes.