DENTAL COUNCIL OF INDIA

REVISED BDS COURSE REGULATIONS, 2007

(As Modified upto 10th September 2007)

DENTAL COUNCIL OF INDIA

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भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY

भाग III—खण्ड 4
PART–III–Section 4

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PREFACE

BDS COURSE REGULATIONS

(As Modified upto 25.07.2007)

Framed by the Dental Council of India and approved by the Central Government under the Dentists Act, 1948 – vide Government of India, Ministry of Health & Family Welfare (Deptt. of Health's) letter No.V.12012/3/2006-DE dated 25.07.2007.

Sd/-
Maj. Gen. (Retd.) P.N. Awasthi,
Secretary,
Dental Council of India

रजिस्ट्री सं.डीएल.-33004/99 REGD.NO.D.L.-33004/99

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DENTAL COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 25th July, 2007

No.DE-22-2007.–In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India with the previous sanction of the Central Government hereby makes the following Revised BDS Course Regulations :–

1. Short title and commencement.–(i) These Regulations may be called the Dental Council of India Revised BDS Course Regulations, 2007.

(ii) They shall come into force on the date of their publication in the Official Gazette.

REGULATIONS FOR THE DEGREE OF BACHELOR OF DENTAL SURGERY, 2007

(Modified : 25-7-2007)

GENERAL: Universities awarding the degrees in Bachelor of Dental Surgery (BDS) and Master of Dental Surgery (MDS) shall establish independent Dental Faculty.

ADMISSION, SELECTION AND MIGRATION:-

I. Admission to the Dental Course – Eligibility Criteria:

No Candidate shall be allowed to be admitted to the Dental Curriculum of first Bachelor of Dental Surgery (BDS) Course until:

1. He/she shall complete the age of 17 years on or before 31st December, of the year of admission to the BDS course;
2. He/she has passed qualifying examination as under:-
   a. The higher secondary examination or the Indian School Certificate Examination which is equivalent to 10+2 Higher Secondary Examination after a period of 12 years study, the last two years of study comprising of Physics, Chemistry, Biology and Mathematics or any other elective subjects with English at a level not less than the core course for English as prescribed by the National Council for Educational Research and Training after the introduction of the 10+2+3 years educational structure as recommended by the National Committee on education;

introduction of the 10+2+3 years educational structure as recommended by the National Committee on education;

Note: Where the course content is not as prescribed for 10+2 education structure of the National Committee, the candidates will have to undergo a period of one year pre-professional training before admission to the dental colleges;

or

b. The intermediate examination in science of an Indian University/Board or other recognised examining body with Physics, Chemistry and Biology which shall include a practical test in these subjects and also English as a compulsory subject;

or

c. The pre-professional/pre-medical examination with Physics, Chemistry and Biology, after passing either the higher secondary school examination, or the pre-university or an equivalent examination. The pre-professional/pre-medical examination shall include a practical test in Physics, Chemistry and Biology and also English as a compulsory subject;

or

d. The first year of the three years degree course of a recognized university, with Physics, Chemistry and Biology including a practical test in three subjects provided the examination is a "University Examination" and candidate has passed 10+2 with English at a level not less than a core course;

or

e. B.Sc examination of an Indian University, provided that he/she has passed the B.Sc examination with not less than two of the following subjects Physics, Chemistry, Biology (Botany, Zoology) and further that he/she has passed the earlier qualifying examination with the following subjects-Physics, Chemistry, Biology and English.

or

f. Any other examination which, in scope and standard is found to be equivalent to the intermediate science examination of an Indian University/Board, taking Physics, Chemistry and Biology including practical test in each of these subjects and English.

Note:

- Marks obtained in Mathematics are not to be considered for admission to BDS Course.
- After the 10+2 course is introduced, the integrated courses should be abolished.

II. **Selection of Students:** The selection of students to dental college shall be based solely on merit of the candidate and for determining merit, the following criteria shall be adopted uniformly throughout the country:

1. In states having only one Dental College and one university board/examining body conducting the qualifying examination, the marks obtained at such qualifying examination may be taken into consideration;
2. In states, having more than one university/board/examining body conducting the qualifying examination (or where there are more than one dental colleges under the administrative control of one authority), a competitive entrance examination should be held so as to achieve a uniform evaluation as there may be variation of standards at qualifying examinations conducted by different agencies;
3. Where there are more than one college in a state and only one university/board conducting the qualifying examination, then a joint selection board be constituted for all the colleges;
4. A competitive entrance examination is absolutely necessary in the cases of institutions of All India character;
5. Procedure for selection to BDS course shall be as follows:-
   i. in case of admission on the basis of qualifying examination under clause (1) based on merit, candidate for admission to BDS course must have passed in the subjects of Physics, Chemistry, Biology & English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry, and Biology at the qualifying examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination be 40% instead of 50% as above and must have passing marks in English.

ii. In case of admission on the basis of competitive entrance examination under clause (2) to (4) of this regulation, a candidate must have passed in the subjects of Physics, Chemistry, Biology and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology at the qualifying examination and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less that 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or any other categories notified by the Government the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above:

Provided that a candidate who has appeared in the qualifying examination the result of which has not been declared, he may be provisionally permitted to take up the competitive entrance examination and in case of selection for admission to the BDS course, he shall not be admitted to that course until he fulfils the eligibility criteria as per above regulations.

III. Duration of the Course:

The undergraduate dental training programme leading to BDS degree shall be of 5 years with 240 teaching days in each academic year. During this period, the student shall be required to have engaged in full time study at a dental college recognised or approved by the Dental Council of India.

IV. Migration:

(1) Migration from one dental college to another is not a right of a student. However, migration of students from one dental college to another dental college in India may be considered by the Dental Council of India. Only in exceptional cases on extreme compassionate grounds*, provided the following criteria are fulfilled. Routine migrations on other ground shall not be allowed.

(2) Both the colleges, i.e. one at which the student is studying at present and one to which migration is sought, are recognised by the Dental Council of India.

(3) The applicant candidate should have passed first professional BDS examination.

(4) The applicant candidate submits his application for migration, complete in all respects, to all authorities concerned within a period of one month of passing (declaration of results) the first professional Bachelor of Dental Surgery (BDS) examination.

(5) The applicant candidate must submit an affidavit stating that he/she will pursue 240 days of prescribed study before appearing at IInd professional Bachelor of Dental Surgery (BDS) examination at the transferee dental college, which should be duly certified by the Registrar of the concerned University in which he/she is seeking transfer. The transfer will be applicable only after receipt of the affidavit.

Note 1:

(i) Migration is permitted only in the beginning of IInd year BDS Course in recognised Institutions.

(ii) All applications for migration shall be referred to Dental Council of India by the college authorities. No Institution/University shall allow migration directly without the prior approval of the Council.

(iii) Council reserves the right not to entertain any application which is not under the prescribed compassionate grounds and also to take independent decisions where applicant has been allowed to migrate without referring the same to the Council.

Note 2: *Compassionate ground criteria:

(i) Death of supporting guardian.

(ii) Disturbed conditions as declared by Government in the Dental College area.

V. Attendance requirement, Progress and Conduct

(i) 75% in theory and 75% in practical/clinical 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 of appearing for the professional examination in the subject, the aggregate percentage of attendance in the subject should satisfy condition (i) above.

VI. Subjects of Study:

First Year

i) General Human Anatomy including Embryology and Histology
ii) General Human Physiology and Biochemistry, Nutrition and Dietics
iii) Dental Anatomy, Embryology and Oral Histology
iv) Dental Materials
v) Pre-clinical Prosthodontics and Crown & Bridge

Second Year

i) General Pathology and Microbiology
ii) General and Dental Pharmacology and Therapeutics
iii) Dental Materials
iv) Pre clinical Conservative Dentistry
v) Pre clinical Prosthodontics and Crown & Bridge
vi) Oral Pathology & Oral Microbiology

Third Year

i) General Medicine
ii) General Surgery
iii) Oral Pathology and Oral Microbiology
iv) Conservative Dentistry and Endodontics
v) Oral & Maxillofacial Surgery
vi) Oral Medicine and Radiology
vii) Orthodontics & Dentofacial Orthopaedics
viii) Paediatric & Preventive Dentistry
ix) Periodontology
x) Prosthodontics and Crown & Bridge

Fourth Year

i) Orthodontics & dentofacial orthopaedics
ii) Oral Medicine & Radiology
iii) Paediatric & Preventive Dentistry
iv) Periodontology
v) Oral & Maxillofacial Surgery
vi) Prosthodontics and Crown & Bridge
vii) Conservative Dentistry and Endodontics
viii) Public Health Dentistry

Fifth Year

i) Oral & Maxillofacial Surgery
ii) Prosthodontics and Crown & Bridge
iii) Conservative Dentistry and Endodontics
iv) Public Health Dentistry

EXAMINATIONS

SCOPE: These regulations shall be applicable for the B.D.S. degree examinations conducted by various universities in the country.

I. PREFACE:

(A) Evaluation is a continuous process and is based on criteria developed by the concerned authorities with certain objectives to assess the performance of the learner. This also indirectly helps in the measurement of effectiveness and quality of the concerned B.D.S. programme.

(B) Evaluation is achieved by two processes
1. Formative or internal assessment

2. Summative or university examinations.

Formative evaluation is done through a series of tests and examinations conducted periodically by the institution.

Summative evaluation is done by the university through examinations conducted at the end of the specified course.

II. METHODS OF EVALUATION:

Evaluation may be achieved by the following tested methods:
1. Written test
2. Practicals
3. Clinical examination
4. Viva voce

INTERNAL ASSESSMENT EXAMINATION

The continuing assessment examinations may be held frequently at least ***3*** times in a given academic year and the average marks of these examinations should be considered. Ten percent of the total marks in each subject separately for theory and practical/clinical examination separately should be set aside for the internal assessment examinations.

SCHEME OF EXAMINATION:
The scheme of examination for B.D.S. Course shall be divided into 1st B.D.S. examination at the end of the first academic year, 2nd B.D.S. examination at the end of second year, 3rd B.D.S. examination at the end of third, 4th BDS at the end of 4th and final B.D.S at the end of 5th year. 240 days minimum teaching in each academic year is mandatory.

The examination shall be open to a candidate who satisfies the requirements of attendance, progress and other rules laid down by the University.

(1) Universities shall organise admission timings and the admission process in such a way that teaching starts from the 1st day of August in each academic year.

I B.D.S. Examination:
1. General anatomy including embryology and histology
2. General human physiology and biochemistry
3. Dental Anatomy, Embryology and Oral Histology

Any student who does not clear the first BDS University Examination in all subjects within 3 years from the date of admission, shall be discharged from the Course.

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 is permitted to appear for the next higher examination.

II B.D.S. Examination:
A candidate who has not successfully completed the 1st B.D.S. examination can not appear in the IInd year Examination.
1. General pathology and Microbiology
2. General and dental pharmacology and therapeutics
3. Dental Materials
4. Pre Clinical Conservative – Only Practical and Viva Voce
5. Pre Clinical Prosthodontics – Only Practical and Viva Voce

III B.D.S. Examination:
A candidate who has successfully completed the 2nd B.D.S. examination can appear in the IIIrd B.D.S. Examination.
1. General Medicine
2. General Surgery
3. Oral Pathology and Oral Microbiology

IV B.D.S. Examination:
1. Oral Medicine and radiology
2. Paediatric & Preventive Dentistry
3. Orthodontics & dentofacial orthopaedics

4. Periodontology

V BDS Examination:

1. Prosthodontics and Crown & Bridge
2. Conservative Dentistry and Endodontics
3. Oral and Maxillofacial Surgery
4. Public Health Dentistry

WRITTEN EXAMINATION:

1. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum of 70 marks.
2. In the subjects of Physiology & Biochemistry and Pathology & Microbiology each paper will be divided into two parts, A and B of equal marks.
3. The question paper should contain different types of questions such as essays, short answer and objective type / M.C.Q's.
4. The nature of questions set, should be aimed to evaluate students of different standards, ranging from average to excellent.
5. The questions should cover as broad an area of the content of the course. The essay questions should be properly structured and the marks specifically allotted.
6. The University may set up a question bank

PRACTICAL AND CLINICAL EXAMINATION:

1. **Objective Structured Clinical Evaluation:** The present system of conducting practical and clinical examination at several universities provide chance for unrealistic proportions of luck. Only a particular clinical procedure or experiment is usually given for the examination. The clinical and practical examination should provide a number of chances for the candidate to express one's skills. A number of examination stations with specific instructions should be provided. This can include clinical procedures, laboratory experiments, spotters etc. Evaluation must be made objective and structured. The method of objective structured clinical examinations should be followed. This will avoid examiner bias because both the examiner and the examinee are given specific instructions on what is to be observed at each station.

2. **Records/ Log Books:** The candidate should be given credit for his records based on the scores obtained in the record. The marks obtained for the record in the first appearance can be carried over to the subsequent appearances if necessary.

3. **Scheme of clinical and practical examinations:** The specific scheme of clinical and practical examinations, the type of clinical procedures/ experiments to be performed and marks allotted for each are to be discussed and finalised by the Chairman and other examiners and it is to be published prior to the conduct of the examinations along with the publication of the time table for the practical examinations. This scheme should be brought to the notice of the external examiner as and when the examiner reports. The practical and clinical examinations should be evaluated by two examiners of which one shall be an external examiner appointed from other universities preferably outside the State. Each candidate should be evaluated by each examiner independently and marks computed at the end of the examination.

4. **Viva Voce:** Viva voce is an excellent mode of assessment because it permits a fairly broad coverage and it can assess the problem solving capacity of the student. An assessment related to the affective domain is also possible through viva voce. It is desirable to conduct the viva voce independently by each examiner. In order to avoid vagueness and to maintain uniformity of standard and coverage, questions can be pre-formulated before administering them to each student. Twenty marks are exclusively allotted for viva voce and that can be divided equally amongst the examiners, i.e., 10 marks per examiner.

MARKS DISTRIBUTION IN EACH SUBJECT :

Each subject shall have a maximum of 200 marks.

Theory	100
Practical/ Clinical	100

Theory – 100		**Practicals/ clinicals – 100**	
University written exam	70	University Exam	90
Viva Voce	20		
Internal assessment (Written)	10	Internal assessment (Written)	10
Total	100		100

Practical and Viva Voce Only in University Examination

Pre-clinical Prosthodontics

Pre-clinical Conservative Dentistry.....

Internal Assessment	-	20
Practical	-	60
Viva Voce	-	20
		100

Criteria for a pass:

Fifty percent of the total marks in any subject computed as aggregate for theory, i.e., written, viva voce and internal assessment and practicals including internal assessment, separately is essential for a pass in all years of study.

For declaration of pass in a subject, a candidate shall secure 50% marks in the University examination both in Theory and Practical/ Clinical examinations separately, as stipulated below:

- A candidate shall secure 50% marks in aggregate in University theory including Viva Voce and Internal assessment obtained in University written examination combined together.
- In the University Practical/ clinical examination, a candidate shall secure 50% of University practical marks and Internal Assessment combined together.
- In case of pre clinical Prosthetic Dentistry and Pre clinical conservative dentistry in II BDS, where there is no written examination, minimum for pass is 50% of marks in Practical and Viva voce combined together in University examination including Internal Assessment i.e. 50/100 marks.
- Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% and above is eligible for Distinction. Only those candidates who pass the whole examination in the first attempt will be eligible for distinction or class.
- First Class and Distinction etc. to be awarded by the University as per their respective rules.

Grace Marks: Grace marks upto a maximum of 5 marks may be awarded to students who have failed only in one subject but passed in all other subjects.

Re-evaluation: The objective of re-evaluation is to ensure that the student receives a fair evaluation in the university examination and to minimise human error and extenuating circumstances. There shall be two mechanisms for this purpose.

1. **Re-totalling:** The University on application and remittance of a stipulated fee to be prescribed by the university, shall permit a recounting or opportunity to recount the marks received for various questions in an answer paper/ papers for theory of all subjects for which the candidate has appeared in the university examination. Any error in addition of the marks awarded if identified should be suitably rectified.

2. **Re-evaluation:** Re-evaluation of theory papers in all years of study of the BDS course may be permissible by the university on application and remittance of a prescribed fee. Such answer scripts shall be re-evaluated by not less than two duly qualified examiners and the average obtained shall be awarded to the candidate and the result accordingly reconsidered. However in those universities where double evaluation provision exists, this provision of re-evaluation will not be applicable.

Qualification and experience for eligibility for examinership in BDS examination

1. M.D.S. Degree from a recognised Institution
2. Four years teaching experience in the subject in a dental college after MDS
3. Should be holding the post of a Reader or above in a Dental Institution approved/recognised by the Dental Council of India for B.D.S.

Note:

1. In case of Public Health Dentistry, as there is as acute shortage of teachers one examiner from Public Health Dentistry and the second from Periodontics is permissible. To be reviewed after three years.
2. In case of Physiology and Biochemistry if Internal examiner is from Physiology, External examiner should be from Biochemistry or vice versa
3. In case of Pathology and Microbiology if Internal is examiner is from Pathology, External examiner should be from Microbiology or vice versa
4. In case of Dental Materials, if internal is from Prosthodontics, external should be from Conservative Dentistry and vice versa

Fifty percent of Examiners appointed shall be external from Dental Institutions approved/recognised by the Dental Council of India for B.D.S. Course, from another University, preferably outside the State.

Reciprocal arrangement of Examiners should be discouraged, in that, the Internal Examiner in a subject should not accept external examinership for a College from which External Examiner is appointed in his subject for the corresponding period.

No person shall be an External Examiner to the same University for more than 3 consecutive years. However, if there is a break of one year the person can be re-appointed.

"Minimum Physical Requirement and Minimum Staffing Pattern (as per DCI Regulations 2006)."

GOALS AND OBJECTIVES

GOALS:

The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out all activities appropriate to general dental practice involving prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate also should understand the concept of community oral health education and be able to participate in the rural health care delivery programmes existing in the country.

OBJECTIVES:

The objectives are dealt under three headings (a) Knowledge and Understanding (b) Skills and (c) Attitudes.

(A) KNOWLEDGE AND UNDERSTANDING:

The graduate should acquire the following during the period of training.

1. Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions; ability to evaluate and analyse scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also bearing on physical and social well being of the patient.
3. Adequate knowledge of clinical disciplines and methods which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of dentistry.
4. Adequate clinical experience required for general dental practice.

5. Adequate knowledge of the constitution, biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health in so far as it affect dentistry.

(B) SKILLS:

A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

1. Diagnose and manage various common dental problems encountered in general dental practice keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
2. Prevent and manage complications if encountered while carrying out various surgical and other procedures.
3. Carry out certain investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help prevent oral diseases where possible.
5. Control pain and anxiety among the patients during dental treatment.

(C) ATTITUDES:

A graduate should develop during the training period the following attitudes.

1. Willingness to apply the current knowledge of dentistry in the best interest of the patient and community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
4. Willingness to participate in the CPED Programmes to update knowledge and professional skill from time to time.
5. Help and participate in the implementation of the national oral health policy.

RECOMMENDATIONS

GENERAL:

1. The undergraduate course involves organisation of teaching programmes year-wise. However, this course, as a whole, should demonstrate integration of the basic sciences, clinical dentistry and practical or the laboratory skills. The course should be designed and integrated in such a way to permit smooth progression from the pre-clinical to clinical phase. Collaboration should be encouraged between teachers of basic sciences, dental sciences and clinical subjects.
2. The undergraduate dental course consists of three main components. The first component consists subjects common to medicine and dentistry like anatomy, physiology, biochemistry and behavioural science, leading to pharmacology, pathology, microbiology and then on to general medicine and general surgery. The second component runs concurrently with the first and deals with special aspects of oral and dental tissues, oral biology and oral pathology. Finally, the third component based on the foundations of the first two, deals with the clinical and technical aspects of dentistry as is required for general dental practice.
3. The first component of the course is intended to provide initially, an appreciation of normal human structure, development, function and behaviour, leading to understanding of the diseases, its prevention and treatment. The main objective is to provide the student a broad knowledge of the normal structures and functions of the body, the alterations which take place in disease with particular reference to those conditions in which medical and dental co-operation is essential for proper management. At this stage, the student should also be made aware of the social and psychological aspects of patient care with special reference to the relationship between dentist and patient. The behavioural sciences including both sociology and psychology should be introduced at the initial stages of the training programme, much before the students actually deal with the patients.
4. The second component of dental undergraduate programme consists instruction in the subjects dealing with dental and oral aspects to ensure a detailed knowledge of the structure and function of the dental and oral tissues. This enables the student to diagnose, prevent and treat the dental and oral diseases and disorders which were not included in the first component. The subject of oral biology is to be introduced at this level to provide the students a comprehensive knowledge and application of oral

physiology, microbiology, biochemistry and oral immunology. Students should be exposed to the basic aspects of forensic odontology at this stage of the course along with oral biology/oral pathology.

5. The third component of the course comprising the clinical and technical aspects of dentistry actually prepares the student to undertake total oral and dental health care of the patients of all ages. The emphasis at this stage should be on the prevention of the various dental diseases and how to preserve natural teeth with their supporting structures. The importance of the various preventive methods need to be stressed. The significance of diagnosis of various dental and oral problems needs to be emphasised along with treatment planning before actual treatment procedures are undertaken.

In addition to acquiring knowledge, the students need to gain adequate clinical hands-on-experience in extractions and other minor oral surgical procedures, all aspects of conservative dentistry, endodontics, crown and bridge, provision of partial and complete dentures, various periodontal therapeutic procedures and use of removable orthodontic appliances. Familiarity with various radiological techniques, particularly intra-oral methods and proper interpretation of radiographs is an essential part of this component of training and has application in clinical diagnosis, forensic identification and age estimation.

Towards the final stage of the clinical training, each student should be involved in comprehensive oral health care or holistic approach to enable them to plan and treat patients as a whole, instead of piece-meal treatment provided in each speciality. The Dental Council of India strongly recommends that all the dental colleges provide facilities and required infrastructure for this purpose.

The aim of the undergraduate programme should undoubtedly be to produce a graduate, competent in general dental practice.

6. The commitment towards society as a whole needs to be stressed along with the knowledge and treatment skills gained. Instruction in public health dentistry should emphasise the sociological aspects of health care, particularly oral health care, including the reasons for the variation in oral and dental needs of different sections of the society. It is important to know the influence of the social, behavioural, environmental and economic factors on oral and dental health. Students should be made aware of the National oral health Policy and the importance of being a member of the Health care team delivering medical and oral health care, particularly among the rural population.

7. Scientific advancement of any profession is based largely on continuous research activities. Dentistry is no exception. It is important that in every dental college proper facilities should be provided for research and the faculty members should involve themselves in such activities. Inter-disciplinary research should be encouraged to bring in integration among various specialities. The teaching and training methodology should be such that the students are motivated to think and indulge in self study rather than playing a passive role. Provision should be made in the daily schedules for adequate time for reading. Proper library facilities with adequate timings and seating capacity should be made available in all dental colleges. Adequate audio visual aids, like video tapes, computer assisted learning aids, Medline and internet facilities should be provided in all dental colleges to encourage self-study. Students should be encouraged to participate in simple research project work and the system of electives, spending some stipulated amount of time in another dental college within the country or outside should be given a serious consideration by all the dental institutions.

8. The society has a right to expect high standards and quality of treatment. Hence, it is mandatory and a social obligation for each dental surgeon to upgrade his or her knowledge and professional skills from time to time. The Dental Council of India strongly recommends that facilities and proper infrastructure should be developed to conduct the continuous professional education programmes in dentistry to enable the practitioners to update their knowledge and skills. The Council is of the opinion that the dental colleges by virtue of their infrastructural facilities will be ideal to conduct such courses and recommends establishment of a Department of continual dental education in each of the dental colleges. In addition, the practitioners should be encouraged to attend

conferences at the state and national level, workshops, seminars and any other such activity which the Council feels is suitable to upgrade the knowledge and skills.

9. The undergraduate curriculum should stress the significance of infection and cross-infection control in dental practice. Aspects like sources of infection, measures to be adopted - both general and specific - for control particularly the HIV and hepatitis should be properly incorporated into the curriculum so that the graduates are aware of its significance and follow it in their practice.

10. Information technology has touched every aspect of an individual's personal and professional life. The Council hence recommends that all undergraduates acquire minimum computer proficiency which will enable them to enhance their professional knowledge and skills.

RECOMMENDATIONS

SPECIFIC:

1. The undergraduate dental training programme leading to B.D.S. degree shall be a minimum of five years duration. During this period, the students shall be required to engage in full time study at a dental college recognised or approved by the Dental Council of India.

   During the five years undergraduate course, the instruction in clinical subjects should be at least for three years

2. Basic Medical & Dental Subjects:

   The basic medical and dental sciences comprise anatomy gross and microscopic, physiology, biochemistry, pharmacology, oral biology and science of dental materials. Subjects like behavioural sciences, which is useful to develop communication skills, should also be introduced in the first year itself and spread over the undergraduate course. An introduction to Public Health Dentistrty & Preventive Dentistry also will be useful to develop the concept of commitment to community. The laboratory skills to be developed by the students like pre-clinical Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology exercises and studying dental morphology also is a part of initial training. The instruction in the above medical and dental sciences shall be for two years duration. At the end of this period the student should be in a position to understand and comprehend in general the development, structure and function of the human body in both health and disease.

3. The instruction in basic dental sciences should include theoretical and practical aspects of oral anatomy and physiology, to provide a detailed knowledge of the form and structure of teeth, associated tissues and occlusal relationships.

   The study should also aim at development of a concept regarding physiological and biochemical processes relevant to oral cavity for better understanding of the changes which occur with the onset of disease in the oral cavity.

   The student should be made aware of the importance of various dental tissues in forensic investigation.

4. Clinical, Medical and Dental subjects:

   The students should be introduced to clinics in the initial stage, preferably in the first year, as an observer to familiarise with the clinical set-up and working. The period of instruction in the clinical subjects shall be not less than three years full time. During this perod, the student shall attend a dental hospital, general hospital, community camps and satellite clinics, in order to obtain instruction and experience in the practice of dentistry. The main objective of training in clinical dental subjects is to produce a graduate able and competent to recognise or diagnose various dental and oral diseases, to undertake general dental treatment, advise on the provision of specialised treatment available and finally advise the patient on prevention. The student should also understand the relationship between oral and systemic diseases.

5. Training in general medicine and surgery should provide sufficient knowledge on human disease to enable the student to understand its manifestations as relevant to the practice

of dentistry. This requires clinical teaching on patients and shall be carried out in in-patient and outpatient medical departments and specialist clinics.

This clinical instruction should enable the student to understand and perhaps diagnose common systemic diseases which have relevance to dental practice, by adopting a systematic approach of history taking and clinical examination. The student should also realise the significance of various general and special investigations in the diagnosis of diseases. The ability to recognise physical and mental illness, dealing with emergencies, effective communication with patients, interaction with various professional colleagues also become important aspects of this training.

6. The Dental Council of India considers it important for all dental students to receive instruction in first-aid and principles of cardio-pulmonary resuscitation. It is also desirable that the student spend time in an accident and emergency department of a general hospital.

7. The purpose of the clinical training is to provide sufficient practical skill in all aspects of clinical dentistry. The instruction should also include patient management skills, treatment of patients of all ages with special reference to children (paediatric), very elderly (geriatric), medically compromised and disabled patients.

8. During the three years clinical course, the students should receive thorough instruction which involves history taking, diagnosis and treatment planning in all aspects of dentistry and on graduation should be competent to carry out all routine general procedures.

In Oral & Maxillofacial Surgery and Oral Implantolgy, instruction should include the knowledge of various maxillofacial problems like injuries, infections and deformities of the jaws and associated structures. The clinical experience should include those procedures commonly undertaken in general practice like extraction of teeth, minor oral surgical procedure etc.

In Conservative, Endodontics & Aesthetic Dentistry, Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology and Periodontology and Oral Implantology students on graduation should be competent to carry out routine treatment like restorations of various kinds, endodontic procedures, removable and fixed prosthodontics, concept of osseointegration and finally various kinds of periodontal therapy. In addition, students should be aware of their limitations on graduation, need to refer patients for consultant opinion and/or treatment and also the need for postgraduate and continual education programmes.

In Orthodontics & Dento Facial Orthopedics, students should carry out simple appliance therapy for patients. Students should also be able to appreciate the role of dentofacial growth in the development and treatment of malocclusion.

In Paediatric dentistry, the students should concentrate on clinical management, efficacy of preventive measures, treatment needs particularly for children with disabilities. In oral medicine and oral diagnosis, the student should receive instruction in various lesions, occurring in the oral cavity with particular reference to oral cancer.

9. The successful control and management of pain is an integral part of dental practice. Upon graduation the students should be competent to administer all forms of local anaesthesia. The value of behavioural methods of anxiety management should be emphasised. The students should also have the practical experience in the administration of intra-muscular and intra-venous injections. Knowledge of pain mechanisms and strategies to control post-operative pain is essential for practice of dentistry.

10. All students should receive instructions and gain practical experience in taking processing and interpretation of various types of intra and extra oral radiographs. They should be aware of the hazards of radiation and proper protective measures from radiation for the patient, operator and other staff.

11. Instruction should be given in dental jurisprudence, legal and ethical obligations of dental practitioners and the constitution and functions of Dental Council of India.

12. Infection and cross infection control assume significance in dental practice. The students should be made aware of the potential risk of transmission in the dental surgery, various infectious diseases particularly HIV and hepatitis. The students should be aware of their professional responsibility for the protection of the patients, themselves and their staff and the requirements of the health and safety regulations.

13. In recent times, the subjects of aesthetic dentistry, oral implantology, behavioural sciences and forensic odontology have assumed great significance. Hence, the Council recommends that these four specialities should be incorporated into the undergraduate curriculum. The instruction and clinical training in aesthetic dentistry shall be carried out by the departments of Conservative, Endodontics & Aesthetic Dentistry and prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology. Similarly, the instruction and clinical training in oral implantology shall be done by the departments of Oral & Maxillofacial Surgery, Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology and Periodontology and Oral Implantology. The instruction in behavioural sciences should ideally commence before the students come in contact with the patients and shall be carried out by the departments of Public Health Dentistry & Preventive Dentistry and Paedodontics & Preventive Dentistry. Forensic Odontology will be a part of Oral Pathology & Oral Microbiology and Oral Medicine and Radiology.

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following.-

General Skills

Apply knowledge& skills in day to day practice
Apply principles of ethics
Analyse the outcome of treatment
Evaluate the scientific literature and information to decide the treatment
Participate and involve in professional bodies
Self assessment & willingness to update the knowledge & skills from time to time
Involvement in simple research projects
Minimum computer proficiency to enhance knowledge and skills
Refer patients for consultation and specialised treatment
Basic study of forensic odontology and geriatric dental problems

Practice Management

Evaluate practice location, population dynamics & reimbursement mechanism
Co-ordinate & supervise the activities of allied dental health personnel
Maintain all records
Implement & monitor infection control and environmental safety programs
Practice within the scope of one's competence

Communication & Community Resources

Assess patients goals, values and concerns to establish rapport and guide patient care
Able to communicate freely, orally and in writing with all concerned
Participate in improving the oral health of the individuals through community activities.

Patient Care – Diagnosis

Obtaining patient's history in a methodical way
Performing thorough clinical examination
Selection and interpretation of clinical, radiological and other diagnostic information
Obtaining appropriate consultation
Arriving at provisional, differential and final diagnosis

Patient Care – Treatment Planning

Integrate multiple disciplines into an individual comprehensive sequence treatment plan using diagnostic and prognostic information
Ability to order appropriate investigations

Patient Care – Treatment

Recognition and initial management of medical emergencies that may occur during dental treatment
Perform basic cardiac life support
Management of pain including post operative
Administration of all forms of local anaesthesia
Administration of intra muscular and venous injections
Prescription of drugs, pre operative, prophylactic and therapeutic requirements
Uncomplicated extraction of teeth
Transalveolar extractions and removal of simple impacted teeth
Minor oral surgical procedures
Management of oro-facial infections.
Simple orthodontic appliance therapy
Taking, processing and interpretation of various types of intra oral radiographs
Various kinds of restorative procedures using different materials available
Simple endodontic procedures
Removable and fixed prosthodontics
Various kinds of periodontal therapy

ORAL MEDICINE & RADIOLOGY

- Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned speciality for their management
- Should have an adequate knowledge about common laboratory investigations and interpretation of their results.
- Should have adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions/ consent from the concerned medical specialist.
- Have adequate knowledge about radiation health hazards, radiation safety and protection.
- Competent to take intra-oral radiographs and interpret the radiographic findings
- Gain adequate knowledge of various extra-oral radiographic procedures, TMJ radiography and sialography.
- Be aware of the importance of intra- and extra-oral radiographs in forensic identification and age estimation
- Should be familiar with jurisprudence, ethics and understand the significance of dental records with respect to law

PAEDIATRIC & PREVENTIVE DENTISTRY

- Able to instill a positive attitude and behaviour in children towards oral health and understand the principles of prevention and preventive dentistry right from birth to adolescence.
- Able to guide and counsel the guardian/parents with regard to various treatment modalities including different facets of preventive dentistry.
- Able to treat dental diseases occurring in the child patient.
- Able to manage t physically and mentally challenged/disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

- Understand about normal growth and development of facial skeleton and dentition.
- Pinpoint aberrations in growth process both dental and skeletal and plan necessary treatment
- Diagnose the various categories of malocclusion
- Able to motivate and explain to the patient (and parent or guardian) about the necessity of treatment
- Plan and execute preventive orthodontics (space maintainers or space regainers)
- Plan and execute interceptive orthodontics (habit breaking appliances)
- Manage treatment of simple malocclusion such as anterior spacing using removable appliances
- Handle delivery and activation of removable orthodontic appliances

- Diagnose and appropriately refer patients with complex malocclusion to the specialist

PERIODONTOLOGY

- Diagnose the patients periodontal problem, plan and perform appropriate periodontal treatment
- Competent to educate and motivate the patient
- Competent to perform thorough oral prophylaxis, subgingival scaling, root planning and minor periodontal surgical procedures
- Give proper post treatment instructions and do periodic recall and evaluation
- Familiar with concepts of osseointegration and basic surgical aspects of implantology

PROSTHODONTICS AND CROWN & BRIDGE

- Able to understand and use various dental materials
- Competent to carry out treatment of conventional complete and partial removable dentures and fabricate fixed partial dentures
- Able to carry out treatment of routine prosthodontic procedures.
- Familiar with the concept of osseointegration and the value of implant-supported Prosthodontic procedures

CONSERVATIVE DENTISTRY AND ENDODONTICS

- Competent to diagnose all carious lesions
- Competent to perform Class I and Class II cavities and their restoration with amalgam
- Restore class V and Class III cavities with glass ionomer cement
- Able to diagnose and appropriately treat pulpally involved teeth (pulp capping procedures)
- Able to perform RCT for anterior teeth
- Competent to carry out small composite restorations
- Understand the principles of aesthetic dental procedures

ORAL & MAXILLOFACIAL SURGERY

- Able to apply the knowledge gained in the basic medical and clinical subjects in the management of patients with surgical problems
- Able to diagnose, manage and treat patients with basic oral surgical problems
- Have a broad knowledge of maxillofacial surgery and oral implantology
- Should be familiar with legal, ethical and moral issues pertaining to the patient care and communication skills
- Should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner
- Understand and practice the basic principles of asepsis and sterilisation
- Should be competent in the extraction of the teeth under both local and general anaesthesia
- Competent to carry out certain minor oral surgical procedure under LA like trans-alveolar extraction, frenectomy, dento alveolar procedures, simple impaction, biopsy, etc.
- Competent to assess, prevent and manage common complications that arise during and after minor oral surgery
- Able to provide primary care and manage medical emergencies in the dental office
- Familiar with the management of major oral surgical problems and principles involved in in-patient management

PUBLIC HEALTH DENTISTRY

- Apply the principles of health promotion and disease prevention
- Have knowledge of the organisation and provision of health care in community and in the hospital service
- Have knowledge of the prevalence of common dental conditions in India.
- Have knowledge of community based preventive measures
- Have knowledge of the social, cultural and environmental factors which contribute to health or illness.
- Administer oral hygiene instructions, topical fluoride therapy and fissure sealing.
- Educate patients about the aetiology and prevention of oral disease and encourage them to assure responsibility for their oral health.

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

Subjects	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General Human Anatomy Including Embryology, Osteology and Histology.	100	175		275
General Human Physiology Biochemistry	120 70	60 60		180 130
Dental Materials	80	240		320
Dental Anatomy Embryology, and Oral Histology	105	250		355
Dental Pharmacology & Therapeutics	70	20		90
General Pathology Microbiology	55 65	55 50		110 115
General Medicine	60		9	150
General Surgery	60		90	150
Oral Pathology & Microbiology	145	130		275
Oral Medicine & Radiology	65		200	265
Paediatric & Preventive Dentistry	65		200	265
Orthodontics & dental orthopaedics	50		200	250
Periodontology	80		200	280
Oral & Maxillofacial Surgery	70		360	430
Conservative Dentistry & Endodontics	135	200	460	795
Prosthodontics & Crown & Bridge	135	300	460	895
Public Health Dentistry	60		290	350
Total	**1590**	**1540**	**2550**	**5680**

Note:
There should be a minimum of 240 teaching days every academic year consisting of 8 working hours including one hour of lunch break.

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

I B.D.S

Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General Human Anatomy Including Embryology, Osteology and Histology	100	175		275
General Human Physiology	120	60		180
Biochemistry.	70	60		130
Dental Anatomy Embryology, and Oral Histology	105	250		355
Dental Materials	20	40		60
Pre clinical Prosthodontics & Crown & Bridge	-	100		100
Total	**415**	**685**		**1100**

II B.D.S

Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General & Dental Pharmacology and therapeutics	70	20		90
General Pathology	55	55		110
Microbiolog	65	50		115

Dental Materials	60	200		260
Oral Pathology and Oral Microbiology	25	50		75
Pre Clinical Prosthodontics & Crown & Bridge	25	200		225
Pre Clinical Conservative Dentistry	25	200		225
Total	**325**	**775**		**1100**

III B.D.S

Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General Medicine	60		90	150
General Surgery	60		90	150
Oral Pathology and Oral Microbiology	120	80		200
Oral Medicine and Radiology	20		70	90
Paediatric and Preventive Dentistry	20		70	90
Orthodontics & Dentofacial Orthopaedics	20		70	90
Periodontology	30		70	100
Oral & Maxillofacial Surgery.	20		70	90
Conservative Dentistry & Endodontics.	30		70	100
Prosthodontics and Crown & Bridge	30		70	100
Total	**410**		**750**	**1160**

IV B.D.S

Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
Oral Medicine and Radiology	45		130	175
Paediatric and Preventive Dentistry	45		130	175
Orthodontics & Dentofacial Orthopaedics	30		130	160
Periodontology	50		130	180
Oral & Maxillofacial Surgery.	20		90	110
Conservative Dentistry & Endodontics.	30		90	120
Prostodontics and Crown & Bridge	30		90	120
Public Health Dentistry	30		90	120
Total	**280**		**880**	**1160**

V B.D.S

Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
Oral & Maxillofacial Surgery.	30		200	230
Conservative Dentistry & Endodontics.	50		300	350
Prostodontics and Crown & Bridge	50		300	350
Public Health Dentistry	30		200	230
Total	**160**		**1000**	**1160**

Note:

* Behavioural Sciences Classes shall commence in 1st Year.
* Forensic odontology shall be covered in the department of Oral pathology and Oral Medicine during 3rd Year.
* Aesthetic Dentistry shall be covered in the Departments of Conservative Dentistry and Prosthodontics during 4th & 5th Year.
* Oral Implantology shall be covered in the Department of Maxillofacial Surgery, Prosthodontics & Crown & Bridge and Periodontology during 4th & 5th Years.
* Ethics and dental jurisprudence shall be covered in Public Health Dentistry in 4th and 5th years.
* Electives / Research work should be encouraged during the 5th Year lasting for a period of atleast one month to be spent in a different dental institution in India / overseas.

* All the institutions shall compulsorily make arrangements for Comprehensive oral health care training for atleast 3 months during 5th Year. The department of Public Health Dentistry may be ustilised in case the institution does not have a separate department for this purpose. Qualified faculty members from the departments of Prosthodontics, Conservative Dentistry and Periodontics should guide the students along with faculty of Public Health Dentistry Department.
* The minimum working hours indicated each year of study does not include one month mid year vacation and one month of university examination.

RECOMMENDED BOOKS

1. Human Anatomy, Embryology, Histology & Medical Genetics

1. SNELL (Richard S.) Clinical Anatomy for Medical Students, Ed. 5, Llittle Brown & company, Boston.
2. RJ LAST'S Anatomy – McMinn, 9th edition.
3. ROMANES(G.J.) Cunningham Manual of Practical Anatomy : Head Neck & Brain Ed.15.Vol.III, Oxford Medical publication.
4. WHEATER,BURKITT & DANIELS, Functional Histology, Ed. 2, Churchill Livingstone.
5. SADLER , LANGMAN'S, Medical Embryology, Ed. 6.
6. JAMES E ANDERSON, Grant's Atlas of Anatomy. Williams & Wilkins.
7. WILLIAMS, Gray's Anatomy, Ed.38. ,Churchill Livingstone.
8. EMERY,Medical Genetics.

2. Physiology

1. Guyton; Text book of Physiology, 9th edition.
2. Ganong; Review of Medical Physiology, 19th edition
3. Vander; Human physiology, 5th edition
4. Choudhari; Concise Medical Physiology, 2nd edition
5. Chaterjee; Human Physiology, 10th edition
6. A.K. Jain; Human Physiology for BDS students, 1st edition
7. Berne & Levey; Physiology, 2nd edition
8. West-Best & Taylor's, Physiological basis of Medical Practise, 11th edition

EXPERIMENTAL PHYSIOLOGY:

1. Rannade; Practical Physiology, 4th edition
2. Ghai; a text book of practical physiology
3. Hutchison's; Clinical Methods, 20th edition

3. Biochemistry

1. Concise text book of Biochemistry (3rd edition) 2001, T.N. Pattabiraman
2. Nutritional Biochemistry 1995, S. Ramakrishnan and S.V. Rao
3. Lecture notes in Biochemistry 1984, J.K. Kandlish

REFERENCE BOOKS:

1. Text book of Biochemistry with clinical correlations 1997, T.N. Devlin
2. Harper's Biochemistry, 1996., R.K. Murray et.al
   Basic and applied Dental Biochemistry, 1979, R.A.D. Williams & J.C.Elliot

4. Dental Anatomy, Embryology and Oral Histology

1. Orban's Oral Histology & Embryology - S.N. Bhaskar
2. Oral Development & Histology - James & Avery
3. Wheeler's Dental Anatomy, Physiology & Occlusion - Major M. Ash
4. Dental Anatomy - its relevance to dentistry - Woelfel & Scheid
5. Applied Physiology of the mouth - Lavelle
6. Physiology & Biochemistry of the mouth - Jenkins

5. General Pathology

1. Robbins – Pathologic Basis of Disease Cotran, Kumar, Robbins
2. Anderson's Pathology Vol 1 & 2 Editors – Ivan Damjanov & James Linder
3. Wintrobe's clinical Haematolog Lee, Bithell, Foerster, Athens, Lukens

6. Microbiology

1. Text book of Microbiology – R.Ananthanarayan & C.K.Jayaram Paniker.
2. Medical Microbiology – David Greenwood et al.
3. Microbiology – Prescott, et al.
4. Microbiology – Bernard D. Davis , et al.
5. Clinical & Pathogenic Microbiology – Barbara J Howard, et al.
6. Mechanisms of Microbial diseases – Moselio Schaechter, et al.
7. Immunology an Introduction – Tizard
8. Immunology 3rd edition – Evan Roitt , et al.

7. Dental Materials

1. Phillips Science of Dental Materials – 10th edn.- Kenneth J. Anusavice
2. Restorative Dental Materials - 10 edn. Robert G.Craig
3. Notes on Dental Materials - E.C. Combe
4. Prep. Manual for undergraduates – Dental Materials – Dr. M.S. Koudi & Dr. Sanjay Gouda B. Patil

8. General and dental pharmacology and therapeutics

1. R.S.Satoskar, Kale Bhandarkar's Pharmacology and Pharmacolherapentics, 10th Edition, Bombay Popular Prakashan 1991.
2. Bertam G Katzung, Basic and Clinical pharmacology 6th ed. Appleton & Lange 1997
3. Lauerence D.R. Clinical Pharmacology 8th ed. Churchill Livingstone 1997
4. Satoskar R.S. & Bhandarkar S.D., Pharmacology and Pharmaco Therapeutics part I & part ii, 13th Popular Prakashan Bombay 1993
5. Tripathi K.D., Essentials of Medical Pharmacology 4th ed Jaypee Brothers 1999.

9. General Medicine

Textbook of Medicine Davidson
Textbook of Medicine Hutchinson

10. General Surgery

Short practice of Surgery Baily & Love

11. Oral Pathology & Oral Microbiology

1. A Text Book of Oral Pathology Shafer, Hine & Levy
2. Oral Pathology - Clinical Pathologic correlations Regezi & Sciubba.
3. Oral Pathology Soames & Southam.
4. Oral Pathology in the Tropics Prabhu, Wilson, Johnson & Daftary

12. Public Health Dentistry

1. Dentistry Dental Practice and Community by David F. Striffler and Brian A. Burt, Edn. –1983, W. B. Saunders Company
2. Principles of Dental Public Health by James Morse Dunning, IVth Edition, 1986, Harvard University Press.
3. Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby Company 1981
4. Community Oral Health-A system approach by Patricia P. Cormier and Joyce I. Levy published by Appleton-Century-Crofts/ New York, 1981
5. Community Dentistry-A problem oriented approach by P. C. Dental Hand book series Vol.8 by Stephen L. Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton Massachuseltts, 1980.
6. Dental Public Health- An Introduction to Community Dentistry. Edition by Geoffrey L. Slack and Brian Burt, Published by John Wrigth and sons Bristol, 1980
7. Oral Health Surveys- Basic Methods, 4th edition, 1997, published by W. H. O. Geneva available at the regional office New Delhi.
8. Preventive Medicine and Hygiene-By Maxcy and Rosenau, published by Appleton Century Crofts, 1986.
9. Preventive Dentistry-by J. O. Forrest published by John Wright and sons Bristoli, 1980.
10. Preventive Dentistry by Murray, 1997.
11. Text Book of Preventive and Social Medicine by Park and park, 14th edition.
12. Community Dentistry by Soben Peter.

13. Introduction to Bio-statistics by B. K. Mahajan
14. Introduction to Statistical Methods by Grewal

13. Paediatric and Preventive Dentistry

1. Pediatric Dentistry (Infancy through Adolescences) – Pinkham.
2. Clinical Use of Fluorides – Stephen H. Wei.
3. Understanding of Dental Caries – Niki Foruk.
4. Handbook of Clinical Pedodontics – Kenneth. D.
5. Dentistry for the Child and Adolescence – McDonald.
6. Pediatric Dentistry – Damle S. G.
7. Behaviour Management – Wright
8. Traumatic Injuries – Andreason.
9. Textbook of Pedodontics – Shobha Tandon

14. Oral Medicine and Radiology

a) Oral Diagnosis, Oral Medicine & Oral Pathology
   1. Burkit – Oral Medicine – J.B. Lippincott Company
   2. Coleman – Principles of Oral Diagnosis – Mosby Year Book
   3. Jones – Oral Manifestations of Systemic Diseases – W.B. Saunders company
   4. Mitchell – Oral Diagnosis & Oral Medicine
   5. Kerr – Oral Diagnosis
   6. Miller – Oral Diagnosis & Treatment
   7. Hutchinson – clinical Methods
   8. Oral Pathology – Shafers
   9. Sonis.S.T., Fazio.R.C. and Fang.L - Principles and practice of Oral Medicine

b) Oral Radiology
   1. White & Goaz – Oral Radiology – Mosby year Book
   2. Weahrman – Dental Radiology – C.V. Mosby Company
   3. Stafne – Oral Roentgenographic Diagnosis – W.B.Saunders Co.,

c) Forensic Odontology
   1. Derek H.Clark – Practical Forensic Odontology - Butterworth-Heinemann (1992)
   2. C Michael Bowers, Gary Bell – Manual of Forensic Odontology - Forensic Pr (1995)

15. Orthodontics and Dentofacial Orthopedics

1. Contemporary Orthodontics William R. Proffit
2. Orthodontics For Dental Students White and Gardiner
3. Handbook Of Orthodontics Moyers
4. Orthodontics - Principles and Practice Graber
5. Design, Construction and Use Of Removable Orthodontic Appliances C. Philip Adams
6. Clinical Orthodontics: Vol 1 & 2 Salzmann

16. Oral and Maxillofacial Surgery

1. Impacted teeth; Alling John F & et al.
2. Principles of oral and maxillofacial surgery; Vol.1,2 & 3 Peterson LJ & et al.
3. Handbook of medical emergencies in the dental office, Malamed SF.
4. Killeys Fractures of the mandible; Banks P.
5. Killeys fractures of the middle 3rd of the facial skeleton; Banks P.
6. Killey and Kays outline of oral surgery – Part-1; Seward GR & et al
7. Essentials of safe dentistry for the medically compromised patients; Mc Carthy FM
8. Extraction of teeth;Howe GL
9. Minor Oral Surgery; Howe GL

17. Prosthodontics, Crown & Bridge

1. Syllabus of Complete denture by – Charles M. Heartwell Jr. and Arthur O. Rahn.
2. Boucher's "Prosthodontic treatment for edentulous patients"
3. Essentials of complete denture prosthodontics – Sheldon Winkler.
4. Maxillofacial prosthetics by – Willam R.Laney.
5. McCraken's Removable partial prosthodontics
6. Removable partial prosthdontics – Ernest L. Miller and Joseph E. Grasso.

18. Periodontology

1. Glickman's Clinical Periodontology – Carranza

REFERENCE BOOKS :

1. Essentials of Periodontology and Periodontics – Torquil MacPhee
2. Contemporary Periodontics – Cohen
3. Periodontal therapy – Goldman
4. Orbans' Periodontics – Orban
5. Oral Health Survey – W.H.O.
6. Preventive Periodontics – Young and Stiffler
7. Public Health Dentistry – Slack
8. Advanced Periodontal Disease – John Prichard
9. Preventive Dentistry – Forrest
10. Clinical Periodontology – Jan Lindhe
11. Periodontics – Baer & Morris.

19. Conservative Dentistry and Endodontics

1. Esthetic guidelines for restorative dentistry; Scharer & others
2. Esthetics of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3. Esthetic & the treatment of facial form, Vol 28; Mc Namara (JA)

20. Aesthetic Dentistry

1. Aesthetic guidelines for restorative dentistry; Scharer & others
2. Aesthetics of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3. Aesthetic & the treatment of facial form, Vol 28; Mc Namara (JA)

21. Forensic Odontology

1. Practical Forensic odontology – Derek Clark

22. Oral Implantology

1. Contemporary Implant Dentistry - Carl .E. Misch Mosby 1993 First Edition.
2. Osseointegration and Occlusal Rehabilitation Hobo S., Ichida .E. and Garcia L.T. Quintessence Publishing Company, 1989 First Edition.

23. Behaviourial Science

1. General psychology -- Hans Raj, Bhatia
2. Behavioural Sciences in Medical practice -- Manju Mehta

24. Ethics

1. Medical Ethics, Francis C.M., I Ed. 1993, Jaypee Brothers, New Delhi p. 189.

Note: 1. *Book titles will keep on adding in view of the latest advances in the Dental Sciences.*
2. *Standard books from Indian authors are also recommended.*

LIST OF JOURNALS:

1. Journal of Dentistry
2. British Dental Journal
3. International Dental Journal
4. Dental Abstracts
5. Journal of American Dental Association
6. British Journal of Oral and Maxillofacial Surgery
7. Oral Surgery, Oral Pathology and Oral Medicine
8. Journal of Periodontolgy
9. Journal of Endodontics
10. American journal of Orthodontics and Dentofacial Orthopedics
11. Journal of Prosthetic Dentistry
12. Journal of Public Health Dentistry
13. Endodontics and Dental Traumatology
14. Journal of Dental Education
15. Dental Update
16. Journal of Dental Material

Note : This is the minimum requirement. More journals both Indian and Foreign are recommended for imparting research oriented education.

INFRASTRUCTURE & FUNCTIONAL REQUIREMENTS
50 ADMISSIONS

General Facilities:

1. **Administrative block**: 2000 sq.ft.
   consisting of –
   (a) Dean's room,
   (b) Administrative officer's room
   (c) Meeting room
   (d) Office
   (e) Office stores
   (f) Pantry etc.

2. **Library**: 4500 sq.ft.
   consisting of –
   (a) Reception & waiting
   (b) Property counter
   (c) Issue counter
   (d) Photocopying area
   (e) Reading room to accommodate 50% of total students strength.
   (f) Postgraduates & staff reading room
   (g) Journal room
   (h) Audio-visual room
   (i) Chief librarian room
   (j) Stores and stocking area.

3. **Lecture halls – 4 :** 3200 sq.ft.
   Each hall to accommodate 10% more of admission strength with proper seating arrangement, blackboard, microphone and facilities for slide, overhead and multi-media projection.

4. **Central stores**: 400 sq.ft.
   With proper storing facilities like racks and refrigerator, preferably compact storage systems.

5. **Maintenance room:** 600 sq.ft.
   Equipped with proper facilities to maintain and repair dental chairs and units and various other equipments in the college and hospital.

6. **Photography and artist room**: 250 sq.ft.
   With proper studio facilities for clinical photography, developing, preparation of slides, charts, models etc.

7. **Medical stores:** 200 sq.ft.
   Stocked with all the necessary drugs usually prescribed in a dental hospital.

8. **Amenities area:** 2000 sq.ft.
   (a) Boys' and Girls' locker rooms
   (b) Boys' and Girls' common rooms
   (c) Common room for non-teaching staff
   (d) Common room for teaching staff
   (e) Change room for men
   (f) Change room for women

9. **Compressor and room for gas plant:** 200 sq.ft.
   Adequate to accommodate required capacity compressors, gas cylinders etc.

10. **Pollution control measures:**
    All the dental institutions shall take adequate pollution control measures by providing incernation plant, sewage water treatment plant, landscaping of the campus etc.

11. **Cafeteria:** 800 sq.ft.
    With accommodation for 100 people with kitchen, stores, washing area etc.

12. **Examination hall:** 1800 sq.ft.

A separate hall for university and other examination furnished with chairs and individual tables to accommodate 125 students at a time.

13. **Hostels:**
The hostel accommodation shall be provided based on number of admissions for all the boys and girls in the Dental College campus itself. The accommodation may be increased in a phased manner over a period of 4 years.

14. **Staff quarters:**
All the staff members, teaching and non-teaching working in the institution shall be provided adequate accommodation in the 5 acres land earmarked for the college. The staff quarters may be built in a phased manner over a period of 4 years.

15. **Play ground:**
There shall be facilities for both indoor and out-door games in the premises.

17. **Auditorium:**
Should accommodate at least 400 people and consisting of –
Proper seating arrangements, reception counter, green rooms, lobby, fitted with sound system, slide and multimedia presentation facility.

18. **Laboratories :**

I. Dental subjects:
(a) Pre-clinical Prosthodontics and dental material lab – 1500 sq.ft.
(b) Pre-clinical conservative lab – 1300 sq.ft.
(c) Oral biology and oral pathology lab – 1300 sq.ft.
(d) Laboratory for orthodontics and paedodontics – 800 sq.ft.

II. Medical subjects: (only for independent dental colleges): 4500 sq.ft.
(a) Anatomy dissection hall with storage for cadavers, osteology, demonstration room etc. Area–1500 sq.ft.
(b) One laboratory for physiology and pathology and microbiology with stores and preparation rooms for individual subjects attached to it. Area–1500 sq.ft.
(c) Laboratory for biochemistry and pharmacology with store and preparation rooms separately for both subjects. Area–1500 sq.ft.

III. Clinical:
(a) Prosthodontics-Plaster room
Polymers room
Wax room
Casting laboratory
Ceramic lab ..... 1300 sq.ft.
(b) Conservative Dentistry – Plaster room
Casting & ceramic laboratories ... 300 sq.ft.
(c) Oral pathology for histopathology ... 400 sq.ft.
(d) Haematology and clinical biochemistry: a laboratory for routine blood and biochemical investigation and urine analysis ... 200 sq.ft.

16. **Distilled Water Plant**

100 ADMISSIONS

General:

1. **Administrative block:** 3000 sq.ft.
consisting of –
(a) Dean's room,
(b) Administrative officer's room
(c) Meeting room
(d) Office
(e) Office stores
(f) Pantry etc.

2. **Library:** 8000 sq.ft.
consisting of –

(a) Reception & waiting, Property counter
(b) Issue counter
(c) Photocopying area
(d) Reading room to accommodate 50% of total students strength.
(e) Postgraduates & staff reading room
(f) Journal room
(g) Audio-visual room
(h) Chief librarian room
(i) Stores and stocking area.
(j) E-Consortium provision to be provided in the College Library connected with the National Medical Library.

3. **Lecture halls – 4 :** 6400 sq.ft.
Each hall to accommodate 10% more of admission strength with proper seating arrangement, blackboard, microphone and facilities for slide, overhead and multi-media projection.

4. **Central stores:** 800 sq.ft.
With proper storing facilities like racks and refrigerator, preferably compact storage systems.

5. **Maintenance room:** 1000 sq.ft.
Equipped with proper facilities to maintain and repair dental chairs and units and various other equipments in the college and hospital.

6. **Photography and artist room:** 400 sq.ft.
With proper studio facilities for clinical photography, developing, preparation of slides, charts, models etc.

7. **Medical stores:** 300 sq.ft.
Stocked with all the necessary drugs usually prescribed in a dental hospital.

8. **Amenities area:** 3200 sq.ft.
(a) Boys' and Girls' locker rooms
(b) Boys' and Girls' common rooms
(c) Common room for non-teaching staff
(d) Common room for teaching staff
(e) Change room for men
(f) Change room for women

9. **Compressor and room for gas plant:** 300 sq.ft.
Adequate to accommodate required capacity compressors, gas cylinders etc.

10. **Pollution control measures:**
All the dental institutions shall take adequate pollution control measures by providing incernation plant, sewage water treatment plant, landscaping of the campus etc.

11. **Cafeteria:** 1500 sq.ft.
With accommodation for 100 people with kitchen, stores, washing area etc.

12. **Examination hall:** 3600 sq.ft.
A separate hall for university and other examination furnished with chairs and individual tables to accommodate 250 students at a time.

13. **Hostels:**
Hostel accommodation shall be provided for all boys and girls based on number of admissions in the Dental College campus itself. The accommodation may be increased in a phased manner over a period of 4 years.

14. **Staff quarters:**
All the staff members, teaching and non-teaching working in the institution shall be provided adequate accommodation in the 5 acres land earmarked for the college. The staff quarters may be built in a phased manner over a period of 4 years.

15. **Play ground:**
There shall be facilities for both indoor and out-door games in the premises.

16. **Auditorium:**

Should accommodate at least 500 people and consisting of –
Proper seating arrangements, reception counter, green rooms, lobby, fitted with sound system, slide and multimedia presentation facility.

17. **Laboratories:**

I. Dental subjects:

(a) Pre-clinical Prosthodontics and dental material lab – 3000 sq.ft.
(b) Pre-clinical conservative lab – 2500 sq.ft.
(c) Oral biology and oral pathology lab – 2500 sq.ft.
(d) Laboratory for orthodontics and paedodontics – 1500 sq.ft.

II. Medical subjects: (only for independent dental colleges):7500 sq.ft.
(a) Anatomy dissection hall with storage for cadavers, osteology, demonstration room etc. Area – 2500 sq.ft.
(b) One laboratory for physiology and pathology and microbiology with stores and preparation rooms for individual subjects attached to it. Area – 2500 sq.ft.
(c) Laboratory for biochemistry and pharmacology with store and preparation rooms separately for both subjects – 2500 sq.ft.

III. Clinical:

(a) Prosthodontics - Plaster room
Polymer room
Wax room
Casting laboratory
Ceramic lab ..... 2500 sq.ft.
(b) Conservative Dentistry – Plaster room
Casting & ceramic laboratories ... 600 sq.ft.
(c) Oral pathology for histopathology ... 600 sq.ft.
(d) Haematology and clinical biochemistry: a laboratory for routine blood and biochemical investigation and urine analysis ... 300 sq.ft.

18. **Distilled Water Plant**

TEACHING AIDS:

Audiovisual – Adequate number of overhead projectors and slide projectors shall be provided in the lecture halls and seminar rooms attached to various departments. It is also desirable to have an LCD or DLP projector for multimedia presentations.

Computers – The administrative area, clinics, stores and library shall be provided with computers & printers preferably interconnected for better co-ordination.

General Hospital:

The applicant owns and manages a General Hospital of not less than 100 beds as per DCI (Establishment of New Dental Colleges, Opening of New or Higher Course of Study or Training and Increase of Admission Capacity in Dental Colleges) Regulations, 2006 with necessary infrastructure facilities including teaching pre-clinical, para-clinical and allied medical sciences in the campus of the proposed dental college,

or

The proposed dental college is located in the proximity of a Government Medical College or a Medical College recognised by the Medical Council of India and an undertaking of the said Medical College to the effect that it would facilitate training of the students of the proposed dental college in the subjects of Medicine, Surgery and Allied Medical Sciences has been obtained,

or

Where no Medical College is available in the proximity of the proposed dental college, the proposed dental college gets itself tied up at least for 5 years with a Government General Hospital having a provision of at least 100 beds and located within a radius of 10 K.M. of the proposed dental college and the tie-up is extendable till it has its own 100 bedded hospital in the same premises. In such cases, the applicant shall produce evidence that necessary infrastructure facilities including teaching pre-clinical, para-clinical and allied medical sciences are owned by the proposed dental college itself.

A 100 bedded teaching hospital should have a definite out patient departments, in-patient services and 24 hours emergency and critical care services. It should have a medical programme as under:-

I. MEDICAL PROGRAMME

A) Medical & Allied Disciplines

- General Medicine
- General Surgery
- Obstetrics and Gynaecology
- Orthopaedics
- Critical Medicine
- Emergency Medicine
- Otrohino Laryngology
- Paediatrics
- Pathology
- Anaesthesiology
- Blood Bank & Transfusion
- Community Medicine
- Hospital Administration

B) Nursing, Paramedical, Technical and Allied Services

- Dielities and Therapeutics
- Drugs & Pharmacy
- ECG Technology
- Imaging Technology
- Central Sterlic Supply department
- Physiotherapy
- Medical Record Sections

C) Engineering & Allied Services

- Fire protection
- Electrical
- Air conditioning/Central heating
- Medical Gases
- Refrigeration
- Central Workshop
- Ambulance Service
- Water Supply
- Sewage Treatment/Disposal and waste disposal cell

D) Administration and Ancillary Services

- General Administration
- Material Management
- Medical Social Worker
- PRO
- Library
- Security

II. FUNCTIONAL PROGRAMME

A) Site

Site should be within 10 k.m. radius of the teaching block of Dental College – a site with high degree of sensitivity to outside noise should not be present. It should be accessible by transport and building should be well ventilated.

B) Category wise Bed Distribution

(i)	General Ward – Medical including allied specialities	30 beds
(ii)	General Ward – Surgical including allied specialities.	30 beds
(iii)	Private Ward (A/C & Non A/C)	9 beds
(iv)	Maternity Ward	15 beds
(v)	Pediatric Ward	6 beds

The intensive care services for medical/surgical intensive care with bed complement of 4 beds (4% of bed strength).

The critical care services for medical/surgical emergencies with bed complement of 6 beds (6% of bed strength).

III. AREA REQUIREMENTS (AS PER BUREAU OF INDIAN STANDARDS)

- Covered area requirement is 20 sq. m. / bed
  Out of the total covered area
- 40% inpatient services
- 35% outpatient services
- 25% department and supportive services

IV. MANPOWER REQUIREMENTS

The consultants in the various departments should have atleast 8 years teaching experience after post graduation.

MEDICAL STAFF

- General Surgery	-	2
- General Medicine	-	2
- Obstetrics & Gynaecology	-	2
- ENT	-	2
- Paediatrics	-	2
- Anaesthesia	-	2
- Orthopaedics	-	2
- Pharmacologist	-	1
- Radiologist	-	1
- G. DMO	-	1
- Community Medicine	-	1
- Hospital Administration	-	1

NURSING STAFF

- Matron	-	1
- Sister in-charge	-	6
- O. T. Nurses	-	6
- General Nurses	-	20
- Labour Room Nurses	-	4

HEALTH STAFF

- Female Health Assistant	-	1
- Extension Educator	-	1
Paramedical Staff		
- Lab Technician/Blood Bank Tech.	-	4
- ECG Technician	-	1
- Pharmacist	-	4
- Sr. Radiographer	-	1
- CSSD	-	2
- Medical Records	-	1

ENGINEERING STAFF

- Civil	-	2
- Mechanical	-	2
- Electrical	-	2
- Engineering aid	-	4

OTHER STAFF

- Drivers	-	2
- Carpenter	-	1
- Cooks	-	2
- Barber	-	1
- Class IV including chowkidars	-	55

ADMINISTRAIVE STAFF

- Office Superintendent	-	1

- Head Clerk - 1
- Cashier - 1
- Stenographer - 1
- U.D.C. - 2
- L.D.C. - 4

Satellite Dental Clinics:
All the dental colleges are encouraged to establish atleast on–to-two satellite centres with all the infrastructural facilities within 50 kms distance to train and expose students in community oral health care programmes.

Dental Hospital:
The following are the clinical departments in a Dental College.
1. Oral Medicine and Radiology
2. Oral Pathology and Oral Microbiology
3. Public Health Dentistry.
4. Paediatric and Preventive Dentistry
5. Orthodontics & Dental orthopaedics
6. Periodontology
7. Conservative Dentistry and Endodontics.
8. Oral & Maxillofacial Surgery.
9. Prosthodontics and Crown & Bridge

Out patients:
Since dentistry is a clinical oriented speciality, the Council desires that all the institutions make efforts to have adequate clinical material for satisfactory training of undergraduate students. There shall be atleast 75 to 100 new patients on an average each day in colleges with 50 admissions and 100 – 150 new patients in colleges with 100 admissions.

Each of the clinical departments should have the following functional areas –

50 ADMISSIONS:
(a) Reception and waiting room – 200 sq.ft.
(b) Undergraduate clinic adequate to accommodate the prescribed number of dental chairs and units.
(c) Sterilisation room (where central sterilisation facilities are not provided) – 150 sq.ft.
(d) Small department stores – 100 sq.ft.
(e) Seminar room – 200 sq.ft.

Staff rooms :
1. H.O.Ds room - 180 sq.ft.
2. Readers' room - 150 sq.ft.
3. Lecturers' room - 250 sq.ft.

Note: Departments having postgraduate training should provide additional functional requirements as per MDS regulations.

Main reception and dental rec ords section: 800 sq.ft.

100 ADMISSIONS:
(a) Reception and waiting room – 300 sq.ft.
(b) Undergraduate clinic adequate to accommodate the prescribed number of dental chairs and units.
(c) Sterilisation room (where central sterilisation facilities are not provided)– 200 sq.ft.
(d) Small department stores – 100 sq.ft.
(e) Seminar room – 400 sq.ft.

Staff rooms:
1. H.O.Ds room - 180 sq.ft.
2. Readers' room - 150 sq.ft.
3. Lecturers' room - 300 sq.ft

Note: Departments having postgraduate training should provide additional functional requirements as per MDS regulations.

Main reception and dental records section: 1500 sq.ft.
There should be adequate area for patients reception, waiting, registration, record storage records etc.

Requirement of dental chairs and units:
For 50 admissions – 100
For 100 admissions – 200

Note: Requirement of Dental Chairs for 1st and 2nd BDS will be as per DCI (Establishment of New Dental Colleges, Opening of New or Higher Course of Study or Training and Increase of Admission Capacity in Dental Colleges) Regulations, 2006.

Distribution of dental chairs and units in various departments (Specification is mentioned in the DCI Regulations 2006):

Department	50 admissions	100 admissions
Oral Medicine & Radiology	06	12
Oral Pathology & Oral Microbiology	01	02
Public Health Dentistry	08	16
Paediatrics and Preventive Dentistry	10	20
Orthodontics	09	18
Periodontology	17	34
Conservative Dentistry and Endodontics	17	34
Oral & Maxillofacial Surgery	15	30
Prosthodontics and Crown & Bridge	17	34
	100	200

Total approximate area for U.G. clinics (50 admissions) – 12,500 sq.ft.
Total approximate area for U.G. clinics (100 admissions) – 25,000 sq.ft

EQUIPMENT REQUIREMENTS

Department : ORAL MEDICINE AND RADIOLOGY

NAME	SPECIFICATION	QUANTITY 50 Admns.	QUANTITY 100 Admns.
	(Space allocation for each Dental chair 100 Sq Ft in all the Departments)		
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, Air Ventury Suction, X-Ray viewer, 3 way syringe, instrument tray, Dental Operator's Stool with height adjustment.	6	12
Panoramic X-Ray with Cephalometric	Preferably digital	1	1
Intra Oral X-ray Unit	70 KV , 8mA, high frequency preferably Digital timer	2	3
Pulp testers	Digital	2	3
Automatic periapical X-ray Developer		1	1
Automatic Panoramic with Cephalometric X-ray Developer		1	1
X-ray viewer	For Panoramic and Cephalometric films	2	2
Radiovisiography	Digital Intra X-ray System with one Sensor and Software	1	1
General X-ray Unit		1	1
Ortho Pantmograph	Preferably digital	1	1
Automatic Developers/*Dark Room*		1	2
Lead aprons		2	2

Lead Gloves		1	1
X-ray Hangers		6	6
X-ray Viewers		2	2
Diagnostic Kits	Mouth mirror, dental probe, college tweezers	20	40
Lead Screen		*1*	*1*
Biopsy Kit		*1*	*1*
Autoclave	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters	1	2
Computers	Minimum Pentium –IV	1	1
Intra Oral Camera	With High resolution	1	1
Needle Burner with Syringe Cutter		2	2

Department : ORAL PATHOLOGY AND ORAL MICROBIOLOGY

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	With shadowless lamp, spittoon, 3 way syringe, instrument tray and suction	1	2
Microscopes		20	40
Microtome		1	1
Wax bath		1	1
Water bath		1	1
Knife sharpner		1	1
Hot plate		1	1
Spencer knife		1	1

Department : PUBLIC HEALTH DENTISTRY

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, Air ventury suction, micromotor control light cure 3 way syringe, X-ray viewer, instrument tray Dental Operators stool with height adjustment With shadowless lamp, spittoon, 3 way syringe, instrument tray and suction, micromotor, airotor, light cure	8	16
Autoclaves	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres.	1	2
Ultrasonic cleaner	Minimum capacity 13 litres with mesh bucket with digital timer	1	2
Needle burner with syringe cutter		2	4
MOBILE CLINIC			
Mobile dental van	Mobile dental van with two dental chairs with all the attachments and adequate sitting space for 15 to 20 people		
Dental chair with unit	Hydraulically operated with spittoon attachment, halogen light with 2 intensity, air ventury suction, airrotor, micromotor, 3 way-scaler and light cure, x-ray viewer, instrument tray, operating stool.	2	

Autoclaves	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters.	1	1
Intraoral x-ray	Portable, 70 KV, 8mA	1	1
Glass bead sterilisers		1	1
Compressor	1.25HP	1	1
Metal Cabinet	With wash basin	1	1
Portable dental chair	Suitcase unit with airotor, micromotor, scaler and compressor 0.25HP	2	2
Stabiliser	4KV	1	1
Generator	4KV	1	1
Water tank	400ltrs	1	1
Oxygen cylinder		1	1
Public address system		1	1
TV and video cassette player		1	1
Demonstration models			

Department : PAEDIATRIC AND PREVENTIVE DENTISTRY

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, high power motorized evacuation system, Air rotor with miniature, Airrotor HPS, Micro motor with miniature contrangle Hand piece, 3 way syringe, ultrasonic sealer with 3 tips, Light cure unit LED based heat free, X-ray viewer, instrument tray Dental Operator's stool with height adjustment (Pedo chair preferred)	10	20
Autoclaves	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters.	1	2
Ultrasonic cleaner	Minimum capacity 13 liters with mesh bucket with digital timer	1	2
Needle Burner with syringe cutter		2	3
Amalgamator		1	1
Pulp Tester-Digital		1	1
Rubber dam kit for pedo		3	5
Apex locator		1	1
Endo motor	With torque control HPs	1	1
Injectable gutta percha with condensation		1	1
Radiovisiography	Digital intra X-ray system with pedo sensor and software	1	1
Intra Oral Camera	With high resolution	1	1
Scaling instruments		5	10
Restorative instruments		5	10
Extraction forceps		5	10
Intra-oral X-ray		1	1
Automatic Developer		1	1
Computer	Minimum Pentium IV	1	1
PEDO LAB			
Plaster dispenser	One each for plaster and stone plaster	2	2
Model Trimmer	With diamond disc	1	1

Model Trimer	Double disc one diamond and one carborandum disc	1	1
Welder with soldering attachments		1	1
Vibrator		2	2
Lab micro motor	Heavy duty with Hps	2	3
Dental Lathe		1	1
Model Trimmer		1	1
Steam cleaner		1	1
Pressure moulding machine		1	1
Carborandum Disc		1	1
Diamond disc		1	1

Department : ORTHODONTICS

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, Air ventury suction, micromotor control light cure 3 way syringe, X-ray viewer, instrument tray Dental Operators stool with height adjustment	9	18
Unit mount scaler		3	5
Autoclave	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters	1	2
Ultrasonic Cleaner	Minimum capacity 13 liters with mesh bucket with digital timer	1	2
ORTHO LAB			
Plaster dispenser	One each for plaster and stone plaster	2	2
Vibrator		2	2
Model Trimmer		1	2
Micromotor –	heavy duty	2	4
Lathe		1	2
X-ray viewers		2	2
OPG with cephalostat	If available in radiology its is adequate.	1	1
Welders		2	4
Blue Torch		1	1
Base Formers		2	4
Typodont		2	4
Set of Pliers		5	10
Welder with soldering attachments		1	1
Hydro solder		1	1
Typhodont articulator	With metal teeth wax rim of Class I, II, III	3	4
Pressure moulding machine		1	1

Department : PERIODONTOLOGY

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, high power evacuation system, Air ventury suction, X-ray viewer, Airrotor, Micromotor with straight and contrangle Handpiece, With shadowless	17	34

	lamp, spittoon, 3 way syringe, ultrasonic sealer with 3 tips, X-ray viewer, instrument tray dental operator's stool with height adjustment		
	Note: Atleast 25% of the units should have the Airpolisher.		
Scaling instrument sets		5	10
Surgical instrument sets		3	6
Autoclave	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters	2	3
Ultrasonic scaler	Minimum capacity 13 liters with mesh bucket	1	2
Electro surgical cautery		1	1
Needle burner with syringe cutter		4	6
LASER	Soft tissue laser	1	1
Surgical motor with physio dispenser		1	1

Department : CONSERVATIVE DENTISTRY AND ENDODONTICS

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, high power evacuation system, Air ventury suction, X-ray viewer, Airrotor, Micromotor with straight and contrangle Handpiece, With shadowless lamp, spittoon, 3 way syringe, ultrasonic sealer with 3 tips, X-ray viewer, instrument tray dental operator's stool with height adjustment	17	34
Rubber dam kits		4	6
Restorative instruments kits		5	10
R.C.T. instrument kits		5	10
Autoclaves	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters	2	3
Ultrasonic cleaner	Minimum capacity 13 liters with mesh bucket	1	2
Needle burner with syringe cutter		3	4
Amalgamator	With auto proportion, auto dispenser	2	3
Rubber dam kits		4	6
Pulp Tester-Digital		2	4
Apex Locator		1	2
Glass bead sterilizers		4	6
Plaster dispensers		2	2
Vibrator		1	2
Ceramic Unit		1	1
Casting machine		1	1
Intra-oral X-ray Unit	Proper radiation safety	1	1
Automatic Developer		1	1
Radiovisiography	RVG with Computer	1	1
Endo motor	With torque control Hps	1	1
Bleaching unit		1	1

Magnification loops		1	2
Injectable gutta percha		1	2
PHANTOM LAB UNIT	Phantom Table fitted with Halogen Operating Light Phantom Head body type neck joint for all the movement, TMJ movement. Modular with Air rotor, Micro motor with contra angle Hps, 3-way syringe, jaw with ivorine teeth, preferably soft gingival, dental operator's stool (not to use extracted or cadaver teeth).	30	60

CHEMICAL LABORATORY

Plaster Dispenser	One each for plaster and stone plaster	2	2
Model Trimmer	Carborandum disc	1	1
	Diamond disc	1	1
Lathe	Heavy Duty	1	2
Lab Micromotor	With heavy duty handpiece	2	3
Ultrasonic cleaner	Minimum capacity 5 litres	1	1
Spindle Grinder		1	1
Vibrator		1	2
Burnout furnace		1	1
Porcelain furnace		1	1
Sandblasting Machine		1	1
Lab Airotor		1	1
Pindex System		1	1
Circular saw		1	1
Vacuum mixer		1	1
Pneumatic chisel		1	1
Casting machine	Motor cast/induction casting preferred	1	1

Department : ORAL & MAXILLOFACIAL SURGERY

A) EXODONTIA

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, Air ventury suction, X-ray viewer, 3 way syringe, instrument tray Dental Operator's stool and height adjustment and suction, Micromotor/ Airotor	15	30
Autoclaves	Front loading having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres	2	2
Ultrasonic Cleaner	Minimum capacity 13 litres with mesh bucket	1	2
Needle burner with syringe cutter		4	6
Extraction forceps sets	Complete set	10	20
Dental elevators	Complete set	5	10
Minor Oral surgery kits		3	6
Emergency drugs tray		1	1
Oxygen cylinder with mask		1	1
X-ray viewers		2	2
Computer	Minimum Pentium IV	1	1

B) MINOR SURGERY

Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, high power evacuation system, Air ventury suction, X-ray viewer, Airrotor, Micromotor with straight and contra-angle Handpiece, 3- way syringe, instrument tray Dental Operator's stool and height adjustment and suction.	3	5

Department : PROSTHODONTICS AND CROWN & BRIDGE

NAME	SPECIFICATION	QUANTITY 50 Admns.	100 Admns.
Dental Chairs and Units	Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, high power evacuation system, Air ventury suction, X-ray viewer, Airotor, Micromotor with straight and contrangle Handpiece, 3 way syringe, ultrasonic sealer with 3 tips, Light cure unit, instrument tray and suction, Dental operator stool with height adjustment	17	34
Semi- adjustable articulator	With face bow	2	2
Extra -oral/intra oral tracer		2	2
Dewaxing unit		1	2
Curing unit		1	2
Dental casting machine		1	1
Wax burnout furnace		1	1
Pre heating furnace		1	1
Surveying unit		1	2
Heavy duty hand piece	Lab micromotors	3	4
Autoclave	Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres	1	2
Needle burner with syringe cutter		1	2
Plaster Dispenser	One each for plaster and stone plaster	2	2
Model Trimmer with Carborandum Disc		1	1
Model Trimmer with Diamond Disc		1	2
Acryliser		2	3
Lathe		1	2
Flask press		4	4
Deflasking unit		4	4
Dewaxing unit		2	3
Hydraulic Press		2	3
Mechanical Press		1	2
Vacuum mixing machine		1	1
Lab Micro motor	With heavy duty handpiece	3	4
Curing pressure pot		1	1

Porcelain furnace		1	2
Vibrator		1	2
Sand blasting unit		2	2
Ultrasonic cleaner		1	2
Model Trimmer		2	4
Hot water steriliser		1	2
Geyser	Compound bath	1	2
H.P. grinder with suction		2	3
Heavy duty lathe		2	2
Phantom heads		50	50
Pre-clinical working tables	Gas connection & bunsen burner	50	100

CERAMIC AND CAST PARTIAL LABORATORY

NAME	SPECIFICATIONS	50 ADMN	100 ADMN
Plaster Dispensor	One each for plaster and stone plaster	2	2
Duplicator		1	1
Pindex System		1	1
Circular saw		1	1
Burn out furnace		1	1
Sandblasting machine	With two containers	1	1
Electro-polisher		1	1
Model Trimmer with Carborundum disc		1	1
Model Trimmer with Diamond disc		1	1
Induction casting machine		1	1
Programmable porcelain furnace with vacuum pump with instrument kit and material kit		1	1
Spot welder with soldering, attachment of cable		1	1
Vacuum mixing machine		1	1
Steam Cleaner		1	1
Spindle Grinder 24,000 RPM with vacuum suction		1	1
Wax heater		1	1
Wax carver		1	1
Curing pressure pot		1	1
Milling machine		1	1
Heavy duty lathe with suction		1	1
Preheating furnace		1	1
Palatal trimmer		1	1
Ultrasonic cleaner	5 litres capacity	1	1
Composite curing unit		1	1
Micro surveyor		1	1
PRE-CLINICAL PROSTHETIC LABORATORY	Work table preferably complete stainless steel fitted with light, Bunsen burner, air blower, working stool.	30	60
	Adequate number of lab micro motor with attached hand piece	10	20
PLASTER ROOM FOR PRE-CLINICAL WORK			
Plaster dispenser	One each for plaster and stone	2	2
Vibrator		2	2
Lathe		2	2

Model Trimmer		1	1
Carborandum Disc		1	1
Diamond disc		1	1

MINIMUM BASIC QUALIFICATION AND TEACHING EXPERIENCE REQUIRED FOR TEACHERS FOR UNDER-GRADUATE DENTAL STUDIES.

(A) Dental Staff

Principal/Dean: Same qualifications as prescribed for a Professor. Experience as Professor for not less than 5 years in a Dental Institution.

Professors: A BDS Degree of an Indian University or an equivalent qualification with Post-graduate qualification /Diplomate of National Board in the subject and with 5 years teaching experience as Reader.

Readers: A BDS Degree of an Indian University or an equivalent qualification with Post-graduate qualification /Diplomate of National Board in the subject and with 4 year's teaching experience after post-graduation.

Lecturers: A recognised MDS Degree of an Indian University/Diplomate of National Board or an equivalent qualification.

Tutors A recognised BDS Degree of Indian University or an equivalent qualification with at least one year experience.

Note:
In case of individuals with discrepancy between teaching experience and the post-graduate qualification, a reference may be made to the Dental Council of India through competent authority for consideration. This is not applicable for future entrants.

(B) Medical Staff The requirement of medical teaching staff is to be as per DCI Regulations 2006

Qualification and Teaching Experience of the medical teaching staff will be as per MCI Regulations.

MINIMUM STAFFING PATTERN FOR UNDER GRADUATE DENTAL STUDIES FOR 50 ADMISSIONS
(As per DCI Regulations 2006)

Principal/Dean: - **1 (One post of Professor can be deleted in the under mentioned tabulation according to the subject of specialisation)**
Each Dental Department should be headed by a Professor.

	I Year			II Year			III Year			Total Posts in position from the beginning of 3rd year onwards		
	Prof.	Reader	Lecturer/ Tutor	Prof.	Reader	Lecturer/ Tutor	Prof.	Reader	Lecturer/ Tutor	Prof.	Reader	Lecturer/ Tutor
	2*	2	10	3*	4	20	6*	11	30	6	11	30#
Prosthodontics and Crown & Bridge	1	1	-	1	2	-	1	2	-	1	2	-
Oral Pathology and Oal Microbiology	-	-	-		1	-	1	1	-	1	1	-
Conservative Dentistry and Endodontics	-	1	-	1	1	-	1	2	-	1	2	-
Oral & Maxillofacial Surgery	-	-	-	-	-	-	1	1	-	1	1	-
Periodontology	-	-	-	-	-	-	1	1	-	1	1	-
Orthodontics	-	-	-	-	-	-	1	1	-	1	1	-
Paediatric & Preventive Dentistry	-	-	-	-	-	-	-	1	-	-	1	-
Oral Medicine & Radiology	-	-	-	-	-	-	-	1	-	-	1	-
Public Health Dentistry	-	-	-	-	-	-	-	1	-	-	1	-
Dental Materials	-	-	-	-	-	-	-	-	-	-	-	-
Dental Anatomy, Embryology & Oral Histology	-	-	-	-	-	-	-	-	-	-	-	-

* Includes the Principal who can head any one of the six specialities.
# 25% MDS and 75% BDS.

MINIMUM STAFFING PATTERN FOR UNDER GRADUATE DENTAL STUDIES FOR 100 ADMISSIONS
(As per DCI Regulations 2006)

Each Dental Department should be headed by a Professor

	I Year			II Year			III Year			Total Posts in position from the beginning of 3rd year onwards		
	Prof.	Reader	Lecturer/ Tutor	Prof.	Reader	Lecturer/ Tutor	Prof.	Reader	Lecturer/ Tutor	Prof.	Reader	Lecturer/ Tutor
	2*	3	16	4*	5	30	6*	13	40	6*	13	40#
Prosthodontics and Crown & Bridge	1	2	-	1	2	-	1	2	-	1	2	-
Oral Pathology and Oral Microbiology	-	-	-	1	1	-	1	1	-	1	1	-
Conservative Dentistry and Endodontics	-	1	-	1	2	-	1	2	-	1	2	-
Oral & Maxillofacial Surgery	-	-	-	-	-	-	1	2	-	1	2	-
Periodontology	-	-	-	-	-	-	1	2	-	1	2	-
Orthodontics	-	-	-	-	-	-	1	1	-	1	1	-
Paediatric & Preventive Dentistry	-	-	-	-	-	-	-	1	-	-	1	-
Oral Medicine & Radiology	-	-	-	-	-	-	-	1	-	-	1	-
Public Health Dentistry	-	-	-	-	-	-	-	1	-	-	1	-
Dental Materials	-	-	-	-	-	-	-	-	-	-	-	-
Dental Anatomy, Embryology & Oral Histology	-	-	-	-	-	-	-	-	-	-	-	-

* Includes the Principal who can head any one of the six specialities.
# 25% MDS and 75% BDS

Medical Teaching Staff in a Dental College
(As per DCI Regulations 2006)

Year	Subjects	Intake and Designation					
		50 Admissions			100 Admissions		
		Prof	Reader	Lecturer	Prof	Reader	Lecturer
I	Anatomy	-	1	2	-	1	4
I	Physiology	-	1	2	-	1	2
I	Biochemistry	-	1	2	-	1	2
II	Pharmacology	-	1	2	-	1	3
II	General Pathology	-	1	2	-	1	2
II	Microbiology	-	1	2	-	1	2
III	General Medicine	-	1	2	-	1	3
III	General Surgery	-	1	2	-	1	3
III	Anaesthesia	-	1	1	-	1	1

OTHER STAFF PATTERN FOR 50 ADMISSIONS

Administrative Officer 1
Secretary to Dean 1
Public Relation officer 1

Designation	Receptionist	Establishment	Accounts	Admissions	Exams	Stores	Library	Maintenance	Security	Illustration	Clinical Depts.	Computer	Laboratories	Sports	Total
Managers/ Office Suptd.		1	1						1			1			4
Assistants		1	1	1	1	1	2	1							8
Receptionist	8														8
Librarian							1								1
D.S.A.(Chair side Attendant)											10				10
Dent. Tech. (Dental Mechanic)											6				6
Dent. Hygst.											3				3
Radiographer											2				2
Photographer										1					1
Artist										1					1
Programmer												1			1
Data Entry Operators												1			1
Physical Director														1	1
Engineer								1							1
Electricians								2							2
Plumber								1							1
Carpenter								1							1
Mason								1							1

A.C. Tech.								1							1
Helpers Electrical								1							1
Sweepers & Scavengers							2	2			3		3		10
Attenders	2	1	1		1	1	1	2			4	1	4		18
Security Personal									5						5
Dept. Secretaries											4				4
Driver									4						4
Nurses											3				3
Lab. Technicians													3		3

Note:
The above staff pattern indicates minimum requirements for the stipulated admissions. However, the actual staff requirements may marginally vary depending upon the patients' flow, work culture and design of the building.

OTHER STAFF PATTERN FOR 100 ADMISSIONS

Administrative Officer 1
Secretary to Dean 1
Public Relation officer 1

Designation	Receptionist	Establishment	Accounts	Admissions	Exams	Stores	Library	Maintenance	Security	Illustration	Clinical Depts.	Computer	Laboratories	Sports	Total
Managers / Office Supdt.	1	1	1		1	1			1			1			7
Assistants		2	2	2	1	1	4	1							13
Receptionist	14														14
Librarian							1								1
D.S.A.(Chair side Attendant)											20				20
Dent. Tech.(Dental Mechanic)											10				10
Dent. Hygst.											5				5
Radiographer											3				3
Photographer										1					1
Artist										1					1
Programmer												1			1
Data Entry Operators												2			2
Physical Director														1	1
Engineer								1							1
Electricians								4							4
Plumber								2							2
Carpenter								1							1
Mason								1							1
A.C. Tech.								1							1
Helpers Electrical								3							3
Sweepers & Scavangers							2	4			5		6		17
Attenders	3	1	1		1	2	2	3			5	1	6		25
Security Personal									6						6

Dept. Secretaries											8				8
Driver									5						5
Nurses											9				9
Lab. Technicians													5		5

Note:
The above staff pattern indicates minimum requirements for the stipulated admissions. However, the actual staff requirements may marginally vary depending upon the patients' flow, work culture and design of the building.

SYLLABUS OF STUDY

1. HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY & MEDICAL GENETICS

A) GOAL

The students should gain the knowledge and insight into the functional anatomy of the normal human head and neck, functional histology and an appreciation of the genetic basis of inheritance and disease, and the embryological development of clinically important structures, so that relevant anatomical & scientific foundations are laid down for the clinical years of the BDS course.

B) OBJECTIVES :

a) KNOWLEDGE & UNDERSTANDING:

At the end of the 1st year BDS course in Anatomical Sciences the undergraduate student is expected to:

1. Know the normal disposition of the structures in the body while clinically examining a patient and while conducting clinical procedures.
2. Know the anatomical basis of disease and injury.
3. Know the microscopic structure of the various tissues, a pre-requisite for understanding of the disease processes.
4. Know the nervous system to locate the site of lesions according to the sensory and or motor deficits encountered.
5. Have an idea about the basis of abnormal development, critical stages of development, effects of teratogens, genetic mutations and environmental hazards.
6. Know the sectional anatomy of head neck and brain to read the features in radiographs and pictures taken by modern imaging techniques.
7. Know the anatomy of cardio-pulmonary resuscitation.

b) SKILLS

1. To locate various structures of the body and to mark the topography of the living anatomy.
2. To identify various tissues under microscope.
3. To identify the features in radiographs and modern imaging techniques.
4. To detect various congenital abnormalities.

C) INTEGRATION

By emphasising on the relevant information and avoiding unwanted details, the anatomy taught integrally with other basic sciences & clinical subjects not only keeps alive in the learner curious but also lays down the scientific foundation for making a better doctor, a benefit to the society.

This insight is gained in a variety of ways:

1) Lectures & small group teaching
2) Demonstrations
3) Dissection of the human cadaver
4) Study of dissected specimens
5) Osteology
6) Surface anatomy on living individual
7) Study of radiographs & other modern imaging techniques.

8) Study of Histology slides.
9) Study of embryology models
10) Audio-visual aids

Throughout the course, particular emphasis is placed on the functional correlation, clinical application & on integration with teaching in other bio dental disciplines.

D) AN OUTLINE OF THE COURSE CONTENT:

1. General anatomy: Introduction of anatomical terms and brief outline of various systems of the body.
2. Regional anatomy of head & neck with osteology of bones of head & neck, with emphasis on topics of dental importance.
3. General disposition of thoracic, abdominal & pelvic organs.
4. The regional anatomy of the sites of intramuscular & intra vascular injections, & lumbar puncture.
5. General embryology & systemic embryology with respect to development of head & neck.
6. Histology of basic tissues and of the organs of gastroinstenstinal, respiratory, Endocrine, excretory systems & gonads.
7. Medical genetics.

E) FURTHER DETAILS OF THE COURSE.

I. INTRODUCTION TO :

1. Anatomical terms.
2. Skin, superficial fascia & deep fascia
3. Cardiovascular system, portal system collateral circulation and arteries.
4. Lymphatic system, regional lymph nodes
5. Osteology - Including ossification & growth of bones
6. Myology – Including types of muscle tissue & innervation.
7. Syndesmology – Including classification of Joints.
8. Nervous system

II. HEAD & NECK:

01. Scalp, face & temple, lacrimal apparatus 02. Neck - Deep fascia of neck, posterior triangle, suboccipital triangle, anterior triangle, anterior median region of the neck, deep structures in the neck. 03.Cranial cavity - Meninges, parts of brain, ventricles of brain, dural venous sinuses, cranial nerves attached to the brain, pituitary gland. 04. Cranial nerves - III, IV, V, VI, VII, IX,XII in detail. 05. Orbital cavity – Muscles of the eye ball, supports of the eye ball, nerves and vessels in the orbit. 06. Parotid gland. 07. Temporo mandibular joint, muscles of mastication, infratemporal fossa, pterygo - palatine fossa. 08. Submandibular region 09. Walls of the nasal cavity, paranasal air sinuses 10. Palate 11. Oral cavity, Tongue 12. Pharynx (palatine tonsil and the auditory tube) Larynx. OSTEOLOGY – Foetal skull, adult skull, individual bones of the skull, hyoid bone and cervical vertebrae

III.THORAX : Demonstration on a dissected specimen of

1. Thoracic wall
2. Heart chambers
3. Coronary arteries
4. Pericardium
5. Lungs – surfaces ; pleural cavity
6. Diaphragm

IV. ABDOMEN : Demonstration on a dissected specimen of

1. Peritoneal cavity
2. Organs in the abdominal & pelvic cavity.

V. CLINICAL PROCEDURES :

a) Intramuscular injections: Demonstration on a dissected specimen and on a living person of the following sites of injection.
   1. Deltoid muscle and its relation to the axillary nerve and radial nerve.
   2. Gluteal region and the relation of the sciatic nerve.

3. Vastus lateralis muscle.

b) Intravenous injections & venesection: Demonstration of veins in the dissected specimen and on a living person.

1. Median cubital vein 2. Cephalic vein 3. Basilic vein 4. Long saphenous vein

c) Arterial pulsations: Demonstration of arteries on a dissected specimen and feeling of pulsation of the following arteries on a living person.

1. Superficial temporal 2. Facial 3. Carotid 4. Axillary 5. Brachial 6. Radial 7. Ulnar 8. Femoral 9. Popliteal 10. Dorsalispedis

d) Lumbar puncture: Demonstration on a dissected specimen of the spinal cord, cauda equina & epidural space and the inter vertebral space between L4 & L5 .

VI. EMBRYOLOGY :

Oogenesis, Spermatogenesis, Fertilisation, Placenta, Primitive streak, Neural crest, Bilaminar and trilaminar embryonic disc, Intra embryonic mesoderm - formation and fate, notochord formation & fate, Pharyngeal arches, pouches & clefts, Development of face, tongue, palate, thyroid gland, pituitary gland, salivary glands, and anomalies in their development, tooth development in brief.

VII. HISTOLOGY :

The Cell :

Basic tissues - Epithelium, Connective tissue including cartilage and bone, Muscle Tissue, Nervous tissue : Peripheral nerve, optic nerve, sensory ganglion, motor ganglion, Skin

Classification of Glands

Salivary glands (serous, mucous and mixed gland), Blood vessels, Lymphoid tissue Tooth, lip, tongue, hard palate, oesphagus, stomach, ,duodenum ,ileum, colon, vermiform appendix Liver, Pancreas, Lung, Trachea ,Epiglottis, Thyroid gland , para thyroid gland , supra renal gland and pituitary gland, Kidney, Ureter, Urninary bladder, Ovary and testis.

VIII. MEDICAL GENETICS :

Mitosis, meiosis, Chromosomes, gene structure, Mendelism, modes of inheritance

RECOMMENDED BOOKS:

1. SNELL (Richard S.) Clinical Anatomy for Medical Students, Ed. 5, Llittle Brown & company, Boston.
2. RJ LAST'S Anatomy – McMinn, 9th edition.
3. ROMANES(G.J.) Cunningham Manual of Practical Anatomy : Head & Neck & Brain Ed.15.Vol.III, Oxford Medical publication.
4. WHEATER,BURKITT & DANIELS, Functional Histology, Ed. 2, Churchill Livingstone.
5. SADLER , LANGMAN'S, Medical Embryology, Ed. 6.
6. JAMES E ANDERSON, Grant's Atlas of Anatomy. Williams & Wilkins.
7. WILLIAMS, Gray's Anatomy, Ed.38. ,Churchill Livingstone.
8. EMERY,Medical Genetics.

2. HUMAN PHYSIOLOGY

A) GOAL

The broad goal of teaching undergraduate students Human Physiology is to provide the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease.

OBJECTIVES

a) KNOWLEDGE

At the end of the course, the student will be able to:

1. Explain the normal functioning of all the organ systems and their interactions for well co-ordinated total body function.
2. Assess the relative contribution of each organ system towards the maintenance of the milieu interior.
3. List the physiological principles underlying the pathogenesis and treatment of disease.

b) SKILLS

At the end of the course, the student shall be able to :

1. Conduct experiments designed for the study of physiological phenomena.
2. Interpret experimental and investigative data
3. Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

c) INTEGRATION

At the end of the integrated teaching the student shall acquire an integrated knowledge of organ structure and function and its regulatory mechanisms.

B) COURSE CONTENTS THEORY

1. GENERAL PHYSIOLOGY
   1. Homeostasis: Basic concept, feedback mechanisms
   2. Structure of cell membrane, transport across cell membrane
   3. Membrane potentials

2. BLOOD:

Composition & functions of blood.

Specific gravity, Packed cell volume, factors affecting & methods of determination.

Plasma proteins - Types, concentration, functions & variations.

Erythrocyte - Morphology, functions & variations. Erythropoiesis & factors affecting erythropoiesis.

ESR- Methods of estimation, factors affecting, variations & significance.

Haemoglobin - Normal concentration, method of determination & variation in concentration.

Blood Indices - MCV, MCH, MCHC - definition, normal values, variation.

Anaemia - Definition, classification, life span of RBC's destruction of RBC's , formation & fate of bile pigments, Jaundice - types.

Leucocytes : Classification, number, percentage, distribution morphology, properties, functions & variation. Role of lymphocytes in immunity , leucopoiesis life span & fate of leucocytes.

Thromobocytes - Morphology, , number, variations, function & thrombopoiesis.

Haemostatsis - Role of vasoconstriction, platelet plug formation in haemostasis, coagulation factors, intrinsic & extrinsic pathways of coagulation, clot retraction.

Tests of haemostatic function, platelet count, clotting time, bleeding time, prothrombin time - normal values, method & variations. Anticoagulants - mechanism of action. Bleeding disorders.

Blood groups: ABO & Rh system, method of determination, importance,indications & dangers of blood transfusion, blood substitutes.

Blood volume: Normal values, variations.

Body fluids : distribution of total body water, intracellular & extracellular compartments, major anions & cations in intra and extra cellular fluid.

Tissue fluids & lymph : Formation of tissue fluid, composition, circulation & functions of lymph. Oedema - causes.

Functions of reticulo endotrelial system.

3. MUSCLE AND NERVE

Classification of nerves, structure of skeletal muscle - Molecular mechanism of muscle contraction, neuromuscular transmission. Properties of skeletal muscle. Structure and properties of cardiac muscle & smooth muscle.

4. DIGESTIVE SYSTEM :

Introduction to digestion : General structure of G.I. tract, Innervation.

Salivary glands: Structure of salivary glands, composition , regulation of secretion & functions of saliva.

Stomach: Composition and functions of gastric juice, mechanism and regulation of gastric secretion.

Exocrine Pancreas - Structure, composition of pancreatic juice, functions of each component, regulation of pancreatic secretion.

Liver : structure , composition of bile, functions of bile, regulation of secretion –

Gall bladder : structure, functions.

Small intestine - Composition, functions & regulation of secretion of intestinal juice.
Large intestine - Functions.
Motor functions of GIT: Mastication, deglutition, gastric filling & emptying, movements of small and large intestine, defecation.

5. EXCRETORY SYSTEM :
Structure & functions of kidney, functional unit of kidney & functions of different parts.
Juxta glomerular apparatus, renal blood flow.
Formation of Urine : Glomerular filteration rate - definition, determination , normal values, factors influencing G.F.R. Tubular reabsorption - Reabsorption of sodium, glucose, water & other substances. Tubular secretion - secretion of urea, hydrogen and other substances.
Mechanism of concentration & dilution of urine.
Role of kidney in the regulation of pH of the blood.
Micturition : anatomy & innervation of Urinary bladder, mechanism of miturition & abonrmalities.

6. BODY TEMPERATURE & FUNCTIONS OF SKIN

7. ENDOCRINOLOGY
General endocrinology - Enumeration of endocrine glands & hormones - General functions of endocrine system, chemistry, mechanism of secretion, transport, metabolism, regulation of secretion of hormones.
Hormones of anterior pituitary & their actions, hypothamic regulation of anterior pituitary function. Disorders of secretion of anterior pituitary hormones.
Posterior pituitary : Functions, regulation & disorders of secretion.
Thyroid: Histology, synthesis, secretion & transport of hormones, actions of hormones, regulation of secretion & disorders, Thyroid function tests.
Adrenal cortex & Medulla -synthesis, secretion, action, metabolism, regulation of secretion of hormones & disorders.
Other hormones - Angiotensin, A.N.F.

8. REPRODUCTION
Sex differentiation, Physiological anatomy of male and female sex organs,
Female reproductive system : Menstrual cycle, functions of ovary, actions of oestrogen & Progesterone, control of secretion of ovarian hormones, tests for ovulation, fertilisation, implantation, maternal changes during pregnancy, pregnancy tests & parturition.
Lactation, composition of milk, factors controlling lactation, milk ejection, reflex, Male reproductive system :spermatogenesis, semen and contraception.

9. CARDIO VASCULAR SYSTEM
Functional anatomy and innervation of heart Properties of cardiac muscle
Origin & propagation of cardiac impulse and heart block.
Electrocardiogram - Normal electrocardiogram. Two changes in ECG in myocardial infarction.
Cardiac cycle - Phases, Pressure changes in atria, ventricles & aorta.
Volume changes in ventricles. Jugular venous pulse, arterial pulse.
Heart sounds: Mention of murmurs.
Heart rate: Normal value, variation & regulation.
Cardiac output: Definition, normal values, one method of determination, variation, factors affecting heart rate and stroke volume.
Arterial blood pressure: Definition, normal values & variations,determinants, regulation & measurement of blood pressure.
Coronary circulation.
Cardio vascular homeostasis - Exercise & posture.

10. RESPIRATORY SYSTEM
Physiology of Respiration : External & internal respiration.
Functional anatomy of respiratory passage & lungs.
Respiratory movements: Muscles of respiration, Mechanism of inflation & deflation of lungs.
Intra pleural & intra pulmonary pressures & their changes during the phases of respiration.
Mechanics of breathing - surfactant, compliance & work of breathing.

Spirometry: Lung volumes & capacities definition, normal values, significance, factors affecting vital capacity, variations in vital capacity, FEV & its variations.
Pulmonary ventilation - alveolar ventilation & dead space – ventilation.
Composition of inspired air, alveolar air and expired air.
Exchange of gases: Diffusing capacity, factors affecting it.
Transport of Oxygen & carbon dioxide in the blood.
Regulation of respiration – neural & chemical.
Hypoxia, cyanosis, dyspnoea, periodic breathing.
Artificial respiration, pulmonary function tests.

11. CENTRAL NERVOUS SYSTEM
1. Organisation of central nervous system
2. Neuronal organisation at spinal cord level
3. Synapse receptors, reflexes, sensations and tracts
4. Physiology of pain
5. Functions of cerebellum, thalamus, hypothalamus and cerebral cortex.
6. Formation and functions of CSF
7. Autonomic nervous system

12. SPECIAL SENSES
Fundamental knowledge of vision, hearing, taste and smell.

PRACTICALS
The following list of practical is minimum and essential. All the practical have been categorised as procedures and demonstrations. The procedures are to be performed by the students during practical classes to acquire skills. All the procedures are to be included in the University practical examination. Those categorised as demonstrations are to be shown to the students during practical classes. However these demonstrations would not be included in the University examinations but question based on this would be given in the form of charts, graphs and calculations for interpretation by the students.

PROCEDURES
1. Enumeration of Red Blood Cells
2. Enumeration of White Blood Cells
3. Differential leucocyte counts
4. Determination of Haemoglobin
5. Determination of blood group
6. Determination of bleeding time and clotting time
7. Examination of pulse
8. Recording of blood pressure.

DEMONSTRATION:
1. Determination of packed cell volume and erythrocyte sedimentation rate
2. Determination of specific gravity of blood
3. Determination of erythrocyte fragility
4. Determination of vital capacity and timed vital capacity
5. Skeletal muscle experiments.
   Study of laboratory appliances in experimental physiology. Frog's gastrocneminus sciatic preparation. Simple muscle curve, effects of two successive stimuli, effects of increasing strength of stimuli, effects of temperature, genesis of fatigue and tetanus. Effect of after load and free load on muscle contraction, calculation of work done.
6. Electrocardiography: Demonstration of recording of normal Electro cardiogram
7. Clinical examination of cardiovascular and respiratory system.

TEXT BOOKS:
Guyton; Text book of Physiology, 9th edition.
Ganong; Review of Medical Physiology, 19th edition
Vander; Human physiology, 5th edition
Choudhari; Concise Medical Physiology, 2nd edition
Chaterjee; Human Physiology, 10th edition
A.K. Jain; Human Physiology for BDS students, 1st edition

BOOKS FOR REFERENCE:

i) Berne & Levey; Physiology, 2nd edition
ii) West-Best & Taylor's, Physiological basis of Medical Practise, 11th edition

EXPERIMENTAL PHYSIOLOGY:

i) Rannade; Practical Physiology, 4th edition
ii) Ghai; a text book of practical physiology
iii) Hutchison's; Clinical Methods, 20th edition

BIOCHEMISTRY

AIMS AND SCOPE OF THE COURSE IN BIOCHEMISTRY

The major aim is to provide a sound but crisp knowledge on the biochemical basis of the life processes relevant to the human system and to dental/medical practice. The contents should be organised to build on the already existing information available to the students in the pre-university stage and reorienting. A mere rehash should be avoided.

The chemistry portion should strive towards providing information on the functional groups, hydrophobic and hydrophilic moieties and weak valence forces that organise macromolecules. Details on structure need not be emphasised.

Discussion on metabolic processes should put emphasis on the overall change, interdependence and molecular turnover. While details of the steps may be given, the student should not be expected to memorise them. An introduction to biochemical genetics and molecular biology is a must but details should be avoided. The exposure to antivitamins, antimetabolites and enzyme inhibitors at this stage, will provide a basis for the future study of medical subjects. An overview of metabolic regulation is to be taught by covering hormonal action, second messengers and regulation of enzyme activities. Medical aspects of biochemistry should avoid describing innumerable functional tests, most of which are not in vogue. Cataloguing genetic disorders under each head of metabolism is unnecessary. A few examples which correlate genotype change to functional changes should be adequate.

At the end of the course the student would be able to acquire a useful core of information, which can be retained for a long time. Typical acid tests can be used to determine what is to be taught or what is to be learnt. A few examples are given below.

1. Need not know the structure of cholesterol. Should know why it cannot be carried free in plasma.
2. Mutarotation should not be taught. Student should know why amylase will not hydrolyse cellulose.
3. Need not know the details of alpha - helix and beta - pleats in proteins.
   Should know why haemoglobin is globular and keratin is fibrous.
4. Need not know mechanism of oxidative phosphorylation.
   Should know more than 90 % of ATP is formed by this process.
5. Need not know details of the conversion of pepsinogen to pepsin.
   Should know hydrochloric acid cannot break a peptide bond at room temperature.
6. Need not remember the steps of glycogenesis.
   Should know that excess intake of carbohydrate will not increase glycogen level in liver or muscle.
7. Need not know about urea or cretinine clearance tests.
   Should know the basis of increase of urea and creatinine in blood in renal insufficiency.
8. Need not know the structure of insulin.
   Should know why insulin level in circulation is normal in most cases of maturity onset diabetes.
9. Need not know the structural details of ATP.
   Should know why about 10 g of ATP in the body at any given time meets all the energy needs.
10. Need not know the mechanism of action of prolylhydroxylase.
    Should know why the gum bleeds in scurvy.
11. Need not know the structure of Vitamin K.
    Should know the basis of internal bleeding arising due to its deficiency.

12. Need not remember the structure of HMGCoA.
Should know why it does not lead to increased cholesterol synthesis in starvation.

BIOCHEMISTRY AND NUTRITION

1. CHEMISTRY OF BIOORGANIC MOLECULES

Carbohydrates: Definition, biological importance and classification. Monosaccharides - Isomerism, anomerism. Sugar derivatives, Disaccharides. Polysaccharides. Structures of starch and glycogen.

Lipids : Definition, biological importance and classification. Fats and fatty acids. Introduction to compound lipids. Hydrophobic and hydrophilic groups. Cholesterol. Bile salts. Micelle. Bimolecular leaflet.

Proteins: Biological importance. Aminoacids: Classification. Introduction to peptides. Proteins : Simple and conjugated; globular and fibrous. Charge properties. Buffer action . Introduction to protein conformation . Denaturation.

Nucleic acids: Building units . Nucleotides. Outline structure of DNA and RNA.

High energy compounds: ATP , Phosphorylamidines, Thiolesters, Enol phosphates.

2. MACRONUTERIENTS AND DIGESTION

Energy needs: Basal metabolic rate. Dietary carbohydrates, fibres. Dietary lipids, essential fatty acids. Nitrogen balance. Essential amino acids. Protein quality and requirement (methods for evaluation of protein quality to be excluded). Protein calorie malnutrition. Balanced diet.

Enzymatic hydrolysis of dietary carbohydrates. Mechanism of uptake of monosaccharides. Digestion and absorption of triacylglycerols. Enzymatic hydrolysis of dietary proteins and uptake of amino acids.

3. MICRONUTRIENTS

Vitamins: Definition, classification, daily requirement, sources and deficiency symptoms. Brief account of water-soluble vitamins with biochemical functions. Vitamins A functions including visual process. Vitamin D and its role in calcium metabolism. Vitamin E. Vitamin K and gamma carboxylation. Introduction to antivitamins and hypervitaminosis.

Minerals :Classification, daily requirement. Calcium and phosphate: sources, uptake, excretion, function. Serum calcium regulation. Iron: sources, uptake and transport.

Heme and nonheme iron functions; deficiency. Iodine: Brief introduction to thyroxine synthesis. General functions of thyroxine. Fluoride: function, deficiency and excess. Indications of role of other minerals.

4. ENERGY METABOLISM

Overview: Outlines of glycolysis, pyruvate oxidation and citric acid cycle. Beta oxidation of fatty acids. Electron transport chain and oxidative phosphyorylation. Ketone body formation and utilisation. Introduction to glycogenesis, glycogenolysis, fatty acid synthesis, lipogenesis and lipolysis. Gluconeogenesis. Lactate metabolism . Protein utilisation for energy. Glucogenic and ketogenic amino acids. Integration of metabolism.

5. SPECIAL ASPECTS OF METABOLISM

Importance of pentose phosphate pathway. Formation of glucuronic acid. Outlines of cholesterol synthesis and breakdown. Ammonia metabolism. Urea formation. Phosphocreatine formation. Transmethylation. Amines. Introduction to other functions of amino acids including one carbon transfer. Detoxication : Typical reactions. Examples of toxic compounds. Oxygen toxicity

6. BIOCHEMICAL GENETICS AND PROTEIN SYNTHESIS

Introduction to nucleotides; formation and degradation. DNA as genetic material. Introduction to replication and transcription. Forms and functions of RNA. Genetic code and mutation. Outline of translation process. Antimetabolites and antibiotics interfering in replication, transcription and translation. Introduction to cancer, viruses and oncogenes.

7. ENZYME AND METABOLIC REGULATION

Enzymes: Definition, classification, specificity and active site. Cofactors. Effect of pH, temperature and substrate concentration. Introduction to enzyme inhibitors, proenzymes

and isoenzymes. Introduction to allosteric regulation, covalent modification and regulation by induction/repression.

Overview of hormones. Introduction to second messengers, cyclic AMP, calcium ion, inositol triphosphate. Mechanism of action of steroid hormones, epinephrine, glucagon and insulin in brief. Acid base regulation. Electrolyte balance.

8. STRUCTURAL COMPONENTS AND BLOOD PROTEINS

Connective tissue: Collagen and elastin. Glycosaminoglycans. Bone structure. Structure of membranes. Membrane associated processes in brief. Exocytosis and endocytosis. Introduction to cytoskeleton. Myofibril and muscle contraction in brief.

Haemoglobin: functions. Introduction to heme synthesis and degradation. Plasma proteins: classification and separation. Functions of albumin. A brief account of immunoglobulins. Plasma lipoproteins: Formation, function and turnover.

9. MEDICAL BIOCHEMISTRY

Regulation of blood glucose. Diabetes mellitus and related disorders. Evaluation of glycemic status. Hyperthyroidism and hypothyroidism: Biochemical evaluation. Hyperlipoproteinemias and atherosclerosis, Approaches to treatment. Jaundice: Classification and evaluation. Liver function tests: Plasma protein pattern, serum enzymes levels. Brief introduction to kidney function tests and gastric function tests. Acid base imbalance. Electrolyte imbalance: evaluation. Gout. Examples of genetic disorders including lysosomal storage disorders, glycogen storage disorders, glucose 6- phosphate dehydrogenase deficiency, hemoglobinopathies, inborn errors of amino acid metabolism and muscular dystrophy (one or two examples with biochemical basis will be adequate). Serum enzymes in diagnosis.

PRACTICALS: Contact hours 50

1. Qualitative analysis of carbohydrates	4
2. Colour reactions of proteins and amino acids	4
3. Identification of nonprotein nitrogen substance	4
4. Normal constituents of urine	4
5. Abnormal constituents of urine	4
6. Analysis of saliva including amylase	2
7. Analysis of milk Quantitative estimations	2
8. Titrable acidity and ammonia in urine	2
9. Free and total acidity in gastric juice	2
10. Blood glucose estimation	2
11. Serum total protein estimation	2
12. Urine creatinine estimation Demonstration	2
13. Paper electrophoresis charts/clinical data evaluation	2
14. Glucose tolerance test profiles	2
15. Serum lipid profiles	1
16. Profiles of hypothyrodisim and hyperthyroidisim	1
17. Profiles of hyper and hypoparathyroidism	1
18. Profiles of liver function	1
19. Urea, uric acid creatinine profile in kidney disorders	1
20. Blood gas profile in acidosis/ alkalosis	1

RECOMMEDED BOOKS:

1. Concise text book of Biochemistry (3rd edition) 2001, T.N. Pattabiraman
2. Nutritional Biochemistry 1995, S. Ramakrishnan and S.V. Rao
3. lecture notes in Biochemistry 1984, J.K. Kandlish

Reference books:

1. Text book of Biochemistry with clinical correlations 1997, T.N. Devlin
2. Harper's Biochemistry, 1996., R.K. Murray et.al
3. Basic and applied Dental Biochemistry, 1979, R.A.D. Williams & J.C.Elliot

3. DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY

INTRODUCTION

Dental Anatomy including Embryology and Oral Histology – a composite of basic Dental Sciences & their clinical applications.

SKILLS

The student should acquire basic skills in :

1. Carving of crowns of permanent teeth in wax.
2. Microscopic study of oral tissues.
3. Identification of Deciduous & Permanent teeth.
4. Age estimation by patterns of teeth eruption from plaster casts of different age groups.

OBJECTIVES

After a course on Dental Anatomy including Embryology and Oral Histology,

1. The student is expected to appreciate the normal development, morphology, structure & functions of oral tissues & variations in different pathological/non-pathological states.
2. The student should understand the histological basis of various dental treatment procedures and physiologic ageing process in the dental tissues.
3. The students must know the basic knowledge of various research methodologies.

I. TOOTH MORPHOLOGY

1. Introduction to tooth morphology:
- Human dentition, types of teeth, & functions, Palmer's & Binomial notation systems, tooth surfaces, their junctions - line angles & point angles, definition of terms used in dental morphology, geometric concepts in tooth morphology, contact areas & embrasures - Clinical significance.

2. Morphology of permanent teeth :
- Description of individual teeth, along with their endodontic anatomy & including a note on their chronology of development, differences between similar class of teeth & identification of individual teeth.
- Variations & Anomalies commonly seen in individual teeth.

3. Morphology of Deciduous teeth :
- Generalised differences between Deciduous & Permanent teeth.
- Description of individual deciduous teeth, including their chronology of development, endodontic anatomy, differences between similar class of teeth & identification of individual teeth.

4. Occlusion :
- Definition, factors influencing occlusion - basal bone, arch, individual teeth, external & internal forces & sequence of eruption.
- Inclination of individual teeth - compensatory curves.
- Centric relation & Centric occlusion - protrusive, retrusive & lateral occlusion.
- Clinical significance of normal occlusion.
- Introduction to & Classification of Malocclusion.

II. ORAL EMBRYOLOGY

1. Brief review of development of face, jaws, lip, palate & tongue, with applied aspects.
2. Development of teeth :
- Epithelial mesenchymal interaction, detailed study of different stages of development of crown, root & supporting tissues of tooth & detailed study of formation of calcified tissues.
- Applied aspects of disorders in development of teeth.

3. Eruption of deciduous & Permanent teeth :
- Mechanisms in tooth eruption, different theories & histology of eruption, formation of dentogingival junction, role of gubernacular cord in eruption of permanent teeth.
- Clinical or Applied aspects of disorders of eruption.

4. Shedding of teeth :
- Factors & mechanisms of shedding of deciduous teeth.
- Complications of shedding.

III. ORAL HISTOLOGY

1. Detailed microscopic study of Enamel, Dentine, Cementum & Pulp tissue. Age changes & Applied aspects (Clinical and forensic significance) of histological considerations - Fluoride applications, transparent dentine, dentine hypersensitivity, reaction of pulp tissue to varying insults to exposed dentine ; Pulp calcifications & Hypercementosis.
2. Detailed microscopic study of Periodontal ligament & alveolar bone, age changes, histological changes in periodontal ligament & bone in normal & orthodontic tooth movement, applied aspects of alveolar bone resorption.
3. Detailed microscopic study of Oral Mucosa, variation in structure in relation to functional requirements, mechanisms of keratinisation, clinical parts of gingiva, Dentogingival & Mucocutaneous junctions & lingual papillae. Age changes & clinical considerations.
4. Salivary Glands :

- Detailed microscopic study of acini & ductal system.
- Age changes & clinical considerations.

5. TM Joint :

- Review of basic anatomical aspects & microscopiuc study & clinical considerations.

6. Maxillary Sinus :

- Microscopic study, anatomical variations, functions & clinical relevance of maxillary sinus in dental practice.

7. Processing of Hard & soft tissues for microscopic study :

- Ground sections, decalcified sections & routine staining procedures.

8. Basic histochemical staining patterns of oral tissues.

IV. ORAL PHYSIOLOGY

1. Saliva :

- Composition of saliva - variations, formation of saliva & mechanisms of secretion, salivary reflexes, brief review of secretomotor pathway, functions, role of saliva in dental caries & applied aspects of hyper & hypo salivation.

2. Mastication :

- Masticatory force & its measurement - need for mastication, peculiarities of masticatory muscles, masticatory cycle, masticatory reflexes & neural control of mastication.

3. Deglutition :

- Review of the steps in deglutition, swallowing in infants, neural control of deglutition & dysphagia.

4. Calcium, phosphorous & fluoride metabolism :

- Source, requirements, absorption, distribution, functions & excretion, clinical considerations, hypo & hypercalcemia & hyper & hypo phosphatemia & fluorosis.

5. Theories of Mineralisation :

- Definition, mechanisms, theories & their drawbacks.
- Applied aspects of physiology of mineralisation, pathological considerations - calculus formation.

6. Physiology of Taste :

- Innervation of taste buds & taste pathway, physiologic basis of taste sensation, age changes & applied aspects - taste disorders.

7. Physiology of Speech :

- Review of basic anatomy of larynx & vocal cords.
- Voice production, resonators, production of vowels & different consonants - Role of palate, teeth & tongue.
- Effects of dental prosthesis & appliances on speech & basic speech disorders.

RECOMMENDED TEXT BOOKS

1. Orban's Oral Histology & Embryology - S.N.Bhaskar
2. Oral Development & Histology - James & Avery
3. Wheeler's Dental Anatomy, Physiology & Occlusion - Major.M.Ash
4. Dental Anatomy - its relevance to dentistry - Woelfel & Scheid
5. Applied Physiology of the mouth - Lavelle
6. Physiology & Biochemistry of the mouth - Jenkins

4. GENERAL PATHOLOGY

AIM:
At the end of the course the student should be competent to:
Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry.

OBJECTIVES:
Enabling the student
1. To demonsts and analyze pathological changes at macroscopically and microscopical levels and explain their observations in terms of disease processes.
2. To Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology.
3. To demonstrate understanding of the capabilities and limitations of morphological pathology in its contribution to medicine, dentistry and biological research.
4. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes.

COURSE CONTENT
A. General Pathology –
1. Introduction to Pathology
   Terminologies
   The cell in health
   The normal cell structure
   The cellular functions
2. Aetiology and Pathogenesis of Disease
   Cell Injury
   Types – Congenital
   Acquired
   Mainly Acquired causes of disease
   (Hypoxic injury, chemical injury, physical injury, immunological injury)
3. Degenerations
   Amyloidosis
   Fatty change
   Cloudy swelling
   Hyaline change, mucoid degeneration
4. Cell death & Necrosis
   Apoptasis
   Def, causes, features and types of necrosis
   Gangrene - Dry, wet, gas
   Pathological Calcifications
   (Dystrophic and metastatic)
5. Inflammation
   - Definition, causes types, and features
   - Acute inflammation
   a. The vascular response
   b. The cellular response
   c. Chemical mediators
   d. The inflammatory cells
   e. Fate
   - Chronic inflammation
   Granulomations inflammation
6. Healing
   - Regeneration
   - Repair
   a. Mechanisms
   b. Healing by primary intention
   c. Healing by secondary intention
   d. Fracture healing

e. Factors influencing healing process
f. Complications

7. Tuberculosis
   - Epidemiology
   - Pathogenesis (Formation of tubercle)
   - Pathological features of Primary and secondary TB
   - Complications and Fate
8. Syphilis
   - Epidemiology
   - Types and stages of syphilis
   - Pathological features
   - Diagnostic criterias
   - Oral lesions
9. Typhoid
   - Epidemiology
   - Pathogenesis
   - Pathological features
   - Diagnostic criterias
10. Thrombosis
   - Definition, Pathophysiology
   - Formation, complications & Fate of a thrombus
11. Embolism
   - Definition
   - Types
   - Effects
12. Ischaemia and Infraction
   - Definition, etiology, types
   - Infraction of various organs
13. Derangements of body fluids
   - Oedema – pathogenesis
     Different types
14. Disorders of circulation
   - Hyperaemia
   - Shock
15. Nutritional Disorders
   - Common Vitamin Deficiencies
16. Immunological mechanisms in disease
   - Humoral & cellular immunity
   - Hypersensitivity & autommunity
17. AIDS and Hepatitis.
18. Hypertension
   - Definition, classification
   - Pathophysiology
   - Effects in various organs
19. Diabetes Mellitus
   - Def, Classification, Pathogenesis, Pathology in different organs
20. Adaptive disorders of growth
   - Atrophy & Hypertrophy, Hyperplasia, Metaplasia and Dysplasia
21. General Aspects of neoplasia
   a. Definition, terminology, classification
   b. Differences between benign and malignant neoplasms
   c. The neoplastic cell
   d. Metastasis
   e. Aetiology and pathogenesis of neoplasia, Carcinogenesis
   f. Tumour biology
   g. Oncogenes and anti-oncogenes
   h. Diagnosis
   i. Precancerous lesions

j. Common specific tumours, Squamous papilloma & Carcinoma, Basal cell Carcinoma, Adenoma & Adenoca, Fibroma & Fibrosarcoma, Lipoma and liposarcoma

B. Systemic Pathology –

22 Anaemias
- Iron Deficiency anaemia, Megaloblastic anaemia

23.Leukaemias
- Acute and chronic leukaemias, Diagnosis and clinical features

24. Diseases of Lymph nodes
- Hodgkin's disease, Non Hodgkins lymphoma, Metastatic carcinoma

25. Diseases of oral cavity
- Lichen planus, Stomatitis, Leukoplakia, Squamous cell Carcinoma, Dental caries, Dentigerious cyst, Ameloblastoma

26. Diseases of salivary glands
- Normal structure, Sialadenitis, Tumours

27. Common diseases of Bones
- Osteomyelitis, Metabolic bone diseases, Bone Tumours, Osteosarcoma, Osteocalstoma, Giant cell Tumour, Ewing's sarcoma, Fibrous dysplasia, Aneurysmal bone cyst

28.Diseases of Cardiovascular system
- Cardiac failuare
- Congenital heart disease – ASD, VSD,PDA
  Fallot's Tetrology
- Infective Endocarditis
- Atherosclerosis
- Ischaemic heart Disease

29. Haemorrhagic Disorders
Coagulation cascade
Coagulation disorders
- Platelet funtion
- Platelet disorders

Practicals

1.Urine – Abnormal constitutients
- Sugar, albumin, ketone bodies

2. Urine – Abnormal consittuents
- Blood, bile salts, bile pigments

3. Haemoglobin (Hb) estimation
4. Total WBC count
5. Differential WBC Count
6. Packed cell volume(PCV,) Erythrocyte Sedimentation Rate (ESR)
7. Bleeding Time & Clotting Time
8. Histopathology
Tissue Processing
Staining

9.Histopathology slides
- Acute appendicitis, Granulation tissue, fatty liver

10. Histopathology slides
CVC lung, CVC liver, Kidney amyloidosis

11. Histopathology slides
Tuberculosis, Actionomycosis, Rhinosporidiosis

12. Histopathology slides
Papilloma, Basal cell Ca, Sq cell Ca

13. Histopathology slides
Osteosarcoma, osteoclastoma, fibrosarcoma

14. Histopathology slides
Malignant melanoma, Ameloblastoma, Adenoma

15. Histopathology slides
Mixed parotid tumour, metastatic
carcinoma in lymph node

List of Textbooks

1. Robbins – Pathologic Basis of Disease Cotran, Kumar, Robbins
2. Anderson's Pathology Vol 1 & 2 Editors – Ivan Damjanov & James Linder
3. Wintrobe's clinical Haematolog Lee, Bithell, Foerster, Athens, Lukens

MICROBIOLOGY

AIM:

To introduce the students to the exciting world of microbes. To make the students aware of various branches of microbiology, importance, significance and contribution of each branch to mankind and other fields of medicine. The objectives of teaching microbiology can be achieved by various teaching techniques such as :

a) Lectures
b) Lecture Demonstrations
c) Practical exercises
d) Audio visual aids
e) Small group discussions with regular feedback from the students.

OBJECTIVES:

A. KNOWLEDGE AND UNDERSTANDING

At the end of the Microbiology course the student is expected to :

1. Understand the basics of various branches of microbiology and be able to apply the knowledge relevantly.
2. Apply the knowledge gained in related medical subjects like General Medicine and General Surgery and Dental subjects like Oral Pathology, Community Dentistry, Periodontics, Oral Surgery, Paedodontics, Conservative Dentistry and Oral Medicine in higher classes.
3. Understand and practice various methods of sterilisation and disinfection in dental clinics.
4. Have a sound understanding of various infectious diseases and lesions in the oral cavity.

A. SKILLS

1. Student should have acquired the skill to diagnose and differentiate various oral lesions.
2. Should be able to select, collect and transport clinical specimens to the laboratory.
3. Should be able to carry out proper aseptic procedures in the dental clinic.

A brief syllabus of Microbiology is given as follows:

A. GENERAL MICROBIOLOGY:

1. History, Introduction, Scope, Aims and Objectives.
2. Morphology and Physiology of bacteria.
3. Detail account of Sterlisation and Disinfection.
4. Brief account of Culture media and Culture techniques.
5. Basic knowledge of selection, collection, transport, processing of clinical Specimens and identification of bacteria.
6. Bacterial Genetics and Drug Resistance in bacteria.

B. IMMUNOLOGY:

1. Infection - Definition, Classification, Source, Mode of transmission and types of Infectious disease.
2. Immunity
3. Structure and functions of Immune system
4. The Complement System
5. Antigen
6. Immunoglobulins - Antibodies - General structure and the role played in defense mechanism of the body.
7. Immune response
8. Antigen - Antibody reactions - with reference to clinical utility.
9. Immunodeficiency disorders - a brief knowledge of various types of immunodeficiency disorders - A sound knowledge of immunodeficiency disorders relevant to dentistry.
10. Hypersensitivity reactions
11. Autoimmune disorders - Basic knowledge of various types - sound knowledge of

autoimmune disorders of oral cavity and related structures.
12. Immunology of Transplantation and Malignancy.
13. Immunehaematology

C. SYSTEMATIC BACTERIOLOGY:
1. Pyogenic cocci - Staphylococcus, Streptococcus, Pneumococcus, Gonococcus, Meningococcus – brief account of each coccus - detailed account of mode of spread, laboratory diagnosis, Chemo therapy and prevention - Detailed account of Cariogenic Streptococci.
2. Corynebacterium diphtheriae - mode of spread, important clinical feature, Laboratory diagnosis, Chemotherapy and Active immunisation.
3. Mycobacteria - Tuberculosis and Leprosy
4. Clostridium - Gas gangrene, food poisoning and tetanus.
5. Non-sporing Anaerobes - in brief about classification and morphology, in detail about dental pathogens - mechanism of disease production and prevention.
6. Spirochaetes - Treponema pallidum - detailed account of Oral Lesions of syphilis, Borrelia vincentii.
7. Actinomycetes.

D. VIROLOGY:
1. Introduction
2. General properties, cultivation, host - virus interaction with special reference to Interferon.
3. Brief account of Laboratory diagnosis, Chemotherapy and immuno prophylaxis in general.
4. A few viruses of relevance to dentistry.
- Herpes Virus
- Hepatitis B Virus - brief about other types
- Human Immunodeficiency Virus (HIV)
- Mumps Virus
- Brief - Measles and Rubella Virus
5. Bacteriophage - structure and significance

E. MYCOLOGY
1. Brief Introduction
2. Candidosis - in detail
3. Briefly on oral lesions of systemic mycoses.

F. PARASITOLOGY:
1. Brief introduction - protozoans and helminths
2. Brief knowledge about the mode of transmission and prevention of commonly seen parasitic infection in the region.

RECOMMENDED BOOKS FOR REGULAR READING:
1. Text book of Microbiology – R.AnanthaNarayan & C.K.Jayaram Paniker.
2. Medical Microbiology – David Greenwood et al.

BOOKS FOR FURTHER READING/REFERENCE.
i) Microbiology – Prescott, et al.
ii) Microbiology – Bernard D. Davis , et al.
iii) Clinical & Pathogenic Microbiology – Barbara J Howard, et al.
iv) Mechanisms of Microbial diseases – Moselio Schaechter, et al.
v) Immunology an Introduction – Tizard
vi) Immunology 3rd edition – Evan Roitt , et al.

5. GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

GOAL:
The broad goal of teaching undergraduate students in pharmacology is to inculcate rational and scientific basis of therapeutics keeping in view of dental curriculum and profession.

OBJECTIVES:

At the end of the course the student shall be able to:

i) Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular.

ii) List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason.

iii) Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs.

iv) Indicate special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immuno compromised patients.

v) Integrate the rational drug therapy in clinical pharmacology.

vi) Indicate the principles underlying the concepts of "Essential drugs".

SKILLS:

At the end of the course the student shall be able to:

1) Prescribe drugs for common dental and medical ailments.
2) Appreciate adverse reactions and drug interactions of commonly used drugs.
3) Observe experiments designed for study of effects of drugs.
4) Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.

5) INTEGRATION: Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments.

LECTURE:

I. GENERAL PHARMACOLOGY:

1. General principles of pharmacology; sources and nature of drugs dosage forms; prescription writing; pharmacokinetics (absorption, distribution, metabolism and excretion of drugs), mode of action of drugs, combined effects of drugs, receptor mechanism of drug action, factors modifying drug response, adverse drug reactions; drug interactions, implications of General Principles in clinical dentistry.
2. CNS drugs; General anaesthetics, hypnotics, analgescis psychotropic drugs, anti – epileptics, muscle relaxants, local anaesthetics, Implications of these drugs in clinical dentistry.
3. Autonomic drugs; sympathomimetics, antiadrenergic drugs parasympathomimetics and parasympatholytics, Implications of Autonomic drugs in clinical dentistry.
4. Cardiovascular drugs; Cardiac stimulants ; antihypertensive drugs, vasopressor agents, treatment of shock, Antianginal agents and diuretics, Implications of these drugs in clinical dentistry.
5. Autocoids:
   Histamine, antihistamines, prostaglandins, leukotriens and bronchodilators, Implications of Autocoids in clinical dentistry.
6. Drugs acting on blood : coagulants and anticoagulants, hematinics, Implications of these drugs in clinical dentistry.
7. G.I.T. Drugs, Purgatives, anti-diarrhoeal, antacids, anti-emetics, Implications of these drugs in clinical dentistry.
8. Endocrines; Emphasis on treatment of diabetes and glucocorticoids, thyroid and antithyroid agents, drugs affecting calcium balance and anabolic steroids, Implications of these drugs in clinical dentistry.
9. Chemotherapy: Antimicrobial agents (against bacteria, anaerobic infections, fungi, virus and broad spectrum). Infection management in dentistry. Phamacotherapy of Tuberculosis, leprosy and chemotherapy of malignancy in general. Implications of Chemotherpy in clinical dentistry.
10. Vitamins : Water soluble vitamins, Vit. D, Vit.K. and Vit. E, Implications of Vitamins in clinical dentistry.
11. Pharmacotherapy of emergencies in dental office and emergency drugs tray Implications of Pharmacotherapy in clinical dentistry.
12. Chealating agents – BAL,EDTA and desferrioxamine,

II. DENTAL PHARMACOLOGY

1. Anti - septics, astrigents, obtundents, mummifying agents, bleaching agents, styptics, disclosing agents, dentifrices, mouth washes, caries and fluorides.
2. Pharmacotherapy of common oral conditions in dentistry.
   Practicals and Demonstrations :
   To familiarise the student with the methodology: prescription writing and dispensing. Rationale of drug combinations of marketed drugs.

LIST OF BOOKS RECOMMENDED FOR READING AND REFERENCE

1. R.S.Satoskar, Kale Bhandarkar's Pharmacology and Pharmacolherapentics, 10th Edition, Bombay Popular Prakashan 1991.
2. Bertam G Katzung, Basic and Clinical pharmacology 6th ed. Appleton & Lange 1997.
3. Lauerence D.R. Clinical Pharmacology 8th ed. Churchill Livingstone 1997.
4. Satoskar R.S. & Bhandarkar S.D., Pharmacology and Pharmacotherapeutics part I & part ii, 13th Popular Prakashan Bombay 1993.
5. Tripathi K.D., Essentials of Medical Pharmacology 4th ed Jaypee Brothers 1999.

6. DENTAL MATERIALS

The science of Dental Material has undergone tremendous changes over the years. Continued research has led to new material systems and changing concepts in the dental field. Interlinked with various specialised branches of chemistry, practically all engineering applied sciences and biological characteristics, the science of dental material emerged as a basic sciences in itself with its own values and principles.

INTRODUCTION

AIMS:

Aim of the course is to present basic chemical and physical properties of Dental materials as they are related to its manipulation to give a sound educational background so that the practice of the dentistry emerged from art to empirical status of science as more information through further research becomes available. It is also the aim of the course of Dental materials to provide with certain criteria of selection and which will enable to discriminate between facts and propaganda with regards to claims of manufactures.

OBJECTIVES:

To understand the evolution and development of science of dental materials

To explain purpose of course in dental materials to personnel concerned with the profession of dentistry. Knowledge of physical and chemical properties. Knowledge of biomechanical requirements of particular restorative procedure. An intelligent compromise of the conflicting as well as co-ordinating factors into the desired ernest. Laying down standards or specifications of various materials to guide to manufacturers as well as to help professionals.

Search for newer and better materials which may answer our requirements with greater satisfaction. To understand and evaluate the claims made by manufacturers of dental materials

NEED FOR THE COURSE:

The profession has to rise from an art to a science; the need for the dentist to possess adequate knowledge of materials to exercises his best through knowledge of properties of different types of materials. The growing concern of health hazards due to mercury toxicity, inhalation of certain vapour or dust materials, irritations and allergic reaction to skin due to contact of materials. Materials causing irritation of oral tissues, pH of restorative materials causing inflammation and necrosis of pulp which is a cause for the dentist to possess wider knowledge of physical, chemical and biological properties of materials being used. For the protection for the patient and his own protection certain criteria of selection are provided that will enable the dentist to discriminate between facts and propaganda, which will make a material biologically acceptable.

SCOPE:

The dental materials are employed in mechanical procedures including restorative dentistry such as Prosthodontics, endodontics, periodontal, orthodontics and restorative materials.

There is scarcely a dental procedure that does not make use of dental materials in one form or another and therefore the application of dental material is not limited to any one branch of dentistry. Branches such as minor surgery and periodontics require less use of materials but the physical and chemical characters of materials are important in these fields.
The toxic and tissue reaction of dental materials and their durability in the oral cavity where the temperature is between 32 & 37 degree centigrade, and the ingestion of hot or cold food ranges from 0-70 degree centigrade. The acid and alkalinity of fluids show pH varies from 4 to 8.5. The load on 1 sq. mm of tooth or restorative materials can reach to a level as high as many kilograms. Thus the biological properties of dental materials cannot be separated from their physical and chemical properties.

2). STRUCTURE OF MATTER AND PRINCIPLES OF ADHESION.
Change of state, inter atomic primary bonds, inter atomic secondary bonds, inter atomic bond distance and bonding energy, thermal energy, crystalline structure, non crystalline structures, diffusion, adhesion and bonding and adhesion to tooth structures.

3). IMPORTANT PHYSICAL PROPERTIES APPLICABLE TO DENTAL MATERIALS
Physical properties are based on laws of mechanics, acoustics, optics, thermodynamics, electricity, magnetism, radiation, atomic structure or nuclear phenomena. Hue, value, chroma and translucency physical properties based on laws of optics, dealing with phenomena of light, vision and sight. Thermal conductivity & coefficient of thermal expansion are physical properties based on laws of thermodynamics. Stress, strain, proportional limit, elastic limit yield strength, modulus of elasticity, flexibility, resilience, impact, impact strength, permanent deformation, strength, flexure strength fatigue, static fatigue, toughness, brittleness, ductility & malleability, hardness, abrasion resistance, relaxation, rheology, Thixotropic, creep, static creep, dynamic creep, flow, colour, three dimensional colour – hue, values, chroma, Munsell system, metamersim, fluorescence, physical properties of tooth, stress during mastication

4). BIOLOGICAL CONSIDERATIONS IN USE OF DENTAL MATERIALS.
Materials used are with the knowledge of appreciation of certain biological considerations for use in oral cavity. Requirement of materials with biological compatibility. Classification of materials from perspective of biological compatibility. eg. contact with soft tissues, affecting vitality of pulp, used for root canal fillings, affecting hard tissues of teeth, laboratory materials that could accidentally be inhaled or ingested during handling. Hazards associated with materials: pH effecting pulp, polymers causing chemical irritation, mercury toxicity, etc. Microleakage, Thermal changes, Galvanism, toxic effect of materials. Biological evaluation for systemic toxicity, skin irritation, mutagenecity and carcinogenicity. Disinfection of dental materials for infection control.

5). GYPSUM & GYPSUM PRODUCTS.
Gypsum – its origin, chemical formula, Products manufactured from gypsum.
Dental plaster, Dental stone, Die stone, high strength, high expansion stone.
Application and manufacturing procedure of each, macroscopic and microscopic structure of each . Supplied as and Commercial names.
Chemistry of setting, setting reaction, theories of setting, gauging water, Microscopic structure of set material.
Setting time: working time and setting time, Measurement of setting time and factors controlling setting time .
Setting expansion, Hygroscopic setting expansion – factors affecting each
Strength :wet strength, dry strength, factors affecting strength, tensile strength
Slurry – need and use.
Care of cast.
ADA classification of gypsum products
Description of impression plaster and dental investment
Manipulation including recent methods or advanced methods.
Disinfection : infection control, liquids, sprays, radiation
Method of use of disinfectants
Storage of material – shelf life

6) IMPRESSION MATERIALS USED IN DENTISTRY
Impression plaster, Impression compound, Zinc oxide eugenol impression paste & bite registration paste incl., non eugenol paste, Hydrocolloids, reversible and irreversible, Elastomeric impression materials. Polysulphide, Condensation silicones, Addition silicones, Polyether, Visible light cure polyether urethane dimethacrylate, Historical background & development of each impression material,
Definition of impression , Purpose of making impression, Ideal properties required and application of material, Classification as per ADA specification, general & individual impression material.
Application and their uses in different disciplines, Marketed as and their commercial names, Mode of supply & mode of application bulk/wash impression. Composition, chemistry of setting ,Control of setting time , Type of impression trays required, Adhesion to tray, manipulation, instruments & equipments required. Techniques of impression, storage of impression, (Compatibility with cast and die material). Any recent advancements in material and mixing devices. Study of properties: Working time, setting time, flow, accuracy, strength, flexibility, tear strength, dimensional stability, compatibility with cast & die materials incl., electroplating Biological properties: tissue reaction , Shelf life & storage of material, Infection control – disinfection, Advantages & disadvantages of each material.

7). SYNTHETIC RESINS USED IN DENTISTRY.
Historical background and development of material, Denture base materials and their classification and requirement
Classification of resins
Dental resins – requirements of dental resins, applications, polymerisation, polymerisation mechanism stages in addition polymerisation, inhibition of polymerisation, co-polymerisation, molecular weight, crosslinking, plasticisers, Physical properties of polymers, polymer structures types of resins.
ACRYLIC RESINS:
Mode of polymerisation: Heat activated, Chemically activated, Light activated, Mode of supply, application, composition, polymerisation reaction of each. Technical considerations: Methods of manipulation for each type of resin. Physical properties of denture base resin. Miscellaneous resins & techniques: Repair resins, Relining and rebasing. Short term and long-term soft-liners, temporary crown and bridge resins, Resin impression trays, Tray materials, Resin teeth, materials in maxillofacial prosthesis, Denture cleansers, Infection control in detail, Biological properties and allergic reactions.

RESTORATIVE RESINS:
Historical background, Resin based restorative materials, Unfilled & filled, Composite restorative materials, Mode of supply, Composition, Polymerisation mechanisms: Chemically activated, Light activated, Dual cure: Degree of conversion, Polymerisation shrinkage Classification of Composites: Application, composition and properties of each Composites of posterior teeth, Prosthodontics resins for veneering. Biocompatibility – microleakage, pulpal reaction, pulpal protection Manipulation of composites: Techniques of insertion of Chemically activated, light activated, dual cure Polymerisation, Finishing and polishing of restoration, Repair of composites Direct bonding Bonding: Need for bonding, Acid - etch technique, Enamel bonding, Dentin bonding agents. Mode of bonding, Bond strength, Sandwich technique its indication and procedure. Extended application for composites: Resins for restoring eroded teeth, Pit and fissure sealing, Resin inlay system – Indirect & direct, Core build up, Orthodontic applications.

8). METAL AND ALLOYS:
Structure and behaviour of metals, Solidification of metals, mechanism of crystallisation amorphous & crystalline. Classification of alloys, Solid solutions, Constitutes or equilibrium phase diagrams:Electric alloys, Physical properties, Peritectic alloys, Solid state reaction other binary systems: Metallography & Heat treatment. Tarnish and corrosion. Definition: causes of corrosion, protection against corrosion., Corrosion of dental restorations, clinical significance of galvanic current. Dental Amalgam.

History:
Definition of dental amalgam, application, Alloy classification, manufacture of alloy powder composition - available as.

Amalgamation : setting reaction & resulting structure , properties , Microleakage
Dimensional stability, Strength, Creep, Clinical performance
Manipulation: Selection of alloy, proportioning, mechanism of trituration, condensation, carving & finishing. Effect of dimensional changes, Marginal deterioration., Repair of amalgam, mercury toxicity, mercury hygiene.

DIRECT FILLING GOLD:
Properties of pure gold, mode of adhesion of gold for restoration forms of direct filling gold for using as restorative material
Classification : Gold Foil, Electrolytic precipitate, powdered gold.
Manipulation: Removal of surface impurities and compaction of direct filling gold.
Physical properties of compacted gold, Clinical performance.

DENTAL CASTING ALLOYS:
Historical background, desirable properties of casting alloys.
Alternatives to cast metal technology: direct filling gold, amalgam, mercury free condensable intermetallic compound - an alternative to metal casting process. CAD-CAM process for metal & ceramic inlays - without need for impression of teeth or casting procedure, pure titanium, most bio compatible metal which are difficult to cast can be made into crowns with the aid of CAD- CAM technology . Another method of making copings - by copy milling (without casting procedures).
Classification of casting alloys: By function & description.
Recent classification , High noble (HN), Noble (N) and predominantly base metal (PB)
Alloys for crown & bridge, metal ceramic & removable partial denture. Composition, function, constituents and application, each alloy both noble and base metal. Properties of alloys: Melting range, mechanical properties, hardness, elongation, modulus of elasticity, tarnish and corrosion.
Casting shrinkage and compensation of casting shrinkage. Biocompatability - Handling hazards & precautions of base metal alloys, casting investments used. Heat treatment : Softening & hardening heat treatment. Recycling of metals. Titanium alloys & their application , properties & advantages. Technical considerations In casting . Heat source, furnaces.

9). DENTAL WAXES INCLUDING INLAY CASTING WAX
Introduction and importance of waxes. Sources of natural waxes and their chemical nature.
Classification of Waxes:
Properties: melting range, thermal expansion, mechanical properties, flow & residual stresses, ductility. Dental Wax: Inlay wax: Mode of supply : Classification & composition, Ideal requirements: Properties of inlay wax: Flow, thermal properties Wax distortion & its causes.
Manipulation of inlay wax: Instruments & equipment required, including electrically heated instruments metal tips and thermostatically controlled wax baths.
Other waxes: Applications, mode of supply & properties.
Casting Wax, Base plate wax, Processing wax, Boxing wax, Utility wax, Sticky wax, Impression wax for corrective impressions, Bite registration wax.

10). DENTAL CASTING INVESTMENTS.
Definition, requirements, classification
Gypsum bonded - classification. Phosphate bonded, Silica bonded
Mode of Supply: Composition, application , setting mechanism, setting time & factors controlling it.
Expansions :Setting expansion, Hygroscopic Setting expansion, & thermal expansion : factors affecting. Properties : Strength, porosity, and fineness & storage. Technical considerations: For Casting procedure, Preparation of die, Wax pattern, spruing, investing, control of shrinkage compensation, wax burnout, and heating the invested ring, casting. Casting machines, source of heat for melting the alloy. Defects in casting.

11). SOLDERING, BRAZING AND WELDING
Need of joining dental appliances, Terms & Definition
Solders: Definition, ideal requirement, types of solders – Soft & hard and their fusion temperature, application. Mode of supply of solders, Composition and selection, Properties.

Tarnish & corrosion resistance mechanical properties, microstructure of soldered joint. Fluxes & Anti fluxes: Definition, Function, Types, commonly used fluxes & their selection Technique of Soldering & Brazing : free hand soldering and investment, steps and procedure. Welding: Definition, application, requirements, procedure, weld decay - causes and how to avoid it. Laser welding.

WROUGHT BASE METAL ALLOYS

Applications and different alloys used mainly for orthodontics purpose

1. Stainless steel
2. Cobalt chromium nickel
3. Nickel titanium
4. Beta titanium

Properties required for orthodontic wires, working range, springiness, stiffness, resilience, Formability, ductility, ease of joining, corrosion resistance, stability in oral environment, bio. compatibility

Stainless steels: Description, type, composition & properties of each type. Sensitisation & stabilisation , Mechanical properties – strength, tensile, yield strength, KHN. Braided & twisted wires their need , Solders for stainless steel, Fluxes, Welding

1. Wrought cobalt chromium nickel alloys, composition, allocation, properties, heat treatment, physical properties
2. Nickel – Titanium alloys, shape, memory & super elastic
3. Titanium alloys, application, composition, properties, welding, Corrosion resistance

12). DENTAL CEMENTS

Definition & Ideal requirements:

Cements: Silicate, Glass ionomer, metal modified glass ionomer, resin modified glass ionomer, zinc oxide eugenol, modified zinc oxide eugenol, zinc phosphate, zinc silico phosphate, zinc poly carboxylate, Cavity liners and cement bases, Varnishes Calcium hydroxide, Gutta percha

Application, classification (general and individual), setting mechanism, mode of supply, Properties, factors affecting setting, special emphasis on critical procedures of manipulation and protection of cement, mode of adhesion, biomechansim of caries inhibition.

Agents for pulpal protection., Modifications and recent advances, Principles of cementation. Special emphasis on cavity liners and cement bases and luting agents.

13). DENTAL CERAMICS

Historical background & General applications.

Dental ceramics : definition, classification, application, mode of supply, manufacturing procedure, methods of strengthening. Properties of fused ceramic: Strength and factors affecting, modulus of elasticity, surface hardness, wear resistance, thermal properties, specific gravity, chemical stability, esthetic properties, biocompatability, technical considerations.

Metal Ceramics (PFM): Alloys - Types and composition of alloys. Ceramic - Type and Composition.

Metal Ceramic Bond - Nature of bond. Bonding using electro deposition, foil copings, bonded platinum foil, swaged gold alloy foil coping. Technical considerations for porcelain and porcelain fused metal restorations. Recent advances - all porcelain restorations, Manganese core, injection moulded, castable ceramics, glass infiltrated alumina core ceramic (In ceram), ceramic veners, inlays and onlays, and CAD - CAM ceramic. Chemical attack of ceramic by fluoride. Porcelain furnaces.

14). ABRASION & POLISHING AGENTS

Definition of abrasion and polishing. Need of abrasion and polishing. Types of abrasives: Finishing, polishing & cleaning. Types of abrasives: Diamond, Emery, aluminium oxides garnet, pumice, Kieselgurh, tripoli, rouge, tin oxide, chalk, chromic oxide, sand, carbides, diamond, zirconium silicate, Zinc oxide

ABRASIVE ACTION :

Desirable characteristics of an abrasive, Rate of abrasion, Size of particle, pressure and speed.

Grading of abrasive & polishing agents. Binder, Polishing materials & procedures used. Technical consideration - Material and procedure used for abrasion and polishing, Electrolytic polishing and burnishing.

15). DIE AND COUNTER DIE MATERIALS INCLUDING ELECTROFORMING AND ELECTROPOLISHING.

Types – Gypsum products, Electroforming, Epoxy resin, Amalgam.

16). DENTAL IMPLANTS : Evolution of dental implants, types and materials.

17). MECHANICS OF CUTTING : Burs and points.

At the end of the course the student should have the knowledge about the composition, properties, manipulative techniques and their various commercial names. The student should also acquire skills to select and use the materials appropriately for laboratory and clinical use.

RECOMMENDED BOOKS:

1. Phillips Science of Dental Materials – 10th edn.- Kenneth J. Anusavice
2. Restorative Dental Materials – 10 edn. Robert G.Craig
3. Notes on Dental Materials – E.C. Combe

7. PRE CLINICAL CONSERVATIVE DENTISTRY LABORATORY EXERCISES

1. Identification and study of handcutting instruments chisles, gingival margin trimmers, excavators and hatchet.
2. Identification and use of rotary cutting instruments in contra angle hand pieces burs (Micromotor)
3. Preparation class I and extended class I and class II and MOD's and class V amounting to 10 exercises in plaster models.
4. Ten exercises in mounted extracted teeth of following: class I, 4 in number; class I extended cavities 2; class II 4 in number and Class V 2 in number. Cavity preparation base application, matrix and wedge placement restoration with amalgam.
5. Exercises on phantom head models which includes cavity preparation base and varnish application matrix and wedge placement followed by amalgam restoration.

Class I	5
Class I with extension	2
Class II	10
Class II Mods	2
Class V and III for glass ionomers	4
Class V for amalgam	2

6. Polishing of above restorations.
7. Demonstration of Class III and Class V cavity preparation. For composites on extracted tooth completing the restoration.
8. Polishing and finishing of the restoration of composites.
9. Identification and manipulation of varnish bases like Zinc Phosphate, Poly carboxylate, Glass Ionomers, Zinc Oxide, Euginol cements.
10. Identification and manipulation of various matrices, tooth separators and materials like composites and modified glass ionomer cements.
11. Cast Restoration
    1. Preparation of Class II inlay cavity
    2. Fabrication of wax pattern
    3. Sprue for inner attachment investing
    4. Investing of wax pattern
    5. Finishing and cementing of class II inlay in extracted tooth.
12. Endodontics
    1. Identification of basic endodontic instruments
    2. Coronal access cavity preparation on extracted upper central incisiors
    3. Determination of working length.
    4. Biomechanical preparation of root canal space of central incisor
    5. Obturation of root canal spaces. Absence of coronal access cavity.
    6. Closure of acess cavity

8. ORAL PATHOLOGY & ORAL MICROBIOLOGY

OBJECTIVES:

At the end of the Oral Pathology & Oral Microbiology course, the student should be able to comprehend -

1. The different types of pathological processes that involve the oral cavity.
2. The manifestations of common diseases, their diagnosis & correlation with clinical pathological processes.
3. The oral manifestations of systemic diseases to help in correlating with systemic physical signs & laboratory findings.
4. The underlying biological principles governing treatment of oral diseases.
5. The principles of certain basic aspects of Forensic Odontology.

SKILLS:

1. Microscopic study of common lesions affecting oral tissues through microscopic slides & projection slides.
2. Study of the disease process by surgical specimens.
3. Study of teeth anomalies/polymorphisms through tooth specimens & plaster casts.
4. Microscopic study of plaque pathogens.
5. Study of haematological preparations (blood films) of anaemias & leukemias.
6. Basic exercises in Forensic Odontology such as histological methods of age estimation and appearance of teeth in injuries.

1. INTRODUCTION:

- A bird's eye view of the different pathological processes involving the oral cavity & oral cavity involvement in systemic diseases to be brought out. Interrelationship between General Medicine & General Surgery & Oral pathology is to be emphasised.

2. Developmental disturbances of teeth, jaws and soft tissues of oral & paraoral region :

- Introduction to developmental disturbances - Hereditary, Familial mutation, Hormonal etc. causes to be highlighted.
- Developmental disturbances of teeth - Aetiopathogenesis, clinical features, radiological features & histopathological features as appropriate :-
  The size, shape, number, structure & eruption of teeth & clinical significance of the anomalies to be emphasised.
- Forensic Odontology.
- Developmental disturbances of jaws - size & shape of the jaws.
- Developmental disturbances of oral & paraoral soft tissues - lip & palate - clefts, tongue, gingiva, mouth, salivary glands & face.

3. Dental Caries :

- Aetiopathogenesis, microbiology, clinical features, diagnosis, histopathology, immunology, prevention of dental caries & its sequelae.

4. Pulp & Periapical Pathology & Osteomyelitis.

- Aetiopathogenesis & interrelationship, clinical features, microbiology, histopathology & radiological features (as appropriate) of pulp & periapical lesions & osteomyelitis.
- Sequelae of periapical abscess - summary of space infections, systemic complications & significance.

5. Periodontal Diseases :

- Aetiopathogenesis, microbiology, clinical features, histopathology & radiological features (as appropriate) of gingivitis, gingival enlargements & periodontitis. Basic immunological mechanisms of periodontal disease to be highlighted.

6. Microbial infections of oral soft tissues :

- Microbiology, defence mechanisms including immunological aspects, oral manifestations, histopathogy and laboratory diagnosis of common bacterial, viral & fungal infections namely:
  Bacterial : Tuberculosis, Syphilis, ANUG & its complications - Cancrum Oris.
  Viral : Herpes Simplex, Varicella zoster, Measles, Mumps & HIV infection.
  Fungal : Candidal infection. Apthous Ulcers.

7. Common non- inflammatory diseases involving the jaws :

- Aetiopathogenesis, clinical features, radiological & laboratory values in diagnosis of :

Fibrous dysplasia, Cherubism, Osteogenesis Imperfecta, Paget's disease, Cleidocranial dysplasia, Rickets, Achondroplasia, Marfan's syndrome & Down's syndrome.

8. Diseases of TM Joint :

- Ankylosis, summary of different types of arthritis & other developmental malformations, traumatic injuries & myofascial pain dysfunction syndrome.

9. Cysts of the Oral & Paraoral region :

- Classification, etiopathogenesis, clinical features, histopathology, laboratory & radiological features (as appropriate) of Odontogenic cysts, Non-Odontogenic cysts, Pseudocysts of jaws & soft tissue cysts of oral & paraoral region.

10. Tumours of the Oral Cavity :

- Classification of Odontogenic, Non-Odontogenic & Salivary Gland . Tumours. Aetiopathogenesis, clinical features, histopathology, radiological features & laboratory diagnosis (as appropriate) of the following common tumours :-

a) Odontogenic - all lesions.

b) Non-odontogenic

- Benign Epithelial - Papilloma, Keratoacanthoma & Naevi.
- Benign Mesenchymal - Fibroma, Aggressive fibrous lesions, Lipoma, Haemangioma, Lymphangioma, Neurofibroma, Schwannoma, Chondroma, Osteoma & Tori.
- Malignant Epithelial - Basal Cell Carcinoma, Verrucous Carcinoma, Squamous Cell carcinoma & Malignant Melanoma.
- Malignant Mesenchymal - Fibrosarcoma, Osteosarcoma, Giant cell tumour, Chondrosarcoma, Angiosarcoma, Kaposi's sarcoma, Lymphomas , Ewing's sarcoma & Other Reticuloendothelial tumours.

c) Salivary Gland

- Benign Epithelial neoplasms - Pleomorphic Adenoma, Warthin's tumour, & Oncocytoma.
- Malignant Epithelial neoplasms - Adenoid Cystic Carcinoma, Mucoepidermoid Carcinoma, Acinic Cell Carcinoma & Adenocarcinomas.

d) Tumours of Disputed Origin - Congenital Epulis & Granular Cell Myoblastoma.

e) Metastatic tumours - Tumors metastasising to & from oral cavity & the routes of metastasis.

11. Traumatic, Reactive & Regressive lesions of Oral Cavity :

- Pyogenic & Giant cell granuloma, exostoses Fibrous Hyperplasia, Traumatic Ulcer & Traumatic Neuroma.
- Attrition, Abrasion, Erosion, Bruxism, Hypercementosis, Dentinal changes, Pulp calcifications & Resorption of teeth.
- Radiation effects of oral cavity, summary of Physical & Chemical injuries including allergic reactions of the oral cavity.
- Healing of Oral wounds & complications - Dry socket.

12. Non neoplastic Salivary Gland Diseases :

- Sialolithiasis, Sialosis, Sialadenitis, Xerostomia & Ptyalism.

13. Systemic Diseases involving Oral cavity :

- Brief review & oral manifestations, diagnosis & significance of common Blood, Nutritional, Hormonal & Metabolic diseases of Oral cavity.

14. Mucocutaneous Lesions :

- Aetiopathogenesis, clinical features & histopathology of the following common lesions. Lichen Planus, Lupus Erythematosus, Pemphigus & Pemphigoid lesions, Erythema Multiforme, Psoriasis, Scleroderma, Ectodermal Dysplasia, Epidermolysis bullosa & White sponge nevus..

15. Diseases of the Nerves :

- Facial neuralgias - Trigeminal & Glossopharyngeal. VII nerve paralysis, Causalgia.
- Psychogenic facial pain & Burning mouth syndrome.

16. Pigmentation of Oral & Paraoral region & Discolouration of teeth :

- causes & clinical manifestations.

17. Diseases of Maxillary Sinus :

- Traumatic injuries to sinus, Sinusitis, Cysts & Tumours involving antrum.

18. a) ORAL PRECANCER – CANCER; Epidemiology, aetiology, clinical and histopatholotgical features, TNM classification. Recent advances in diagnosis, management and prevention.
    b) Biopsy : Types of biopsy, value of biopsy, cytology, histo chemistry & frozen sections in diagnosis of oral diseases.
19. Principles of Basic Forensic Odontology (Pre-clinical Forensic Odontology):

- Introduction, definition, aims & scope.
- Sex and ethnic (racial) differences in tooth morphology and histological age estimation
- Determination of sex & blood groups from buccal mucosa / saliva.
- Dental DNA methods
- Bite marks, rugae patterns & lip prints.
- Dental importance of poisons and corrosives.
- Overview of forensic medicine and toxicology

RECOMMENDED BOOKS

1. A Text Book of Oral Pathology - Shafer, Hine & Levy.
2. Oral Pathology - Clinical Pathologic correlations - Regezi & Sciubba.
3. Oral Pathology - Soames & Southam.
4. Oral Pathology in the Tropics - Prabhu,Wilson,Johnson & Daftary

9. GENERAL MEDICINE

GUIDELINES:

Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry.

1. Special precautions/ contraindications of anaesthesia and various dental procedures in different systemic diseases.
2. Oral manifestations of systemic diseases.
3. Medical emergencies in dental practice.

A dental student should be taught in such a manner that he/she is able to record the arterial pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body – diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice.

THEORY SYLLABUS

CORE TOPICS (Must Know)	COLLATERAL TOPICS (Desirable to Know)
1. Aims of medicine Definitions of signs, symptoms, diagnosis, differential diagnosis treatment & prognosis.	
2. Infections. Enteric fever, AIDS, herpes simplex, herpes zoster, syphilis diphtheria.	Infectious mononucleosis mumps, measles, rubella, malaria.
3. G.I.T. Stomatitis, gingival hyperplasia, dysphagia, acid peptic disease, jaundice, acute and chronic hepatitis, cirrhosis of liver ascites.	Diarrhoea Dysentery Amoebiasis Malabsorption
4. CVS Acute rheumatic fever rheumatic valvular heart disease, hypertension, ischemic heart disease, infective endocarditis, common arrhythmias, congenital heart disease, congestive cardiac failure.	
5. RS Pneumonia, COPD, Pulmonary TB, Bronehial asthma	Lung Abscess Pleural effusion Pneumothorax Bronchiectasis

	Lung cancers.
6. Haematology Anaemias, bleeding & clotting disorders, leukemias, lymphomas, agranulocytosis, splenomegaly, oral manifestations of haematologic disorders, generalised lymphadenopathy.	
7. Renal System Acute nephritis Nephrotic syndrome	Renal failure
8. Nutrition Avitaminosis	Balanced diet PEM Avitaminosis
9. CNS Facial palsy, facial pain including trigeminal neuralgia, epilepsy, headache including migraine.	- Meningitis - Examination of comatose patient - Examination of cranial nerves.
10. Endocrines Diabetes Mellitus Acromegaly, Hypothyroidism, Thyrotoxicosis, Calcium metabolism and parathyroids.	Addison's disease, Cushing's syndrome.
11. Critical care Syncope, cardiac arrest, CPR, shock	Ac LVF ARDS

CLINICAL TRAINING:

The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, lymphadenopathy, oral cavity) and be able to examine CVS, RS and abdomen and facial nerve.

10. GENERAL SURGERY

AIMS:

To acquaint the student with various diseases, which may require surgical expertise and to train the student to analyse the history and be able to do a thorough physical examination of the patient. The diseases as related to head and neck region are to be given due importance, at the same time other relevant surgical problems are also to be addressed. At the end of one year of study the student should have a good theoretical knowledge of various ailments, and be practically trained to differentiate benign and malignant diseases and be able to decide which patient requires further evaluation.

1. HISTORY OF SURGERY:
   The development of surgery as a speciality over the years, will give the students an opportunity to know the contributions made by various scientists, teachers and investigators. It will also enable the student to understand the relations of various specialities in the practice of modern surgery.

2. GENERAL PRINCIPLES OF SURGERY:
   Introduction to various aspects of surgical principles as related to orodental diseases. Classification of diseases in general. This will help the student to understand the various diseases, and their relevance to routine dental practice.

3. WOUNDS:
   Their classification, healing, repair, treatment, medico-legal aspects of accidental wounds and complications of wounds.

4. INFLAMMATION:
   Of soft and hard tissues. Causes of inflammation, varieties, treatment and sequelae.

5. INFECTIONS:
   Acute and chronic abscess skin infections, cellulitis, carbuncle, and erysepelas. Specific infections such as tetanus, gangrene, syphilis, gonorrhoea, tuberculosis, Actinomycosis, Vincents angina, cancrum oris. Pyaemia, toxaemia and septicaemia.

6. TRANSMISSABLE VIRAL INFECTIONS:
HIV and Hepatitis B with special reference to their prevention and precautions to be taken in treating patients in a carrier state.

7. SHOCK AND HAEMORRHAGE:
Classification, causes, clinical features and management of various types of shock. Syncope, Circulatory collapse. Haemorrhage – different types, causes, clinical features and management. Blood groups, blood transfusion, precautions and complications of blood and their products. Hemophilias, their transmission, clinical features and management especially in relation to minor dental procedures.

8. TUMOURS, ULCERS, CYSTS, SINUS AND FISTULAE:
Classification, clinical examination and treatment principles in various types of benign and malignant tumours, ulcers, cysts, sinus and fistulae.

9. DISEASES OF LYMPHATIC SYSTEM:
Especially those occurring in head and neck region. Special emphasis on identifying diseases such as tubercular infection, lymphomas, leukaemias, metastatic lymph node diseases.

10. DISEASES OF THE ORAL CAVITY:
Infective and malignant diseases of the oral cavity and oropharynx including salivary glands with special emphasis on preventive aspects of premalignant and malignant diseases of the oral cavity.

11. DISEASES OF LARYNX, NASOPHARYNX:
Infections and tumours affecting these sites. Indications, procedure and complications of tracheostomy.

12. NERVOUS SYSTEM:
Surgical problems associated with nervous system with special reference to the principles of peripheral nerve injuries, their regeneration and principles of treatment. Detailed description of afflictions of facial nerve and its management. Trigeminal neuralgia, its presentation and treatment.

13. FRACTURES:
General principles of fractures, clinical presentation and treatment with additional reference to newer methods of fracture treatment. Special emphasis on fracture healing and rehabilitation.

14. PRINCIPLES OF OPERATIVE SURGERY:
Principles as applicable to minor surgical procedures including detailed description of asepsis, antiseptics, sterilisation, principles of anaesthesia and principles of tissue replacement. Knowledge of sutures, drains, diathermy, cryosurgery and use of Laser in surgery.

15. ANOMALIES OF DEVELOPMENT OF FACE:
Surgical anatomy and development of face. Cleft lip and cleft palate—principles of management.

16. DISEASES OF THYROID AND PARATHYROID:
Surgical anatomy, pathogenesis, clinical features and management of dysfunction of thyroid and parathyroid glands. Malignant diseases of the thyroid—classification, clinical features and management.

17. SWELLINGS OF THE JAW:
Differential diagnosis and management of different types of swellings of the jaw.

18. BIOPSY:
Different types of biopsies routinely used in surgical practice.
Skills to be developed by the end of teaching is to examine a routine swelling, ulcer and other related diseases and to perform minor surgical procedures such as draining an abscess, taking a biopsy etc.

11. CONSERVATIVE DENTISTRY AND ENDODONTICS

OBJECTIVES:

A. Knowledge and understanding
B. Skills and
C. Attitudes

A). Knowledge and under standing:
The graduate should acquire the following knowledge during the period of training.

i. Diagnose and treat simple restorative work for teeth.
ii. Gain knowledge about aesthetic restorative material and to translate the same to patients needs.
iii. Gain the knowledge about endodontic treatment on the basis of scientific foundation.
iv. Carry out simple endodontic treatment.
v. Carry out simple luexation of tooth and its treatment and to provide emergency endodontic treatment.

SKILLS:
He/she should attain the following skills necessary for practice of dentistry

i) Use medium and high speed hand - pieces to carry out restorative work.
ii) Use and be familiar with endodontic instruments and materials needed for carrying out simple endodontic treatment.
iii) Translate patients aesthetic needs along with function.

ATTITUDES:

i). Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
ii). Willingness to participate in CDE programme to update knowledge and professional skill from time to time.
iii). Help and participate in the implementation of the national oral health policy.
iv). He/she should be able to motivate the patient for proper dental treatment at the same time proper maintenance of oral hygiene should be emphasised which will help maintain the restorative work and prevent future damage.

INTRODUCTION :
Definition aims objectives of Conservative Dentistry scope and future of Conservative Dentistry.

1. Nomenclature Of Dentition:
   Tooth numbering systems A.D.A. Zsigmondy Palmer and F.D.I. systems.
2. Principles Of Cavity Preparation :
   Steps and nomenclature of cavity preparation classification of cavities, nomenclature of floors and angles of cavities.
3. Dental Caries :
   Aetiology, classification clinical features, morphological features, microscopic features, clinical diagnosis and sequel of dental caries.
4. Treatment Planning For Operative Dentistry:
   Detailed clinical examination , radiographic examination, tooth vitality tests, diagnosis and treatment planning, preparation of the case sheet.
5. Gnathological Concepts of Restoration:
   Physiology of occlusion, normal occlusion, ideal occlusion, mandibular movements and occlusal analysis. Occlusal rehabilitation and restoration.
6. Armamentarium for Cavity Preparation:
   General classification of operative instruments, hand cutting instruments design formula and sharpening of instruments. Rotary cutting instruments dental bur, mechanism of cutting, evaluation of hand piece and speed current concepts of rotary cutting procedures. Sterilisation and maintenance of instruments. Basic instrument tray set up.
7. Control of Operating Filed:
   Light source sterilisation field of operation control of moisture, rubber dam in detail, cotton rolls and anti sialogagues.

8. Amalgam Restoration :
Indication contraindication, physical and mechanical properties , clinical behaviour. Cavity preparation for Class I , II, V and III. Step wise procedure for cavity preparation and restoration. failure of amalgam restoration.
9. Pulp Protection :
Liners, varnishes and bases, Zinc phosphate, zinc polycarboxylate, zinc oxide eugenol and glass inomer cements.
10. Anterior Restorations :
Selection of cases, selection of material, step wise procedures for using restorations , silicate (theory only) glass ionomers, composites, including sand witch restorations and bevels of the same with a note on status of the dentine bonding agents.
11. Direct Filling Gold Restorations :
Types of direct filling gold indications and limitations of cohesive gold. Annealing of gold foil cavity preparation and condensation of gold foils.
12. Preventive Measures in Restorative Practice :
Plaque Control, Pit and fissure sealants dietary measures restorative procedures and periodontal health. Contact and contour of teeth and restorations matrices tooth separation and wedges.
13. Temporisation or Interim Restoration.
14. Pin Amalgam Restoration Indication and Contra Indication :
Advantages disadvantages of each types of pin methods of placement use of auto matrix. Failure of pin amalgam restoration.
15. Management of Deep Carious Lesions; Indirect And Direct Pulp Capping.
16. Non Carious Destruction of Tooth Structures Diagnosis and Clinical Management
17. Hyper Sensitive Dentine and its Management.
18. Cast Restorations
Indications, contra indications, advantages and disadvantages and materials used for same Class II and Class I cavity preparation for inlays fabrication of wax pattern spurring inverting and casting procedures & casting defects.
19. Die Materials And Preparation Of Dies.
20. Gingival Tissue Management For Cast Restoration And Impression Procedures
21. Recent Cavity Modification Amalgam Restoration.
22. Differences between Amalgam and Inlay Cavity preparation with note on all the types of Bevels used for Cast Restoration.
23. Control of Pain During Operative Procedures.
24. Treatment Planning for Operative Dentistry Detailed Clinical and Radiographic Examination
25. Vitality Tests, Diagnosis and Treatment Planning and Preparation of Case Sheet.
26. Applied Dental Materials.
    1. Biological Considerations.
    Evaluation, clinical application and adverse effects of the following materials. Dental cements, Zinc oxide euginol cements zinc phosphate cements, polycarboxylates glass ionomer cements, silicate cement calcium hydroxides varnishes.
    2. Dental amalgam, technical considerations mercury toxicity mercury hygiene.
    3. Composite, Dentine bonding agents, chemical and light curing composites
    4. Rubber base Imp. Materials
    5. Noble & non - noble metal alloys
    6. Investment and die materials
    7. Inlay casting waxes
    8. Dental porcelain
    9. Aesthetic Dentistry
27. Endodontics: introduction, definition, scope and future of endodontics
28. Clinical diagnostic methods
29. Emergency endodontic procedures
30. Pulpal diseases causes, types and treatment .
31. Periapical diseases: acute periapical abscess, acute periodontal abscess phoenix abscess, chronic alveolar abscess granuloma cysts condensing osteits, external resorption.

32. Vital pulp therapy: indirect and direct pulp capping, pulpotomy, different types and medicaments used.
33. Apexogenisis and apexification or problems of open apex.
34. Rationale of endodontic treatment case selection indication and contraindications for root canal treatments.
35. Principles of root canal treatment, mouth preparation, root canal instruments, hand instruments, power driven instruments, standardization, colour - coding principle of using endodontic instruments. Sterilisation of root canal instruments and materials rubber dam application.
36. Anatomy of the pulp cavity: root canals apical foramen. Anomalies of pulp cavities access cavity preparation of anterior and premolar teeth.
37. Preparation of root canal space, Determination of working length, cleaning and shaping of root canals, irrigating solution, chemical aids to instrumentation.
38. Disinfection of root canal space intracanal medicaments, poly antibiotic paste gross mans paste, mummifying agents. Outline of root canal treatment, bacteriological examinations, culture methods.
39. Problems during cleaning and shaping of root canal spaces. Perforation and its management. Broken instruments and its management, management of single and double curved root canals.
40. Methods of cleaning and shaping like step-back crown down and conventional methods.
41. Obturation of the root canal system. Requirements of an ideal root canal filling material obturation methods using gutta percha healing after endodontic treatment. Failures in endodontics.
42. Root canal sealers. Ideal properties classification. Manipulation of root canal sealers.
43. Post endodontic restoration fabrication and components of post core preparation.
44. Smear layer and its importance in endodontics and conservative treatment.
45. Discoloured teeth and its management, bleaching agents, vital and non vital bleaching methods.
46. Traumatised teeth classification of fractured teeth, management of fractured tooth and root, Luxated teeth and its management.
47. Endodontic surgeries indication and contraindications, pre operative preparation. Pre medication surgical instruments and techniques apicectomy, retrograde filling, post operative sequale trephination hemisection, radisectomy techniques of tooth reimplantation (both intentional and accidental) endodontic implants.
48. Root resorption.
49. Emergency endodontic procedures.
50. Lasers in conservative endodontics (introduction only) practice management
51. Professional association Dentist Act 1948 and its amendment 1993.
52. Duties towards the govt. like payments of professional tax, income tax.
53. Financial management of practice
54. Dental material and basic equipment management.
55. Ethics

12. ORAL & MAXILLOFACIAL SURGERY

AIMS:

To produce a graduate who is competent in performing extraction of teeth under both local and general anaesthesia, prevent and manage related complications, acquire a reasonable knowledge and understanding of the various diseases, injuries, infections occurring in the Oral & Maxillofacial region and offer solutions to such of those common conditions and has an exposure into the in-patient management of maxillofacial problems.

OBJECTIVES:

a) Knowledge & Understanding:

At the end of the course and clinical training the graduate is expected to -

1. Apply the knowledge gained in the related medical subjects like pathology, microbiology and general medicine in the management of patients with oral surgical problems.

2. Diagnose, manage and treat (understand the principles of treatment of) patients with oral surgical problems.
3. Gain Knowledge of a range of surgical treatments. .
4. Be able to decide the requirement of a patient to have oral surgical specialist opinion or treatment.
5. Understand the principles of in-patient management.
6. Understand the management of major oral surgical procedures and principles involved in patient management.
7. Know the ethical issues and have communication ability.

b) Skills:

1. A graduate should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner, be able to understand requisition of various clinical and laboratory investigations and is capable of formulating differential diagnosis.
2. Should be competent in the extraction of teeth under both local and general anaesthesia.
3. Should be able to carry out certain minor oral surgical procedures under L.A. like frenectomy, alveolar procedures & biopsy etc.
4. Ability to assess, prevent and manage various complications during and after surgery.
5. Able to provide primary care and manage medical emergencies in the dental office.
6. Understand the management of major oral surgical problems and principles involved in inpatient management.

DETAILED SYLLABUS

1. Introduction, definition, scope, aims and objectives.
2. Diagnosis in oral surgery:
   (A) History taking
   (B) Clinical examination
   (C) Investigations.
3. Principles of infection control and cross-infection control with particular reference to HIV/AIDS and Hepatitis.
4. Principles of Oral Surgery -
   a) Asepsis: Definition, measures to prevent introduction of infection during surgery.
      1. Preparation of the patient
      2. Measures to be taken by operator
      3. Sterilisation of instruments - various methods of sterilisation etc.
      4. Surgery set up.
   b) Painless Surgery:
      1. Pre-anaesthetic considerations. Pre-medication: purpose, drugs used
      2. Anaesthetic considerations -
         a) Local b) Local with IV sedations
      3. Use of general anaesthetic
   c) Access:
      Intra-oral: Mucoperiosteal flaps, principles, commonly used intra oral incisions.
      Bone Removal: Methods of bone removal.
      Use of Burs: Advantages & precautions
      Bone cutting instruments: Principles of using chisel & osteotome.
      Extra-oral: Skin incisions - principles, various extra-oral incision to expose facial skeleton.
         a) Submandibular
         b) Pre auricular
         c) Incision to expose maxilla & orbit
         d) Bicoronal incision
   d) Control of haemorrhage during surgery
      Normal Haemostasis
      Local measures available to control bleeding
      Hypotensive anaesthesia etc.
   e) Drainage & Debridement
      Purpose of drainage in surgical wounds
      Types of drains used

Debridement: purpose, soft tissue & bone debridement.

f) Closure of wounds
Suturing: Principles, suture material, classification, body response to various materials etc.

g) Post operative care
Post operative instructions
Physiology of cold and heat
Control of pain - analgesics
Control of infection - antibiotics
Control of swelling - anti-inflammatory drugs
Long term post operative follow up - significance.

5. Exodontia: General considerations
Ideal Extraction.
Indications for extraction of teeth
Extractions in medically compromised patients.
Methods of extraction -
(a) Forceps or intra-alveolar or closed method.
Principles, types of movement, force etc.
(b) Trans-alveolar, surgical or open method, Indications, surgical procedure.
Dental elevators: uses, classification, principles in the use of elevators, commonly used elevators.
Complications of Exodontia -
Complications during exodontia
Common to both maxilla and mandible.
Post-operative complications -
Prevention and management of complications.

6. Impacted teeth:
Incidence, definition, aetiology.
(a) Impacted mandibular third molar.
Classification, reasons for removal,
Assessment - both clinical & radiological
Surgical procedures for removal.
Complications during and after removal,
Prevention and management.
(b) Maxillary third molar,
Indications for removal, classification,
Surgical procedure for removal.
(c) Impacted maxillary canine
Reasons for canine impaction,
Localisation, indications for removal,
Methods of management, labial and palatal approach,
Surgical exposure, transplantation, removal etc.

7. Pre-prosthetic Surgery:
Definition, classification of procedures
(a) Corrective procedures: Alveoloplasty,
Reduction of maxillary tuberosities,
Frenectemies and removal of tori.
(b) Ridge extension or Sulcus extension procedures
Indications and various surgical procedures
(c) Ridge augmentation and reconstruction.
Indications, use of bone grafts, Hydroxyapatite
Implants - concept of osseo integration
Knowledge of various types of implants and
surgical procedure to place implants.

8. Diseases of the maxillary sinus
Surgical anatomy of the sinus.
Sinusitis both acute and chronic
Surgical approach of sinus - Caldwell-Luc procedure
Removal of root from the sinus.

Oro-antral fistula - aetiology, clinical features and various surgical methods for closure.

9. Disorders of T.M. Joint

Applied surgical anatomy of the joint.
Dislocation - Types, aetiology, clinical features and management.
Ankylosis - Definition, aetiology, clinical features and management
Myo-facial pain dysfunction syndrome, aetiology, clinical features, management-non surgical and surgical.
Internal derangement of the joint.
Arthritis of T.M. Joint.

10. Infections of the Oral cavity

Introduction, factors responsible for infection, course of odontogenic infections, spread of odontogenic infections through various facial spaces.
Dento-alveolar abscess - aetiology, clinical features and management.
Osteomyelitis of the jaws - definition, aetiology, predisposing factors, classification, clinical features and management.
Ludwigs angina - definition, aetiology, clinical features, management and complications.

11. Benign cystic lesions of the jaws -

Definition, classification, pathogenesis.
Diagnosis - Clinical features, radiological, aspiration biopsy, use of contrast media and histopathology.
Management - Types of surgical procedures, Rationale of the techniques, indications, procedures, complications etc.

12. Tumours of the Oral cavity -

General considerations
Non odontogenetic benign tumours occuring in oral cavity - fibroma, papilloma, lipoma, ossifying fibroma, myxoma etc.
Ameloblastoma - Clinical features, radiological appearance and methods of management.
Carcinoma of the oral cavity -
Biopsy - types
TNM classification.
Outline of management of squamous
cell carcinoma: surgery, radiation and chemotherapy
Role of dental surgeons in the prevention and early detection of oral cancer.

13. Fractures of the jaws -

General considerations, types of fractures, aetiology, clinical features and general principles of management.
mandibular fractures - Applied anatomy, classification.
Diagnosis - Clinical and radiological
Management - Reduction closed and open
Fixation and immobilisation methods
Outline of rigid and semi-rigid internal fixation.
Fractures of the condyle - aetiology, classification, clinical features, principles of management.
Fractures of the middle third of the face.
Definition of the mid face, applied surgical anatomy, classification, clinical features and outline of management.
Alveolar fractures - methods of management
Fractures of the Zygomatic complex
Classification, clinical features, indications for treatment, various methods of reduction and fixation.
Complications of fractures - delayed union, non-union and malunion.

14. Salivary gland diseases -

Diagnosis of salivary gland diseases'
Sialography, contrast media, procedure.
Infections of the salivary glands
Sialolithiasis - Sub mandibular duct and gland and parotid duct.

Clinical features, management.
Salivary fistulae
Common tumours of salivary glands like Pleomorphic adenoma including minor salivary glands.

15. Jaw deformities -
    Basic forms - Prognathism, Retrognathism and open bite.
    Reasons for correction.
    Outline of surgical methods carried out on mandible and maxilla.
16. Neurological disorders -
    Trigeminal neuralgia - definition, aetiology, clinical features and methods of management including surgical.
    Facial paralysis - Aetiology, clinical features.
    Nerve injuries - Classification, neurorhaphy etc.
17. Cleft Lip and Palate -
    Aetiology of the clefts, incidence, classification, role of dental surgeon in the management of cleft patients. Outline of the closure procedures.
18. Medical Emergencies in dental practice –
    Primary care of medical emergencies in dental practice particularly -
    (a)Cardio vascular (b) Respiratory (c) Endocrine
    (d)Anaphylactic reaction (e) Epilepsy
19. Emergency drugs, Intra muscular I.V. Injections -
    Applied anatomy, Ideal location for giving these injections, techniques etc.
20. Oral Implantology
21. Ethics

LOCAL ANAESTHESIA:
Introduction, concept of L.A., classification of local anaesthetic agents, ideal requirements, mode of action, types of local anaesthesia, complications.

Use of Vaso constrictors in local anaesthetic solution -
Advantages, contra-indications, various vaso constrictors used.
Anaesthesia of the mandible -
Pterygomandibular space - boundaries, contents etc.
Interior Dental Nerve Block - various techniques
Complications
Mental foramen nerve block
Anaesthesia of Maxilla -
Intra - orbital nerve block.
Posterior superior alveolar nerve block
Maxillary nerve block - techniques.

GENERAL ANAESTHESIA –
Concept of general anaesthesia.
Indications of general anaesthesia in dentistry.
Pre-anaesthetic evaluation of the patient.
Pre-anaesthetic medication - advantages, drugs used.
Commonly used anaesthetic agents.
Complication during and after G.A.
I.V. sedation with Diazepam and Medozolam.
Indications, mode of action, technique etc.
Cardiopulmonary resuscitation
Use of oxygen and emergency drugs.
Tracheostomy.

RECOMMENDED BOOKS:
1. Impacted teeth; Alling John F et al.
2. Principles of oral and maxillofacial surgery; Vol.1,2 & 3 Peterson LJ et al.
3. Text book of oral and maxillofacial surgery; Srinivasan B.
4. Handbook of medical emergencies in the dental office, Malamed SF.
5. Killeys Fractures of the mandible; Banks P.

6. Killeys fractures of the middle 3rd of the facial skeleton; Banks P.
7. The maxillary sinus and its dental implications; McGovanda
8. Killey and Kays outline of oral surgery – Part-1; Seward GR et al
9. Essentials of safe dentistry for the medically compromised patients; Mc Carthy FM
10. Oral & maxillofacial surgery, Vol 2; Laskin DM
11. Extraction of teeth;Howe, GL
12. Minor Oral Surgery; Howe.GL
13. Contemporary oral and maxillofacial surgery; Peterson I.J. et al
14. Oral and maxillofacial infections; Topazian RG & Goldberg MH

13. ORAL MEDICINE AND RADIOLOGY

AIMS:

(1) To train the students to diagnose the common disorders of Orofacial region by clinical examination and with the help of such investigations as may be required and medical management of oro-facial disorders with drugs and physical agents.

(2) To train the students about the importance, role, use and techniques of radiographs/digital radiograph and other imaging methods in diagnosis.

(3) The principles of the clinical and radiographic aspects of Forensic Odontology.
The syllabus in ORAL MEDICINE & RADIOLOGY is divided into two main parts.
(I) Diagnosis, Diagnostic methods and Oral Medicine (II) Oral Radiology. Again the part ONE is subdivided into three sections. (A) Diagnostic methods (B) Diagnosis and differential diagnosis (C) Oral Medicine & Therapeutics.

COURSE CONTENT

(1) Emphasis should be laid on oral manifestations of systemic diseases and ill-effects of oral sepsis on general health.

(2) To avoid confusion regarding which lesion and to what extent the student should learn and know, this elaborate syllabus is prepared. As certain lesions come under more than one group, there is repetition.

Part-I ORAL MEDICINE AND DIAGNOSTIC AIDS

SECTION (A) – DIAGNOSTIC METHODS.

(1) Definition and importance of Diagnosis and various types of diagnosis
(2) Method of clinical examinations.
(a) General Physical examination by inspection.
(b) Oro-facial region by inspection, palpation and other means
(c) To train the students about the importance, role, use of saliva and techniques of diagnosis of saliva as part of oral disease
(d) Examination of lesions like swellings, ulcers, erosions, sinus, fistula, growths, pigmented lesions, white and red patches
(e) Examination of lymph nodes
(f) Forensic examination – Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics.
(3) Investigations
(a) Biopsy and exfoliative cytology
(b) Haematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis

SECTION (B) – DIAGNOSIS, DIFFERENTIAL DIAGNOSIS

While learning the following chapters, emphasis shall be given only on diagnostic aspects including differential diagnosis

(1) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discolouration of teeth

(2) Diseases of bone and Osteodystrophies: Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenisis imperfecta, Marfans syndrome, osteopetrosis. Inflammation – Injury, infection and spread of infection,fascial space infections, osteoradionecrosis.

Metabolic disorders – Histiocytosis
Endocrine – Acro-megaly and hyperparathyroidism
Miscellaneous – Paget's disease, Mono and polyostotic fibrous dysplasia, Cherubism.

(3) Temparomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Sub-luxation and luxation.

(4) Common cysts and Tumors:
Cysts of soft tissue: Mucocele and Ranula
Cysts of bone: Odontogenic and nonodontogenic.

TUMORS:
Soft Tissue:
Epithelial: Papilloma, Carcinoma, Melanoma
Connective tissue: Fibroma, Lipoma, Fibrosarcoma
Vascular: Haemangioma, Lymphangioma
Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis
Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.
Hard Tissue:
Non Odontogenic: Osteoma, Osteosarcoma, Osteoclastoma, Chondroma, Chondrosarcoma, Central giant cell tumor, and Central haemangioma
Odontogenic: Enameloma, Ameloblastoma, Calcifying Epithelial Odontogenic tumor, Adenomatoid Odontogenic tumor, Periapical cemental dysphasia and odontomas

(5) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma

(6) Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma, Crohn's Disease and Histiocytosis X

(7) Miscellaneous Disorders: Burkitt lymphoma, Sturge – Weber syndrome, CREST syndrome, rendu-osler-weber disease

SECTION (C): ORAL MEDICINE AND THERAPEUTICS.

The following chapters shall be studied in detail including the aetiology, pathogenesis, clinical features, investigations, differential diagnosis, management and prevention

(1) Infections of oral and paraoral structures:
Bacterial: Streptococcal, tuberculosis, syphillis, vincents, leprosy, actinomycosis, diphtheria and tetanus
Fungal: Candida albicans
Virus: Herpes simplex, Herpes zoster, Ramsay hunt syndrome, measles, herpangina, mumps, infectious mononucleosis, AIDS and hepatitis-B

(2) Important common mucosal lesions:
White lesions: Chemical burns, leukodema, leukoplakia, fordyce spots, stomatitis nicotina palatinus, white sponge nevus, candidiasis, lichenplanus, discoid lupus erythematosis
Vesiculo-bullous lesions: Herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid erythema multiforme.
Ulcers: Acute and chronic ulcers
Pigmented lesions: Exogenous and endogenous
Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.

(3) Cervico-facial lymphadenopathy

(4) Facial pain:
(i) Organic pain: Pain arising from the diseases of orofacial tissues like teeth, pulp, gingival and periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone, paranasal sinus, salivary glands etc.,
(ii) Pain arising due to C.N.S. diseases:
(a) Pain due to intracranial and extracranial involvement of cranial nerves. (Multiple sclerosis, cerebrovascular diseases, trotter's syndrome etc.)
(b) Neuralgic pain due to unknown causes: Trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain
(iii) Referred pain: Pain arising from distant tissues like heart, spine etc.,

(5) Altered sensations: Cacogeusia, halitosis

(6) Tongue in local and systemic disorders: (Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red patches etc.)

(7) Oral manifestations of:

(i) Metabolic disorders:

(a) Porphyria

(b) Haemochromatosis

(c) Histocytosis X diseases

(ii) Endocrine disorders:

(a) Pituitary: Gigantism, acromegaly, hypopituitarism

(b) Adrenal cortex: Addison's disease (Hypofuntion)
Cushing's syndrome (Hyperfunction)

(c) Parathyroid glands: Hyperparathyroidism.

(d) Thyroid gland: (Hypothyroidism) Cretinism, myxoedema

(e) Pancreas: Diabetes

(iii) Nutritional deficiency: Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy)

(iv) Blood disorders:

(a) Red blood cell diseases
Deficiency anemias: (Iron deficiency, Plummer – Vinson syndrome, pernicious anaemia)
Haemolytic anaemias: (Thalassemia, sickle cell anaemia, erythroblastosis foetalis)
Aplastic anaemia
Polycythemia

(b) White Blood cell diseases
Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias

(c) Haemorrhagic disorders:
Thrombocytopenia, purpura, haemophillia, christmas disease and Von Willebrant's disease

(8) Disease of salivary glands:

(i) Development distrubances: Aplasia, atresia and aberration

(ii) Functional disturbances:Xerostomia, ptyalism

(iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis heerdfort's syndrome (Uveoparotid fever), Necrotising sialometaplasia

(iv) Cysts and tumors: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma

(v) Miscellaneous: Sialolithiasis, Sjogren's syndrome, mikuliez's disease and sialosis

(9) Dermatological diseases with oral manifestations:
(a) Ectodermal dysplasia (b) Hyperkerotosis palmarplantaris with periodontoopathy (c) Scleroderma (d) Lichen planus including ginspan's syndrome (e) Lupus erythematosus (f) Pemphigus (g) Erythema multiforme (h) Psoriasis

(10) Immunological diseases with oral manifestations
(a) Leukemia (b) Lymphomas (c) Multiple mycloma (d) AIDS clinical manifestations, opportunistic infections, neoplasms (e) Thrombcytopenia (f) Lupus erythematosus (g) Scleroderma (h) dermatomyositis (I) Submucous fibrosis (j) Rheumatoid arthritis (k) Recurrent oral ulcerations including behcet's syndrome and reiter's syndrome

(11) Allergy: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)

(12) Foci of oral infection and their ill effects on general health

(13) Management of dental problems in medically compomised persons:

(i) Physiological changes: Puberty, pregnancy and menopause

(ii) The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorders, hypertension, diabetes and AIDS. Post-irradiated patients.

(14) Precancerous lesions and conditions

(15) Nerve and muscle diseases:

(i) Nerves: (a) Neuropraxia (b) Neurotemesis (c) Neuritis (d) Facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthel syndrome and Ramsay Hunt syndrome (e) Neuroma (f) Neurofibromatosis (g) Frey'syndrome

(ii) Muscles: (a) Myositis ossificans (b) Myofascial pain dysfunction syndrome (c) Trismus

(16) Forensic odontology:

(a) Medicolegal aspects of orofacial injuries

(b) Identification of bite marks

(c) Determination of age and sex

(d) Identification of cadavers by dental appliances, Restorations and tissue remnants

(17) Therapeutics: General therapeutic measures – drugs commonly used in oral medicine viz., antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, astringents, mouth washes, styptics, demelucents, local surface anaesthetic, sialogogues, antisialogogues and drugs used in the treatment of malignancy

Part – II BEHAVIOURAL SCIENCES AND ETHICS.

Part – III ORAL RADIOLOGY

(1) Scope of the subject and history of origin

(2) Physics of radiation: (a) Nature and types of radiations (b) Source of radiations (c) Production of X-rays (d) Properties of X-rays (e) Compton effect (f) Photoelectric effect (g) Radiation measuring units

(3) Biological effects of radiation

(4) Radiation safety and protection measures

(5) Principles of image production

(6) Radiographic techniques:

(i) Intra-Oral: (a) Periapical radiographs (Bisecting and parallel technics) (b) Bite wing radiographs (c) Occlusal radiographs

(ii) Extra-oral: (a) Lateral projections of skull and jaw bones and paranasal sinuses (c) Cephalograms (d) Orthopantomograph (e) Projections of temperomandibular joint and condyle of mandible (f) Projections for Zygomatic arches

(iii) Specialised techniques: (a) Sialography (b) Xeroradiography (c) Tomography

(7) Factors in production of good radiographs:

(a) K.V.P. and mA.of X-ray machine (b) Filters (c) Collimations (d) Intensifying screens (e) Grids (f) X-ray films (g) Exposure time (h) Techniques (i) Dark room (j) Developer and fixer solutions (k) Film processing

(8) Radiographic normal anatomical landmarks

(9) Faculty radiographs and artefacts in radiographs

(10) Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissues

(11) Principles of radiotherapy of oro-facial malignancies and complications of radiotherapy

(12) Contrast radiography and basic knowledge of radio-active isotopes

(13) Radiography in Forensic Odontoloy - Radiographic age estimation and post-mortem radiographic methods

PRACTICALS / CLINICALS:

1. Student is trained to arrive at proper diagnosis by following a scientific and systematic proceedure of history taking and examination of the orofacial region. Training is also imparted in management wherever possible. Training also shall be imparted on saliva diagnostic procedures. Training also shall be imparted in various radiographic proceedures and interpretation of radiographs.

2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination

3. The following is the minimum of prescribed work for recording

(a) Recording of detailed case histories of interesting cases 10

(b) Intra-oral radiographs (Periapical, bitewing, occlusal) 25

(c) Saliva diagnostic check as routine procedure

BOOKS RECOMMENDED:

a) Oral Diagnosis, Oral Medicine & Oral Pathology

1. Burkit – Oral Medicine – J.B. Lippincott Company
2. Coleman – Principles of Oral Diagnosis – Mosby Year Book
3. Jones – Oral Manifestations of Systemic Diseases – W.B. Saunders company
4. Mitchell – Oral Diagnosis & Oral Medicine
5. Kerr – Oral Diagnosis
6. Miller – Oral Diagnosis & Treatment
7. Hutchinson – clinical Methods
8. Oral Pathology – Shafers
9. Sonis.S.T., Fazio.R.C. and Fang.L - Principles and practice of Oral Medicine

b) Oral Radiology

1. White & Goaz – Oral Radiology – Mosby year Book
2. Weahrman – Dental Radiology – C.V. Mosby Company
3. Stafne – Oral Roentgenographic Diagnosis – W.B.Saunders Co.,

c) Forensic Odontology

1. Derek H.Clark – Practical Forensic Odontology - Butterworth-Heinemann (1992)
2. C Michael Bowers, Gary Bell – Manual of Forensic Odontology - Forensic Pr (1995)

14. ORTHODONTICS & DENTAL ORTHOPAEDICS

COURSE OBJECTIVE:

Undergraduate programme in Orthodontics is designed to enable the qualifying dental surgeon to diagnose, analyse and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures. The following basic instructional procedures will be adapted to achieve the above objectives.

1. Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care.
2. Growth and Development: In General
   a. Definition
   b. Growth spurts and Differential growth
   c. Factors influencing growth and Development
   d. Methods of measuring growth
   e. Growth theories (Genetic, Sicher's, Scott's, Moss's,Petrovics, Multifactorial)
   f. Genetic and epigenetic factors in growth
   g. Cephalocaudal gradient in growth.
3. Morphologic Development Of Craniofacial Structures
   a. Methods of bone growth
   b. Prenatal growth of craniofacial structures
   c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion.
4. Functional Development of Dental Arches and Occlusioin
   a. Factors influencing functional development of dental arches and occlusion.
   b. Forces of occlusion
   c. Wolfe's law of transformation of bone
   d. Trajectories of forces
5. Clinical Application of Growth and Development
6. Malocclusion - In General
   a. Concept of normal occlusion
   b. Definition of malocclusion
   c. Description of different types of dental, skeletal and functional malocclusion.
7. Classification of Malocclusion
   Principle, description, advantages and disadvantages of classification of malocclusion by Angle, Simon, Lischer and Ackerman and Proffitt.
8. Normal and Abnormal Function of Stomatognathic System
9. Aetiology Of Malocclusion
   a. Definition, importance, classification, local and general aetiological factors.

b. Etiology of following different types of malocclusion:
1) Midline diastema
2) Spacing
3) Crowding
4) Cross-Bite: Anterior/Posterior
5) Class III Malocclusion
6) Class II Malocclusion
7) Deep Bite
8) Open bite

10. Diagnosis And Diagnostic Aids
a. Definition, Importance and classification of diagnostic aids
b. Importance of case history and clinical examination in orthodontics
c. Study Models: - Importance and uses - Preparation and preservation of study models
d. Importance of intraoral X-rays in orthodontics
e. Panoramic radiographs: - Principles, Advantages, disadvantages and uses
f. Cephalometrics: Its advantages, disadvantages
1. Definition
2. Description and use of cephalostat
3. Description and uses of anatomical landmarks lines and angles used in cephalometric analysis
4. Analysis- Steiner's, Down's, Tweed's, Ricket's-E- line
g. Electromyography and its use in orthodontics
h. Wrist X-rays and its importance in othodontics

11. General Principles In Orthodontic Treatment Planning Of Dental And Skeletal Malocclusions

12. Anchorage in Orthodontics - Definition, Classification, Types and Stability Of Anchorage

13. Biomechanical Principles In Orthodontic Tooth Movement
a. Different types of tooth movements
b. Tissue response to orthodontic force application
c. Age factor in orthodontic tooth movement

14. Preventive Orthodontics
a. Definition
b. Different procedures undertaken in preventive orthodontics and their limitations.

15. Interceptive Orthodontics
a. Definition
b. Different procedures undertaken in interceptive orthodontics
c. Serial extractions: Definition, indications, contra-indication, technique, advantages and disadvantages.
d. Role of muscle exercises as an interceptive procedure

16. Corrective Orthodontics
a. Definition, factors to be considered during treatment planning.
b. Model analysis: Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis
c. Methods of gaining space in the arch:- Indications, relative merits and demerits of proximal stripping, arch expansion and extractions
d. Extractions in Orthdodontics - indications and selection of teeth for extraction.

17. Orthodontic Appliances: General
a. Requisites for orthodontic appliances
b. Classification, indications of Removable and Functional Appliances
c. Methods of force application
d. Materials used in construction of various orthodontic appliances - use of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antifluxes.
e. Preliminary knowledge of acid etching and direct bonding.

18. Ethics

REMOVABLE ORTHODONTIC APPLIANCES

1) Components of removable appliances
2) Different types of clasps and their use
3) Different types of labial bows and their use
4) Different types of springs and their use
5) Expansion appliances in orthodontics:
   i) Principles
   ii) Indications for arch expansion
   iii) Description of expansion appliances and different types of expansion devices and their uses.
   iv) Rapid maxillary expansion

FIXED ORTHODONTIC APPLIANCES

1. Definition, Indications & Contraindications
2. Component parts and their uses
3. Basic principles of different techniques: Edgewise, Begg straight wire.

EXTRAORAL APPLIANCES

1. Headgears
2. Chincup
3. Reverse pull headgears

MYOFUNCTIONAL APPLIANCES

1. Definition and principles
2. Muscle exercises and their uses in orthodontics
3. Functional appliances:
   i) Activator, Oral screens, Frankels function regulator, bionator twin blocks, lip bumper
   ii) Inclined planes - upper and lower

18. Orthodontic Management Of Cleft Lip And Palate
19. Principles Of Surgical Orthodontics
    Brief knowledge of correction of:
    a. Mandibular Prognathism and Retrognathism
    b. Maxillary Prognathism and Retrognathism
    c. Anterior open bite and deep bite
    d. Cross bite
20. Principle, Differential Diagnosis & Methods of Treatment of:
    1. Midline diastema
    2. Cross bite
    3. Open bite
    4. Deep bite
    5. Spacing
    6. Crowding
    7. Class II - Division 1, Division 2
    8. Class III Malocclusion - True and Psuedo Class III
21. Retention and Relapse

Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention.

CLINICALS AND PRACTICALS IN ORTHODONTICS

PRACTICAL TRAINING DURING II YEAR B.D.S.

I. Basic wire bending exercises Gauge 22 or 0.7mm
   1. Straightening of wires (4 Nos.)
   2. Bending of a equilateral triangle
   3. Bending of a rectangle
   4. Bending of a square
   5. Bending of a circle
   6. Bending of U.V.

II. Construction of Clasps (Both sides upper/lower) Gauge 22 or 0.7mm
   1. 3/4 Clasp (C-Clasp)
   2. Full Clasp (Jackson's Crib)

3. Adam's Clasp
4. Triangular Clasp

III. Construction of Springs (on upper both sides) Gauge 24 or 0.5mm
1. Finger Spring
2. Single Cantelever Spring
3. Double Cantelever Spring (Z-Spring)
4. T-Springs on premolars

IV. Construction of Canine retractors Gauge 23 or 0.6mm
1. U - Loop canine retractor
(Both sides on upper & lower)
2. Helical canine retractor
(Both sides on upper & lower)
3. Buccal canine retractor:
- Self supported buccal canine retractor with
a) Sleeve - 5mm wire or 24 gauge
b) Sleeve - 19 gauge needle on any one side.
4. Palatal canine retractor on upper both sides
Gauge 23 or 0.6mm

V. Labial Bow
Gauge 22 or 0.7mm
One on both upper and lower

CLINICAL TRAINING DURING III YEAR B.D.S.

NO.	EXERCISE
01.	Making upper Alginate impression
02.	Making lower Alginate impression
03.	Study Model preparation
04.	Model Analysis
	a. Pont's Analysis
	b. Ashley Howe's Analysis
	c. Carey's Analysis
	d. Bolton's Analysis
	e. Moyer's Mixed Dentition Analysis

CLINICAL TRAINING DURING FINAL YEAR B.D.S.

NO.	EXERCISE
01.	Case History taking
02.	Case discussion
03.	Discussion on the given topic
04.	Cephalometric tracings
	a. Down's Analysis
	b. Steiner's Analysis
	c. Tweed's Analysis

PRACTICAL TRAINING DURING FINAL YEAR B.D.S.
1. Adam's Clasp on Anterior teeth Gauge 0.7mm
2. Modified Adam's Clasp on upper arch Gauge 0.7mm
3. High Labial bow with Apron spring on upper arch
(Gauge of Labial bow - 0.9mm, Apron spring - 0.3mm)
4. Coffin spring on upper arch Gauge 1mm

Appliance Construction in Acrylic
1. Upper & Lower Hawley's Appliance
2. Upper Hawley's with Anterior bite plane
3. Upper Habit breaking Appliance
4. Upper Hawley's with Posterior bite plane with 'Z' Spring
5. Construction of Activator
6. Lower inclined plane/Catalan's Appliance
7. Upper Expansion plate with Expansion Screw

RECOMMENDED AND REFERENCE BOOKS

1. CONTEMPORARY ORTHODONTICS	WILLIAM R. PROFFIT
2. ORTHODONTICS FOR DENTAL STUDENTS	WHITE and GARDINER
3. HANDBOOK OF ORTHODONTICS	MOYERS
4. ORTHODONTICS - PRINCIPLES AND PRACTICE	GRABER
5. DESIGN, CONSTRUCTION AND USE OF REMOVABLE ORTHODONTIC APPLIANCES	C. PHILIP ADAMS
6. CLINICAL ORTHODONTICS: VOL1 & 2	SALZMANN

15. PAEDIATRIC & PREVENTIVE DENTISTRY

THEORY:

1. INTRODUCTION TO PAEDODONTICS & PREVENTIVE DENTISTRY.
   - Definition, Scope, Objectives and Importance.
2. GROWTH & DEVELOPMENT:
   - Importance of study of growth and development in Paedodontics.
   - Prenatal and Postnatal factors in growth & development.
   - Theories of growth & development.
   - Development of maxilla and mandible and related age changes.
3. DEVELOPMENT OF OCCLUSION FROM BIRTH THROUGH ADOLESCENCE.
   - Study of variations and abnormalities.
4. DENTAL ANATOMY AND HISTOLOGY:
   - Development of teeth and associated structures.
   - Eruption and shedding of teeth.
   - Teething disorders and their management.
   - Chronology of eruption of teeth.
   - Differences between deciduous and permanent teeth.
   - Development of dentition from birth to adolescence.
   - Importance of first permanent molar.
5. DENTAL RADIOLOGY RELATED TO PAEDODONTICS.
6. ORAL SURGICAL PROCEDURES IN CHILDREN.
   - Indications and contraindications of extractions of primary and permanent teeth in children.
   - Knowledge of Local and General Anaesthesia.
   - Minor surgical procedures in children.
7. DENTAL CARIES:
   - Historical background.
   - Definition, aetiology & pathogenesis.
   - Caries pattern in primary, young permanent and permanent teeth in children.
   - Rampant caries, early childhood caries and extensive caries:
     * Definition, aetiology, Pathogenesis, Clinical features, Complications & Management
   - Role of diet and nutrition in Dental Caries.
   - Dietary modifications & Diet counselling.
   - Caries activity, tests, caries prediction, caries susceptibility & their clinical application.
8. GINGIVAL & PERIODONTAL DISEASES IN CHILDREN.
   - Normal gingiva & periodontium in children.
   - Definition, aetiology & Pathogenesis.
   - Prevention & Management of gingival & Periodontal diseases.
9. CHILD PSYCHOLOGY:
   - Definition.
   - Theories of child psychology.
   - Psychological development of children with age.
   - Principles of psychological growth & development while managing child patient.
   - Dental fear and its management.
   - Factors affecting child's reaction to dental treatment.
10. BEHAVIOUR MANAGEMENT:
   - Definitions.

- Types of behaviour encountered in the dental clinic.
- Non-pharmacological & pharmacological methods of Behaviour Management.

11. PAEDIATRIC OPERATIVE DENTISTRY:
    - Principles of Paediatric Operative Dentistry.
    - Modifications required for cavity preparation in primary and young permanent teeth.
    - Various Isolation Techniques.
    - Restorations of decayed primary, young permanent and permanent teeth in children using various restorative materials like Glass Ionomer, Composites & Silver Amalgam. Stainless steel, Polycarbonate & Resin Crowns.
12. PAEDIATRIC ENDODONTICS
    - Principles & Diagnosis.
    - Classification of Pulpal Pathology in primary, young permanent & permanent teeth.
    - Management of Pulpally involved primary, young permanent & permanent teeth.
        - Pulp capping – direct & indirect.
        - Pulpotomy
        - Pulpectomy
        - Apexogenesis
        - Apexification
    - Obturation Techniques & material used for primary, young permanent & Permanent teeth in children.
13. TRAUMATIC INJURIES IN CHILDREN:
    - Classifications & Importance.
    - Sequelae & reaction of teeth to trauma.
    - Management of Traumatised teeth.
14. PREVENTIVE & INTERCEPTIVE ORTHODONTICS:
    - Definitions.
    - Problems encountered during primary and mixed dentition phases & their management.
    - Serial extractions.
    - Space management.
15. ORAL HABITS IN CHILDREN:
    - Definition, Aetiology & Classification.
    - Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
    - Management of oral habits in children.
16. DENTAL CARE OF CHILDREN WITH SPECIAL NEEDS:
    - Definition, Aetiology, Classification, Behavioural and Clinical features & Management of children with:
        - Physically handicapping conditions.
        - Mentally compromising conditions.
        - Medically compromising conditions.
        - Genetic disorders.
17. CONGENITAL ABNORMALITIES IN CHILDREN:
    - Definition, Classification, Clinical features & Management.
18. DENTAL EMERGENCIES IN CHILDREN & THEIR MANAGEMENT.
19. DENTAL MATERIALS USED IN PAEDIATRIC DENTISTRY.
20. PREVENTIVE DENTISTRY:
    - Definition.
    - Principles & Scope.
    - Types of prevention.
    - Different preventive measures used in Paediatric Dentistry including pit and fissure sealants and caries vaccine.
21. DENTAL HEALTH EDUCATION & SCHOOL DENTAL HEALTH PROGRAMMES.
22. FLUORIDES:
    - Historical background.
    - Systemic & Topical fluorides.

- Mechanism of action.
- Toxicity & Management.
- Defluoridation techniques.

23. CASE HISTORY RECORDING:
    - Outline of principles of examination, diagnosis & treatment planning.
24. SETTING UP OF PAEDODONTIC CLINIC.
25. ETHICS.

B. PRACTICALS:

Following is the recommended clinical quota for under-graduate students in the subject of paediatric & preventive dentistry.

1. Restorations – Class I & II only : 45
2. Preventive measures e.g. Oral Prophylaxis – 20.
3. Fluoride applications – 10
4. Extractions – 25
5. Case History Recording & Treatment Planning – 10
6. Education & motivation of the patients using disclosing agents. Educating patients about oral hygiene measures like tooth brushing, flossing etc.

BOOKS RECOMMENDED & REFERENCES:

1. Paediatric Dentistry (Infancy through Adolescences) – Pinkham.
2. Kennedy's Pediatric Operative Dentistry – Kennedy & Curzon.
3. Occlusal guidance in Paediatric Dentistry – Stephen H. Wei.
4. Clinical Use of Fluorides – Stephen H. Wei.
5. Paediatric Oral & Maxillofacial Surgery – Kaban.
6. Paediatric Medical Emergencies – P. S. Whatt.
7. Understanding of Dental Caries – Niki Foruk.
8. An Atlas of Glass Ionomer cements – G. J. Mount.
9. Clinical Pedodontics – Finn.
10. Textbook of Pediatric Dentistry – Braham Morris.
11. Primary Preventive Dentistry – Norman O. Harris.
12. Handbook of Clinical Pedodontics – Kenneth. D.
13. Preventive Dentistry – Forrester.
14. The Metabolism and Toxicity of Fluoride – Garry M. Whitford.
15. Dentistry for the Child and Adolescent – Mc. Donald.
16. Pediatric Dentistry – Damle S. G.
17. Behaviour Management – Wright
18. Pediatric Dentistry – Mathewson.
19. Traumatic Injuries – Andreason.
20. Occlusal guidance in Pediatric Dentistry – Nakata.
21. Pediatric Drug Therapy – Tomare
22. Contemporary Orhtodontics – Profitt.
23. Preventive Dentistry – Depaola.
24. Metabolism & Toxicity of Fluoride – Whitford. G. M.
25. Endodontic Practice – Grossman.
26. Principles of Endodontics – Munford.
27. Endodontics – Ingle.
28. Pathways of Pulp – Cohen.
29. Management of Traumatized anterior Teeth – Hargreaves.

16. PUBLIC HEALTH DENTISTRY

GOAL:

To prevent and control oral diseases and promote oral health through organised community efforts

OBJECTIVES:

Knowledge:

At the conclusion of the course the student shall have a knowledge of the basis of public health, preventive dentistry, public health problems in India, Nutrition, Environment and their role in health, basics of dental statistics, epidemiological methods, National Oral Health Policy

Skill and Attitude:

At the conclusion of the course the students shall acquire the skill of identifying health problems affecting the society, conducting health surveys, conducting health education classes and deciding health strategies. Students should develop a positive attitude towards the problems of the society and must take responsibilities in providing health.

Communication abilities:

At the conclusions of the course the student should be able to communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease

Syllabus:

1. Introduction to Dentistry: Definition of Dentistry, History of dentistry, Scope, aims and objectives of Dentistry.
2. Public Health:
   - i. Health & Disease: - Concepts, Philosophy, Definition and Characteristics
   - ii. Public Health: - Definition & Concepts, History of public health
   - iii. General Epidemiology: - Definition, objectives, methods
   - iv. Environmental Health: - Concepts, principles, protection, sources, purification, environmental sanitation of water, disposal of waste, sanitation, then role in mass disorder
   - v. Health Education: - Definition, concepts, principles, methods, and health education aids
   - vi. Public Health Administration: - Priority, establishment, manpower, private practice management, hospital management.
   - vii. Ethics and Jurisprudence: Professional liabilities, negligence, malpractice, consents, evidence, contracts, and methods of identification in forensic dentistry.
   - viii. Nutrition in oral diseases
   - ix. Behavioural science: Definition of sociology, anthropology and psychology and their relevance in dental practice and community.
   - x. Health care delivery system: Centre and state, oral health policy, primary health care, national programmes, health organisations.

Dental Public Health:

1. Definition and difference between community and clinical health.
2. Epidemiology of dental diseases-dental caries, periodontal diseases, malocclusion, dental fluorosis and oral cancer.
3. Survey procedures: Planning, implementation and evaluation, WHO oral health survey methods 1997, indices for dental diseases.
4. Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and comprehensive health care, school dental health.
5. Payments of dental care: Methods of payments and dental insurance, government plans
6. Preventive Dentistry- definition, Levels, role of individual , community and profession, fluorides in dentistry, plaque control programmes.

Research Methodology and Dental Statistics

1. Health Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes
2. Research Methodology: -Definition, types of research, designing a written protocol
3. Bio-Statistics: - Introduction, collection of data, presentation of data, Measures of Central tendency, measures of dispersion, Tests of significance, Sampling and sampling techniques-types, errors, bias, blind trials and calibration.

Practice Management

1. Place and locality
2. Premises & layout
3. Selection of equipments
4. Maintenance of records/accounts/audit.

Dentist Act 1948 with amendment.

Dental Council of India and State Dental Councils

Composition and responsibilities.

Indian Dental Association
Head Office, State, local and branches.

PRACTICALS/CLINICALS/FIELD PROGRAMME IN COMMUNITY DENTISTRY:
These exercises designed to help the student in IV year students:

1. Understand the community aspects of dentistry
2. Take up leadership role in solving community oral health programme

Exercises:

a) Collection of statistical data (demographic) on population in India, birth rates, morbidity and mortality, literacy, per capita income
b) Incidence and prevalence of common oral diseases like dental caries, periodontal disease, oral cancer, fluorosis at national and international levels
c) Preparation of oral health education material - posters, models, slides, lectures, play acting skits etc.
d) Oral health status assessment of the community using indices and WHO basic oral health survey methods
e) Exploring and planning setting of private dental clinics in rural, semi urban and urban locations, availment of finances for dental practices-preparing project report.
f) Visit to primary health centre-to acquaint with activities and primary health care delivery
g) Visit to water purification plant/public health laboratory/ centre for treatment of waste and sewage water
h) Visit to schools-to assess the oral health status of school children, emergency treatment and health education including possible preventive care at school (tooth brushing technique demonstration and oral rinse programme etc.)
i) Visit to institution for the care of handicapped, physically, mentally, or medically compromised patients
j) Preventive dentistry: in the department application of pit and fissure sealants, fluoride gel application procedure, A. R. T., Comprehensive health for 5 patients at least 2 patients

The colleges are encouraged to involve in the N.S.S. programme for college students for carrying out social work in rural areas

SUGGESTED INTERNSHIP PROGRAMME IN COMMUNITY DENTISTRY:

I. AT THE COLLEGE:

Students are posted to the department to get training in dental practice management.

(a) Total oral health care approach- in order to prepare the new graduates in their approach to diagnosis, treatment planning, cost of treatment, prevention of treatment on schedule, recall maintenance of records etc. at least 10 patients (both children and adults of all types posting for at least one month).
(b) The practice of chair side preventive dentistry including oral health education

II. AT THE COMMUNITY ORAL HEALTH CARE CENTRE (ADOPTED BY THE DENTAL COLLEGE IN RURAL AREAS)

Graduates posted for at least one month to familiarise in:

(a) Survey methods, analysis and presentation of oral health assessment of school children and community independently using WHO basic oral health survey methods.
(b) Participation in rural oral health education programmes
(c) Stay in the village to understand the problems and life in rural areas

III. DESIRABLE: Learning use of computers-at least basic programme.

Examination Pattern

I. Index: Case History

b) Oral hygiene indices simplified- Green and Vermilion
c) Silness and Loe index for Plaque
d) Loe and Silness index for gingiva
e) CPI
f) DMF: T and S, df:t and s
g) Deans fluoride index

II. Health Education
   1. Make one - Audio visual aid
   2. Make a health talk

III. Practical work
   1. Pit and fissure sealant
   2. Topical fluoride application

BOOKS RECOMMENDED & REFERENCE:

1. Dentistry Dental Practice and Community by David F. Striffler and Brian A. Burt, Edn. –1983, W. B. Saunders Company
2. Principles of Dental Public Health by James Morse Dunning, IV Edition, 1986, Harvard University Press.
3. Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby Company 1981
4. Community Oral Health-A system approach by Patricia P. Cormier and Joyce I. Levy published by Appleton-Century-Crofts/New York, 1981
5. Community Dentistry-A problem oriented approach by P. C. Dental Hand book series Vol.8 by Stephen L. Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton Massachuseltts, 1980.
6. Dental Public Health- An Introduction to Community Dentistry. Editted by Geoffrey L. Slack and Brian Burt, Published by John Wrigth and sons Bristol, 1980
7. Oral Health Surveys- Basic Methods, 4th edition, 1997, published by W. H. O. Geneva Available at the regional office New Delhi.
8. Preventive Medicine and Hygiene-By Maxcy and Rosenau, published by Appleton Century Crofts, 1986.
9. Preventive Dentistry-by J. O. Forrest published by John Wright and sons Bristol, 1980.
10. Preventive Dentistry by Murray, 1997.
11. Text Book of Preventive and Social Medicine by Park and Park, 14th edition.
12. Community Dentistry by Dr. Soben Peter.
13. Introduction to Bio-statistics by B. K. Mahajan
14. Research methodology and Bio-statistics
15. Introduction to Statistical Methods by Grewal

17. PERIODONTOLOGY

OBJECTIVES:

The student shall acquire the skill to perform dental scaling ,diagnostic tests of periodontal diseases; to use the instruments for periodontal therapy and maintenance of the same.

The student shall develop attitude to impart the preventive measures namely, the prevention of periodontal diseases and prevention of the progress of the disease. The student shall also develop an attitude to perform the treatment with full aseptic precautions; shall develop an attitude to prevent iatrogenic diseases; to conserve the tooth to the maximum possible time by maintaining periodontal health and to refer the patients who require specialist's care.

1. Introduction: Definition of Periodontology, Periodontics, Periodontia, Brief historical background, Scope of Periodontics
2. Development of perio-dontal tissues, micro-structural anatomy and biology of periodontal tissues in detail Gingiva. Junctional epithelium in detail, Epithelial-Mesenchymal interaction,Periodontal ligament, Cementum, Alveolar bone.
3. Defensive mechanisms in the oral cavity: Role of Epithelium,Gingival fluid, Saliva and other defensive mechanisms in the oral environment.
4. Age changes in periodontal structures and their significance in Geriatric dentistry — Age changes in teeth and periodontal structures and their association with periodontal diseases
5. Classification of periodontal diseases — Need for classification, Scientific basis of classification
   Classification of gingival and periodontal diseases as described in World Workshop1989
   Gingivitis:

		Plaque associated,ANUG,steroid hormone influence, Medication influenced, Desquamative gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc. Periodontitis: Adult periodontitis, Rapidly progressive periodontitis A&B, Juvenile periodontitis(localised, generalised, and post-juvenile), Prepubertal periodontitis, Refractory periodontitis
6.	Gingival diseases	Localised and generalised gingivitis, Papillary, marginal and diffuse gingivitis Aetiology, pathogenesis, clinical signs, symptoms and management of i) Plaque associated gingivitis ii) Systemically aggravated gingivitis(sex hormones, drugs and systemic diseases) iii) ANUG iv) Desquamative gingivitis-Gingivitis associated with lichen planus, pemphigoid, pemphigus, and other vesiculobullous lesions v) Allergic gingivitis vi) Infective gingivitis-Herpetic, bacterial and candidial vii) Pericoronitis viii) Gingival enlargement (classification and differential diagnosis)
7	Epidemiology of periodontal diseases	- Definition of index, incidence, prevalence,epidemiology,endemic, epidemic, and pandemic - Classification of indices(Irreversible and reversible) - Deficiencies of earlier indices used in Periodontics - Detailed understanding of Silness & Loe Plaque Index ,Loe & Silness Gingival Index, CPITN & CPI. - Prevalence of periodontal diseases in India and other countries. - Public health significance All these topics are covered at length under community dentistry. Hence, the topics may be discussed briefly. However, questions may be asked from the topics for examination
8.	Extension of inflammation from gingiva	Mechanism of spread of inflammation from gingival area to deeper periodontal structures Factors that modify the spread
9.	Pocket	Definition, signs and symptoms, classification, pathogenesis, histopathology, root surface changes and contents of the pocket
10.	Etiology	- Dental Plaque (Biofilm) - Definition, New concept of biofilm - Types, composition, bacterial colonisation, growth,maturation & disclosing agents - Role of dental plaque in periodontal diseases - Plaque microorganisms in detail and bacteria associated with periodontal diseases - Plaque retentive factors - Materia alba - Food debris - Calculus

- Definition
- Types, composition, attachment, theories of formation
- Role of calculus in disease

Food Impaction
- Definition
- Types, Aetiology
- Hirschfelds' classification
- Signs & symptoms & sequelae of treatment

Trauma from occlusion
- Definition, Types
- Histopathological changes
- Role in periodontal disease
- Measures of management in brief

Habits
- Their periodontal significance
- Bruxism & parafunctional habits, tongue thrusting ,lip biting, occupational habits

IATROGENIC FACTORS

Conservative Dentistry
- Restorations
- Contact point, marginal ridge, surface roughness, overhanging restorations, interface between restoration and teeth

Prosthodontics
- Interrelationship
- Bridges and other prosthesis, pontics (types), surface contour, relationships of margins to the periodontium, Gingival protection theory, muscle action theory & theory of access to oral hygiene.

Orthodontics
- Interrelationship, removable appliances & fixed appliances
- Retention of plaque, bacterial changes

Systemic diseases
- Diabetes, sex hormones, nutrition (Vit.C & proteins)
- AIDS & periodontium
- Haemorrhagic diseases, Leukemia, clotting factor disorders,PMN disorders

11. Risk factors — Definition. Risk factors for periodontal diseases

12. Host response
- Mechanism of initiation and progression of periodontal diseases
- Basic concepts about cells, Mast cells, neutrophils, macrophages, lymphocytes, immunoglobulins, complement system, immune mechanisms & cytokines in brief
- Stages in gingivitis-Initial, early, established & advanced
- Periodontal disease activity, continuous paradigm, random burst & asynchronous multiple burst hypothesis

13. Periodontitis
- Aetiology ,histopathology, clinical signs & symptoms, diagnosis and treatment of adult periodontitis
- Periodontal abscess; definition, classification, pathogenesis, differential diagnosis and treatment
- Furcation involvement, Glickmans' classification, prognosis and management
- Rapidly progressive periodontitis
- Juvenile periodontitis: Localised and generalised
- Post-juvenile periodontitis
- Periodontitis associated with systemic diseases
- Refractory periodontitis

14.	Diagnosis	- Routine procedures, methods of probing, types of probes, (According to case history) - Halitosis: Aetiology and treatment. Mention advanced diagnostic aids and their role in brief.
15.	Prognosis	- Definition, types, purpose and factors to be taken into consideration
16.	Treatment plan	- Factors to be considered
17.	Periodontal therapy	A. General principles of periodontal therapy. Phase I,II, III, IV therapy. Definition of periodontal regeneration, repair, new attachment and reattachment. B. Plaque control i. Mechanical tooth brushes, interdental cleaning aids, dentifrices ii. Chemical; classification and mechanism of action of each & pocket irrigation
18.	Pocket eradication procedures	- Scaling and root planning: - Indications - Aims & objectives - Healing following root planning - Hand instruments,sonic,ultrasonic & piezo-electric scalers - Curettage & present concepts - Definition - Indications - Aims & objectives - Procedures & healing response - Flap surgery - Definition - Types of flaps, Design of flaps, papilla preservation - Indications & contraindications - Armamentarium - Surgical procedure & healing response
19.	Osseous Surgery	Osseous defects in periodontal disease - Definition - Classification - Surgery: resective, additive osseous surgery (osseous grafts with classification of grafts) - Healing responses - Other regenerative procedures; root conditioning - Guided tissue regeneration
20.	Mucogingival surgery & periodontal plastic surgeries	Definition Mucogingival problems: etiology, classification of gingival recession (P.D.Miller Jr. and Sullivan and Atkins) Indications & objectives Gingival extension procedures: lateral pedicle graft, frenectomy, frenotomy Crown lengthening procedures Periodontal microsurgery in brief
21.	Splints	- Periodontal splints - Purpose & classification - Principles of splinting
22.	Hypersensitivity	Causes, Theories & management
23.	Implants	Definition, types, scope & biomaterials used. Periodontal considerations: such as implant-bone interface, implant-gingiva interface, implant failure, peri-implantitis & management

24.	Maintenance phase (SPT)	- Aims, objectives, and principles - Importance - Procedures - Maintenance of implants
25.	Pharmaco-therapy	- Periodontal dressings - Antibiotics & anti-inflammatory drugs - Local drug delivery systems
26.	Periodontal management of medically compromised patients	Topics concerning periodontal management of medically compromised patients
27.	Inter-disciplinary care	- Pulpo-periodontal involvement - Routes of spread of infection - Simons' classification - Management
28.	Systemic effects of periodontal diseases in brief	Cardiovascular diseases, Low birth weight babies etc.
29.	Infection control protocol	Sterilisation and various aseptic procedures
30.	Ethics	

TUTORIALS DURING CLINICAL POSTING;

1. Infection control
2. Periodontal instruments
3. Chair position and principles of instrumentation
4. Maintenance of instruments (sharpening)
5. Ultrasonic, Piezoelectric and sonic scaling – demonstration of technique
6. Diagnosis of periodontal disease and determination of prognosis
7. Radiographic interpretation and lab investigations
8. Motivation of patients- oral hygiene instructions

Students should be able to record a detailed periodontal case history, determine diagnosis, prognosis and plan treatment. Student should perform scaling, root planning local drug delivery and SPT. Shall be given demonstration of all periodontal surgical procedures.

DEMONSTRATIONS:

1. History taking and clinical examination of the patients
2. Recording different indices
3. Methods of using various scaling and surgical instruments
4. Polishing the teeth
5. Bacterial smear taking
6. Demonstration to patients about different oral hygiene aids
7. Surgical procedures- gingivectomy, gingivoplasty, and flap operations
8. Follow up procedures, post operative care and supervision

REQUIREMENTS:

1. Diagnosis, treatment planning and discussion and total periodontal treatment – 25 cases
2. Dental scaling, oral hygiene instructions – 50 complete cases/ equivalent
3. Assistance in periodontal surgery – 5 cases
4. A work record should be maintained by all the students and should be submitted at the time of examination after due certification from the head of the department.

Students should have to complete the work prescribed by the concerned department from time to time and submit a certified record for evaluation.

PRESCRIBED BOOK:

1. Glickman's Clinical Periodontology — Carranza

REFERENCE BOOKS

1. Essentials of Periodontology and periodontics- Torquil MacPhee
2. Contemporary periodontics- Cohen
3. Periodontal therapy- Goldman
4. Orbans' periodontics- Orban
5. Oral Health Survey- W.H.O.
6. Preventive Periodontics- Young and Stiffler
7. Public Health Dentistry- Slack
8. Advanced Periodontal Disease- John Prichard
9. Preventive Dentistry- Forrest
10. Clinical Periodontology- Jan Lindhe
11. Periodontics- Baer & Morris.

18. PROSTHODONTICS AND CROWN & BRIDGE

Complete Dentures

A. Applied Anatomy and Physiology.
   1. Introduction
   2. Biomechanics of the edentulous state.
   3. Residual ridge resorption.

B. Communicating with the patient
   Understanding the patients.
   - Mental attitude.
   2. Instructing the patient.

C. Diagnosis and treatment planning for patients-
   1. With some teeth remaining.
   2. With no teeth remaining.
   a) Systemic status.
   b) Local factor.
   c) The geriatric patient.
   d) Diagnostic procedures.

D. Articulators- discussion

E. Improving the patient's denture foundation and ridge relation -an overview.
   a) Pre-operative examination.
   b) Initial hard tissue & soft tissue procedure.
   c) Secondary hard & soft tissue procedure.
   d) Implant procedure.
   e) Congenital deformities.
   f) Postoperative procedure.

F. Principles of Retention, Support and Stability

G. Impressions - detail.
   a) Muscles of facial expression.
   b) Biologic considerations for maxillary and mandibular impression including anatomy landmark and their interpretation.
   c) Impression objectives.
   d) Impression materials.
   e) Impression techniques.
   f) Maxillary and mandibular impression procedures.
   i. Preliminary impressions.
   ii. Final impressions.
   g) Laboratory procedures involved with impression making (Beading & Boxing, and cast preparation).

H. Record bases and occlusion rims- in detail.
   a) Materials & techniques.
   b) Useful guidelines and ideal parameters.
   c) Recording and transferring bases and occlusal rims.

I. Biological consideration in jaw relation & jaw movements - craniomandibular relations.
   a) Mandibular movements.

b) Maxillo -mandibular relation including vertical and horizontal jaw relations.
c) Concept of occlusion- discuss in brief.

J. Relating the patient to the articulator.
a) Face bow types & uses– discuss in brief.
b) Face bow transfer procedure - discuss in brief.

K. Recording maxillo mandibular relation.
a) Vertical relations.
b) Centric relation records.
c) Eccentric relation records.
d) Lateral relation records.

L. Tooth selection and arrangement.
a) Anterior teeth.
b) Posterior teeth.
c) Esthetic and functional harmony.

M. Relating inclination of teeth to concept of occlusion- in brief.
a) Neutrocentric concept.
b) Balanced occlusal concept.

N. Trial dentures.

O. Laboratory procedures.
a) Wax contouring.
b) Investing of dentures.
c) Preparing of mold.
d) Preparing & packing acrylic resin.
e) Processing of dentures.
f) Recovery of dentures.
g) Lab remount procedures.
h) Recovering the complete denture from the cast.
i) Finishing and polishing the complete denture.
j) Plaster cast for clinical denture remount procedure.

P. Denture insertion.
a) Insertion procedures.
b) Clinical errors.
c) Correcting occlusal disharmony.
d) Selective grinding procedures.

R. Treating problems with associated denture use – discuss in brief (tabulation/flow-chart form).

S. Treating abused tissues - discuss in brief.

T. Relining and rebasing of dentures- discuss in brief.

V. Immediate complete denture construction procedure- discuss in brief.

W. The single complete denture- discuss in brief.

X. Overdentures - discuss in brief.

Y. Dental implants in complete denture - discuss in brief.

Note : It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover –

1. Definition
2. Diagnosis (of the particular situation/patient selection/treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab /Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase
9. Oral Implantology
10. Ethics

Removable Flexible Dentures

1. Introduction
   - Terminologies and scope
2. Classification.
3. Examination, Diagnosis & Treatment planning & evaluation of diagnostic data.
4. Components of a removable partial denture.
   - Major connectors,
   - Minor connectors,
   - Rest and rest seats.
5. Components of a Removable Partial Denture.
   - Direct retainers,
   - Indirect retainers,
   - Tooth replacement.
6. Principles of Removable Partial Denture Design.
7. Survey and design – in brief.
   - Surveyors.
   - Surveying.
   - Designing.
8. Mouth preparation and master cast.
9. Impression materials and procedures for removable partial dentures.
10. Preliminary jaw relation and aesthetic try-in for some anterior replacement teeth.
11. Laboratory procedures for framework construction-in brief.
12. Fitting the framework - in brief.
13. Try-in of the partial denture - in brief.
14. Completion of the partial denture - in brief.
15. Inserting the Removable Partial Denture - in brief.
16. Post-insertion observations.
17. Temporary Acrylic Partial Dentures.
18. Immediate Removable Partial Denture.
19. Removable Partial Dentures opposing Complete denture.

Note : It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover –

1. Definition
2. Diagnosis (of the particular situation /patient selection /treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab /Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase

Fixed Partial Dentures

Topics To Be Covered In Detail -

1. Introduction
2. Fundamentals of occlusion – in brief.
3. Articulators – in brief.
4. Treatment planning for single tooth restorations.
5. Treatment planning for the replacement of missing teeth including selection and choice of abutment teeth.
6. Fixed partial denture configurations.
7. Principles of tooth preparations.
8. Preparations for full veneer crowns – in detail.
9. Preparations for partial veneer crowns – in brief.
10. Provisional Restorations
11. Fluid Control and Soft Tissue Management
12. Impressions
13. Working Casts and Dies
14. Wax Patterns
15. Pontics and Edentulous Ridges

16. Aesthetic Considerations
17. Finishing and Cementation

Topics To Be Covered In Brief -

1. Solder Joints and Other Connectors
2. All - Ceramic Restorations
3. Metal - Ceramic Restorations
4. Preparations of intracoronal restorations.
5. Preparations for extensively damaged teeth.
6. Preparations for periodontally weakened teeth
7. The Functionally Generated Path Technique
8. Investing and Casting
9. Resin - Bonded Fixed Partials Denture

Note : It is suggested that the above mentioned topics be dealt with wherever appropriate in the following order so as to cover –

1. Definition
2. Diagnosis(of the particular situation /patient selection /treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab /Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase

RECOMMENDED BOOKS:

1. Syllabus of Complete denture by - Charles M. Heartwell Jr. and Arthur O. Rahn.
Boucher's "Prosthodontic treatment for edentulous patients"
Essentials of complete denture prosthodontics by – Sheldon Winkler.
Maxillofacial prosthetics by – Willam R.Laney.
McCraken's Removable partial prosthodontics
Removable partial prosthdontics by – Ernest L. Miller and Joseph E. Grasso.

19. AESTHETIC DENTISTRY

Aesthetic Dentistry has gained popularity over the last decade. Therefore it is better that undergraduate students understand the philosophy and scientific knowledge of aesthetic dentistry.

1. Introduction and scope of aesthetic dentistry
2. Anatomy & physiology of smile
3. Role of the colour in asthetic dentistry
4. Simple procedures (roundening of central incisors to enhance esthetic appearance)
5. Bleaching of teeth
6. Veneers with various materials
7. Preventive and interceptive aesthetics
8. Ceramics
9. Simple gingival contouring to enhance the appearance
10. Simple clinical procedures for BDS students

Recommended books:

1. Esthetic guidelines for restorative dentistry; Scharer & others
2. Esthetics of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3. Esthetic & the treatment of facial form, Vol 28; Mc Namara (JA)

20. FORENSIC ODONTOLOGY (30 hrs of instruction)

Definition

Forensic is derived from the Latin word forum, which means 'court of law.' Odontology literally implies 'the study of teeth.' Forensic odontology, therefore, has been defined by the Fédération Dentaire International (FDI) as "that branch of dentistry which, in the interest of justice, deals with the proper handling and examination of dental evidence, and with the proper evaluation and presentation of dental findings."

Objectives of the undergraduate curriculum

At the end of the programme, the dental graduate should:

1. Have sound knowledge of the theoretical and practical aspects of forensic odontology.
2. Have an awareness of ethical obligations and legal responsibilities in routine practice and forensic casework.
3. Be competent to recognise forensic cases with dental applications when consulted by the police, forensic pathologists, lawyers and associated professionals.
4. Be competent in proper collection of dental evidence related to cases of identification, ethnic and sex differentiation, age estimation and bite marks.
5. Be able to assist in analysis, evaluation, and presentation of dental facts within the realm of law.

Curriculum for forensic odontology

1. Introduction to forensic dentistry
   - Definition and history
   - Recent developments and future trends
2. Overview of forensic medicine and toxicology
   - Cause of death and postmortem changes
   - Toxicological manifestations in teeth and oral tissues
3. Dental identification
   - Definition
   - Basis for dental identification
   - Postmortem procedures
   - Dental record compilation and interpretation
   - Comparison of data, and principles of report writing
   - Identification in disasters and handling incinerated remains
   - Postmortem changes to oral structures
4. Maintaining dental records
   - Basic aspects of good record-keeping
   - Different types of dental records
     - Dental charts
     - Dental radiographs
     - Study casts
     - Denture marking
     - Photographs
   - Dental notations
   - Relevance of dental records in forensic investigation
5. Age estimation
   - Age estimation in children and adolescents
     - Advantages of tooth calcification over 'eruption' in estimating age
     - Radiographic methods of Schour & Massler, Demirjian et al
   - Age estimation in adults
     - Histological methods – Gustafson's six variables and Johanson's modification, Bang & Ramm's dentine translucency
     - Radiographic method of Kvaal et al
   - Principles of report writing
6. Sex differentiation
   - Sexual dimorphism in tooth dimensions (Odontometrics)
7. Ethnic variations ('racial' differences) in tooth morphology
   - Description of human population groups
   - Genetic and environmental influences on tooth morphology
   - Description of metric and non-metric dental features used in ethnic differentiation
8. Bite mark procedures
   - Definition and classification
   - Basis for bite mark investigation
   - Bite mark appearance
   - Macroscopic and microscopic ageing of bite marks
   - Evidence collection from the victim and suspect of bite mark

- Analysis and comparison
- Principles of report writing
- Animal bite investigation

9. Dental DNA methods
   - Importance of dental DNA evidence in forensic investigations
   - Types of DNA and dental DNA isolation procedures
   - DNA analysis in personal identification
   - Gene-linked sex dimorphism
   - Population genetics
10. Jurisprudence and ethics
   - Fundamentals of law and the constitution
   - Medical legislation and statutes (Dental and Medical Council Acts, etc)
   - Basics of civil law (including torts, contracts and consumer protection act)
   - Criminal and civil procedure code (including expert witness requirement)
   - Assessment and quantification of dental injuries in courts of law
   - Medical negligence and liability
   - Informed consent and confidentiality
   - Rights and duties of doctors and patients
   - Medical and dental ethics (as per Dentists' Act)

Theory sessions and practical exercises

Total hours for the course

- Didactic – 10-12 hours
- Practical – 20-25 hours

Detailed didactic sessions for the above components, either in the form of lectures or as structured student-teacher interactions, is essential. Specialists from multiple disciplines, particularly from legal and forensic sciences, can be encouraged to undertake teaching in their area of expertise.

An interactive, navigable and non-linear (INN) model may also be utilised for education.

Practical exercises (real-life casework and/or simulated cases) must complement didactic sessions to facilitate optimal student understanding of the subject. Mandatory practical training in dental identification methods, dental profiling (ethnic and sex differences, radiographic age estimation), and bite mark procedures, is of paramount importance. In addition, practical exercises/demonstrations in histological age estimation, comparative dental anatomy, DNA methods, medical autopsy, court visits, and other topics may be conducted depending on available expertise, equipment and feasibility.

Approach to teaching forensic odontology

Forensic odontology could be covered in two separate streams. The divisions include a preclinical stream and a clinical stream.

Preclinical stream

- Introduction to forensic odontology
- Sex differences in odontometrics
- Ethnic variations in tooth morphology
- Histological age estimation
- Dental DNA methods
- Bite marks procedures
- Overview of forensic medicine and toxicology

It could prove useful to undertake the preclinical stream in II or III year under Oral Biology/Oral Pathology since these aspects of forensic odontology require grounding in dental morphology, dental histology and basic sciences, which, students would have obtained in I and/or II BDS.

Clinical stream

- Dental identification
- Maintaining dental records
- Radiographic age estimation
- Medical jurisprudence and ethics

It would be suitable to undertake these topics in the IV or V year as part of Oral Medicine and Radiology, since students require reasonable clinical exposure and acumen to interpret dental records, perform dental postmortems and analyse dental radiographs for age estimation.

21. ORAL IMPLANTOLOGY (30 hrs of instruction)

INTRODUCTION TO ORAL IMPLANTOLOGY

Oral Implantology has now emerged as a new branch in dentistry world wide and it has been given a separate status in the universities abroad. In India day to day the practice of treating patients with implants is on the rise. In this context inclusion of this branch into under graduate curriculum is essential. The objective behind this is to impart basic knowledge of Oral Implantology to undergraduates and enable them to diagnose, plan the treatment and to carry out the needed pre surgical mouth preparations and treat or refer them to speciality centres. This teaching programme may be divided and carried out by the Dept. of Oral Surgery, Prosthodontics and Periodontics.

1. History of implants, their design & surface characteristics and osseo-integration
2. Scope of oral & maxillofacial implantology & terminologies
3. A brief introduction to various implant systems in practice
4. Bone biology, Morphology, Classification of bone and its relevance to implant treatment and bone augmentation materials.
5. Soft tissue considerations in implant dentistry
6. Diagnosis & treatment planning in implant dentistry
   Case history taking/Examination/Medical evaluation/Orofacial evaluation/ Radiographic evaluation/ Diagnostic evaluation/ Diagnosis and treatment planning/ treatment alternatives/ Estimation of treatment costs/ patient education and motivation
7. Pre surgical preparation of patient
8. Implant installation & armamentarium for the Branemark system as a role model
9. First stage surgery – Mandible – Maxilla
10. Healing period & second stage surgery
11. Management of surgical complications & failures
12. General considerations in prosthodontic reconstruction & Bio mechanics
13. Prosthodontic components of the Branemark system as a role model
14. Impression procedures & Preparation of master cast
15. Jaw relation records and construction of suprastructure with special emphasis on occlusion for osseointegrated prosthesis
16. Management of prosthodontic complications & failures
17. Recall & maintenance phase.

Criteria for success of osseointegrated implant supported prosthesis

SUGGESTED BOOKS FOR READING

1. Contemporary Implant Dentistry -	Carl .E. Misch Mosby 1993 First Edition.
2. Osseointegration and Occlusal Rehabilitation	Hobo S., Ichida. E. and Garcia L.T. Quintessence Publishing Company, 1989 First Edition.

22. BEHAVIOURAL SCIENCES (20 hrs of instruction)

GOAL:

The aim of teaching behavioural sciences to undergraduate student is to impart such knowledge & skills that may enable him to apply principles of behaviour –

a) For all round development of his personality
b) In various therapeutic situations in dentistry.

The student should be able to develop skills of assessing psychological factors in each patient, explaining stress, learning simple counselling techniques, and improving patients compliance behaviour.

OBJECTIVES:

A) KNOWLEDGE & UNDERSTANDING:

At the end of the course, the student shall be able to:

1) Comprehend different aspects of normal behaviour like learning, memory, motivation, personality & intelligence.
2) Recognise difference between normal and abnormal behaviour.
3) Classify psychiatric disorders in dentistry.
4) Recognise clinical manifestations of dental phobia, dental anxiety, facial pain, orofacial manifestations of psychiatric disorders, and behavioural problems in children. Addictive disorders, psychological disorders in various dental departments.
5) Have understanding of stress in dentistry and knowledge of simple counselling techniques.
6) Have some background knowledge of interpersonal, managerial and problem solving skills which are an integral part of modern dental practice.
7) Have knowledge of social context of dental care.

B) SKILLS

The student shall be able to:

1) Interview the patient and understand different methods of communication skills in dentist - patient relationship.
2) Improve patient compliance behaviour.
3) Develop better interpersonal, managerial and problem solving skills.
4) Diagnose and manage minor psychological problems while treating dental patients.

INTEGRATION:

The training in Behavioural sciences shall prepare the students to deliver preventive, promotive, curative and rehabilitative services to the care of the patients both in family and community and refer advanced cases to specialised psychiatric hospitals.

Training should be integrated with all the departments of Dentistry, Medicine, Pharmacology, Physiology and Biochemistry.

PSYCHOLOGY:

1. Definition & Need of Behavioural Science. Determinants of Behaviour. Hrs 1
   Scope of Behavioural Science.
2. Sensory process & perception perceptual process- clinical applications.
3. Attention - Definition - factors that determine attention. Clinical application.
4. Memory - Memory process - Types of memory , Forgetting:
   Methods to improve memory, Clinical assessment of memory & clinical applications.
5. Definition - Laws of learning
   Type of learning. Classical conditioning, operant conditioning, cognitive learning, Insight learning, social learning, observational learning, principles of learning– Clinical application.
6. Intelligence- Definition: Nature of intelligence stability of intelligence
   Determinants of intelligence, clinical application
7. Thinking - Definition: Types of thinking, delusions, problem solving
8. Motivation - Definition: Motive, drive, needs classification of motives
9. Emotions - Definition differentiation from feelings – Role of hypothalamus, Cerebral cortex, adrenal glands ANS. Theories of emotion, Types of emotions.
   Personality. Assessment of personality: Questionnaires, personality inventory, rating scales, Interview projective techniques – Rorshach ink blot test , RAT, CAT

SOCIOLOGY:

Social class, social groups – family, types of family, types of marriages, communities and Nations and institutions.

REFERENCE BOOKS:

1. General psychology -- S.K. Mangal
2. General psychology -- Hans Raj, Bhatia
3. General psychology -- Munn
4. Behavioural Sciences in Medical practise -- Manju Mehta
5. Sciences basic to psychiatry -- Basanth Puri & Peter J Tyrer

23. ETHICS (20 hrs. of instruction)

Introduction:

There is a definite shift now from the traditional patient and doctor relationship and delivery of dental care. With advances in science and technology and the increasing needs of the patient, their families and community, there is a concern for the health of the community as a whole. There is a shift to greater accountability to the society. Dental specialists like other health professionals are confronted with many ethical problems. It is therefore absolutely necessary for each and every one in health care delivery to prepare themselves to deal with these problems. To accomplish this and develop human values the Council desires that all the trainees undergo ethical sensitisation by lectures or discussion on ethical issues, discussion of cases with an important ethical component.

Course content:

Introduction to ethics –

- what is ethics?
- What are values and norms?
- How to form a value system in one's personal and professional life?
- Hippocratic oath.
- Declaration of Helsinki, WHO declaration of Geneva, International code of ethics, DCI Code of ethics.

Ethics of the individual –

The patient as a person.
Right to be respected
Truth and confidentiality
Autonomy of decision
Doctor Patient relationship

Profession Ethics –

Code of conduct
Contract and confidentiality
Charging of fees, fee splitting
Prescription of drugs
Over-investigating the patient
Malpractice and negligence

Research Ethics –

Animal and experimental research/humanness
Human experimentation
Human volunteer research-informed consent
Drug trials

Ethical workshop of cases
Gathering all scientific factors
Gathering all value factors
Identifying areas of value – conflict, setting of priorities
Working our criteria towards decisions

Recommended Reading:

Medical Ethics, Francis C.M., I Ed. 1993, Jaypee Brothers, New Delhi p. 189.

Maj. Gen. (Retd.) P.N. AWASTHI, Secy.
[ADVT III/IV/Exty./98/07]

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असाधारण

EXTRAORDINARY

भाग III — खण्ड 4

PART III—Section 4

प्राधिकार से प्रकाशित

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शुद्धिपत्र

नई दिल्ली, 7 जनवरी, 2008

सं. डीई-22-2007.—दन्त अधिनियम, 1948 की धारा 20 द्वारा प्रदत्त शक्तियों का उपयोग करते हुए, केन्द्र सरकार की पूर्व संस्वीकृति के साथ भारतीय दन्त परिषद् द्वारा भाग-III, खण्ड 4 में तारीख 10 सितम्बर, 2007 को प्रकाशित संशोधित बी.डी.एस. पाठ्यक्रम विनियम 2007 में निम्न संशोधन कर रहा है ।

1. लघु शीर्ष और प्रारम्भ.—(i) इन विनियमों को भारतीय दन्त परिषद् संशोधित बी.डी.एस. पाठ्यक्रम विनियम (संशोधन) 2007 कहा जा सकता है ।

(ii) ये सरकारी राजपत्र में उनके प्रकाशन की तारीख से प्रभावी होंगे ।

शीर्षक –

आधारभूत सुविधाएं एवं कार्यात्मक आवश्यकताएं

50 दाखिला

(i) संख्या नं. 17 आडीटोरियम के स्थान पर :

-संख्या नं. 17 आडीटोरियम का प्रतिस्थापन करके संख्या 16. आडीटोरियम कर दिया जाए ।

(ii) संख्या नं. 18. प्रयोगशालाएं के स्थान पर :

-संख्या नं. 18. प्रयोगशालाएं का प्रतिस्थापन करके संख्या 17. प्रयोगशालाएं कर दिया जाए ।

(iii) प्रतिस्थापन संख्या, संख्या नं. 17 प्रयोगशालाएं के स्थान पर :

II. मेडिकल विषय :

(ख) क्षेत्र-1500 वर्ग फुट कथन के बाद-"प्रत्येक विषय के लिए" जोड़ दिया जाए ।

(ग) क्षेत्र-1500 वर्ग फुट कथन के बाद-"प्रत्येक विषय के लिए" जोड़ दिया जाए ।

(iv) संख्या नं. 16. आसवित जल संयंत्र के स्थान पर :

-संख्या नं. 16. आसवित जल संयंत्र का प्रतिस्थापन करके संख्या 18. आसवित जल संयंत्र कर दिया जाए ।

(v) प्रतिस्थापन संख्या 18. आसवित जल संयंत्र के बाद निम्न टिप्पणी को जोड़ दिया जाए ।

"टिप्पणी : डीसीआई विनियम 2006 के अनुसार छात्रावास और स्टाफ क्वाटर के अलावा दन्त्य कालेज भवन का न्यूनतम निर्मित क्षेत्र प्रथम वर्ष में 30,000 वर्ग फुट और तृतीय वर्ष, में 50,000 वर्ग फुट से कम नहीं होना चाहिए ।

शीर्षक – 100 दाखिला

(i) संख्या नं. 17 प्रयोगशालाएं के स्थान पर :

II. मेडिकल विषय :

(ख) क्षेत्र-2500 वर्ग फुट कथन के बाद-"प्रत्येक विषय के लिए" जोड़ दिया जाए ।

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(ग) क्षेत्र-2500 वर्ग फुट कथन के बाद-"प्रत्येक विषय के लिए" जोड़ दिया जाए।

(ii) प्रतिस्थापन संख्या 18 आसवित जल संयंत्र के बाद निम्न टिप्पणी को जोड़ दिया जाए।

"टिप्पणी : डीसीआई विनियम 2006 के अनुसार छात्रावास और स्टाफ क्वाटर के अलावा दन्त्य कालेज भवन का न्यूनतम निर्मित क्षेत्र प्रथम वर्ष में 60,000 वर्ग फुट और तृतीय वर्ष, में 1,00,000 वर्ग फुट से कम नही होना चाहिए।

[विज्ञापन III/4/असा./98/07]

मेजर जनरल (सेवानिवृत) पी.एन. अवस्थी, सचिव

DENTAL COUNCIL OF INDIA

CORRIGENDUM

New Delhi, the 7th January, 2008

No.DE-22-2007.—In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India with the previous sanction of the Central Government hereby makes the following Amendments to the Revised BDS Course Regulations published in Part III, Section 4 of Government of India Gazette dated 10th September, 2007.

1. Short title and commencement.-(i) These Regulations may be called the Dental Council of India Revised BDS Course Regulations (Amendments) 2007.

(ii) They shall come into force on the date of their pulication in the Official Gazette.

In the Title —

INFRASTRUCTURE & FUNCTIONAL REQUIREMENTS

50 ADMISSIONS

(i) Against Serial No. 17 **Auditorium:**

- Delete the word Serial No. 17. **Auditorium:** and substitute by 16. **Auditorium:**

(ii) Against Serial No. 18. **Laboratories:**

- Delete the word Serial No. 18. **Laboratories:** and substitute by 17. **Laboratories:**

(iii) After the substituted Serial No. 17. **Laboratories:**

II. Medical subjects:

(b) After the words Area - 1500 sq. ft. add the words "for each subject"

(c) After the words Area - 1500 sq. ft. add the words "for each subject"

(iv) Against Serial No. 16. **Distilled Water Plant**

- Delete the word Serial No. 16. **Distilled Water Plant** and substitute by 18. **Distilled Water Plant**

(v) After the substituted Serial No. 18. **Distilled Water Plant** -

Add the following Note :—

"Note: Minimum built up area of the dental college building other than Hostel and Staff Quarters should not be less than 30,000 sq. ft. in 1st Year and 50,000 sq. ft. in 3rd Year as per DCI Regulations, 2006."

In the Title **100 ADMISSIONS**

(i) Against Serial No. 17. **Laboratories:**

II. Medical subjects:

(b) After the words Area - 2500 sq. ft. add the words "for each subject"

(c) After the words Area - 2500 sq. ft. add the words "for each subject"

(ii) After the Serial No. 18. **Distilled Water Plant** - Add the following Note :—

"Note: Minimum built up are of the dental college building other than Hostels and Staff Quarters should not be less then 60,000 sq. ft. in 1st Year and 1,00,000 sq. ft. in 3rd Year as per DCI Regulations, 2006."

[ADVT. III/4/Exty./98/07]

Maj. Gen. (Retd.) P. N. AWASTHI, Secy.

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रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

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The Gazette of India

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सं. 273] नई दिल्ली, शुक्रवार, अक्तूबर 29, 2010/कार्तिक 7, 1932
No. 273] NEW DELHI, FRIDAY, OCTOBER 29, 2010/KARTIKA 7, 1932

भारतीय दंत्य परिषद्

अधिसूचना

नई दिल्ली, 22 अक्तूबर, 2010

सं. डीई-175-2010.—दंत चिकित्सक अधिनियम, 1948 की धारा 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए भारतीय दंत्य परिषद् केन्द्र सरकार के पूर्व अनुमोदन से भारतीय दंत्य परिषद् संशोधित दन्त शल्य चिकित्सा स्नातक की डिग्री, 2007 में पुनः संशोधन करने हेतु एतद्द्वारा निम्नलिखित विनियम बनाती है:—

1. संक्षिप्त शीर्षक और प्रारंभ:—(1) इन विनियमों को भारतीय दंत्य परिषद् संशोधित दन्त शल्य चिकित्सा स्नातक की डिग्री (संशोधन), 2010 के नाम से जाना जाएगा।

2. ये भारत के राजपत्र में अपने प्रकाशन की तारीख से लागू होंगे।

2. भारतीय दंत्य परिषद् संशोधित दन्त शल्य चिकित्सा स्नातक की डिग्री, 2007 में निम्नलिखित परिवर्तन/संशोधन/विलोप/प्रतिस्थापन दर्शाए जांयेगे:-

3. अध्याय 1 में दन्त शल्य चिकित्सा स्नातक की डिग्री, में प्रवेश शीर्षक के अधीन-पात्रता के मानदंड, निम्नलिखित जोड़ा जाएगा—

"3. वार्षिक स्वीकृत प्रवेश क्षमता की 3% सीटें, 50% से 70% के बीच निचले अंगों की गतिक विकलांगता वाले अभ्यर्थियों से भरी जाएंगी।

बशर्ते कि यदि 50% से 70% के बीच निचले अंगों की गतिक विकलांगता वाले अभ्यर्थी उपलब्ध न होने के कारण इस 3% कोटा में कोई सीट खाली रह जाती है तो इस 3% कोटा में खाली रह गई इस प्रकार की सीट को, सामान्य श्रेणी के अभ्यर्थियों के लिए वार्षिक स्वीकृत सीटों में उन्हें जोड़े जाने से पहले, 40% से 50% के बीच निचले अंगों की गतिक विकलांगता वाले व्यक्तियों से भरा जाएगा।

पुनः बशर्ते कि यह संपूर्ण कार्य प्रत्येक दंत चिकित्सक कालेज/संस्थान द्वारा, दाखिलों के लिए सांविधिक रूप से निर्धारित समय के अनुसार पूरा किया जाएगा और किसी भी स्थिति में 30 सितम्बर के पश्चात बी.डी.एस. पाठ्यक्रम में कोई दाखिला नहीं किया जाएगा।"

4. खण्ड 5 (ii) के परंतुक से पहले शीर्षक छात्रों का चयन में निम्नलिखित परंतुक जोड़ा जाएगा:-

"बशर्ते कि उपर खण्ड 3 के अनुसार निचले अंगों की गतिक विकलांगता वाले व्यक्तियों के दाखिले के लिए पात्रता सबन्धी मानदण्ड, बी.डी.एस. पाठ्यक्रम के लिए अर्हक परीक्षा और प्रतियोगितात्मक प्रवेश परीक्षा में एक साथ मिलकर न्यूनतम 50% के बजाय 45% अंक होगा।"

मेजर जनरल (सेवानिवृत्त) डा. पी.एन. अवस्थी, सचिव

[विज्ञापन-III/4/98/10-असा.]

पाद टिप्पणी: प्रधान नियमावली नामत दन्त शल्य चिकित्सा स्नातक की डिग्री, 2007, भारतीय दंत्य परिषद की दिनांक 10 सितम्बर, 2007 की अधिसूचना के अंतर्गत भारत के राजपत्र के भाग-III धारा 4 में प्रकाशित की गई थी तथा परिषद की दिनांक 27-9-2007 की अधिसूचना के अन्तर्गत संशोधित किया गया था।

DENTAL COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 22nd October, 2010

No. DE-175-2010.—In exercise of the powers conferred by Section 20 of the Dentists Act, 1948 the Dental Council of India, with the previous approval of the Central Government, hereby makes the following Regulations to amend the Principal Regulations, 2007 called "DCI's Revised BDS Course Regulations, 2007":—

1. Short title and commencement:—(i) These Regulations may be called the Dental Council of India Revised BDS Course (2nd Amendment) Regulations, 2010.

(ii) They shall come into force from the date of their publication in the Official Gazette.

2. In the Revised BDS Course Regulations, 2007, the following additions/modifications/deletions/substitutions, shall be as indicated therein:—

3. In Chapter 1 under the heading "Admission to the Dental Course-Eligibility Criteria", the following shall be added after sub-clause 2 (f):—

"3. 3% seats of the annual sanctioned intake capacity shall be filled up by candidates with locomotory disability of lower limbs between 50% to 70%.

Provided that in case any seat in this 3% quota remains unfilled on account of unavailabity of candidates with locomotory disability of lower limbs between 50% to 70% then any such unfilled seat in this 3% quota shall be filled up by persons with locomotory disability of lower limbs between 40% to 50% before they are included in the annual sanctioned seats for General Category candidates.

Provided further that this entire exercise shall be completed by each Dental College/Institution as per the statutory time schedule for admissions and in no case any admission will be made in the BDS course after 30th of September."

4. The following proviso shall be added before the clause 5 (ii) under the heading "selection of students".

"Provided that the eligibility criteria for admission to persons with locomotory disability of lower limbs in terms of Clause 3 above—will be a minimum of 45% marks instead of 50 % taken together in qualifying examination and competitive entrance examination for admission in BDS course."

Maj. Gen. (Retd.) Dr. P.N. AWASTHI, Secy.

[ADVT. III/4/98/10-Exty.]

Foot Note: The Principal Regulations namely Revised BDS Course Regulation, 2007 were published in Part III Section 4 of the Gazette of India *vide* Notification dt. 10-09-2007 and amended *vide* dt. 27-09-2007.

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सं. 176] नई दिल्ली, बृहस्पतिवार, अगस्त 25, 2011/भाद्र 3, 1933
No. 176] NEW DELHI, THURSDAY, AUGUST 25, 2011/BHADRA 3, 1933

भारतीय दन्त परिषद्

अधिसूचना

नई दिल्ली, 25 अगस्त, 2011

सं. डी ई-130-2011.—दंत चिकित्सक अधिनियम, 1948 के खंड 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तथा दन्तचिकित्सक अधिनियम, 1948 के खंड–20 के उप खंड (छ) तथा (ब) में यथानिर्धारित राज्य सरकारों के साथ परामर्श करने के बाद तथा केन्द्रीय सरकार की पूर्व मंजूरी से भारतीय दंत्य परिषद भारत के असाधारण राजपत्र के भाग–III, खंड–4 में दिनांक 10 सितम्बर, 2007 को प्रकाशित मौजूदा संशोधित बीडीएस पाठ्यकम विनियम, 2007 में एतद्द्वारा निम्न संशोधन करती है:–

1. लघु शीर्ष तथा प्रवर्तन

(i) ये विनियम भारतीय दंत्य परिषद संशोधित बीडीएस पाठ्यकम (तिसरा संशोधन) विनियम, 2011 कहलाएंगे।

(ii) ये विनियम सरकारी राजपत्र में उनके प्रकाशन की तारीख से प्रवृत्त होंगे ।

लेकिन शर्त यह है कि संबंधन प्रदान करने वाले विश्वविद्यालयों/राज्य सरकारों को ये संशोधन ऐसे छात्रों पर भी लागू करने की छूट है जो शैक्षणिक सत्र 2011–12 के बाद बीडीएस पाठ्यकम के चौथे वर्ष की पढाई करेंगे । विश्वविद्यालय इस संशोधन को कार्यान्वित कर सकते हैं बशर्ते किए अपने अधिनियम/नियमों और विनियमों का पालन करते हों।

2. मौजूदा संशोधित बीडीएस पाठ्यकम विनियम 2007 निम्न निर्दिष्ट सीमा तक प्रतिस्थापित किए जांए:–

(i) पाठ्यकम की अवधि

मौजूदा प्रावधान निम्न द्वारा प्रतिस्थापित किया जाए:–

बीडीएस डिग्री प्रदान कराने वाला अवरस्नातक दन्त्य कार्यकम 4 (चार) शैक्षणिक वर्षों का होगा। प्रत्येक शैक्षणिक वर्ष में 240 शिक्षण दिवस होंगे जिसके अलावा किसी दन्त्य कालेज में बारी–बारी से एक वर्ष का सवेतन स्थानबद्ध प्रशिक्षण होगा। बीडीएस अंतिम परीक्षा पास करने के बाद प्रत्येक अभ्यर्थी को किसी दन्त्य कालेज में बारी–बारी से एक वर्ष का सवेतन स्थानबद्ध प्रशिक्षण पूरा करना होगा। दन्त्य स्थानबद्ध प्रशिक्षण कार्यकम का विस्तृत पाठ्यकम अनुलग्नक 'ए' पर दिया गया है।

स्थानबद्ध प्रशिक्षण अनिवार्य होगा और बीडीएस की डिग्री एक वर्ष का सवेतन स्थानबद्ध प्रशिक्षण पूरा कर लेने के बाद प्रदान की जाएगी।

टिप्पणी: डीसीआई द्वारा यह सिफारिश की गई है कि जिन कालेजों ने संशोधित बीडीएस पाठ्यकम विनियम 2007, 2007 मे ही कार्यान्वित किया है, उन्हें मौजूदा पांच वर्षीय कार्यकम जारी रखना है। जहां तक इस बैच के लिए स्थानबद्ध प्रशिक्षण का सवाल है, इसके बारे में संबंधित विश्वविद्यालय निर्णय लेगा।

इसके अलावा वर्ष 2008–09 से किए गए दाखिले के संबंध में छात्रों को इस संशोधन में शामिल कर लिया जाए बशर्ते कि संबंधित विश्वविद्यालय के नियम इसकी अनुमति देते हों।

(ii) परीक्षाएं

3 वर्ष (2007) तक के पाठ्यक्रम विवरण में कोई बदलाव नहीं है।

मौजूदा विनियम, 2007 के पृष्ठ 4 पर निम्न प्रतिस्थापित किया जाएगा:—

यदि कोई अभ्यर्थी किसी परीक्षा में किसी एक विषय में फेल हो जाता है, उसे अगली उच्चतर कक्षा में जाने की अनुमति दी जाती है और वह उस विषय, जिसमें वह फेल हुआ है की परीक्षा में बैठता है तथा अगली उच्चतर परीक्षा में बैठने से पहले उसे सफलतापूर्वक पूरा कर लेता है। तथापि भारतीय दन्त्य परिषद को कोई आपत्ति नहीं होगी यदि संबंधित विश्वविद्यालय अपनी/अपने संविधि/विनियमों में उपबंधित परीक्षा स्कीम का पालन करता हो।

पूर्ण—नैदानिक प्रोस्थोडैंटिक्स विषय की कम सं0 5 के बाद निम्न जोडा जाएगा:—

यदि कोई अभ्यर्थी किसी परीक्षा में किसी एक विषय में फेल हो जाता है, उसे अगली उच्चतर कक्षा में जाने की अनुमति दी जाती है और वह उस विषय, जिसमें वह फेल हुआ है की परीक्षा में बैठता है तथा अगली उच्चतर परीक्षा में बैठने से पहले उसे सफलतापूर्वक पूरा कर लेता है। तथापि भारतीय दन्त्य परिषद को कोई आपत्ति नहीं होगी यदि संबंधित विश्वविद्यालय अपनी/अपने संविधि/विनियमों में उपबंधित परीक्षा स्कीम का पालन करता हो।

मुखीय विकृति विज्ञान तथा मुखीय सूक्ष्मजीव विज्ञान विषय की कम संख्या 3 के बाद निम्न जौडा जाएगा:

यदि कोई अभ्यर्थी किसी परीक्षा में किसी एक विषय में फेल हो जाता है, उसे अगली उच्चतर कक्षा में जाने की अनुमति दी जाती है और वह उस विषय, जिसमें वह फेल हुआ है की परीक्षा में बैठता है तथा अगली उच्चतर परीक्षा में बैठने से पहले उसे सफलतापूर्वक पूरा कर लेता है। तथापि भारतीय दन्त्य परिषद को कोई आपत्ति नहीं होगी यदि संबंधित विश्वविद्यालय (दूसरे वर्ष के बाद से) अपनी/अपने संविधि/विनियमों में उपबंधित परीक्षा स्कीम का पालन करता हो।

मौजूदा विनियम, 2007 के पृष्ठ 4 पर निम्न प्रतिस्थापित किया जाएगा:—

अंतिम बीडीएस (चौथा वर्ष)

- जन स्वास्थ्य दंतचिकित्सा
- पेरियोडौंटोलाजी
- आर्थोडौंटिक्स तथा डेंटोफेशियल आर्थोपीटिक
- मुखीय चिकित्सा तथा विकिरण चिकित्सा विज्ञान
- मुखीय तथा मैक्सिलोफेशियल सर्जरी
- परिरक्षी तथा एंडोडैंटिक्स
- प्रोस्थोडोंटिक्स तथा काउन और ब्रिज
- बाल चिकित्सा तथा निवारक दंतचिकित्सा

भाग—।

- जन स्वास्थ्य दन्तचिकित्सा
- पेरियोडौंटोलौजी
- आर्थोडौंटिक्स तथा डेंटोफिशियल आर्थोपीटिक
- मुखीय चिकित्सा तथा विकिरण चिकित्साविज्ञान

भाग—।।

- मुखीय तथा मैक्सीलेफिशियल सर्जरी
- परिरक्षी तथा एंडोडौंटिक्स
- प्रोस्थोडोंटिक्स तथा काउन और ब्रिज
- बाल चिकित्सा तथा निवारक दंतचिकित्सा

टिप्पणी

1. संबंधित विश्वविद्यालय चौथे बीडीएस अंतिम वर्ष में उपर वर्णित किसी एक परीक्षा पद्धति का विकल्प दे सकते हैं ।
2. यदि कोई विश्वविद्यालय आंशिक परीक्षा पद्धति का विकल्प देता है तो ऐसा कोई भी अभ्यर्थी जो चौथे (अंतिम वर्ष) भाग—। परीक्षा में किसी विषय में फेल हो, उसे भाग—।। परीक्षा में बैठने की अनुमति है तथा उसे स्थानबद्ध प्रशिक्षण कार्यक्रम में जाने की अनुमति दिए जाने से पूर्व दोनों भाग सफलतापूर्वक पूरे कर लेने चाहिए।
3. क्योंकि जन स्वास्थ्य दंत चिकित्सा विभाग में अपर्याप्त शिक्षण स्टाफ है, इसलिए उसे पेरियोडौंटिक्स के साथ जोड दिया जाना चाहिए । इस व्यवस्था की तीन वर्ष बाद पुनरीक्षा की जाएगी ।

पृष्ठ 6 पर 5वें वर्ष के विषय हटा दिए जाएंगे।

(iii) परीक्षा की योजना मौजूदा मूल विनियमों के पृष्ठ 5 पर पंक्ति 1—4 के स्थान पर निम्न प्रतिस्थापित किया जाएगा:—

बीडीएस पाठ्यक्रम के लिए परीक्षा की योजना इस प्रकार विभाजित की जाएगी, पहले शैक्षणिक वर्ष की समाप्ति पर पहली बीडीएस परीक्षा, दूसरे वर्ष की समाप्ति पर दूसरी बीडीएस परीक्षा, तीसरे वर्ष की समाप्ति पर तीसरी बीडीएस परीक्षा चौथे वर्ष की समाप्ति पर चौथी तथा अंतिम बीडीएस परीक्षा। जहां कहीं सेमेस्टर प्रणाली मौजूद है अंतिम वर्ष में दो परीक्षाएं होंगी। जिन्हें संबंधित परीक्षाओं (विनियम 1983) का भाग—। तथा भाग—2 कहा जाएगा। प्रत्येक शैक्षणिक वर्ष में कम से कम 240 दिनों का शिक्षण अनिवार्य है।

सेमेस्टर पद्धति का विकल्प देने वाले विश्वविद्यालयों के लिए प्रत्येक सेमेस्टर में कवर किए जाने वाले विषयों का सुझाव नीचे प्रस्तुत है:—

भाग—।

- जन स्वास्थ्य दन्तचिकित्सा
- पेरियोडौंटोलौजी
- आर्थोडौंटिक्स तथा डेंटोफिशियल आर्थोपीटिक
- मुखीय चिकित्सा तथा विकिरण चिकित्सा विज्ञान

भाग—।।

- मुखीय तथा मैक्सीलेफिशियल सर्जरी

– परिरक्षी तथा एंडोडॉटिक्स
– प्रोस्थोडॉटिक्स तथा काउन और ब्रिज
– बाल चिकित्सा तथा निवारक दंतचिकित्सा

पृष्ठ 6 पर V बीडीएस परीक्षा शब्द हटा दिए जाएंगे ।

(V) मौजूदा मूल विनियमों के पृष्ठ संख्या 16 पर यथानिर्दिष्ट मौजूदा के लिए प्रतिस्थापित अध्ययन के प्रत्येक विषय (बीडीएस पाठ्यक्रम) के लिए न्यूनतम कार्य समय

विषय	लेक्चर घंटे	प्रायोगिक घंटे	नैदानिक घंटे	कुल घंटे
सामान्य मानवीय शरीर रचना विज्ञान जिसमें भ्रूण विज्ञान, अस्थि प्रकरण तथा ऊतक विज्ञान शामिल है	100	175		275
सामान्य मानवीय शरीर विज्ञान जैव रसायन	120 70	80 80		180 130
दंत्य सामग्रियां	80	240		320
दंत्य संरचना भ्रूण विज्ञान तथा मुखीय ऊतक विज्ञान	105	250		355
दंत्य फार्माकोलाजी तथा चिकित्साविज्ञान	70	20		90
सामान्य विकिरण चिकित्सा, सूक्ष्म जीवविज्ञान	55 65	55 50		110 115
सामान्य चिकित्सा	60		9	150
सामान्य सर्जरी	60		90	150
मुखीय विकृतिविज्ञान तथा सूक्ष्मजीवविज्ञान	145	130		275
मुखीय चिकित्सा तथा विकिरण चिकित्साविज्ञान	65		170	235
बाल चिकित्सा तथा निवारक दंतचिकित्सा	65		170	235
आर्थोडॉटिक्स तथा दंत्य विकलांग विज्ञान	50		170	220
पेरियोडॉटोलोजी	80		170	250
मुखीय तथा मैक्सिलोफेशियल सर्जरी	70		270	340
परिरक्षी दंतचिकित्सा तथा एंडोडॉटिक्स	135	200	370	705
प्रोस्थोडॉटिक्स तथा काउन और ब्रिज	135	300	370	805
जन स्वास्थ्य दंतचिकित्सा जिसमें तम्बाकू नियंत्रण तथा आदत निर्माण पर लेक्चर शामिल हैं	80		200	260
योग	1590	1540	1989	5200

टिप्पणी: प्रत्येक शैक्षणिक वर्ष में 8 घंटें के कार्यसमय सहित, जिसमें एक घंटें का मध्यावकाश शामिल है कम से कम 240 शिक्षण दिवस होने चाहिए ।

स्थानबद्ध प्रशिक्षण 240X8=1920 नैदानिक घंटे

(V) मौजूदा मूल विनियम 2007 के पृष्ठ 17 पर निर्दिष्ट मौजूदा चौथा वर्ष बीडीएस पाठ्यक्रम के लिए निम्न शिक्षण/नैदानिक घंटे नीचे बताए अनुसार प्रतिस्थापित किए जांए :–

विषय	लैक्चर घंटे	प्रायोगिक घंटे	नैदानिक घंटे	कुल घंटे
प्रोस्थोडॉक्सि	80		300	380
मुखीय चिकित्सा	45		100	145
पेरियोडॉटिक्स	50		100	150
जन स्वास्थ्य	60		200	260
परिरक्षी दंतचिकित्सा	80		300	380
मुखीय सर्जरी	50		200	250
आर्थोडॉटिक्स	30		100	130
पेडोडॉटिक्स	45		100	145
योग	440		1400	1840

लेकिन शर्त यह है कि इस विनियम अथवा संबंधित विश्वविद्यालय की किसी संविधि अथवा नियमों, विनियमों अथवा मार्गनिर्देशों अथवा अधिसूचनाओं अथवा फिलहाल लागू किसी अन्य विधि के प्रावधान में निहित कोई भी बात किसी भी ऐसे छात्र को जो पहले सैमेस्टर के एक अथवा एक से अधिक विषयों में फेल हो गया हो अपने चौथे वर्ष के बीडीएस पाठ्यक्रम जारी रखने से नहीं रोकेगी । ऐसा छात्र इन विषयों को दूसरे सैमेस्टर में ले जाएगा तथा दूसरे सैमेस्टर के विषयों के साथ इन विषयों की परीक्षा में बैठेगा। स्थानबद्ध प्रशिक्षण शुरू करने से पहले चौथा बीडीएस पाठ्यक्रम पूरा करने के लिए सभी आठ विषयों में पास होना जरूरी है।

(vi) केवल पंजाब और आन्ध्रप्रदेश के लिए प्रतिस्थापित किया जाए।

केवल 2007 बैच (पंजाब और आन्ध्र प्रदेश) को मौजूदा पांच वर्षीय कार्यक्रम का पालन करना होगा। उसके बाद तीसरा संशोधन लागू हो जाएगा।

बशर्ते कि संबंधित विश्वविद्यालय प्रस्तावित संशोधन का पालन करता है।

(vii) पृष्ठ संख्या 17 पर पादटिप्पणी के नीचे निम्न को हटा दिया जाए:–

1. अंत में टिप्पणी संख्या 3 के नीचे निम्न हटा दिया जाए:
   "तथा पांचवा वर्ष"
2. अंत में टिप्पणी संख्या 4 के नीचे निम्न हटा दिया जाए:
   "तथा पांचेवा वर्ष"
3. अंत में टिप्पणी संख्या 5 के नीचे निम्न हटा दिया जाए:
   "तथा पांचवा वर्ष"
4. टिप्पणी संख्या 6 हटा दी जाए:

5. टिप्पणी संख्या 7 हटा दी जाए:

(viii) मौजूदा बीडीएस पाठ्यक्रम विनियम 2007 के पृष्ठ सं0 17 पर "V बीडीएस" पाठ्यक्रम के लिए यथानिर्धारित शिक्षण घंटे हटा दिए जाएं।

भारतीय दंत्य परीषद को इस बात की जांच करने के लिए की क्या कालेजों द्वारा डीसीआई द्वारा निर्धारित स्थानबद्ध प्रशिक्षण के मानदंडों का अनुपालन किया जा रहा है अथवा नहीं, कैलेण्डर वर्ष के दौरान किसी भी समय किसी भी कालेज में निरीक्षण करने का विशेषाधिकार प्राप्त है।

कर्नल (सेवानिवृत्त) डॉ. एस. के. ओझा, कार्यवाहक सचिव

[विज्ञापन III/4/98/11(पी.ओ.)/असा.]

पाद टिप्पणियां :

1. मूल विनियम अर्थात भारतीय दंत्य परीषद संशोधित बीडीएस पाठ्यक्रम विनियम 2007 भारत के असाधारण राजपत्र के भाग–III, खंड–4 में 10.9.2007 को प्रकाशित हुए थे।
2. मूल विनियमों में पहला संशोधन भारत के असाधारण राजपत्र के भाग–III, खंड–4 में 11.1.2008 को प्रकाशित हुआ था।
2. मूल विनियमों में दुसरा संशोधन भारत के असाधारण राजपत्र के भाग–III, खंड–4 में 29.10.2010 को प्रकाशित हुआ था।

संलग्नक-ए

भारतीय दंत्य परिषद्

संशोधित स्थानबद्ध प्रशिक्षण कार्यक्रम, 2011

दंत्य स्थानबद्ध प्रशिक्षण कार्यक्रम की पाठ्यचर्या

1. स्थानबद्ध प्रशिक्षण की अवधि एक वर्ष होगी ।
2. स्थानबद्ध प्रशिक्षण के सभी भाग देश के भीतर दंत्य स्नातकों को शिक्षा और प्रशिक्षण प्रदान करने के लिए भारतीय दंत्य परिषद द्वारा विधिवत रूप से मान्यताप्रदत्त/अनुमोदित दंत्य कालेज में आयोजित किए जाएंगे ।
3. स्थानबद्ध प्रशिक्षणार्थियों को, स्थानबद्ध प्रशिक्षण की अवधि के लिए जो एक वर्ष से अधिक नहीं होगी वृत्ति–भत्ते का भुगतान किया जाएगा।
4. स्थानबद्ध प्रशिक्षण अनिवार्य होगा और इस प्रयोजन के लिए निर्धारित विनियमों के अनुसार बारी–बारी से होगा ।
5. बीडीएस की डिग्री स्थानबद्ध प्रशिक्षण पूरा करने के बाद दी जाएगी ।

दंत्य स्नातकों के लिए स्थानबद्ध प्रशिक्षण के वास्ते पाठ्यचर्या के निर्धारक तत्व स्थानबद्ध प्रशिक्षण की पाठ्यचर्यात्मक अंतर्वस्तु निम्न पर आधारित होगी:–

(i) समाज की दंत स्वास्थ्य संबंधी जरूरत

(ii) इस प्रयोजन के लिए उपलब्ध वित्तीय, भौतिक तथा जनशक्ति संसाधन

(iii) राष्ट्रीय दंत्य स्वास्थ्य नीति

(iv) लोगों की आमतौर पर समाजार्थिक स्थितियां

(v) स्वास्थ्य सेवाओं की आपूर्ति के लिए मौजूदा दंत्य और साथ ही प्राथमिक स्वास्थ्य देखभाल अवधारणा

(vi) दंतचिकित्सा में स्नातक विभिन्न अभ्यास स्थितियों, निजी तथा सरकारी सेवा में वस्तुतः क्या निष्पादित करते हैं, उसका विश्लेषण।

(vii) दंत्य समस्याओं की मात्रा, दंत्य समस्याओं की गंभीरता और उन समस्याओं के कारण उत्पन्न सामाजिक विघटन को ध्यान में रखते हुए विभिन्न दंत्य स्वास्थ्य समस्याओं की व्याप्ति का पता लगाने के लिए आयोजित जानपदिकरोग वैज्ञानिक अध्ययन ।

उद्देश्य

ए. अधिगम के सुदृढीकरण तथा अतिरिक्त ज्ञान के अर्जन को सुविधापूर्ण बनाना:

(क) ज्ञान का सुदृढीकरण

(ख) व्यक्ति तथा समुदाय के लिए उपलब्ध तकनीक तथा संसाधन, सामाजिक और सांस्कृतिक स्थितियां ।

(ग) चरणबद्ध तरीके से प्रशिक्षण, साझा से पूर्ण दायित्व तक ।

बी. निम्न में बुनियादी कौशलों की प्राप्ति, क्षमता बनाए रखने के संदर्भ में क्षमता प्राप्त करना:–

(i) इतिवृत्त लेना

(ii) नैदानिक परीक्षण

(iii) निष्पादन और अनिवार्य प्रयोगशाला डाटा की व्याख्या

(iv) डाटा विश्लेषण और निष्कर्ष

(v) रोगी के भीतर आशा तथा आशावाद उत्पन्न करने के प्रति लक्षित संचार कौशल

(vi) नैदानिक स्थितियों और सामुदायिक सामूहिक कार्य में कार्यात्मक संबंध स्थापित करने के लिए अभिरुचियां

सी. सुदृढ अभिवृत्तियां तथा आदतें विकसित करने को सुविधापूर्ण बनाना

(i) रोग/संलक्षणों पर नहीं बल्कि व्यक्ति तथा मानवों पर बल देना

(ii) विखंडित उपचार की बजाए व्यापक देखभाल की व्यवस्था करना

(iii) दंत्य शिक्षा जारी रखना और दायित्व स्वीकार करना सीखना

डी. व्यावसायिक तथा नैतिक सिद्धांतों की समझ सुविधापूर्ण बनाना :

– रोगियों के अधिकार तथा प्रतिष्ठा ।

– अन्य व्यावसायिकों के साथ परामर्श तथा वरिष्ठों/संस्थानों के पास भेजना ।

– हमजोलियों, सहकर्मियों, रोगियों, परिवारों तथा समुदायों के प्रति दायित्व।

– आपातिक स्थिति में निःशुल्क व्यावसायिक सेवाओं की व्यवस्था

ई व्यक्तियों, परिवारों और समुदाय के स्तर पर ऐसी वैयक्तिक तथा सामूहिक कार्रवाई की शुरूआत करना जिससे कि रोग निवारण और दंत स्वास्थ्य प्रोत्साहन मिल सके ।

अंतर्वस्तु (विषयवस्तु)

अनिवार्य और बारी–बारी से दिए जाने वाले सवेतन दंत्य स्थानबद्ध प्रशिक्षण में ये शामिल होंगे: मुखीय चिकित्सा तथा विकिरण चिकित्साविज्ञान, मुखीय तथा मैक्सिलोफेशियल सर्जरी, प्रोस्थोडोंटिक्स, पेरियोडोंटिक्स, परिरक्षी दंतचिकित्सा, पेडोडोंटिक्स, मुखीय विकृतिविज्ञान तथा सूक्ष्म जीवविज्ञान, आर्थोडोंटिक्स तथा सामुदायिक दंतचिकित्सा ।

सामान्य मार्गनिर्देश

1. यह कार्योन्मुखी प्रशिक्षण होगा । सहवासियों को विभिन्न संस्थानगत तथा क्षेत्रीय कार्यक्रमों में भाग लेना चाहिए और उन्हें दंत्य कालेजों तथा सहयोगी संस्थानों के सभी विभागों में कियाकलाप करने की जिम्मेदारी सौंपी जानी चाहिए।

2. बुनियादी कौशलों तथा अभिवृत्तियों की प्रगति को सुविधापूर्ण बनाने के लिए सभी दंत्य स्नातकों को निम्न सुविधाएं उपलब्ध कराई जानी चाहिए:–

(i) इतिवृत्त लेना, परीक्षण, निदान, मामले की उपचार योजना की रूपरेखा तैयार करना और रिकार्ड करना

(ii) संगोष्ठियों के समूह में मामलों की प्रस्तुति

(iii) प्रदत्त औजारों की देखभाल तथा निर्जीवाणूकरण

(iv) अनिवार्य प्रयोगशाला परीक्षणों तथा अन्य संगत जांचों का निष्पादन तथा व्यवस्था।

(v) डाटा विश्लेषण तथा निष्कर्ष ।

(vi) प्रतिजीवियों, शोथ–विरोधी तथा अन्य दवाइयों का और साथ ही अन्य चिकित्सीय प्रविधियों का समुचित प्रयोग ।

(vii) संस्थान में और साथ ही क्षेत्र में काम करते समय दंत्य स्वास्थ्य देखभाल के सभी पक्षों की बाबत रोगियों, उनके संबंधियों और समुदाय की शिक्षा

(viii) आशा, विश्वास तथा आशावाद प्रेरित करने के प्रति लक्षित संचार।

(ix) अपराध–विज्ञान विधिशास्त्र के अधीन रोगियों के कानूनी अधिकार तथा दंत्य स्नातक के दायित्व ।

1. मुखीय चिकित्सा तथा विकिरण चिकित्सा विज्ञान

1. रोगियों की मानकीकृत जांच	25 रोगी
2. नैदानिक, विकृतिवैज्ञानिक प्रयोगशाला कियाविधि तथा बायोप्सियों का प्रभावन	5 रोगी
3. रेडियोग्राफ लेने में प्रभावी प्रशिक्षण	2 पूर्ण मुख
(अन्तःमुखीय) आई.ओ. (मुखीय से इतर) ई.ओ.	1
सिफैलोग्राम	1
वार्डों में रोगियों की प्रभावी देखभाल	2 रोगी

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2. मुखीय तथा मैक्सिलोफेशियल सर्जरी

ए. मुखीय सर्जरी में अपनी तैनाती के दौरान स्थानबद्ध प्रशिक्षणार्थी निम्न कियाविधियां निष्पादित करेंगें:

1.	दांत निकालना	50
2.	दांत निकालना (सर्जरी)	2
3.	इम्पैक्शन	2
4.	साधारण इंट्रामोक्सिलरी फिक्सेशन	1
5.	पुटिका समूल निष्कासन	1
6.	छेदन तथा निकास	2
7.	ऐल्वियोलोप्लास्टीज, बायोप्सी तथा फेनैक्टामीज	3

बी. स्थानबद्ध प्रशिक्षणार्थी कैंसर रोगियों के संबंध में निम्न कियाविधियां निष्पादित करेंगे :

1. फाइलवर्क का रख–रखाव
2. रेडियोथिरेपी के मामलों के लिए दांत निकालेंगे
3. बायोप्सी करेंगे
4. मुखीय कैंसर के विविध रोगियों को देखेंगे ।

सी. स्थानबद्ध प्रशिक्षणार्थियों को किसी दंत्य/जनरल अस्पताल में आपातिक सेवाओं में 15 दिन के लिए तैनात किया जाएगा, जब उन पर वार्डों में आपातिक दंत्य देखभाल की अतिरिक्त जिम्मेदारी रहेगी ।

1. आपातिक स्थितियां

(i) दांत का दर्द (ii)त्रिधारा न्यूरोल्जिया (iii)ट्रामा, दांत निकालने के बाद रक्तस्राव विकृति भाव हीमोफीलिया (iv) मेंडिबिल तथा मैक्सिला अस्थिभंग के कारण वायुपथ का रुक जाना, मेंडिबिल च्युति, मूर्छा अथवा वाहिका–वेगसी प्रहार; लुडविग, ऐंजाइना, दंत अस्थिभंग; सामान्य वेदनाहरण के बाद इंटरमैक्सिलरी फिक्सेशन

2. पुनरूज्जीवन कियाविधियों के विशेष संदर्भ में आई.सी.यू. में कार्य
3. आपातकालीन विभाग में आने वाले वास्तविक रोगियों पर रिपोर्ट करने सहित चिकित्सीय विधिक पक्षों पर ट्यूटोरियलों का आयोजन। उन्हें विधि न्यायालयों का दौरा भी करना चाहिए।

3. प्रौस्थोडोंटिक्स

प्रौस्थोडोंटिक्स में अपनी तैनाती के दौरान दंत्य स्नातक निम्न कार्य करेंगे:–

1.	पूर्ण कृत्रिम दंतावली (उपर और नीच)	2
2.	हटाए जा सकने योग्य आंशिक दंतावली	4
3.	स्थिर आंशिक दंतावली	1
4.	नियोजित कास्ट आंशिक दंतावली	1
5.	विविध जैसेकि रीलाइन/ओवर डेंचर/मैक्सिलोफेशियल प्रोस्थीसिस की मरम्मत	1
6.	फेस बो तथा सेमी एनाटौमिक आर्टिक्यूलेटर तकनीक का प्रयोग सीखना	
7.	काउन	
8.	इम्प्लांट लगाना	

4. पेरियोडौंटिक्स

ए. दंत्य स्नातक निम्न कियाविधियां करेंगे :–

1.	सेग निरोध	15 रोगी
2.	फ्लैप आपरेशन	2 रोगी
3.	रूट नियोजन	1 रोगी
4.	क्यूरेटेज	1 रोगी
5.	गिंगीवैक्टोमी	1 रोगी
6.	पेरिया–ऐण्डो रोगी	1 रोगी

बी. सामुदायिक स्वास्थ्य केन्द्रों में अपनी एक सप्ताह की तैनाती के दौरान स्थानबद्ध प्रशिक्षणार्थी जनता को पेरियोडौंटल रोगी में शिक्षा प्रदान करेंगे ।

5. परिरक्षी दंतचिकित्सा

बुनियादी कौशल सीखने और उनकी प्रगति के सुदृढीकरण को सुविधापूर्ण बनाने के लिए स्थानबद्ध प्रशिक्षणार्थी कम से कम निम्न कियाविधियां स्वतंत्र रूप से अथवा पर्यवेक्षकों के मार्गदर्शन में निष्पादित करेंगे।

1.	अत्यधिक कटे–फटे दांती की बहाली	5 रोगी
2.	इनले तथा आनले निर्मितियां	1 रोगी
3.	दांत के वर्ण की जीर्णोद्धार सामग्री का प्रयोग	4 रोगी
4.	अपवर्णित मुख्य तथा मुख्येतर दांतों का इलाज	1 रोगी
5.	डैंटो ऐल्वेओलर अस्थिभंग की देखभाल	1 रोगी
6.	पेरीएपिकल विक्षति के बिना मज्जारहित, एकल मूल के दांतो की देखभाल	4 रोगी
7.	गंभीर डेटो ऐल्वियोलर संक्रमणों की देखभाल	
8.	परिसरीय विक्षति अवधि सहित मज्जारहित एकल मूल के दांतों की देखभाल	2 रोगी
9.	रचना अवधि के दौरान अभिघातज दांतों की नान–सर्जिकल देखभाल	1 रोगी

6. पेडोडोंटिक्स तथा निवारक दंतचिकित्सा

पेडोडोंटिक्स विभाग में अपनी तैनाती के दौरान दंत्य स्नातक निम्न कार्य करेंगे:–

वार्निश सहित फ्लूराइडस का स्थानिक प्रयोग	5 रोगी
बच्चों में क्षरणग्रस्त पाती दांतों की जीर्णोद्धार कियाविधियां	10 रोगी
पल्पोटोमी	2 रोगी
पल्पेक्टोमी	2 रोगी
स्पेस मेंन्टनरों की संरचना और निवेशन	1 रोगी
मुखीय आदतें छुडाने के उपकरण	1 रोगी

7. मुखीय विकृतिविज्ञान तथा सूक्ष्म जीव विज्ञान

स्थानबद्ध प्रशिक्षणार्थी निम्न काम करेंगे :–

1.	इतिवृत रिकार्ड करना और नैदानिक परीक्षण	5 रोगी
2.	रक्त, मूत्र और थूक की जांच	5 रोगी
3.	विपत्रण कोशिका प्रकरण तथा स्मीयर्स अध्ययन	2 रोगी
4.	बायोप्सी–प्रयोगशाला कियाविधि तथा रिपोर्ट देना	1 रोगी

8. आर्थोडोंटिक्स

ए. आर्थोडोंटिक्स विभाग में अपनी तैनाती के दौरान स्थानबद्ध प्रशिक्षणार्थी निम्न कियाविधियां देखेंगे:–

1. 5 रोगियों के लिए विस्तृत नैदानिक कियाविधियां
2. हटाए जा सकने योग्य उपकरणों, सोल्डरिंग तथा मायो–कार्यात्मक उपकरणों के संसाधन के लिए तार मोडने सहित प्रयोगशाला तकनीक
3. बैंड बनाना, बांडिंग कियाविधियां तथा तार निवेशन
4. एक्स्ट्रा ओरल एन्करेज का प्रयोग तथा बल मानों का प्रेक्षण
5. रिटेनर
6. ऐसे रोगियों को संभालना जिनकी मुखीय आदतों के कारण मैलोक्लूसंस पैदा हो जाते हैं।

दंत्य स्नातक निम्न प्रयोगशाला कार्य करेंगे:–

1.	हटाए जा सकने योग्य उपकरणों और स्पेस मेनटेनर्स के लिए तार बंकन जिसमें वेल्डोइंग और ताप उपचार कियाविधि शामिल है	5 रोगी
2.	सोल्डरिंग कियाएं, बैंडिंग तथा बौंडिंग कियाविधियां	2 रोगी
3.	सामान्य आर्थोडौंटिक्स उपकरणों का शीत तथा तप्त उपचार एकिलीकरण	5 रोगी

9. जन स्वास्थ्य दंतचिकित्सा

1. स्थानबद्ध प्रशिक्षणार्थी मुखीय स्वास्थ्य, जन स्वास्थ्य, पोषण, व्यवहारपरक विज्ञान, पर्यावरणात्मक स्वास्थ्य, निवारक दंतचिकित्सा तथा जानपदिकरोग विज्ञान के संबंध में व्यक्तियों और समूहों के लिए स्वास्थ्य शिक्षा सत्रों का आयोजन करेंगे ।
2. वे समुदाय में जानपदिकरोगवैज्ञानिक सर्वेक्षण करेंगे अथवा विकल्प के रूप में नियोजन और प्रविधि में भाग लेंगें।
3. वे निम्न के प्रभावी निदर्शन की व्यवस्था करेंगे:–

(क)	प्रचलित दंत्य रोगों के लिए निवारक तथा अवरोधी कियाविधियां	
(ख)	मुंह को खगालना तथा अन्य मुखीय स्वास्थ्य निदर्शन	5 रोगी
(ग)	टूथ ब्रश करने की तकनीक	5 रोगी

4. निम्न स्थलों पर स्वास्थ्य शिक्षा कार्यकमों का आयोजन

ए	स्कूल वातावरण	2
बी	सामूदायिक वातावरण	2
सी	प्रौढ शिक्षा कार्यकम	2

5. स्वास्थ्य शिक्षा सामग्री तैयार करना 5
6. दलगत अवधारणा तथा राष्ट्रीय स्वास्थ्य देखभाल प्रणालियों का ज्ञान :

(क) स्वास्थ्य आधारिक सुविधाओं का कार्यकरण देखना

(ख) बहुद्देशीय कार्मिकों पुरुष तथा महिला, स्वास्थ्य प्रशिक्षकों तथा अन्य कार्मिकों सहित स्वास्थ्य देखभाल दल का कार्यकरण देखना

(ग) कम से कम एक राष्ट्रीय स्वास्थ्य कार्यकम को देखना

(घ) प्राथमिक स्वास्थ्य देखभाल के साथ मुखीय स्वास्थ्य देखभाल की आपूर्ति के अंतः संबंधों को देखना । इस प्रकार के शिक्षण के लिए जहां कहीं उपलब्ध हो सचल दंत्य क्लिनिक उपलब्ध कराये जाने चाहिए ।

10. पसंदीदा तैनाती

स्थानबद्ध प्रशिक्षणार्थियों को कम से कम 15 दिन के लिए उनकी [illegible] के [illegible]सार पूर्व में उल्लिखित किसी भी दंत्य विभाग में तैनात किया जाना चाहिए।

अंतर्वस्तु की व्यवस्था

4 वर्षीय बीडीएस प्रशिक्षण के दौरान पाठ्यचर्या विषय आधारित होती है जिसमें व्यावहारिक कौशल सीखने पर बल दिया जाता है। एक वर्षीय स्थानबद्ध प्रशिक्षण के दौरान क्षमता–आधारित समुदायोन्मुखी प्रशिक्षण पर बल दिया जाएगा। स्थानबद्ध प्रशिक्षणार्थियों को जिन व्यावहारिक कौशलों के न्यूनतम निष्पादन स्तर सहित पारंगति प्राप्त करनी है वे दंत्य शिक्षा के विभिन्न विभागों की पाठ्यकम अंतर्वस्तु के अधीन दिए गए हैं। पर्यवेक्षकों को इस बात का ध्यान रखना चाहिए कि उनके निष्पादन के लिए सभी विभागों तथा सम्बद्ध संस्थानों में समुचित सुविधाएं उपलब्ध कराई जाती हैं।

शिक्षण कियाकलापों की विशिष्टता

बीडीएस में चार वर्षीय प्रशिक्षण के दौरान शिक्षात्मक लेक्चर प्रदान किए जाते हैं। स्थानबद्ध प्रशिक्षण के दौरान ये निकाल दिए जाएंगे। चेयर–साइड शिक्षण, लघु समूह शिक्षण, ट्यूटोरियलों, संगोष्ठियों, वार्ड तैनाती, प्रयोगशाला तैनाती, क्षेत्रीय दौरों तथा स्व–अधिगम पर बल दिया जाएगा ।

संसाधान सामग्री का प्रयोग

सभी दंत्य कालेजों तथा सम्बद्ध संस्थानों और क्षेत्रीय इलाके में ओवरहैड प्रोजेक्टरों, स्लाइड प्रोजेक्टरों, नमूनों, माडलों तथा अन्य श्रव्यदृश्य सहायक सामग्री उपलब्ध कराई जाएगी। यदि संभव हो तो स्थानबद्ध प्रशिक्षणार्थियों को जिन विभिन्न कियाविधियों तथा तकनीकों में पारंगति प्राप्त करनी है, उन्हें दर्शाने वाले टेलीविजन, वीडियो और टेप उपलब्ध कराए जाने चाहिए।

मूल्यांकन

1. रचनात्मक मूल्यांकन

स्थानबद्ध प्रशिक्षणार्थियों की स्थानबद्ध तैनाती के दौरान उनका दैनिक मूल्यांकन किया जाना चाहिए । उद्देश्य यह है कि सभी स्थानबद्ध प्रशिक्षणार्थी, अपना रोजमर्रा का व्यावसायिक कार्य सक्षम तौर पर करने के लिए अपेक्षित न्यूनतम कौशल अवश्य प्राप्त कर लें । यह तभी हो सकता है जबकि सभी स्थानबद्ध प्रशिक्षणार्थियों द्वारा रिकार्ड और निष्पादन डाटा पुस्तक रखी जाए। यह केवल यही नहीं कि प्रशिक्षण की प्रकिया का निदर्शनीय साक्ष्य उपलब्ध कराएगा, बल्कि इससे भी अधिक महत्वपूर्ण बात यह है कि प्रशिक्षणार्थी निष्पादन से जुडी क्षमताएं प्राप्त कर लेंगे। यह रचनात्मक मूल्यांकन के एक हिस्से का निर्माण करेगा और साथ ही स्थानबद्ध प्रशिक्षणार्थियों के अंतिम ग्रेड निर्धारण के एक घटक का भी निर्णय करेगा।

2. संक्षिप्त मूल्यांकन

यह विभिन्न विभागों के पर्यवेक्षकों के अभिमतों तथा स्थानबद्ध प्रशिक्षणार्थियों द्वारा रखे गए रिकार्ड और निष्पादन पुस्तिकाओं पर आधारित होगा।

11. ग्रामीण सेवाएं

ग्रामीण सेवाओं में छात्र निम्न कियाकलापों में भाग लेगा:–

1. सामूदायिक स्वास्थ्य मानीटरिंग कार्यकम और सेवाएं जिनमें निवारक, नैदानिक तथा सुधारात्मक कियाविधियां शामिल होंगी।

2. दंत स्वास्थ्य और लोगों के बारे में शैक्षिक जागरूकता उत्पन्न करना।

3. निम्न में मुखीय स्वास्थ्य शिक्षा कार्यकम का आयोजन:

(क)	स्कूल वातावरण	5
(ख)	सामुदायिक वातावरण	5
(ग)	प्रौढ शिक्षा कार्यकम	5

4. दूरस्थ क्षेत्रों में उपग्रह क्लिनिकों की अनिवार्य स्थापना 1

5. तम्बाकू के प्रयोग के हानिप्रद प्रभावों और मुखीय कैंसर के प्रति पूर्वानुकूलता के संबंध में सार्वजनिक मंचों पर जागरूकता सृजन और शिक्षा –प्रति छात्र दो लैक्चर।

तैनाती की अवधि

1.	मुखीय चिकित्सा और विकिरण चिकित्साविज्ञान	1 महीना
2.	मुखीय तथा मैक्सिलोफेशियल सर्जरी	1½ महीना
3.	प्रोस्थोडौंटिक्स	1½ महीना
4.	संरक्षी दंतचिकित्सा	1 महीना
5.	पेडोडौंटिक्स	1 महीना
6.	मुखीय विकृतिविज्ञान और सूक्ष्म जीवविज्ञान	15 दिन
7.	आर्थोडौंटिक्स	1 महीना
8.	सामुदायिक दंतचिकित्सा	1 महीना
9.	ग्रामीण सेवाएं	3 महीने
10.	वैकल्पिक	15 दिन

DENTAL COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 25th August, 2011

No.DE-130-2011.–In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India after consultation with the State Government as prescribed in clause (g) & (h) of Sub Section 2 of Section 20 of the Dentists Act, 1948. and with the previous sanction of the Central Government, hereby makes the following Amendments to the existing Revised BDS Course Regulations 2007, published in Part III, Section 4 of The Gazette of India, Extraordinary, dated 10th September 2007.

1. Short title and commencement.–

(i) These Regulations may be called the Dental Council of India Revised BDS Course (3rd Amendment) Regulations, 2011.

(ii) They shall come into force on the date of their publication in the Official Gazette.

Provided that the Affiliating University/State Government are free to make applicable these amendment even to its students who would pursue their 4th year BDS Course during the academic session 2011-12 onwards. It is upto the University to implement this amendment provided it abides by their Act/Rules and Regulations.

2. The existing Revised BDS Course Regulations 2007 be substituted to the extent indicated hereunder:-

(i) **Duration of the Course:**

The existing provision be substituted with the following:-

The undergraduate dental programme leading to BDS Degree shall be of 4 (four) academic years, with 240 teaching days in each academic year, plus one year paid rotating internship in a dental college. Every candidate will be required, after passing the final BDS Examination, to undergo one year paid rotating internship in a dental college. The detailed curriculum of Dental Internship Programme is annexed as **Annexure-A**.

The internship shall be compulsory and BDS Degree shall be granted after completion of one year paid Internship.

NOTE: It is recommended by the DCI that the colleges who have implemented the revised BDS Course Regulation, 2007, in 2007 itself, has to carry on with the existing five year programme. Regarding internship for this batch it is upto the respective university to decide. Further, the admissions made from the year 2008-09, the students may be included in this amendment provided the concerned University's rules permit.

(ii) **EXAMINATIONS:-**

There is no change in syllabus upto 3rd year (2007).

The following will be substituted at page No. 4 of the Existing Regulations, 2007:-

*Any candidate who fails in **one subject** in an Examination is permitted to go to the next higher class and appears for the said failed subject and complete it successfully before he is permitted to appear for the next higher examination. However, the Dental Council of India would have no objection, if the concerned University follows their examination scheme provided in their statute/regulations.*

After Sl. No. 5 of the subject, Pre-clinical Prosthodontics, the following be added:-

*Any candidate who fails in **one subject** in an Examination is permitted to go to the next higher class and appears for the said failed subject and complete it successfully before he is permitted to appear for the next higher examination. However, the Dental Council of India would have no objection, if the concerned University follows their examination scheme provided in their statute/regulations.*

After Sl. No. 3 of the subject, Oral Pathology and Oral Microbiology, the following be added:-

*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 is permitted to appear for the next higher examination. However, the Dental Council of India would have no objection, if the concerned University follows their examination scheme (2nd year onwards) provided in their statute/regulations.*

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The following will be substituted at page No. 4 of the Existing Regulations, 2007:-

Final BDS (Fourth Year):

- Public Health Dentistry
- Periodontology
- Orthodontics and Dentofacial Orthopaetic
- Oral Medicine and Radiology
- Oral & Maxillofacial Surgery
- Conservative and Endodontics
- Prosthodontics and Crown & Bridge
- Paediatric and Preventive Dentistry

OR

Part-I

- Public Health Dentistry
- Periodontology
- Orthodontics and Dentofacial Orthopaetic
- Oral Medicine and Radiology

Part –II

- Oral & Maxillofacial Surgery
- Conservative and Endodontics
- Prosthodontics and Crown & Bridge
- Paediatric and Preventive Dentistry

Note:-

1. **The concerned Universities may opt for any one of the examination pattern mentioned above in 4th BDS final year.**
2. **If any University opt for the part examination system then any candidate who fails in any subject in 4th (final) year Part-I examination is permitted to go to the part-II examination and should complete both parts successfully before he/she is permitted to go for internship programme.**
3. **Since there are inadequate teaching staffs in Department of Public Health Dentistry, the same may be clubbed together under the head of Periodontics. This arrangement shall be reviewed after three years.**

At page No.6, .5th year subjects will be deleted

(iii) SCHEME OF EXAMINATION:

For line 1 - 4 at page 5 of the existing Principle Regulations, the following be substituted:-

The Scheme of Examination for BDS Course shall be divided into 1st BDS examination at the end of the first academic year, 2nd BDS examination at the end of second year, 3rd BDS examination at the end of third, 4th and final BDS at the end of 4th year. Where semester system exists, there shall be two examinations in the final year, designated as part 1 and part 2 of the respective examinations (regulations 1983). 240 days minimum teaching in each academic year is mandatory.

For University opting for semester mode, the subjects that are to be covered in each semester proposed below.

Part-I

- Public Health Dentistry
- Periodontology
- Orthodontics and Dentofacial Orthopaetic
- Oral Medicine and Radiology.

Part –II

- Oral & Maxillofacial Surgery
- Conservative and Endodontics
- Prosthodontics and Crown & Bridge
- Paediatric and Preventive Dentistry

At page No. 6, V BDS examination will be deleted.

(iv) **The minimum working Hours for Each subject of study (BDS Course) substituted for the existing as indicated at page No. 16 of the existing Principal Regulations as under:-**

Subjects	*Lecture Hours*	*Practical Hours*	*Clinical Hours*	*Total Hours*
General Human Anatomy Including Embryology, Osteology and Histology.	*100*	*175*		*275*
General Human Physiology *Biochemistry*	*120* *70*	*60* *60*		*180* *130*
Dental Materials	*80*	*240*		*320*
Dental Anatomy Embryology, and Oral Histology	*105*	*250*		*355*
Dental Pharmacology & Therapeutics	*70*	*20*		*90*
General Pathology *Microbiology*	*55* *65*	*55* *50*		*110* *115*
General Medicine	*60*		*9*	*150*
General Surgery	*60*		*90*	*150*
Oral Pathology & Microbiology	*145*	*130*		*275*
Oral Medicine & Radiology	*65*		***170***	***235***
Paediatric & Preventive Dentistry	*65*		***170***	***235***
Orthodontics & dental orthopaedics	*50*		***170***	***220***
Periodontology	*80*		***170***	***250***
Oral & Maxillofacial Surgery	*70*		***270***	***340***
Conservative Dentistry & Endodontics	*135*	*200*	***370***	***705***
Prosthodontics & Crown & Bridge	*135*	*300*	***370***	***805***
Public Health Dentistry including Lectures on Tobacco Control & Habit Cessation	*60*		***200***	***260***
Total	*1590*	*1540*	***1989***	***5200***

Note:
There should be a minimum of 240 teaching days each academic year consisting of 8 working hours, including one hour of lunch break.
Internship – 240X8 hours-1920 clinical hours

(v) **The following teaching/clinical hours for the existing 4th year BDS Course indicated at Page No. 17 of the existing Principal Regulations, 2007 be substituted as under:-**

Subject	**Lecture Hours**	**Practical Hours**	**Clinical Hours**	**Total Hours**
Prosthodontics	80		300	380
Oral medicine	45		100	145
Periodontics	50		100	150
Public Health	60		200	260
Conservative Dentistry	80		300	380
Oral Surgery	50		200	250
Orthodontics	30		100	130
Pedodontics	45		100	145
Total	**440**		**1400**	**1840**

Provided that nothing contained in the provision of this regulations or statute or rules, regulations or guidelines or notifications of the concerned university, or any other law for the time being in force shall prevent any student pursuing his/her 4th year BDS Course who fails in any one or more subjects of 1st semester **will carry over those subjects to the 2nd Semester** and will appear in those subjects together with the subjects of the 2nd semester. A pass in all the eight subjects is mandatory for completion of the 4th BDS course before undergoing internship programme.

(vi) **To be substituted only for –Punjab and Andhra Pradesh**:-

Only 2007 batch (Punjab & Andhra Pradesh) will have to follow the existing 5th year only Programme. Thereafter this 3rd amendment will be applicable.

Provided the concerned University follows the proposed amendment.

(vii) **Under the Footnote page No. 17, the following be deleted**:-

1. Under Note No. 3, at the end, the following be deleted:-
   "& 5th year".
2. Under Note No. 4, at the end, the following be deleted:-
   "& 5th year".
3. Under Note No. 5, at the end, the following be deleted:-
   "and 5th year".
4. Note No. 6 be deleted.
5. Note No. 7 be deleted.

(viii) **The Teaching Hours as prescribed for "V BDS" Course at Page No. 17 in the existing BDS course Regulations, 2007, be deleted.**

It is the prerogative of the Dental Council of India to conduct inspections, at any of the colleges, at any time during the calendar year for inspecting whether the colleges are following the internship norms as laid down by DCI.

Col. (Retd). Dr. S.K. OJHA, Offg. Secy.

[ADVT. III/4/98/11/(P.O.)/Exty.]

Foot-notes :

1. The Principal Regulations, namely, Dental Council of India Revised BDS Course Regulations 2007 published in Part III, Section 4, of the Gazette of India, Extraordinary, on 10.9.2007.
2. 1st Amendment to the Principal Regulations, published in Part III, Section 4, of the Gazette of India, Extraordinary, on 11.1.2008.
3. 2nd Amendment to the Principal Regulations, published in Part III, Section 4, of the Gazette of India, Extraordinary, on 29.10.2010

Annexure-A

DENTAL COUNCIL OF INDIA

Revised Internship Programme, 2011

CURRICULUM OF DENTAL INTERNSHIP PROGRAMME.

1. The duration of Internship shall be one year.
2. All parts of internship shall be done in a Dental College duly recognized/approved by the Dental Council of India for the purpose of imparting education and training to Dental graduates in the country.
3. The Interness shall be paid stipendiary allowance during the period of an internship not extending beyond a period of one year.
4. The internship shall be compulsory and rotating as per the regulations prescribed for the purpose.
5. The degree- BDS shall be granted after completion of internship.

Determinants of Curriculum for internship for Dental Graduates:

The curricular contents of internship training shall be based on.

i) Dental health needs of the society.
ii) Financial, material and manpower resources available for the purpose.
iii) National Dental Health Policy.
iv) Socio-economic conditions of the people in general.
v) Existing Dental as also the primary health care concept, for the delivery of health services.
vi) Task analysis of what graduates in Dentistry in various practice settings, private and government service actually perform.
vii) Epidemiological studies conducted to find out prevalence of different dental health problems, taking into consideration the magnitude of dental problems, severity of dental problems and social disruption caused by these problems.

Objectives:

A. To facilitate reinforcement of learning and acquisition of additional knowledge:-
   a) Reinforcement of knowledge.
   b) Techniques & resources available to the individual and the community; Social and cultural setting.
   c) Training in a phased manner, from a shared to a full responsibility.

B. To facilitate the achievement of basic skills: attaining competence Vs. maintaining competence.in:-
   i) History taking.
   ii) Clinical Examination.
   iii) Performance and interpretation of essential laboratory data.
   iv) Data analysis and inference.
   v) Communication skills aimed at imparting hope and optimism in the patient.
   vi) Attributes for developing working relationship in the Clinical setting and Community team work.

C To facilitate development of sound attitudes and habits:-
   i) Emphasis on individual and human beings, and not on disease/symptoms.
   ii) Provision of comprehensive care, rather than fragmentary treatment.
   iii) Continuing Dental Education and Learning of accepting the responsibility.

D To facilitate understanding of professional and ethical principles:-
   - Right and dignity of patients.
   - Consultation with other professionals and referral to seniors/institutions.
   - Obligations to peers, colleagues, patients, families and Community.
   - Provision of free professional services in an emergent situation.

E To initiate individual and group action, leading to disease prevention and dental health promotion, at the level of individuals familities and the community.

Content (subject matter)

The compulsory rotating paid Dental Internship shall include training in Oral Medicine & Radiology; Oral & Maxillofacial Surgery; Prosthodontics; Periodontics; Conservative Dentistry; Pedodontics; Oral Pathology & Microbiology; Orthodontics and Community Dentistry.

General Guidelines:

1. It shall be task-oriented training. The interns should participate in various institutional and field programmes and be given due responsibility to perform the activities in all departments of the Dental Colleges and associated Institutions.

2. To facilitate achievement of basic skills and attitudes the following facilities should be provided to all dental graduates:
   i) History taking, examination, diagnosis, charting and recording treatment plan of cases.
   ii) Presentation of cases in a group of Seminar.
   iii) Care and sterilization of instruments used.
   iv) Performance and interpretation of essential laboratory tests and other relevant investigations.
   v) Data analysis and inference.
   vi) Proper use of antibiotics, anti-inflammatory and other drugs, as well as other thereapeutive modalities.
   vii) Education of patients, their relatives and community on all aspects of dental health car while working in the institution as also in the field.
   viii) Communication aimed at inspiring hope, confidence and optimism.
   ix) Legal rights of patients and obligations of dental graduate under forensic jurisprudence.

1. **Oral Medicine & Radiology:**

1.	Standardized examination of patients	25 Cases
2.	Exposure to clinical, pathological laboratory procedures and biopsies.	5 Cases
3.	Effective training in taking of Radiographs:	2 Full mouth
	(Intra-oral) I.O. (Extra oral) E.O.	1
	Cephalogram	1
4.	Effective management of cases in wards-	2 Cases

2. **Oral and Maxillofacial surgery**

A. The Interness during their posting in oral surgery shall perform the following procedures:

1.	Extractions	50
2.	Surgical extractions	2
3.	Impactions	2
4	Simple Intra Maxillary Fixation	1
5	Cysts enucleations	1
6.	Incision and drainage	2
7.	Alveoloplasties, Biopsies & Frenectomies, etc.	3

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B. The Interness shall perform the following on Cancer Patients:

1. Maintain file work.
2. Do extractions for radiotherapy cases.
3. Perform biopsies.
4. Observe varied cases of oral cancers.

C. The interness shall have 15 days posting in emergency services of a dental/general hospital with extended responsibilities in emergency dental care in the wards. During this period they shall attend to all emergencies under the direct supervision of oral surgeon during any operation:

1. Emergencies.
   (i) Toothache; (ii) trigemminal neuralgia; (iii) Bleeding from mouth due to trauma, post extraction, bleeding disorder or haemophylia; (iv) Airway obstruction due to fracture mandible and maxilla; dislocation of mandible; syncope or vasovagal attacks; ludwig's angina; tooth fracture; post intermaxillary fixation after general Anaesthesia.
2. Work in I.C.U. with particular reference to resuscitation procedures.
3. Conduct tutorials on medico-legal aspects including reporting on actual cases coming to casualty. They should have visits to law courts.

3. **Prosthodontics**

The dental graduates during their internship posting in Prosthodontics shall make:-

1.	Complete denture (upper & lower)	2
2.	Removable Partial Denture	4
3.	Fixed Partial Denture	1
4.	Planned cast partial denture	1
5.	Miscellaneous-like reline/overdenture/repairs of Maxillofacial Prosthesis	1
6.	Learning use of Face bow and Semi anatomic articulator technique	
7.	Crowns	
8.	Introduction of Implants	

4. **Periodontics**

A. The dental graduates shall perform the following procedures

1.	Prophylaxis	15 Cases
2.	Flap Operation	2 Cases
3.	Root Planning	1 Case
4.	Currettage	1 Case
5.	Gingivectomy	1 Case
6.	Perio-Endo cases	1 Case

B. During their one week posting in the community health centers, the interness shall educate the public in prevention of Periodontal diseases.

5. **Conservative Dentistry**

To facilitate reinforcement of learning and achievement of basic skills, the interns shall perform atleast the following procedures independently or under the guidance of supervisors:

1.	Restoration of extensively mutilated teeth	5 Cases
2.	Inlay and onlay preparations	1 Case
3.	Use of tooth coloured restorative materials	4 Cases
4.	Treatment of discoloured vital and non-vital teeth	1 Case
5.	Management of dento alveolar fracture	1 Case
6.	Management of pulpless, single-rooted teeth without periapical lesion.	4 Case
7.	Management of acute deto alveolar Infections	2 Cases
8.	Management of pulpless, single-rooted teeth with peripheral lesion period	1 Case
9.	Non-surgical management of traumatised teeth during formative period.	

6. **Pedodontics and Preventive Dentistry**

During their posting in Pedodontics the Denteal graduates shall perform:

1.	Topical application of fluorides including varnish	5 Cases
2.	Restorative procedures of carious deciduous teeth in children.	10 Cases
3.	Pulpotomy	2 Cases
4.	Pulpectomy	2 Cases
5.	Fabrication and insertion of space mainteners	1 Case
6.	Oral habits breaking appliances	1 Case

7. **Oral pathology and microbiology**

The interness shall perform the following:

1.	History-recording and clinical examination	5 Cases
2.	Blood, Urine and Sputum examination	5 Cases
3.	Exfoliative Cytology and smears study	2 Cases
4.	Biopsy- Laboratory Procedure & reporting	1 Case

8. **Orthodontics**

A. The interness shall observe the following procedures during their posting in Orthodontics:

1. Detailed diagnostic procedures for 5 patients
2. Laboratory techniques including wire-bending for removable appliances, soldering and processing of myo-functional appliances.
3. Treatment of plan options and decisions.
4. Making of bands, bonding procedures and wire insertions.
5. Use of extra oral anchorage and observation of force values.
6. Retainers.
7. Observe handling of patients with oral habits causing malocclusions.

The dental graduates shall do the following laboratory work:-

1.	Wire bending for removable appliances and space maintainers including weldoing and heat treatment procedure.	-	5 Cases
2.	Soldering exercises, banding & bonding procedures -	-	2 Cases
3.	Cold-cure and heat-cure acrylisation of simple Orthodontics appliances	-	5 Cases

9. **Public Health Dentistry**

1. The interness shall conduct health education sessions for individuals and groups on oral health public health nutrition, behavioral sciences, environmental health, preventive dentistry and and epidemiology.
2. They shall conduct a short term epidemiological survey in the community, or I n the alternate, participate in the planning and methodology.
3. They shall arrange effective demonstrations of:
   - a) Preventive and interceptive producers for prevalent dental diseases.
   - b) Mouth-rinsing and other oral hygiene demonstrations — 5 Cases
   - c) Tooth brushing techniques — 5 Cases
4. Conduction of oral health education programmes at
   - A) School setting — 2
   - B) Community setting — 2
   - C) Adult education programmes — 2
5. Preparation of Health Education materials — 5
6. Exposure to team concept and National Health Care systems:
   - a) Observation of functioning of health infrastructure.
   - b) Observation of functioning of health casre team including multipurpose workers male and female, health educators and other workers.
   - c) Observation of atleast one National Health Programme:-
   - d) Observation of interlinkages of delivery of oral health care with Primary Health care. Mobile dental clinics, as and when available, should be provided for this teachings.

10 **Elective Posting**

The Interness shall be posted for 15 days in any of the dental departments of their choice mentioned in the foregoing.

Organisation of content:

The Curriculum during the 4 years of BDS training is subject based with more emphasis on learning practical skills. During one year internship the emphasis will be on competency-based, community oriented training. The practical skills to be mastered by the interness along with the minimum performance level are given under the course content of different departments of Dental Education. The supervisors should seding it that proper facilities are provided in all departments and attached institutions for their performance.

Specification of teaching activities:

Didaetic lectures are delivered during the four years training in BDS. These shall be voided during the internship programme. Emphasis shall be on chair-side teaching, small group teaching and discussions tutorials, seminars, ward posting, laboratory posting, field visits and self learning.

Use of Resource Materials:

Overhead projectors, slide projectors, film projectors charts, diagrams, photographs, posters, specimens, models and other audiovisual aids shall be provided in all the Dental Colleges and attached institutions and field area. If possible, television, video and tapes showing different procedures and techniques to be mastered by the interness should be provided.

Evaluation

1. **Formative Evaluation:**

   Day-to-day assessment of the interness during their internship posting should be done. The objective ius that asll the interns must acquire necessary minimum skills required for carrying out day-to-day professional work competently. This can be achieved by maintaining records and performance data book by all interness. This will not only provide a demonstrable evidence ;of the processes of training but more importantly, of the interness own acquisition of competencies as rolated to performance. It shall form a part of formative evaluation and shall also constitute a component of final grading of interns.

2. **Summative Evaluation:**

   It shall be based on the observation of the supervious of different departments and the records and performance data book maintained by the interns. Grading shall be done accordingly.

11. **Rural Services**

In the rural services, the student will have to participate in-

1. Community Health Monitoring programmes and services which include Preventive, Diagnostic and corrective procedures
2. To create educational awareness about dental hygiene and diseases.
3. Conduction of Oral Health Education Programe at –
   - (a) School Setting - 5
   - (b) community Setting - 5
   - (c) Adult Education Programe - 5
4. compulsory setup of satellite clinics in remote areas - 1
5. **Lectures to create awareness and education in public forums about the harmful effects of tobacco consumption and the predisposition to oral cancer – two Lecturers per student.**

Period of Postings

1.	Oral Medicine & Radiology	–	1 month
2.	Oral & Maxillofacial Surgery	–	1 ½ months
3.	Prosthodontics	–	1 ½ months
4.	Periodontics	–	1 month
5.	Conservative Dentistry	–	1 month
6.	Pedodontics	–	1 month
7.	Oral Pathology & Microbiology	–	15 days
8.	Orthodontics	–	1 month
9.	Community Dentistry /Rural Services	–	3 months
10.	Elective	–	15 days

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भारतीय दन्त परिषद्

अधिसूचना

नई दिल्ली, 8 दिसम्बर, 2011

सं. डीई-130-2011.—दन्त चिकित्सक अधिनियम, 1948 के खंड 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तथा दन्तचिकित्सक अधिनियम, 1948 के खंड 20 के उप-खंड 2 की धारा (छ) तथा (ज) में यथानिर्धारित राज्य सरकारों के साथ परामर्श करने के बाद तथा केन्द्रीय सरकार की पूर्व मंजूरी से भारतीय दन्त परिषद भारत के असाधारण राजपत्र के भाग III, खंड 4 में दिनांक 10 सितम्बर, 2007 को प्रकाशित मौजूदा संशोधित बीडीएस पाठ्यक्रम विनियम, 2007 में एतद्द्वारा निम्न संशोधन करती है :—

1. लघु शीर्ष तथा प्रवर्तन

(i) ये विनियम भारतीय दन्त परिषद संशोधित बीडीएस पाठ्यक्रम (चौथा संशोधन) विनियम, 2011 कहलाएंगे।

(ii) ये विनियम सरकारी राजपत्र में उनके प्रकाशन की तारीख से प्रवृत्त होंगे।

2. भारतीय दन्त परिषद संशोधित बीडीएस पाठ्यक्रम (तीसरा संशोधन) विनियम, 2011 के विनियम 2(1) में "पाठ्यक्रम की अवधि" शीर्ष के अंतर्गत दी गई टिप्पणी "डीसीआई द्वारा यह सिफारिश की गई है कि जिन कालेजों ने संशोधित बीडीएस पाठ्यक्रम विनियम, 2007 को वर्ष 2007 से ही कार्यान्वित किया है उन्हें मौजूदा पाँच वर्षीय कार्यक्रम जारी रखना है। जहां तक इस बैच के लिए स्थानबद्ध प्रशिक्षण का सवाल है, इसके बारे में सम्बंधित विश्वविद्यालय निर्णय लेगा" को एतद्द्वारा हटाया जाता है तथा टिप्पणी के नीचे निम्नलिखित प्रावधान जोड़ा जाता है, अर्थात् :—

बशर्ते शैक्षिक वर्ष 2007-2008 बैच में दाखिल किए गए छात्र, तदनुसार संशोधित बीडीएस पाठ्यक्रम विनियम, 2007 में निर्धारित बीडीएस के पाँच वर्ष की पाठ्यचर्या और पाठ्यक्रम को जारी रखेंगे, तथा अपनी थ्योरी (चार) विषयों को छः महीने की अवधि के दौरान 160 लेक्चर घंटों को निम्न रूप से पूरी करेंगे :—

विषय	लेक्चर घंटे
मुखीय तथा मैक्सिलोफेशियल सर्जरी	30
परिरक्षी दंतचिकित्सा तथा एंडोडोंटिक्स	50
प्रोस्थोडोंटिक्स तथा क्राउन और ब्रिज	50
जन स्वास्थ्य दंतचिकित्सा	30
योग	160

ऐसा अध्ययन पूरा करने पर उन्हें विश्वविद्यालय की परीक्षा में बैठना होगा तथा सफलतापूर्वक परीक्षा पास करने के बाद ही उन्हें निम्नलिखित अवधि के अनुसार प्रत्येक विभाग में छः महीने का स्वेतन स्थानबद्ध प्रशिक्षण करने की अनुमति दी जाएगी :—

विभाग	लेक्चर की अवधि
1. मुखीय चिकित्सा तथा विकिरण चिकित्साविज्ञान	20 दिन
2. मुखीय तथा मैक्सिलोफेशियल सर्जरी	30 दिन
3. प्रोस्थोडोंटिक्स	30 दिन
4. पेरियोडोंटिक्स	15 दिन
5. परिरक्षी दंतचिकित्सा	10 दिन
6. पेडोडोंटिक्स	15 दिन
7. मुखीय विकृतिविज्ञान तथा सूक्ष्मजीवविज्ञान	10 दिन
8. आर्थोडोंटिक्स	10 दिन
9. सामाजिक दंतचिकित्सा/ग्रामीण सेवा	30 दिन
10. वैकल्पिक	10 दिन
योग	180 दिन

कर्नल (सेवानिवृत्त) डॉ. एस.के. ओझा, कार्यवाहक सचिव

[विज्ञापन III/4/98/11/असा.]

पाद टिप्पणियां :

1. मूल विनियम अर्थात भारतीय दन्त परिषद् संशोधित बीडीएस पाठ्यक्रम विनियम, 2007, भारत के राजपत्र, असाधारण के भाग III, खंड 4 में 10-9-2007 को प्रकाशित हुए थे ।
2. मूल विनियमों में पहला संशोधन भारत के राजपत्र, असाधारण के भाग III, खंड 4 में 11-1-2008 को प्रकाशित हुआ था ।
3. मूल विनियमों में दूसरा संशोधन भारत के राजपत्र, असाधारण के भाग III, खंड 4 में 29-10-2010 को प्रकाशित हुआ था ।
4. मूल विनियमों में तीसरा संशोधन भारत के राजपत्र, असाधारण के भाग III, खंड 4 में 25-8-2011 को प्रकाशित हुआ था ।

DENTAL COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 8th December, 2011

No.DE-130-2011.—In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India after consultation with the State Government as prescribed in clause (g) & (h) of sub-section 2 of Section 20, and with the previous sanction of the Central Government, hereby makes the following Amendments to the existing principal Revised BDS Course Regulations, 2007, published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10th September, 2007.

1. Short title and commencement :—

(i) These Regulations may be called the Dental Council of India Revised BDS Course (4th Amendment) Regulations, 2011.

(ii) They shall come into force on the date of their publication in the Official Gazette.

2. In Regulation 2(i) captioned as "Duration of the Course" of the Dental Council of India Revised BDS Course (3rd Amendment) Regulations, 2011, the words "It is recommended by the DCI that the colleges who have implemented the revised BDS Course Regulation, 2007, in 2007 itself, has to carry on with the existing five year programme. Regarding internship for this batch it is up to the respective university to decide." under the captioned "NOTE:" are hereby deleted and the following proviso shall be inserted below the NOTE:, namely :—

Provided that the students of the batch admitted during the academic session 2007-2008, and consequently they are going to pursue their 5th year BDS Course as per the course curriculum and syllabus prescribed in the principal Revised BDS Course Regulations, 2007, may complete their Theory in 4 (four) subjects with 160 Lecture hours within a period of 6 (six) months as given below :—

Subject	Lecture Hours
Oral & Maxillofacial Surgery	30
Conservative Dentistry & Endodontics	50
Prosthodontics and Crown & Bridge	50
Public Health Dentistry	30
Total	160

On completion of such study, they shall have to appear in the University Examination and only after passing University Examination successfully, they shall be allowed to do six months Paid Rotating Internship Programme in all the Departments for the duration indicated against each Department as under:—

Departments	Period of Postings
1. Oral Medicine & Radiology	20 days
2. Oral & Maxillofacial Surgery	30 days
3. Prosthodontics	30 days
4. Periodontics	15 days
5. Conservative Dentist	10 days
6. Pedodontics	15 days
7. Oral Pathology & Microbiology	10 days
8. Orthodontics	10 days
9. Community Dentist/Rural Service	30 days
10. Elective	10 days
Total	180 days

Col. (Retd). Dr. S.K. OJHA, Offg. Secy.

[ADVT. III/4/98/11/Exty.]

Foot Notes:

1. The Principal Regulations, namely, Dental Council of India Revised BDS Course Regulations, 2007 published in Part III, Section 4 of the Gazette of India, Extraordinary, on 10-9-2007.
2. 1st Amendment to the Principal Regulations, published in Part III, Section 4, of the Gazette of India, Extraordinary, on 11-1-2008.
3. 2nd Amendment to the Principal Regulations, published in Part III, Section 4 of the Gazette of India, Extraordinary, on 29-10-2010.
4. 3rd Amendment to the Principal Regulations, published in Part III, Section 4, of the Gazette of India, Extraordinary, on 25-8-2011.

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असाधारण
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PART III—Section 4
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 139] नई दिल्ली, शुक्रवार, जून 1, 2012/ज्येष्ठ 11, 1934
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भारतीय दंत्य परिषद्

अधिसूचना

नई दिल्ली, 31 मई, 2012

सं. डी.ई.-22-2012.—दन्त चिकित्सक अधिनियम, 1948 के खंड 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तथा केन्द्रीय सरकार के पूर्व-अनुमोदन से भारतीय दंत्य परिषद्, भारत के असाधारण राजपत्र के भाग III, खंड 4 में 10 सितम्बर, 2007 को प्रकाशित मौजूदा मूल संशोधित बीडीएस पाठ्यक्रम, 2007 में निम्न संशोधन करती है :—

1. लघु शीर्ष तथा प्रवर्तन

(i) ये विनियम भारतीय दंत्य परिषद संशोधित बीडीएस पाठ्यक्रम (5वां संशोधन) विनियम, 2007 कहलाएंगे।

(ii) ये विनियम सरकारी राजपत्र में इनके प्रकाशन की तारीख से शैक्षणिक सत्र 2013–14 से लागू होंगे।

2. "भारतीय दंत्य परिषद संशोधित बीडीएस पाठ्यक्रम विनियम, 2007" में निम्न अंतःस्थापन/उपांतरण/विलोपन/प्रतिस्थापन उसमें यथानिर्दिष्ट किए जाएंगे।

3. '1. दंत्य पाठ्यक्रम में दाखिला–पात्रता मानदंड' शीर्षक के अधीन विनियम 1 के उप–विनियम 1 के बाद निम्न उप–विनियम अंतःस्थापित किया जाएगा जो मौजूदा उप–नियम '2' '3' के रूप में पुनःसंख्याकित किया जाएगा:

"2. उसने 'छात्रों का चयन' शीर्षक के अधीन विनियम II के उप–विनियम 5 में यथानिर्धारित राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा में न्यूनतम अंक अर्जित कर लिए हैं।"

4. भारतीय दंत्य परिषद संशोधित बीडीएस पाठ्यक्रम विनियम, 2007 के विनियम 1 के उप–विनियम 2 में 'उसने नीचे बताए अनुसार अर्हक परीक्षा पास कर ली है' शब्दों से पहले 'राष्ट्रीय पात्रता एवं प्रवेश परीक्षा में बैठने का पात्र होने के लिए' शब्द **अंतःस्थापित किए जाएंगे।**

5.(i) इस संशोधनों के शुरू होने के बाद विनियम 1 के उप–विनियम 3 में बीडीएस पाठ्यक्रम में दाखिले के लिए 'गणित में प्राप्त अंकों पर विचार नहीं किया जाएगा'।

(ii) छात्रों का चयन शीर्षक के अधीन मौजूदा विनियम II में 1 से 4 तक के उप–विनियम **विलोपित कर दिए जाएंगे।**

6. 'बीडीएस में दाखिले की क्रियाविधि' निम्नानुसार होगी शीर्षक के अधीन विनियम II के मौजूदा उप–विनियम में विलोपित किया जाएगा और निम्नानुसार प्रतिस्थापित किया जाएगा:

"i. प्रत्येक शैक्षणिक सत्र में बीडीएस पाठ्यक्रम में दाखिले के लिए राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा' के नाम से एक अकेली पात्रता–एवं–प्रवेश परीक्षा होगी।

ii. किसी विशेष शैक्षणिक वर्ष में बीडीएस पाठ्यक्रम में दाखिले के लिए पात्र होने के वास्ते यह जरूरी है कि अभ्यर्थी ने उक्त शैक्षणिक वर्ष में आयोजित 'बीडीएस पाठ्यक्रम के लिए राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा' में 50वें शतमक (पर्सेंटाइल) पर न्यूनतम अंक प्राप्त किए हों। तथापि, अनुसूचित जातियों, अनुसूचित जनजातियों, अन्य पिछड़े वर्गों के अभ्यर्थियों को 40वें शतमक पर न्यूनतम अंक प्राप्त करने होंगे। उपर्युक्त उप–विनियम 4 के अर्थों में शरीर के निचले अंगों में गतिक निःशक्तता से पीड़ित अभ्यर्थियों के मामले में इन संशोधनों के लागू किए जाने के बाद न्यूनतम अंक 45वें शतमक पर होंगे। शतमक का निर्धारण 'बीडीएस पाठ्यक्रम में दाखिल के लिए राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा' में अखिल भारतीय सामान्य योग्यताक्रम सूची में प्राप्त उच्चतम अंकों के आधार पर किया जाएगा।"

लेकिन शर्त यह है कि यदि संबंधित श्रेणियों के अभ्यर्थी बीडीएस पाठ्य5म में दाखिले के लिए पर्याप्त संख्या में किसी शैक्षणिक वर्ष के लिए आयोजित राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा में यथानिर्धारित न्यूनतम अंक प्राप्त करने में असफल रहते हैं, तो केन्द्रीय सरकार, भारतीय दंत्य परिषद के परामर्श से अपने विवेकानुसार संबंधित श्रेणियों के अभ्यर्थियों के मामले में बीडीएस पाठ्यक्रम में दाखिले के लिए अपेक्षित न्यूनतम अंकों को घटा सकती है और केन्द्रीय सरकार द्वारा इस प्रकार घटाए गए अंक केवल उसी शैक्षणिक वर्ष के लिए लागू होंगे।

iii. दंत्य कालेजों में संबंधित श्रेणियों के लिए सीटों का आरक्षण राज्यों/संघ राज्य क्षेत्र में मौजूद यथालागू विधि के अनुसार होगा। राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा में प्राप्त अंकों के आधार पर पात्र अभ्यर्थियों की एक अखिल भारतीय योग्यताक्रम सूची और साथ ही राज्य–वार योग्यताक्रम सूची तैयार की जाएगी और अभ्यर्थियों को बीडीएस पाठ्य5म में दाखिला केवल उपर्युक्त सूचियों के आधार पर दिया जाएगा।

iv. ऐसे किसी भी अभ्यर्थी को, जो धारा (ii) में यथानिर्धारित न्यूनतम पात्रता अंक प्राप्त करने में असफल रहा है उक्त शैक्षणिक वर्ष में बीडीएस पाठ्यक्रम में दाखिला नहीं दिया जाएगा।

v. संबंधित श्रेणियों के भीतर बीडीएस पाठ्यक्रम में सभी दाखिले पूर्णतः राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा में अर्जित अंकों पर आधारित होंगे।

vi. बीडीएस पाठ्यक्रम में दाखिले के वास्ते पात्र होने के लिए यह जरूरी है कि अभ्यर्थी ने विनियम के उप–विनियम 2 में यथानिर्दिष्ट अर्हक परीक्षा में भौतिकशास्त्र, रसायनशास्त्र जीवविज्ञान/जैव प्रौद्योगिकी तथा अंग्रेजी विषयों में अलग–अलग विषयों में परीक्षा पास की हो और उसने भौतिकशास्त्र, रसायनशास्त्र तथा जीवविज्ञान/जैव प्रौद्योगिकी में समेकित रूप से कम से कम 50% अंक प्राप्त किए हों और साथ ही उसने बीडीएस पाठ्यक्रम में दाखिले के लिए 'राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा' की योग्यताक्रम सूची में कोई स्थान प्राप्त किया हो। अनुसूचित जातियों, अनुसूचित जनजातियों अथवा अन्य पिछड़े वर्गों के अभ्यर्थियों के मामले में अर्हक परीक्षा में भौतिकशास्त्र, रसायनशास्त्र तथा जीवविज्ञान/जैव प्रौद्योगिकी में समेकित रूप से प्राप्त न्यूनतम अंक 50% की बजाय 40% होंगे। उप–विनियम 4 के अर्थों में शरीर के निचले अंगों की गतिक निःशक्तता से ग्रस्त अभ्यर्थियों के मामले में उपर्युक्त विनियम 1 में इन संशोधनों के लागू होने के बाद अर्हक परीक्षा में भौतिकशास्त्र, रसायनशास्त्र तथा जीवविज्ञान/जैव प्रौद्योगिकी में समेकित रूप से न्यूनतम अंक 50% की बजाय 45% होंगे।

लेकिन शर्त यह है कि ऐसे अभ्यर्थी के मामले में जो ऐसी अर्हक परीक्षा में बैठा है जिसका परिणाम घोषित नहीं किया गया है, उसे अनंतिम रूप से राष्ट्रीय पात्रता–एवं–प्रवेश परीखा में बैठने की अनुमति दे दी जाएगी और बीडीएस पाठ्यक्रम में चयन हो जाने की स्थिति में उसे पाठ्यक्रम में तब तक दाखिला नहीं दिया जाएगा जब तक कि उसने विनियम I के अधीन पात्रता मानदंडों की पूर्ति न कर ली हो।

vii. बीडीएस पाठ्यक्रम में दाखिले के लिए राष्ट्रीय पात्रता–एवं–प्रवेश परीक्षा आयोजित करने वाला संगठन केन्द्रीय माध्यमिक शिक्षा बोर्ड होगा।"

कर्नल (सेवानिवृत्त) डॉ. एस. के. ओझा, कार्यवाहक सचिव

[विज्ञापन III/4/98/12/असा.]

पाद टिप्पणी : मूल विनियम अर्थात 'भारतीय दंत्य परिषद बीडीएस पाठ्यक्रम विनियम, 2007' दिनांक 10 सितंबर, की अधिसूचना के अधीन भारत के राजपत्र के भाग III, खंड (4) में प्रकाशित किए गए थे जिन्हें बाद में 11.1.2008, 29.10.2010, 25.8.2011, 9.12.2011 की अधिसूचनाओं के जरिए संशोधित किया गया था।

DENTAL COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 31st May, 2012

No.DE-22-2012.–In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India with the previous sanction of the Central Government hereby makes the following Amendments to the existing principal Revised BDS Course Regulations, 2007, published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10th September, 2007:–

1. **Short title and commencement:–**

(i) These Regulations may be called the **Dental Council of India Revised BDS Course (5th Amendment) Regulations, 2007**.

(ii) They shall come into force on the date of their publication in the Official Gazette from the academic session 2013-14.

2. In "Dental Council of India Revised BDS Course Regulations, 2007", the following **insertion / modifications / deletions / substitutions**, shall be as indicated therein:-

3. After sub-regulation 1. of Regulation I, under the heading "**I. Admission to the Dental Course – Eligibility Criteria**", the following new sub-regulation **shall be inserted**, and the existing sub-regulation "2." is re-numbered as "3.", as under:-

"2. He/She has obtained a minimum of marks in National Eligibility-cum-Entrance Test as prescribed in sub-regulation 5 of Regulation II under the heading **"Selection of students:"**.

4. In Sub-regulation 2 of Regulation I of Dental Council of India Revised BDS Course Regulations, 2007, in the first line before the words "He/she has passed qualifying examination as under:-", the word "In order to be eligible to take National Eligibility-cum-Entrance Test." **shall be inserted**.

5.(i) In Sub-regulation 3 of Regulation I, after the commencement of these amendments, the "**Note:**" with the sentence "Marks obtained in Mathematics are not to be considered for admission to BDS Course." **shall be deleted**.

(ii) In the existing Regulation II, under the heading "**Selection of Students**", sub-regulation "1. to 4." **shall be deleted**.

6. In the existing Sub-regulation 5 of Regulation II, under the heading "Procedure for selection to BDS course shall be as follows:-" **shall be deleted and substituted** as under:-

"i. There shall be a single eligibility-cum-entrance examination namely "National Eligibility-cum-Entrance Test for admission to BDS course" in each academic year."

ii. In order to be eligible for admission to BDS Course for a particular academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in 'National Eligibility-cum-Entrance Test to BDS course' held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes, Other Backward Classes, the minimum marks shall be at 40th percentile. In respect of candidates with locomotory disability of lower limbs terms of sub-regulation 4 above, after the commencement of these amendments, the minimum marks shall be at 45th percentile. The percentile shall be determined on the basis of highest marks secured in the All-India common merit list in "National Eligibility-cum-Entrance Test for admission to BDS course".

Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to BDS Course, the Central Government in consultation with Dental Council of India may at its discretion lower the minimum marks required for admission to BDS Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said academic year only.

iii. The reservation of seats in dental colleges for respective categories shall be as per applicable laws prevailing in States/Union Territories. An all India merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in National Eligibility-cum-Entrance Test and candidates shall be admitted to BDS course from the said lists only.

iv. No Candidate who has failed to obtain the minimum eligibility marks as prescribed in Clause (ii.) above shall be admitted to BDS course in the said academic year.

v. All admissions to BDS course within the respective categories shall be based solely on marks obtained in the National Eligibility-cum-Entrance Test.

vi. To be eligible for admission to BDS course, a candidate must have passed in the subjects of Physics, Chemistry, Biology/Biotechnology and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology/Biotechnology at the qualifying examination as mentioned in Sub-regulation 2 of Regulation I and in addition must have come in the merit list of "National Eligibility-cum-Entrance Test" for admission to BDS course. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other Backward Classes the minimum marks obtained in Physics, Chemistry and Biology/Bio-technology taken together in qualifying examination shall be 40%

instead of 50%. In respect of candidates with locomotory disability of lower limbs in terms of sub-regulation 4, after the commencement of these amendments, of Regulation I above, the minimum marks in qualifying examination in Physics, Chemistry and Biology/Bio-technology taken together in qualifying examination shall be 45% instead of 50%.

Provided that a candidate who has appeared in the qualifying examination the result of which has not been declared, he/she may be provisionally permitted to take up the National Eligibility-cum-Entrance Test and in case of selection for admission to the BDS course, he/she shall not be admitted to that course until he fulfils the eligibility criteria under Regulation I.

vii. The Central Board of Secondary Education shall be the organization to conduct National Eligibility-cum-Entrance Test for admission to BDS course."

Col. (Retd.) Dr. S. K. OJHA, Officiating Secy.

[ADVT. III/4/98/12/Exty.]

Foot Note : The Principal Regulations namely, "Dental Council of India Revised BDS Course Regulations, 2007" were published in Part III, Section, Section (4) of the Gazette of India vide Notification dated the 10th September, 2007 and amended vide Gazette Notifications dated 11.01.2008, 29.10.2010, 25.08.2011, 09.12.2011.

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भारतीय दंत्य परिषद

अधिसूचना

नई दिल्ली, 24 जून, 2013

सं. डीई–130–2013.—भारतीय दंतचिकित्सक अधिनियम 1948 के खंड 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारतीय दंत्य परिषद खंड 20 के उप–खंड 2 की धारा (छ) तथा (ज) में यथानिर्धारित राज्य सरकार से परामर्श के बाद तथा केन्द्रीय सरकार की पूर्व स्वीकृति से भारत के दिनांक 10 सितंबर, 2007 के असाधारण राजपत्र के भाग III, खंड 4 में प्रकाशित मूल संशोधित बीडीएस पाठ्यक्रम विनियम, 2007 के 9 दिसंबर, 2011 को भारत के असाधारण राजपत्र के भाग III, खंड 4 में प्रकाशित संशोधित बीडीएस पाठ्यक्रम (चौथा संशोधन) विनियम, 2011 में निम्नानुसार और आगे संशोधन करती है :—

1. संक्षिप्त शीर्षक तथा प्रवर्तन

(i) ये विनियम भारतीय दंत्य परिषद सशोधित बीडीएस पाठ्यक्रम (छठा संशोधन) विनियम, 2013 कहलाएंगे।

(ii) ये विनियम सरकारी राजपत्र में इनके प्रकाशन की तारीख से लागू होंगे।

2. "भारतीय दंत्य परिषद संशोधित बीडीएस पाठ्यक्रम (चौथा संषोधन) विनियम, 2007" में पहले परंतुक के नीचे निम्न दूसरा परंतुक सन्निविष्ट किया जाएगा :—

"आगे शर्त यह है कि 2007–2008 के बीडीएस बैच के जो छात्र स्थिति अनुसार 4½ + 6 महीने के प्रदत्त रोटेरी स्थानबद्ध प्रशिक्षण सहित अथवा 5 वर्ष की अवधि का पाठ्यक्रम पास कर लेते हैं, वे संशोधित बीडीएस पाठ्यक्रम (चौथा संशोधन) विनियम, 2011 के अनुसार सभी आशयों और प्रयोजनों के लिए जैसे कि एमडीएस पाठ्यक्रम में दाखिले, सरकारी नौकरियों के निमित्त आवेदन करने, राज्य दंत्य परिषदों में पंजीकरण आदि के लिए एक वर्ष के प्रदत्त रोटेटरी स्थानबद्ध कार्यक्रम सहित 4+1 वर्ष के बीडीएस पाठ्यक्रम के बराबर/समतुल्य समझे जाएंगे।"

3. भारतीय दंतचिकित्सक अधिनियम 1948 के खंड 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारतीय दंत्य परिषद खंड 20 के उप–खंड 2 की धारा (छ) तथा (ज) में यथानिर्धारित राज्य सरकार से परामर्श के बाद तथा केन्द्रीय सरकार की पूर्व स्वीकृति से भारत के दिनांक 10 सितंबर, 2007 के असाधारण राजपत्र के भाग III, खंड 4 में प्रकाशित मूल संशोधित बीडीएस पाठ्यक्रम विनियम 2007 के 1 जून, 2012 को भारत के असाधारण राजपत्र के भाग III, खंड 4 में प्रकाशित संशोधित बीडीएस पाठ्यक्रम (पांचवां संशोधन) विनियम, 2007 में निम्नानुसार और आगे संशोधन करती है :—

1. मौजूदा संशोधित बीडीएस पाठ्यक्रम (पांचवां संशोधन) विनियम, 2007 के संक्षिप्त शीर्षक में वर्ष '2007' के स्थान पर '2012' पढ़ा जाए।

4. भारतीय दंतचिकित्सक अधिनियम 1948 के खंड 20 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारतीय दंत्य परिषद खंड 20 के उप–खंड 2 की धारा (छ) तथा (ज) में यथानिर्धारित राज्य सरकार से परामर्श के बाद तथा केन्द्रीय सरकार की पूर्व स्वीकृति से भारत के दिनांक 10 सितंबर, 2007 के असाधारण राजपत्र के भाग III, खंड 4 में प्रकाशित मूल संशोधित बीडीएस पाठ्यक्रम विनियम 2007 के 25 अगस्त, 2011 को भारत के असाधारण राजपत्र के खंड III, भाग 4 में प्रकाशित संशोधित बीडीएस पाठ्यक्रम (तीसरा संशोधन) विनियम, 2011 में निम्नानुसार और आगे संशोधन करती है :—

1. शीर्षक III) 'परीक्षा की योजना' के नीचे पैरा 2 की पहली पंक्ति में एतद्द्वारा 'सेमेस्टर' शब्द के स्थान पर जहां कहीं लागू हो वहां 'भाग I अथवा भाग II प्रतिस्थापित किया जाएगा।

कर्नल (सेवानिवृत्त) डॉ. एस. के. ओझा, कार्यवाहक सचिव

[विज्ञापन–III / 4 / असाधारण / 98 / 13]

पाद टिप्पणी : मूल विनियम तथा 'भारतीय दंत्य परिषद संशोधित बीडीएस पाठ्यक्रम विनियम, 2007' अधिसूचना के रूप में भारत के असाधारण राजपत्र के भाग III, खंड (4) में 10 सितंबर, 2007 को प्रकाशित किए गए थे जिन्हें दिनांक 11.1.2008, 29.10.2010, 25.8.2011, 9.12.2011, 1.6.2012 की राजपत्रित अधिसूचनाओं द्वारा संशोधित किया गया।

DENTAL COUNCIL OF INDIA
NOTIFICATION

New Delhi, the 24th June, 2013

No. DE-130-2013.—In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India after consultation with the State Government as prescribed in clause (g) & (h) of sub-section 2 of Section 20, and with the previous sanction of the Central Government, hereby makes the following further Amendments to the Revised BDS Course (4th Amendment) Regulations, 2011, published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 9th December 2011, to the Principal Revised BDS Course Regulations, 2007 published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10th September 2007 :—

1. **Short title and commencement**:–

(i) These Regulations may be called the Dental Council of India Revised BDS Course (6th Amendment) Regulations, 2013.

(ii) They shall come into force on the date of their publication in the Official Gazette.

2. In "Dental Council of India Revised BDS Course (4th Amendment) Regulations, 2007", the following second proviso, below the first proviso thereof, shall be inserted : —

"Provided further that students of 2007-2008 BDS batch who are declared passed with 4½ + 6 months Paid Rotatory Internship <u>or</u> 5-year duration course, as the case may be, as per Revised BDS Course (4th Amendment) Regulations, 2011, shall be deemed at par/equivalent with 4+1-year BDS Course, including one year Paid Rotatory Internship programme, for all intents and purposes i.e. for admission in MDS Course, applying for Govt. Jobs, registration in State Dental Councils, etc."

3. In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India after consultation with the State Government as prescribed in clause (g) & (h) of sub-section 2 of Section 20, and with the previous sanction of the Central Government, hereby makes the following further Amendments to the Revised BDS Course (5th Amendment) Regulations, 2007, published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 1st June 2012, to the Principal Revised BDS Course Regulations, 2007 published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10th September 2007 :—

1. In the short title of existing Revised BDS Course (5th Amendment) Regulations, 2007, the year "2007" be read as "2012".

4. In exercise of the powers conferred by Section 20 of the Dentists Act, 1948, the Dental Council of India after consultation with the State Government as prescribed in clause (g) & (h) of sub-section 2 of Section 20, and with the previous sanction of the Central Government, hereby makes the following further Amendments to the Revised BDS Course (3rd Amendment) Regulations, 2011, published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 25th August 2011, to the Principal Revised BDS Course Regulations, 2007 published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10th September 2007 :—

1. In 1st line of 2nd paragraph under the heading (III) "Scheme of Examination", the word "semester" is hereby substituted by the word "Part I or Part II, whichever is applicable"

Col. (Retd.) Dr. S.K. OJHA, Offg. Secy.

[ADVT-III/4/Exty./98/13]

Foot Note : The Principal Regulations namely, "Dental Council of India Revised BDS Course Regulations, 2007" were published in Part III, Section (4) of the Gazette of India vide Notification dated the 10th September, 2007 and amended vide Gazette Notifications dated 11.01.2008, 29.10.2010, 25.08.2011, 09.12.2011, 01.06.2012.

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