SYLLABUS & REGULATIONS FOR

B.D.S

[With effect from 2018-19 onwards]
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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:-

1. 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 1+2+3 years educational structure as recommended by the National Committee on education;

Note: Where the course content is not as prescribed for 1+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;

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;

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;

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 1+2 with English at a level not less than a core course;

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.

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 1+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 fulfills 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 1st professional Bachelor of Dental Surgery (BDS) examination at the transfer 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 lInd 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 & Dental Orthopaedics
viii) Paediatric & Preventive Dentistry
ix) Periodontology
x) Prosthodontics and Crown & Bridge

Fourth Year
i) Orthodontics & dental 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 B.D.S: 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 1nd 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 3rd 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 & dento-facial 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, spotter 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.

<table>
<thead>
<tr>
<th>Theory</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical/ Clinical</td>
<td>100</td>
</tr>
</tbody>
</table>
Theory - 100

University written exam 70
Viva Voce 20
Internal assessment (Written) 10

Total 100

Practicals/clinicals - 100

University Exam 90
Internal assessment (Written) 10

Total 100

Practical and Viva Voce Only in University Examination
Pre-clinical Prostodontics
Pre-clinical Conservative Dentistry.......
Internal Assessment - 20
Practical - 60
Viva Voce - 20

Total 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.

Double Valuation:

The answer script will be evaluated by two examiners both internal and external separately and the average of the two marks will be taken for final marks. Any paper having differences of 15% of maximum theory marks shall be taken for third valuation and the final marks will be arrived taking the average of third valuation and the nearest marks. There will be no revaluation and only re-totaling.
Qualification and experience for eligibility for examinership in MDS 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 an 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.
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 of 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 specialty. 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 dentist 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
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 Dentistry & 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 period, 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 inpatient 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 Implantology, 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 Periodontics 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 Paedodentics & 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
- Analyze 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 patient's 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 posts 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 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 patient's 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 ENDO DONTICS
- 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 pulparly 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 anesthesia
- Competent to carry out certain minor oral surgical procedures 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 assume responsibility for their oral health
### Minimum Working Hours for Each Subject of Study

#### B.D.S. Course

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Lecture Hours</th>
<th>Practical Hours</th>
<th>Clinical Hours</th>
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<tr>
<td>General Human Anatomy Including Embryology, Osteology and Histology</td>
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<td>Dental Materials</td>
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<td>Dental Pharmacology &amp; Therapeutics</td>
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<td>General Pathology</td>
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**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

#### I B.D.S.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lecture Hours</th>
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<th>Total Hours</th>
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<tbody>
<tr>
<td>General Human Anatomy Including Embryology, Osteology and Histology</td>
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<td>175</td>
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</tr>
<tr>
<td>General Human Physiology</td>
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<tr>
<td>Dental Anatomy Embryology, and Oral Histology</td>
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<tr>
<td>Dental Materials</td>
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<tr>
<td>Pre clinical Prosthodontics &amp; Crown &amp; Bridge</td>
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### Minimum Working Hours for Each Subject of Study

#### II B.D.S.

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<td>General Pathology</td>
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<td>Oral Pathology and Oral Microbiology</td>
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### III B.D.S

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<tr>
<td>Paediatric and Preventive Dentistry</td>
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<td>Orthodontics &amp; Dentofacial</td>
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### IV B.D.S

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<td>175</td>
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<td>Orthodontics &amp; Dentofacial</td>
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<td>Orthopaedics</td>
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<td>Periodontology</td>
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<td>Prosthodontics and Crown &amp; Bridge</td>
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<td>Public Health Dentistry</td>
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### V B.D.S

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<tr>
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<td>Public Health Dentistry</td>
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<td><strong>Total</strong></td>
<td>160</td>
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**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 at least 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 utilised 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, Little Brown & company, Boston.
   5. SADLER , LANGMAN'S, Medical Embryology, Ed. 6.
   6. JAMES E ANDERSON, Grant's Atlas of Anatomy. Williams & Wilkins.
   8. EMERY,Medical Genetics.

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

EXPERIMENTAL PHYSIOLOGY:

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

3. **Biochemistry**
   3. Lecture notes in Biochemistry 1984, J.K. Kandiah

REFERENCE BOOKS:

   Basic and applied Dental Biochemistry, 1979, R.A.D. Williams & J.C.Elliot

4. **Dental Anatomy, Embryology and Oral Histology**
   1. Oral'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, Poerster, Athens, Lukens

6. **Microbiology**
7. Immunology an Introduction – Tizard

7. Dental Materials
2. Restorative Dental Materials – 10th edn. Robert G. Craig
3. Notes on Dental Materials – E.C. Combe

8. General and dental pharmacology and therapeutics

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 Regesi & Scibbba.
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
12. Community Dentistry by Sobhen Peter.
13. Paediatric and Preventive Dentistry
1. Pediatric Dentistry (Infancy through Adolescence) - Pinkham.
3. Understanding of Dental Caries - Nikiforuk.
4. Handbook of Clinical Pedodontics - Kenneth D.
5. Dentistry for the Child and Adolescence - McDonald.
6. Pediatric Dentistry - Damle S. G.
8. Traumatic Injuries - Andreason.
9. Textbook of Pedodontics - Shobha Tandon

a) Oral Diagnosis, Oral Medicine & Oral Pathology
1. Burkitt - Oral Medicine - J.B. Lippincott Company
2. Coleman - Principles of Oral Diagnosis - Mosby Year Book
5. Kerr - Oral Diagnosis
6. Miller - Oral Diagnosis & Treatment
7. Hutchinson - clinical Methods
8. Oral Pathology - Shafer
b) Oral Radiology
1. White & Goes - Oral Radiology - Mosby year Book
2. Weirman - Dental Radiology - C.V. Mosby Company
c) Forensic Odontology

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

16. Oral and Maxillofacial Surgery
1. Impacted teeth; Albing John F & et al.
2. Principles of oral and maxillofacial surgery; Vol.1,2 & 3 Petersom LJ & et al.
3. Handbook of medical emergencies in the dental office, Malamed SF.
4. Killey's Fractures of the mandible; Banks P.
5. Killey's fractures of the middle 3rd of the facial skeleton; Banks P.
6. Killey and Kees outline of oral surgery - Part-1; Seward OR & et al
7. Essentials of safe dentistry for the medically compromised patients; McCarthy FM
8. Extraction of teeth; Howe GL
9. Minor Oral Surgery; Howe GL

17. Prosthodontics, Crown & Bridge
2. Boucher's "Prosthodontic treatment for edentulous patients"
3. Essentials of complete denture prosthodontics - Sheldon Winkler.
5. McCracken's Removable partial prosthodontics
6. Removable partial prosthodontics - Ernest L. Miller and Joseph F. Ganz

18. Periodontology
1. Periodontal - Clinical Periodontology - Cowen
REFERENCE BOOKS:
1. Essentials of Periodontology and Periodontics – Torquil MacPhie
2. Contemporary Periodontics – Cohen
3. Periodontal therapy – Goldman
4. Orbans' Periodontics – Orbans
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

19. Conservative Dentistry and Endodontics
   1. Esthetic guidelines for restorative dentistry; Scherer & 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; Scherer & 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
   2. Osseointegration and Oclusal Rehabilitation Hobo S., Ichida E. and Garcia L.T.

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

24. Ethics

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
7. Oral Surgery, Oral Pathology and Oral Medicine
8. Journal of Periodontology
9. Journal of Endodontics
10. American Journal of Orthodontics and Dentofacial Orthopedics
11. Journal of Prosthetic 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:** 2800 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:** 4800 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 incineration plant, sewage water treatment plant, landscaping of the campus etc.

11. **Cafeteria:** 300 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 outdoor 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.
(n) 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 store 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.
(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.

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 incineration 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: 3500 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 outdoor games in the premises.
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
      - Otorhino Laryngology
      - Paediatrics
      - Pathology
      - Anaesthesiology
      - Blood Bank & Transfusion
      - Community Medicine
      - Hospital Administration
   B) Nursing, Paramedical, Technical and Allied Services
      - Dietetics and Therapeutics
      - Drugs & Pharmacy
      - ECG Technology
      - Imaging Technology
      - Central Sterile 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
      (ii) General Ward – Surgical including allied specialities
      (iii) Private Ward (A/C & Non A/C)
      (iv) Maternity Ward
      (v) Pediatric Ward
         
         | Category          | Beds |
         |------------------|------|
         | General Ward (Med) | 30   |
         | General Ward (Sur) | 30   |
         | Private Ward A/C   | 9    |
         | Maternity Ward      | 15   |
         | Pediatric Ward      | 6    |
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 9 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 at least 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

ADMINISTRATIVE STAFF
Office Superintendent - 1
Satellite Dental Clinics:
All the dental colleges are encouraged to establish at least one-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 Endodontology
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 at least 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.D’s 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 records 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.D’s 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):

<table>
<thead>
<tr>
<th>Department</th>
<th>50 admissions</th>
<th>100 admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Medicine &amp; Radiology</td>
<td>06</td>
<td>12</td>
</tr>
<tr>
<td>Oral Pathology &amp; Oral Microbiology</td>
<td>01</td>
<td>02</td>
</tr>
<tr>
<td>Public Health Dentistry</td>
<td>08</td>
<td>16</td>
</tr>
<tr>
<td>Paediatrics and Preventive Dentistry</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Orthodontics</td>
<td>09</td>
<td>18</td>
</tr>
<tr>
<td>Periodontology</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Conservative Dentistry and Endodontics</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Oral &amp; Maxillofacial Surgery</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Prosthodontics and Crown &amp; Bridge</td>
<td>17</td>
<td>34</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIFICATION</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Space allocation for each Dental chair 100 Sq Ft in all the Departments)</td>
<td>6</td>
</tr>
<tr>
<td>Dental Chairs and Units</td>
<td>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.</td>
<td>12</td>
</tr>
<tr>
<td>Panoramic X-Ray with Cephalometric</td>
<td>Preferably digital</td>
<td>1</td>
</tr>
<tr>
<td>Intra Oral X-ray Unit</td>
<td>70 KV., 8mA, high frequency preferably Digital timer</td>
<td>2</td>
</tr>
<tr>
<td>Pulp testers</td>
<td>Digital</td>
<td>2</td>
</tr>
<tr>
<td>Automatic periapical X-ray Developer</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Automatic Panoramic with Cephalometric X-ray Developer</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>X-ray viewer</td>
<td>For Panoramic and Cephalometric films</td>
<td>2</td>
</tr>
<tr>
<td>Radiovisigraphy</td>
<td>Digital Intra X-ray System with one Sensor and Software</td>
<td>1</td>
</tr>
<tr>
<td>General X-ray Unit</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ortho Panotigraph</td>
<td>Preferably digital</td>
<td>1</td>
</tr>
<tr>
<td>Automatic Developers/Dark Room</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lead aprons</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Lead Gloves</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>X-ray Rengers</strong></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>X-ray Viewers</strong></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Diagnostic Kits</strong></td>
<td>Mouth mirror, dental probe,college tweezers</td>
<td>20</td>
</tr>
<tr>
<td><strong>Lead Sorgen</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Biopsy Kit</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Autoclave</strong></td>
<td>Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres</td>
<td>1</td>
</tr>
<tr>
<td><strong>Computers</strong></td>
<td>Minimum Pentium -IV</td>
<td>1</td>
</tr>
<tr>
<td><strong>Intra Oral Camera</strong></td>
<td>With High resolution</td>
<td>1</td>
</tr>
<tr>
<td><strong>Needle Burner with Syringe Cutter</strong></td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Department: ORAL PATHOLOGY AND ORAL MICROBIOLOGY**

| **NAME** | **SPECIFICATION** | **QUANTITY**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental Chairs and Units</strong></td>
<td>With shadowless lamp, spittoon, 3-way syringe, instrument-tray and suction</td>
<td>1</td>
</tr>
<tr>
<td><strong>Microscopes</strong></td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td><strong>Microtome</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Wax Bath</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Water Bath</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Knife Sharpener</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Hot Plate</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Spencer Knife</strong></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Department: PUBLIC HEALTH DENTISTRY**

| **NAME** | **SPECIFICATION** | **QUANTITY**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental Chairs and Units</strong></td>
<td>Electrically operated, Spillton 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, airrotor, light cure</td>
<td>8</td>
</tr>
<tr>
<td><strong>Autoclaves</strong></td>
<td>Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Ultrasonic Cleaner</strong></td>
<td>Minimum capacity 13 litres with mesh bucket with digital timer</td>
<td>1</td>
</tr>
<tr>
<td><strong>Needle Burner with Syringe Cutter</strong></td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

**MOBILE CLINIC**

<p>| <strong>Mobile Dental Van</strong> | Mobile dental van with two dental chairs with all the attachments and adequate sitting space for 15 to 20 people |
| <strong>Dental Chair with Unit</strong> | 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 |</p>
<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIFICATION</th>
<th>QUANTITY</th>
<th>5G</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Chairs and Units</td>
<td>Electrically operated, Spitoon 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 scaler 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)</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoclaves</td>
<td>Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters.</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasonic cleaner</td>
<td>Minimum capacity 13 liters with mesh bucket with digital timer.</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needle Burner with syringe cutter</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amalgamator</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulp Tester-Digital</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber dam kit for pedo</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apex locator</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endo motor</td>
<td>With torque control HPs</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injectable gutta percha with condensation</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiovisiography</td>
<td>Digital intra X-ray system with pedo sensor and software.</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intra Oral Camera</td>
<td>With high resolution</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaling instruments</td>
<td></td>
<td>5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Restorative instruments</td>
<td></td>
<td>5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Extraction forceps</td>
<td></td>
<td>5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Intra-oral X-ray</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic Developer</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer</td>
<td>Minimum Pentium IV</td>
<td>1</td>
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<tr>
<td><strong>PEDO LAB</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plaster dispenser</td>
<td>One each for plaster and stone plaster</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Trimmer</td>
<td>With diamond disc</td>
<td>1</td>
<td></td>
<td></td>
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</table>
### Department: Orthodontics

<table>
<thead>
<tr>
<th>Name</th>
<th>Specification</th>
<th>Quantity</th>
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<tbody>
<tr>
<td><strong>Dental Chairs and Units</strong></td>
<td>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</td>
<td>9</td>
</tr>
<tr>
<td>Unit mount scaler</td>
<td>Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters</td>
<td>3</td>
</tr>
<tr>
<td>Autoclave</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ultrasonic Cleaner</td>
<td>Minimum capacity: 13 liters with mesh bucket with digital timer</td>
<td>1</td>
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<tr>
<td><strong>Ortho Lab</strong></td>
<td></td>
<td></td>
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<tr>
<td>Plaster dispenser</td>
<td>One each for plaster and stone plaster</td>
<td>2</td>
</tr>
<tr>
<td>Vibration</td>
<td></td>
<td>2</td>
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<tr>
<td>Model Trimmer</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Micromotor</td>
<td>heavy duty</td>
<td>2</td>
</tr>
<tr>
<td>Lathe</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>X-ray viewers</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>OPG with cephalostat</td>
<td>If available in radiology its is adequate.</td>
<td>1</td>
</tr>
<tr>
<td>Welders</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Blue Torch</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Base Formers</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Typodont</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Set of Pliers</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Welder with soldering</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>attachments</td>
<td></td>
<td></td>
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<tr>
<td>Hydro solder</td>
<td></td>
<td>1</td>
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<tr>
<td><strong>Orthodontic articulator</strong></td>
<td>With metal teeth wax rim of Class I, II, III</td>
<td>3</td>
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<tr>
<td>Pressure Moulding machine</td>
<td></td>
<td>1</td>
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</table>

### Department: Periodontology

<table>
<thead>
<tr>
<th>Name</th>
<th>Specification</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental Chairs and Units</strong></td>
<td>Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, High power evacuation system, Air ventury suction, X-ray viewer, Airtower, Micromotor with straight and contra-angle Handpiece, With shadowless</td>
<td>17 34</td>
</tr>
<tr>
<td>NAME</td>
<td>SPECIFICATION</td>
<td>QUANTITY</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Dental Chairs and Units</strong></td>
<td>Electrically operated, Spittoon attachment, Halogen Light with 2 intensity, high power evacuation system, Air ventary 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</td>
<td>17 34</td>
</tr>
<tr>
<td><strong>Rubber dam kits</strong></td>
<td></td>
<td>4 6</td>
</tr>
<tr>
<td><strong>Restorative instruments kits</strong></td>
<td></td>
<td>5 10</td>
</tr>
<tr>
<td><strong>R.C.T. instrument kits</strong></td>
<td></td>
<td>5 10</td>
</tr>
<tr>
<td><strong>Autoclaves</strong></td>
<td>Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 liters</td>
<td>2 3</td>
</tr>
<tr>
<td><strong>Ultrasonic cleaner</strong></td>
<td>Minimum capacity 13 liters with mesh bucket</td>
<td>1 2</td>
</tr>
<tr>
<td><strong>Needle burner with syringe cutter</strong></td>
<td></td>
<td>3 4</td>
</tr>
<tr>
<td><strong>Amalgamator</strong></td>
<td>With auto proportion, auto dispenser</td>
<td>2 3</td>
</tr>
<tr>
<td><strong>Rubber dam kits</strong></td>
<td></td>
<td>4 6</td>
</tr>
<tr>
<td><strong>Pulp Tester-Digital</strong></td>
<td></td>
<td>2 4</td>
</tr>
<tr>
<td><strong>Apex Locator</strong></td>
<td></td>
<td>1 2</td>
</tr>
<tr>
<td><strong>Glass bead sterilizers</strong></td>
<td></td>
<td>4 6</td>
</tr>
<tr>
<td><strong>Plaster dispensers</strong></td>
<td></td>
<td>2 2</td>
</tr>
<tr>
<td><strong>Vibrator</strong></td>
<td></td>
<td>1 2</td>
</tr>
<tr>
<td><strong>Ceramic Unit</strong></td>
<td></td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Casting machine</strong></td>
<td></td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Intra-oral X-ray Unit</strong></td>
<td>Proper radiation safety</td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Automatic Developer</strong></td>
<td></td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Radiovisionography</strong></td>
<td>RVG with Computer</td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Endo motor</strong></td>
<td>With torque control Hps</td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Bleaching unit</strong></td>
<td></td>
<td>1 1</td>
</tr>
<tr>
<td>Magnification loops</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>---------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Injectable gutta percha</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>PHANTOM LAB UNIT</td>
<td>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 syringes, jaw with ivory teeth, preferably soft gingival, dental operator's stool (not to use extracted or cadaver teeth).</td>
<td>30</td>
</tr>
</tbody>
</table>

**CHEMICAL LABORATORY**

<table>
<thead>
<tr>
<th>Plaster Dispenser</th>
<th>One each for plaster and stone plaster</th>
<th>2</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Trimmer</td>
<td>Carbonadium disc</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Diamond disc</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lathe</td>
<td>Heavy Duty</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Lab Micromotor</td>
<td>With heavy duty handpiece</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Ultrasound cleaner</td>
<td>Minimum capacity 5 litres</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Spindle Grinder</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Vibrator</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Burnout furnace</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Porcelain furnace</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sandblasting Machine</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lab Airator</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pinxex System</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Circular saw</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Vacuum mixer</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pneumatic chisel</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Casting machine</td>
<td>Motor cast/induction casting preferred</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>

**Department: ORAL & MAXILLOFACIAL SURGERY**

A) EXODONTIA

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIFICATION</th>
<th>QUANTITY 50</th>
<th>100 Adms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Chairs and Units</td>
<td>Electrically operated, Spitoon 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/ Airator</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Autoclaves</td>
<td>Front loading having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ultrasonic Cleaner</td>
<td>Minimum capacity 13 litres with mesh bucket</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Needle burner with syringe cutter</td>
<td></td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Extraction forceps sets</td>
<td>Complete set</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Dental elevator</td>
<td>Complete set</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Minor Oral surgery kits</td>
<td></td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Emergency drugs tray</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Oxygen cylinder with mask</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>X-ray viewers</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Computer</td>
<td>Minimum Pentium IV</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
### 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.**

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIFICATION</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>50 Adms.</td>
</tr>
<tr>
<td>Dental Chairs and Units</td>
<td>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, ultrasonic sealer with 3 tips, Light cure unit, instrument tray and suction, Dental operator stool with height adjustment</td>
<td>17</td>
</tr>
<tr>
<td>Semi-adjustable articulator</td>
<td>With face bow</td>
<td>2</td>
</tr>
<tr>
<td>Extra-oral/intra oral tracer</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Dewaxing unit</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Curing unit</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Dental casting machine</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Wax burnout furnace</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Pre-heating furnace</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Surveying unit</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Heavy duty handpiece</td>
<td>Lab micromotors</td>
<td>3</td>
</tr>
<tr>
<td>Autoclave</td>
<td>Having wet and dry cycle, which can achieve 135°C with minimum capacity of 20 litres</td>
<td>1</td>
</tr>
<tr>
<td>Needle burner with syringe cutter</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Plaster Dispenser</td>
<td>One each for plaster and stone plaster</td>
<td>2</td>
</tr>
<tr>
<td>Model Trimmer with Carborundum Disc</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Model Trimmer with Diamond Disc</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Acryliser</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Lathe</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Flask press</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Deflasking unit</td>
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<td>4</td>
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<tr>
<td>Dewaxing unit</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Hydraulic Press</td>
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<td>2</td>
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<tr>
<td>Mechanical Press</td>
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<td>1</td>
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<tr>
<td>Vacuum mixing machine</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lab Micro motor</td>
<td>With heavy duty handpiece</td>
<td>3</td>
</tr>
<tr>
<td>Curing pressure put</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Porcelain furnace</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>----------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Vibrator</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sand blasting unit</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ultrasonic cleaner</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Model Trimmer</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Hot water steriliser</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Geyser</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>H.P. grinder with suction</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Heavy duty lathe</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Phantom heads</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>Pre-clinical working tables</td>
<td>50</td>
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**CERAMIC AND CAST PARTIAL LABORATORY**

<table>
<thead>
<tr>
<th>NAME</th>
<th>SPECIFICATIONS</th>
<th>50 ADMN</th>
<th>100 ADMN</th>
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</thead>
<tbody>
<tr>
<td>Plaster Dispenser</td>
<td>One each for plaster and stone plaster</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Duplicator</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pindex System</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Circular saw</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Burn out furnace</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sandblasting machine</td>
<td>With two containers</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Electro-polisher</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Model Trimmer with</td>
<td>Carborundum disc</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Model Trimmer with Diamond</td>
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<tr>
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<tr>
<td>Programmable porcelain</td>
<td>furnace with vacuum pump with instrument kit and</td>
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<td>1</td>
</tr>
<tr>
<td>furnace</td>
<td>material kit</td>
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<td>attachment of cable</td>
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<td>Spindle Grinder 24,000 RPM</td>
<td>with vacuum suction</td>
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<td>Wax heater</td>
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<tr>
<td>Wax carver</td>
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</tr>
<tr>
<td>Curing pressure pot</td>
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<tr>
<td>Milling machine</td>
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<tr>
<td>Heavy duty lathe with suction</td>
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<tr>
<td>Preheating furnace</td>
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<tr>
<td>Palatal trimmer</td>
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<tr>
<td>Ultrasonic cleaner</td>
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<tr>
<td>Composite curing unit</td>
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<tr>
<td>Micro surveyor</td>
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<td>PRE-CLINICAL PROSTHETIC</td>
<td>Work table preferably complete stainless steel fitted</td>
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<td>60</td>
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<tr>
<td>LABORATORY</td>
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<td></td>
<td>Adequate number of lab micro motor with attached</td>
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<td>hand piece</td>
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**PLASTER ROOM FOR PRE-CLINICAL WORK**

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<th>NAME</th>
<th>SPECIFICATIONS</th>
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<th>100 ADMN</th>
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<td>Plaster dispenser</td>
<td>One each for plaster and stone</td>
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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.)

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<thead>
<tr>
<th></th>
<th>I Year</th>
<th></th>
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<th>II Year</th>
<th></th>
<th></th>
<th>III Year</th>
<th></th>
<th></th>
<th>Total Posts in position from the beginning of 3rd year onwards</th>
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</thead>
<tbody>
<tr>
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<td>Lecturer/Tutor</td>
<td>Prof.</td>
<td>Reader</td>
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<td>6*</td>
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* Includes the Principal who can head any one of the six specialities.  
* 25% MDS and 75% BDS.
### MINIMUM STAFFING PATTERN FOR UNDERGRADUATE DENTAL STUDIES FOR 100 ADMISSIONS
(As per DCI Regulations 2006)

Each Dental Department should be headed by a Professor.

<table>
<thead>
<tr>
<th></th>
<th>I Year</th>
<th>II Year</th>
<th>III Year</th>
<th>Total Posts in position from the beginning of 3rd year onwards</th>
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<td>Lecturer/Tutor</td>
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* 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)

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<tr>
<th>Year</th>
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**OTHER STAFF PATTERN FOR 50 ADMISSIONS**

| Administrative Officer | 1 |
| Secretary to Dean      | 1 |
| Public Relation officer| 1 |

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### A.C. Tech.

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</tr>
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</table>

**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 |

<table>
<thead>
<tr>
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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 patient's 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 prerequisite 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 emphasizing 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.
4. The regional anatomy of the sites of intramuscular & intravascular 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 gastrointestinatal, respiratory, Endocrine, excretory systems & gonads.
7. Medical genetics.

D) 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. Syndeasomyology - Including classification of Joints.
8. Nervous system.

II. HEAD & NECK:

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. Deltoide 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 & vanection: 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 pulsation: 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. Dorsalis pedis

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 tissues, 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.

VIII. MEDICAL GENETICS:
Mitosis, meiosis, Chromosomes, gene structure, Mendelism, modes of inheritance

RECOMMENDED BOOKS:
1. SNELL (Richard B.) Clinical Anatomy for Medical Students, Ed. 5, Little Brown & company, Boston.
5. SADLER, LANGMAN'S, Medical Embryology, Ed. 6.
6. JAMES & ANDERSON, Grant's Atlas of Anatomy, Williams & Wilkins.
8. EMMER, 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 interieur.
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.

**2. 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.

Erythrocytes - 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.

Anemia - 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, leucopenia life span & fate of leucocytes.

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

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


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 & extra cellular fluid.


Functions of reticuloendothelial system.

3. **MUSCLE AND NERVE**


4. **DIGESTIVE SYSTEM**

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


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.
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 micturition & abnormalities.

6. BODY TEMPERATURE & FUNCTIONS OF SKIN

7. ENDOCRINOLOGY
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 aorta, ventricles & aorta.
Volume changes in ventricles. Jugular venous pulse, arterial pulse.
Heart sounds: Mention of murmur.
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.
Sputometry: 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.
Effect of after load and free load on muscle contraction, calculation of work done.
5. Electrocardiography: Demonstration of recording of normal Electrocardiogram
7. Clinical examination of cardiovascular and respiratory system.

TEXT BOOKS:
Ganong; Review of Medical Physiology, 19th edition
Vander; Human physiology, 5th edition
Choudhari; Concise Medical Physiology, 2nd edition
Chatterjee; Human Physiology, 18th edition
A.K. Jain; Human Physiology for BDS students, 1st edition
BOOKS FOR REFERENCE:
2. West-Best & Taylor's, Physiological basis of Medical Practice, 11th edition

EXPERIMENTAL PHYSIOLOGY:
1. Rammell; Practical Physiology, 4th edition
2. Chal; a text book of practical physiology
3. Hutchinson'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, interdependences 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 antibiotics, 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. Mutaization 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 creatinine 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
Proteins: Biological importance. Aminoacids: Classification. Introduction to peptides.
Protein: 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, Phosphorylaminides, Thioesters, Enol phosphates.

2. MACRONUTRIENTS AND DIGESTION
Enzymatic hydrolysis of dietary carbohydrates. Mechanism of uptake of monosaccharides.
Digestion and absorption of triglycerides. Enzymatic hydrolysis of dietary proteins and uptake of amino acids.

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

4. ENERGY METABOLISM

5. SPECIAL ASPECTS OF METABOLISM

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.


8. STRUCTURAL COMPONENTS AND BLOOD PROTEINS


9. MEDICAL BIOCHEMISTRY

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/case study data evaluation 2
14. Glucose tolerance test profiles 2
15. Serum lipid profiles 1
16. Profiles of hypothyroidism and hyperthyroidism 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

RECOMMENDED BOOKS:
3. lecture notes in Biochemistry 1984, J.K. Kandiah
Reference books:
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 tooth 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.
4. Salivary Glands:
   • Detailed microscopic study of salivary & ductal system.
   • Age changes & clinical considerations.
5. TM Joint:
   • Review of basic anatomical aspects & microscopic 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, hyper & hyperphosphatemia & 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. Orbán's Oral Histology & Embryology - S.N.Bhaaker
2. Oral Development & Histology - James & Avery
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 demonstrate and analyze pathological changes at macroscopic and microscopic 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. Etiology 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
   Apoptosis
   Def, causes, features and types of necrosis
   Gangrene - Dry, wet, gas
   Pathological Calculations
   (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 tubercule)
   - Pathological features of Primary and secondary TB
   - Complications and Fate
8. Syphilis
   - Epidemiology
   - Types and stages of syphilis
   - Pathological features
   - Diagnostic criteria
   - Oral lesions
9. Typhoid
   - Epidemiology
   - Pathogenesis
   - Pathological features
   - Diagnostic criteria
10. Thrombosis
    - Definition, Pathophysiology
    - Formation, complications & Fate of a thrombus
11. Embolism
    - Definition
    - Types
    - Effects
12. Ischaemia and Infarction
    - Definition, etiology, types
    - Infarction 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 & autoimmunity
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 Anemias
   - Iron Deficiency anaemia, Megaloblastic anaemia
23 Leukemias
   - Acute and chronic leukemias, Diagnosis and clinical features
24. Diseases of Lymph nodes
   - Hodgkin’s disease, Non Hodgkin lymphoma, Metastatic carcinoma
25. Diseases of oral cavity
   - Lichen planus, Stomatitis, Leukoplakia, Squamous cell Carcinoma, Dental caries, Dentigerous cyst, Ameloblastoma
26. Diseases of salivary glands
   - Normal structure, Sialadenitis, Tumours
27. Common diseases of Bones
   - Osteomyelitis, Metabolic bone diseases, Bone Tumours, Osteosarcoma, Osteoclastoma, Giant cell Tumour, Ewing’s sarcoma, Fibrous dysplasia, Aneurysmal bone cyst
28. Diseases of Cardiovascular system
   - Congestive failure
   - Congenital heart disease - ASD, VSD, PDA
   - Palsat’s Tetralogy
   - Infective Endocarditis
   - Atherosclerosis
   - Ischaemic heart disease
29. Haematologic Disorders
   Coagulation cascade
   - Coagulation disorders
     - Platelet function
     - Platelet disorders

Practicals
1. Urine - Abnormal constituents
   - Sugar, albumin, ketone bodies
2. Urine - Abnormal constituents
   - 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, Actinomycosis, 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 Danjanov & James Linder
3. Winrobe's clinical Haematology Lee, Bithell, Poerster, 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, Paedodontology, 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.

B. 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:
3. Details of account of Sterilisation 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.

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. Immunoglobuline - Antibodies - General structure and the role played in defense mechanism of the body.
7. Immune response
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. Immunohaematology

C. SYSTEMATIC BACTERIOLOGY:
1. Pyogenic cocci - Staphylococcus, Streptococcus, Pneumococcus, Gonococcus, Meningococcus - brief account of each cocci - detailed account of mode of spread, laboratory diagnosis, Chemotherapy 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.
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 immune 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

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:
2. Medical Microbiology - David Greenwood et al.

BOOKS FOR FURTHER READING/REFERENCE.
1. Microbiology - Piroozi, et al.
5. Immunology - An Introduction - Tizard

S. 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 responses; adverse drug reactions; drug interactions, implications of General Principles in clinical dentistry.

2. CNS drugs; General anaesthetics, hypnotics, analgesics psychotropic drugs, anti - epileptics, muscle relaxants, local anaesthetics, Implications of these drugs in clinical dentistry.

3. Autonomic drugs; sympathomimetics, anticholinergic 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, heparinoids, Implications of these drugs in clinical dentistry.

7. G.I.T. Drugs, Purgatives, anti-diarrhoeal, antacids, anti-secretics, 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.


12. Cytotoxic agents – BAI, EDTA and deferoxamine,
II. DENTAL PHARMACOLOGY
1. Anti-septics, astringents, obturants, 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

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 entity. 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, irritation 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, chrome, and transcrucency 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, fracture strength fatigue, static fatigue, toughness, brittleness, ductility & malleability, hardness, abrasion resistance, relaxation, rheology, Thigmotropic, creep, static creep, dynamic creep, flow, colour, three dimensional colour – hue, value, chrome, Munsell system, metamerism. 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 e.g. 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 affecting pulp, polymers causing chemical irritation, mercury toxicity, etc. Microleakage, Thermal changes, Galvanism, toxic effect of materials. Biological evaluation for systemic toxicity, skin irritation, mutagenicity 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 wet 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, spray, 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. Polyvinylphosphate, 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 ADA specification, general & individual impression material.

Application and their uses in different disciplines, Marked as and their commercial names, Mode of supply & mode of application, bulk/wax 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:


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 restorating eroded teeth, Pit and fissure scaling, Resin inlay system - Indirect & direct, Core build up, Orthodontic applications.

8) METAL AND ALLOYS:


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 triturating, 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 use 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.

9) DENTAL WAXES INCLUDING INLAY CASTING WAX
Introduction and importance of waxes. Sources of natural waxes and their chemical nature.
Classification of waxes:
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
Mode of supply: Composition, application, setting mechanism, setting time & factors controlling it.
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 requirements, types of solders - Soft & hard and their fusion temperature, application. Mode of supply of solders, composition and selection, properties.
Termish & 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.

WOUGHT 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 - Titanuth 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, biomechanism 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.

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 ceramic), ceramic veneers, 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, Emer, aluminium oxides, garnet, pumice, Kieselgur, 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.

15. DIE AND COUNTER DIE MATERIALS INCLUDING ELECTROFORMING AND ELECTROPOLISHING.
Types - Gypsum products, Electroforming, Epoxy resin, Amalgam.

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:
2. Restorative Dental Materials - 10th edn. Robert O. Craig

7. PRE CLINICAL CONSERVATIVE DENTISTRY LABORATORY EXERCISES
1. Identification and study of handcutting instruments' chisels, gingival margin trimmers, excavators and hatchet.
2. Identification and use of rotary cutting instruments - contra angle hand piece burs (Micromotor)
3. Preparation of 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, Eugenol 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 incisors
   3. Determination of working length
   4. Biomechanical preparation of root canal space of central incisor
   6. Closure of access cavity
3. 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.
5. Study of haematological preparations (blood films) of anaemias & leukaemias.
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 - Aetiology, pathogenesis, 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:
   - Aetiology, pathogenesis, microbiology, clinical features, diagnosis, histopathology, immunology, prevention of dental caries & its sequelae.
4. Pulp & Periapical Pathology & Osteomyelitis:
   - Aetiology, pathogenesis & 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:
   - Aetiology, pathogenesis, 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, histopathology & 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, Aphthous Ulcers.
7. Common non-inflammatory diseases involving the jaws:
   - Aetiology, pathogenesis, 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:
   • Angleitis, summary of different types of arthritis & other developmental malformations, traumatic injuries & myofacial pain dysfunction syndrome.

9. Cysts of the Oral & Paroral 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 & paroral region.

10. Tumours of the Oral Cavity:
    • Classification of Odontogenic, Non-Odontogenic & Salivary Gland Tumours. Etiopathogenesis, 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 & Nevi.
         - Benign Mesenchymal - Fibroma, Aggressive fibrous lesions, Lipoma, Haemangiomata, Lymphangiomata, 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, Swingle'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.
    c) Metastatic tumours - Tumours 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 Neuritis.
    • Atresia, Abrasion, Erosion, Bruising, Hypercementosis, Dental 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 & Pyorrhoea.

13. Systemic Diseases involving Oral cavity:
    • Brief review & oral manifestations, diagnosis & significance of common Blood, Nutritional, Hormonal & Metabolic diseases of Oral cavity.

14. Muco-cutaneous Lesions:
    • Etiopathogenesis, clinical features & histopathology of the following common lesions.

15. Diseases of the Nerves:
    • Facial neuralgia - Trigeminal & Glossopharyngeal VIt nerve paralysis, Causalgia.
    • Psychogenic facial pain & Burning mouth syndrome.

16. Pigmentation of Oral & Paroral 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 histopathological features, TNM classification. Recent advances in diagnosis, management and prevention.
   b) Biopsy: Types of biopsy, value of biopsy, cytology, histology & 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


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.

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)

1. Aims of medicine Definitions of signs, symptoms, diagnosis, differential diagnosis, treatment & prognosis.
2. Infections, Enteric fever, AIDS, herpes simplex, herpes zoster, syphilis, diphtheria.

3. G.I.T.
Stomatitis, gingival hyperplasia, dysphagia, acid peptic disease, jaundice, acute and chronic hepatitis, cirrhosis of liver ascites.

4. CVS
Acute rheumatic fever, rheumatic valvular heart disease, hypertension, ischemic heart disease, infective endocarditis, common arrhythmias, congenital heart disease, congestive cardiac failure.

5. RES
Pneumonia, COPD, Pulmonary TB, Bronchial asthma

COLLATERAL TOPICS (Desirable to Know)

Diarrhoea
Dysentery
Amoebiasis
Malabsorption

Infectious mononucleosis, mumps, measles, rubella, malaria.

Lung Abscess
Pleuraseffusion
Pneumothorax
Bronchiectasis
6. Haematology
Anaemias, bleeding & clotting disorders, leukemia, lymphomas, agranulocytosis, splenomegaly, oral manifestations of hematologic disorders, generalised lymphadenopathy.

7. Renal System
Acute nephritis
Nephrotic syndrome

8. Nutrition
Avitaminosis

9. CNS
Facial palsy, facial pain including trigeminal neuralgia, epilepsy, headache including migraine.

10. Endocrine
Diabetes Mellitus, Acromegaly, Hypothyroidism, Thyrotoxicosis, Calcium metabolism and parathyroidism.

11. Critical Care
Sepsis, cardiac arrest, CPR, shock

CLINICAL TRAINING:
The student must be able to take a history, do a general physical examination (including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, lymphadenopathy, oral cavity) and be able to examine OVS, OS 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 specialty 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 specialties in the practice of modern surgery.

2. GENERAL PRINCIPLES OF SURGERY:
Introduction to various aspects of surgical principles as related to oral and dental 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 erysipelas. Specific infections such as tetanus, gangrene, syphilis, gonorrhoea, tuberculosis. Actinomycosis, Vincent's angina, cancerum 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. Hemophilia, 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, leukemias, metastatic lymph node
diseases.

10. DISEASES OF THE ORAL CAVITY:
    Infective and malignant diseases of the oral cavity and oro-pharynx 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 tracheotomy.

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 affections 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, antisepsis, 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 understanding:
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.
v. Carry out simple leverage 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 handpieces 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 programmes 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 P.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. Gynaecological 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 pieces and speed current concepts of rotary cutting procedures. Sterilisation and maintenance of instruments. Basic instrument tray set up.
7. Control of Operating Field:
   Light source sterilisation field of operation control of moisture, rubber dam in detail, cotton rolls and anti salivary gels.
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 ionomer cements.
10. Anterior Restorations:
    Selection of cases, selection of material, step wise procedures for using restorations,
    silicate (theory only) glass ionomers, composites, including sand with restoration
    and bevelling with 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. Temporary or Interim Restoration.
14. Pin Amalgam Restoration Indication and Contra Indication:
    Advantages, disadvantages of each type of pin methods of placement use of auto
    matrix. Failure of pin amalgam restoration.
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.
20. Gingival Tissue Management For Cast Restoration And Impression Procedures
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 eugenol 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
31. Periapical diseases: acute periapical abscess, acute periodontal abscess, phoebus
    abscess, chronic alveolar abscess, granuloma cysts condensing osteitis, external
    resorption.
32. Vital pulp therapy: indirect and direct pulp capping, pulpotomy, different types and medicaments used.

33. Apexitontology and apexitology or problems of open apex.

34. Rationale of endodontic treatment case selection indication and contraindications for root canal treatments.


37. Preparation of root canal space. Determination of working length, cleaning and shaping of root canals, irrigating solution, chemical aids to instrumentation.


40. Methods of cleaning and shaping like step-back crown down and conventional methods.


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. Traumatized 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 sequelae trephination hemisection, radiectomy 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


52. Duties towards the government payments of professional tax, income tax.

53. Financial management of practice

54. Dental material and basic equipment management.

55. Ethics

19. 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 & biopsies 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.
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-anesthetic 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.
   c) 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: Alveoplasty,
       Reduction of maxillary tuberosities,
       Frenectomy and removal of tori.
   (b) Ridge extension or Sutura extension procedures
       Indications and various surgical procedures
   (c) Ridge augmentation and reconstruction.
       Indications, use of bone grafts, Hydroxyapatite
       Implants - concept of osseointegration
       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 rest from the sinon
Oro-anal 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.
   Ludwig 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 odontogenic benign tumours occurring in oral cavity - fibroma, papilloma, lipoma, enucleating 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
   Stomatolithiasis - Sub mandibular duct and gland and parotid duct.
Clinical features, management.
Salivary fistulas
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 method 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, neurophysiological 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) Cardiac 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 O.A.
I.V. sedation with Diazepam and Medolozal.
Indications, mode of action, technique etc.
Cardiopulmonary resuscitation
Use of oxygen and emergency drugs.
Tracheostomy.

RECOMMENDED BOOKS:
1. Impacted teeth; Alleing John P. 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. Oral: Fractures of the mandible; Islam F.
6. Killey’s fractures of the middle 3rd of the facial skeleton; Banka P.
7. The maxillary sinus and its dental implications; McGovanda
8. Killey and Kay’s outline of oral surgery – Part-I; 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, OL
12. Minor Oral Surgery; Howe. OL
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 record 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, osteogenesis imperfecta, Marfan’s syndrome, osteoporosis. Inflammation – injury, infection and spread of infection, fascial space infections, osteoradionecrosis.
Metabolic disorders – Histiocytosis
Endocrine – Hyper-magaly and hyperparathyroidism
Miscellaneous – Pek’s disease, Mono and polyosteitic fibrous dysplasia, Cherubism.

(3) Temporomandibular 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, Carinoma, Melanoma
Connective tissue: Fibroma, Lipoma, Fibrosarcoma
Vascular: Haemangioma, Lymphangioma
Nerve Tissue: Neurofibroma, Traumatic Neurooma, 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 dysplasia 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


SECTION (C): ORAL MEDICINE AND THERAPEUTICS.
The following chapters shall be studied in detail including the etiology, pathogenesis, clinical features, investigations, differential diagnosis, management and prevention.

1. Infections of oral and paraoral structures:
   Bacterial: Streptococcal, tuberculosis, syphilis, Vincent’s, 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, leukoedema, leukoplakia, fardyce spots, stomatitis nicotina palatinus, white sponge nevus, candidiasis, lichenplanus, discoid lupus erythematos
   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 sinuses, 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.
   (iv) Altered sensations: Carotidism, 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 (Hypofunction)
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 anemias: (Thalassemia, sickle cell anaemia, erythroblastosis foetalis)
Aplastic anaemia
Polycythemia

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

(c) Haemorrhagic disorders:
Thrombocytopenia, purpura, haemophilia, christmas disease and Von Willebrand’s disease

(8) Disease of salivary glands:
(i) Development disturbances: Aplasia, atresia and aberration
(ii) Functional disturbances: Xerostomia, physialism

(iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis
Keratocon’s syndrome (Uveoparotid fever), Nercrotising sialometaplasia

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

(v) Miscellaneous: Sialolithiasis, Sjogren’s syndrome, mikulicz’s disease and sialosis

(9) Dermatological diseases with oral manifestations:
(a) Ectodermal dysplasia
(b) Hyperkeratosis palmoplantaris with periodontopathy

(c) Scleroderma (d) Lichen planus including gingiva’s syndrome (e) Lupus erythematosus (f) Pemphigus (g) Erythema multiforme (h) Psoriasis

(10) Immunological diseases with oral manifestations
(a) Leukemia (b) Lymphomas (c) Multiple myeloma (d) AIDS clinical manifestations,
opportunistic infections, neoplasms (e) Thrombocytopenia (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 compromised 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) Premature lesions and conditions

(15) Nerve and muscle diseases:
(1) Nerves: (a) Neuropathy (b) Neuromasias (c) Neuritis (d) Facial nerve paralysis including Bell's palsy, Hecford's syndrome, Melkerson Rosenthal syndrome and Ramsay Hunt syndrome (e) Neurama (f) Neurofibromatosis (g) Frey's syndrome

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

(16) Forensic odontology:
(a) Medico-legal 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, demulcents, local surface anaesthetic, saliogogues, 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 techniques) (b) Bitewing 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 Odontology - Radiographic age estimation and post-mortem radiographic methods

PRACTICALS / CLINICALS:
1. The student is trained to arrive at proper diagnosis by following a scientific and systematic procedure 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 procedures 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
b) Oral Radiology

2. Coleman – Principles of Oral Diagnosis – Mosby Year Book
5. Kerr – Oral Diagnosis
6. Miller – Oral Diagnosis & Treatment
7. Hutchinson – clinical Methods
8. Oral Pathology – Shafer's

b) Oral Radiology

1. White & Goaz – Oral Radiology – Mosby Year Book
2. Weahrmann – Dental Radiology – C.V. Mosby Company

C) Forensic Odontology


14. ORTHODONTICS & DENTAL ORTHOPAEDICS

Course Objective:
Undergraduate programme in Orthodontics is designed to enable the qualifying dental surgeon to diagnose, analyze and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures. The following basic instructional procedures will be adopted 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, Sacher'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 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
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 use of anatomical landmarks lines and angles used in cephalometric analysis
   4. Analysis: Steiner’s, Downs, Tweed’s, Rickett’s-E- line
   5. Electromyography and its use in orthodontics
   6. Wrist X-rays and its importance in orthodontics

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: Post’s, Ashley Howe’s, Bolton, Careys, Meyer’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 Orthodontics - 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. Chinap
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 I, Division 2
   8. Class III Malocclusion - True and Pseudo 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 wire (4 Noa.)
   2. Bending of an 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. Pull 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 Cantilever Spring
3. Double Cantilever 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. Moyers 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
2. ORTHODONTICS FOR DENTAL STUDENTS
3. HANDBOOK OF ORTHODONTICS
4. ORTHODONTICS - PRINCIPLES AND PRACTICE
5. DESIGN, CONSTRUCTION AND USE OF REMOVABLE ORTHODONTIC APPLIANCES
6. CLINICAL ORTHODONTICS: VOLS 1 & 2

WILLIAM R. PROFFIT
WHITE and GARDINER
MOYERS
GRABER
C. PHILIP ADAMS
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.
   - Ruptant 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
  - Apexitogenesis
  - Apexitonization
- Obstruction 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 Traumatized 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.
Desmin mization 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 Adolescence) - Pinkham.
6. Paediatric Medical Emergencies - P. S. Whatt.
7. Understanding of Dental Caries - Niki Foruk.
9. Clinical Pedodontics - Finn.
11. Primary Preventive Dentistry - Norman O. Harris.
13. Preventive Dentistry - Forrester.
15. Dentistry for the Child and Adolescent - Me. Donald.
16. Pediatric Dentistry - Dainle S. G.
22. Contemporary Orthodontics - Pravitt.
23. Preventive Dentistry - DePaola.
24. Metabolism & Toxicity of Fluoride - Whitford. G. M.
27. Endodontics - Ingle.

16. PUBLIC HEALTH DENTISTRY

GOAL:
To prevent and control oral diseases and promote oral health through organized 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 conclusion 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.
4. Delivery of dental care: Dental auxiliaries, operational and non-operational, increment 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. Research Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes
2. Research Methodology: - Definition, types of research, designing a written protocol

Practice Management
1. Place and locality
2. Premises & layout
3. Selection of equipments

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, assessment 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
   a) Oral hygiene indices simplified- Green and Vermilion
   b) Silness and Loe Index for Plaque
   c) Loe and Silness index for gingiva
   d) CPI
   e) DMF: T and S, dft and s
   f) Dean’s 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 P. Striffler and Brian A. Burt, Edn. - 1983, W. B. Saunders Company
6. Oral Public Health - An Introduction to Community Dentistry, Edited by Geoffrey L. Slack and Brian Burt, Published by John Wright and sons Bristol, 1980
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, use of 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 refer the patients who require specialist's care.
1. Introduction: Definition of Periodontology, Periodontics, Periodontia, Brief historical background, Scope of Periododontics
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 association with periodontal diseases
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, CPI, 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, etiology
- Hirschfeld's 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
- Hemorrhagic diseases, Leukemia, clotting factor disorders, PMN disorders

11. Risk factors
12. Host response

Definition. Risk factors for periodontal diseases
- 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
- Etiology, histopathology, clinical signs & symptoms, diagnosis and treatment of adult periodontitis
- Periodontal abscess: definition, classification, pathogenesis, differential diagnosis and treatment
- Purulent involvement, Glickman's 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: Etiology 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.
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
- Scaling and root planning:
  - Indications
  - Aims & objectives
  - Healing following root planning
  - Hand instruments, ultrasonic & piezo-electric scalers
  - Curettage & present concepts
  - Definition
  - Indications
  - Aims & objectives
  - Procedures & healing response
  - Flap surgery
- Flap surgery
  - 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
  - Periodontal splints
  - Purpose & classification
  - Principles of splinting
21. Splints
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
   - Management of implants

25. Pharmacotherapy - Periodontal dressings
   - Antibiotics & anti-inflammatory drugs
   - Local drug delivery systems

26. Periodontal management of medically compromised patients
   Topies concerning periodontal management of medically compromised patients

27. Inter-disciplinary care - Pulps-periodontal involvement
   - Routes of spread of infection
   - Gilmans' classification
   - Management

28. Systemic effects of periodontal disease - Cardiovascular diseases, Low birth weight babies etc.
   in brief

29. Infection control - Sterilisation and various aseptic procedures
   protocol

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 – Currance
REFERENCE BOOKS
1. Essentials of Periodontology and periodontics- Torquill MacPhoece
2. Contemporary periodontics- Cohen
3. Periodontal therapy- Goldman
4. Orban's periodontics- Orban
5. Oral Health Survey- W.H.O.
6. Preventive Periodontics- Young and Stifler
7. Public Health Dentistry- Slack
8. Advanced Periodontal Disease- John Prichard
9. Preventive Dentistry- Forrest
10. Clinical Periodontology- Jan Lindhe

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.
      h. 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 - cranio-mandibular
   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.

G2) 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) Neurocentric 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.

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

R. Treating abused tissues - discuss in brief.

S. Refining and rebasing of dentures- discuss in brief.

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

U. The single complete denture- discuss in brief.

V. Overdentures - discuss in brief.

W. 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.
   - Major connectors,
   - Minor connectors,
   - Rest and rest seats.
5. Components of a Removable Partial Denture.
   - Direct retainers,
   - Indirect retainers,
   - Tooth replacement.
7. Survey and design – in brief.
   - Surveyors,
   - Surveying,
   - Designing.
8. Mouth preparation and master cast.
9. Impression materials and procedures for removable partial dentures.
11. Laboratory procedures for framework construction-in brief.
12. Fitting the framework - 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.

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
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.
8. Preparations for full veneer crowns – in detail.
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. Rinse - Bonded Fixed Partial 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:
2. Boucher’s “Prosthodontic treatment for edentulous patients” essentials of complete denture prosthodontics by – Ueck motion winkle.
4. McCracken’s Removable partial prosthodontics
5. Removable partial prosthodontics by – Ernest L. Miller and Joseph E. Grasso.

18. 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 aesthetic dentistry
4. Simple procedures (rounding 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; Scherer & others
2. Esthetics of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3. Esthetic & the treatment of facial form, Vol 2B; 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 & Ramn's dentine translucency
     - Radiographic method of Khiat 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
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 constitutional
    - Medical legislation and statutes (Dental and Medical Council Acts, etc)
    - Basics of civil law (including torts, contracts and consumer protection acts)
    - 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 autopsies, 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 mark 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 undergraduate 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 specialty 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/Cosmesis 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 superstructure 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
2. Osseointegration and Occlusal Rehabilitation
   - Hedo S., Ichida. E. and Garcia L.T.

22. **BEHAVIOURAL SCIENCES (20 hrs of instruction)**

**OBJECTIVE:**

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 counseling techniques, and improving patients' compliance behavior.

OBJECTIVES:

A) KNOWLEDGE & UNDERSTANDING:

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

1) Comprehend different aspects of normal behavior like learning, memory, motivation, personality & intelligence.
2) Recognize difference between normal and abnormal behavior.
3) Classify psychiatric disorders in dentistry.
5) Have understanding of stress in dentistry and knowledge of simple counseling 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 patient and understand different methods of communication skills in dentist - patient relationship.
2) Improve patient compliance behavior.
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 specialized psychiatric hospitals.

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

PSYCHOLOGY:

   1a. 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 - Rorschach ink blot test, RIT, CAT

SOCIOLGY:

Social class, social groups - family, types of family, types of marriage, communities and

Nutrition 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 practice -- Manju Mcha
5. Sciences basic to psychiatry -- Basant Furi & Peter J Tyre

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,
  DCE 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

Professional 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/humaness
- 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., 1 Ed. 1993, Jaypee Brothers, New Delhi p. 189.

[ADVT III/IV/Ext. /98/07]
भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY

भाग III—खण्ड 4
PART III—Section 4

प्रतिस्पर्श से प्रकाशित
PUBLISHED BY AUTHORITY

पत्रि 2 |
नई दिल्ली, यूनाइटेड, जनवरी 11, 2008/पापा 21, 1929

प्रतिस्पर्श संख्या, संख्या 17 प्राधिकारिकाएँ के तत्व पर :

(II) प्रतिस्पर्श संख्या 17 प्राधिकारिकाएँ के तत्व पर :

11. मैत्रिकत विषय :

(५) के-१५०० वर्ष गुत्थ कम्पनी के लिए "प्रतिस्पर्श विषय लिखी" जांच दिया गया।

(६) गृह-१५०० वर्ष गुत्थ कम्पनी के लिए "प्रतिस्पर्श विषय लिखी" जांच दिया गया।

(७) संचार 17, उपलब्धित न्याय और प्रशासन के ववक न : 

-संचार 17, उपलब्धित न्याय और प्रशासन के ववक न

(४) प्रविधिक मंडल संख्या 18, उपलब्धित न्याय और प्रशासन के ववक न

"दिनांक : दोपहर 2006 के अनुसार प्राधिकार ने 
साधन के तत्व पर के प्राधिकार न में 30,000 वर्ष और यूरोप से ना 30,000 वर्ष पाया था कारण न

सौंपने 100 दिनों

(१) संचार 17 प्राधिकारिकाएँ के तत्व पर :

II. मैत्रिकत विषय :

(२) के-२५०० वर्ष गुत्थ कम्पनी के लिए "प्रतिस्पर्श विषय लिखी" जांच दिया गया।
(i) Against Serial No. 17. Laboratories:
- 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:
- 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:
- 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 area of the dental college building other than Hostels and Staff Quarters should not be less than 60,000 sq. ft. in 1st Year and 1,00,000 sq. ft. in 3rd Year as per DCI Regulations, 2006."

[ADVTR. III/4/Ext-98/07]
भारत का राजपत्र

The Gazette of India

EXTRAORDINARY
भाग III—खंभ 4
PART III—Section 4
PUBLISHED BY AUTHORITY

सं. 273]
No. 273]
NEW DELHI, FRIDAY, OCTOBER 29, 2010/CARTIKA 7, 1322

भारतीय संघ परिषदः

अधिकृतता

प्रिय संधी, 23 अक्टूबर, 2010

सं. 273-193-2010—रेखा पत्रिका अभिलेख, 1948
की भाषा 20 जुलाई इस राष्ट्रीय का प्रमुख बाटोहू सरस्वती वर्षे अनुरूपता से भारतीय संघ परिषदः साहित्य रथ समांत्रा स्थानक की दिवसी (संडीवार), 2010 के भाषा से प्रकाश प्रमाण।

2. ये पत्र के उपरान्त में अपने प्रमुख की प्राप्ति के सन् 1937.

3. सदस्य भाषा प्रवृत्ति संगठन द्वारा समांत्रा स्थानक का दिवसी, 2007 में संगठित पालियोस संस्कृति-विभागित विधि संपन्न करेंगे।

3. संघ भाषा समांत्रा स्थानक का दिवसी, 2007 में संगठित पालियोस संस्कृति-विभागित विधि संपन्न करेंगे।

3. संघ भाषा समांत्रा स्थानक का दिवसी, 2007 में संगठित पालियोस संस्कृति-विभागित विधि संपन्न करेंगे।

3. संघ भाषा समांत्रा स्थानक का दिवसी, 2007 में संगठित पालियोस संस्कृति-विभागित विधि संपन्न करेंगे।

‘गोरा बापु’ का पुस्तक समांत्रा स्थानक की दिवसी, 2007 में संगठित पालियोस संस्कृति-विभागित विधि संपन्न करेंगे।

इस 35% भाषा में साइट वेब उपभोक्ता जाती रहती है तो इस 35% भाषा में भारतीय रहने वाले उपभोक्ता की भाषा की, साथमें संघियों के आभासिक विचारधारा द्वारा न्यायिक स्थानक का दिवसी (संडीवार), 2010 के भाषा से प्रकाश प्रमाण।

4. बागड़ 3 (II) का पुस्तक से नई रुपये स्वतंत्र भाषा के रूप में संगठित परिवार सोनी पावन।

“बापु के बारे में 3 डे भाषा विशेष उपभोक्ता को उनके विचारधारा सामाजिक व्यवस्थाओं में प्रदर्शन के रूप में भाषा के प्रमाण, संगठित परिवार तथा दोहरी विधि से एक साथ, मिलकर मनली युगान 50% से कमान 45% भाषा होगी।”

पंजाब विधान (संस्कृति) (डा. पीएम. अनंदस) संसदीय

(संवत-1414/29/10-यु. )

दर संपत्ति: प्रावधान प्रतिकारकारन का राज उप विभाग स्थानक की दिवसी, 2007, गोरा बापु पालिका का पुस्तक में 10 निर्देश; 2007 में संगठित पालियोस संस्कृति-विभागित विधि संपन्न करेंगे।
NOTIFICATION

New Delhi, the 1st October, 2010

No. DE-172-2010—In exercise of the powers conferred by Section 20 of the Dentists Act, 1948 (12 of 1948) Dental Council of India, with the previous approval of the Central Government, hereby makes the following regulations to amend the Principal Regulations, 2007 as referred to in the Dental Council of India (Dental Course Regulations) 2007 referred to as the DC Regulations, 2007:

1. Short title and commencement—(1) These regulations may be called the Dental Council of India Revised BDS Course Regulations, 2010.

(2) 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 additional mandatory instructions shall be added as indicated therewith:

3. In Chapter I under the heading “Admission to the Dental Course Eligibility Criteria”, the following shall be added after sub-clause (2):

“2. 3% seats of the annual sanctioned intake capacity shall be filled up by candidates with locomotor disability of lower limbs between 50% to 70%.

Provided that in case any seat in this 3% quota remains unfilled on account of unavailability of candidates with locomotor disability of lower limbs between 30% to 70% then any such unfilled seat in this 3% quota shall be filled up by persons with locomotor 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 admissions will be made in the BDS course after 30th of September.”

4. The following proviso shall be added before the clause 3 (g) under the heading “Selection of students”:

“Provided that the eligibility criteria for admission to persons with locomotor 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 to BDS course.”

Maj. Gen. (Retd.) Dr. P.M. Awashti, Secy.

[ADVT. 04/41/10-Ency.]

Foot Note: The Principal Regulations namely Revised BDS Course Regulations, 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.

Printed by the Manager, Government of India Press, Ring Road, Mayapuri, New Delhi-110064 and Published by the Controller of Publications, Delhi-110014.
भारतीय रक्षा परिषद्
अधिसूचना
पृष्ठ 31, अगस्त, 2011
सं. की 130-2011.—यदि विनिवेशक अधिनियम 1948 के अनुसार रक्षा का प्रदान करने वाला रक्षा भवन में अधिनियम 1948 के अनुसार रक्षा का प्रदान करने वाला रक्षा भवन में हाल ही में उपनिवेशकों और उनके नियमों और नियमांकनों का अनुयायी होना वगैर्ह ही किया जा रहा है।

1. यदि यदि उपनिवेशकों के प्रदान किए जाने वाले उत्पादों के अनुसार उनके नियमों और नियमांकनों का अनुयायी किया जा रहा है, तो उनके प्रदान किए जाने वाले उत्पादों के हालियों के अनुसार उनके नियमों और नियमांकनों का अनुयायी किया जा रहा है।

2. उपनिवेशकों के प्रदान किए जाने वाले उत्पादों के हालियों के अनुसार उनके नियमों और नियमांकनों का अनुयायी किया जा रहा है।

3. उपनिवेशकों के प्रदान किए जाने वाले उत्पादों के हालियों के अनुसार उनके नियमों और नियमांकनों का अनुयायी किया जा रहा है।

4. उपनिवेशकों के प्रदान किए जाने वाले उत्पादों के हालियों के अनुसार उनके नियमों और नियमांकनों का अनुयायी किया जा रहा है।

1243. 7/2011 (1)
5 जनवरी (2007) के द्वारा पाबंदित विधेयक में वीडीओ कि स्थापना की गई है।

मंत्रीदर्शक, 2007 में 4 नवंबर पर स्थापित प्रशासनिक तकनीकी आयोग (पीसीएसआई) के भाषण में इसे तैयार किया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया।

वीडीओ कि स्थापना का उद्देश्य वैविध्यों और विविधताओं का उल्लेख करना। के लिए उल्लेख करना। इसके लिए उल्लेख करना। इसके लिए उल्लेख करना।

पीसीएसआई विद्युत-विद्युत व्यवस्था के लिए तैयार किया गया।

गोवर्धन विराटन, 2007 में 4 नवंबर पर स्थापित प्रशासनिक तकनीकी आयोग (पीसीएसआई) के भाषण में इसे तैयार किया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया।

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पीसीएसआई विद्युत-विद्युत व्यवस्था के लिए तैयार किया गया।

गोवर्धन विराटन, 2007 में 4 नवंबर पर स्थापित प्रशासनिक तकनीकी आयोग (पीसीएसआई) के भाषण में इसे तैयार किया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया।

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गोवर्धन विराटन, 2007 में 4 नवंबर पर स्थापित प्रशासनिक तकनीकी आयोग (पीसीएसआई) के भाषण में इसे तैयार किया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया।

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पीसीएसआई विद्युत-विद्युत व्यवस्था के लिए तैयार किया गया।

गोवर्धन विराटन, 2007 में 4 नवंबर पर स्थापित प्रशासनिक तकनीकी आयोग (पीसीएसआई) के भाषण में इसे तैयार किया। इस योजना का निर्माण विधेयक के साथ साथ ही 2007 में शुरू किया गया।

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(५) अमेरिका नवीन भवन स्थापना व्यवस्था ६२५ वर्षों के लिए अतिक्रमण स्थल सहित क्षेत्र धरार दिए गए हैं।

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<tr>
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<th>खाद्य</th>
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</tbody>
</table>

(६) स्वीकृति विषयों का प्राप्ति अनुसार विविध क्षेत्रों में लिखित की गई है।
भारतीय दूतावास,
संयुक्त स्थानक प्रीडिट्रेन व्यवस्था, 2017

स्थानक प्रीडिटर व्यवस्था सारणी को निर्माण
1. स्थानक प्रीडिटर व्यवस्था सारणी को जनरेट करने के लिए एक बंग देशी।
2. स्थानक प्रीडिटर व्यवस्था सारणी को बनाने के लिए सर्वाधिक देश एवं सर्वाधिक क्षेत्र के लिए नतीजें निर्माण करने के लिए भारतीय दूतावास परिषद द्वारा विभाजित क्रम से नागरिकता / मूलतम दंड अंतर्गत में प्रस्तावित किए जाएँगे।
3. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की वस्तु जो एक बंग देश से अधिक नहीं होनी चाहिए पूरा-पूरे का मुद्दत किया जाना।
4. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की अनुसरण नीति-प्रणाली में तैयारी की जाएँगी।
5. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की अनुसरण नीति-प्रणाली में तैयारी की जाएँगी।
6. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की अनुसरण नीति-प्रणाली में तैयारी की जाएँगी।
7. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की अनुसरण नीति-प्रणाली में तैयारी की जाएँगी।
8. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की अनुसरण नीति-प्रणाली में तैयारी की जाएँगी।
9. स्थानक प्रीडिटर व्यवस्था सारणी को, स्थानक प्रीडिटर व्यवस्था सारणी की अनुसरण नीति-प्रणाली में तैयारी की जाएँगी।

वर्तमान
ए. अन्नदान के सूचनापत्र यथा,केरिस्टिया भाषा के संदेशों को लेकर ध्यान दें।
(व) अन्नदान के सूचना पत्र)
(व) शिक्षण के लिए आह्मन व तुलनात्मक अनुसंधान यथा,वित्त विशेषता, तथा सामाजिक विश्लेषण तथा सामाजिक विश्लेषण के लिए अनुभवकरता।

d. निम्न ने दी गई वाणिज्य के उपयोग के सन्दर्भ में स्पष्ट रूप से कथा--
(i) दबाव तथ्यात्मक
(ii) नैतिक विवरण
(iii) विश्लेषण और अनेक विवरण प्रदान करता है आपकी।
(iv) अन्नदान पत्र यथा,विवरण
(v) विवरण के संदर्भ में विवरण व वार्तालाप
(vi) विवरण के संदर्भ में विवरण व वार्तालाप

### शीतल, अनुभवकरता, तथा आपका विवरण करने के साथ आपकी राय

(i) पृथवियों के संदर्भ में विवरण व वार्तालाप
(ii) विवरण के संदर्भ में विवरण व वार्तालाप
(iii) विवरण के संदर्भ में विवरण व वार्तालाप
(iv) अन्नदान पत्र, अनुभवकरता के साथ अन्नदान पत्र का रिपोर्ट तथा व्याख्या
(v) ज्ञान के संदर्भ में विवरण व वार्तालाप
(vi) विवरण के संदर्भ में विवरण व वार्तालाप
(vii) विवरण के संदर्भ में विवरण व वार्तालाप
(viii) अन्नदान पत्र, अनुभवकरता के साथ पत्र का संदर्भ चर्चा।

### अनुभव
1. नैतिक विवरण तथा विवरण के संदर्भ में विवरण व वार्तालाप
2. नैतिक विवरण व वार्तालाप के संदर्भ में विवरण
3. विवरण के संदर्भ में विवरण विवरण

### अनुभवकरता
1. विवरण के संदर्भ में विवरण व वार्तालाप
2. विवरण के संदर्भ में विवरण व वार्तालाप
3. विवरण के संदर्भ में विवरण व वार्तालाप
2. पुलिस तथा सुरक्षाप्रदाता सर्वेक्षण

र. पुलिस व्यवस्था में अस्वीकारी व्यक्तियों के गृहयोग स्वायत्त सुरक्षा समिति नियुक्ति किया गया।

1. साहित्यिक भाषाओं

2. नाटक रचनात्मक (पिन्डी) परिवार

3. उद्योग

4. साहित्यिक अनुभवको सार्वजनिक समिति नियुक्ति किया गया।

5. पुलिस एवं नियुक्ति

6. व्यवस्था तथा नियुक्ति

7. नृत्यकलाओं

8. व्यवस्था तथा नियुक्ति

सी. पुलिस तथा सुरक्षा समिति के अन्तर्गत नियुक्ति प्रविधियों में स्थापित कहाँ?

1. साहित्यिक

2. नाटक रचनात्मक (पिन्डी)

3. उद्योग

4. साहित्यिक अनुभवको सार्वजनिक समिति

5. पुलिस एवं नियुक्ति

6. व्यवस्था तथा नियुक्ति

7. नृत्यकलाओं

8. व्यवस्था तथा नियुक्ति

पूर्व तथा सेवकों में अस्वीकारी व्यक्तियों के गृहयोग स्वायत्त सुरक्षा समिति नियुक्ति किया गया।

1. साहित्यिक

2. नाटक रचनात्मक (पिन्डी)

3. उद्योग

4. साहित्यिक अनुभवको सार्वजनिक समिति

5. पुलिस एवं नियुक्ति

6. व्यवस्था तथा नियुक्ति

7. नृत्यकलाओं

8. व्यवस्था तथा नियुक्ति

पुलिस तथा सुरक्षा समिति के अन्तर्गत नियुक्ति प्रविधियों में स्थापित कहाँ?

1. साहित्यिक

2. नाटक रचनात्मक (पिन्डी)

3. उद्योग

4. साहित्यिक अनुभवको सार्वजनिक समिति

5. पुलिस एवं नियुक्ति

6. व्यवस्था तथा नियुक्ति

7. नृत्यकलाओं
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<td>सेवानिधियों के विभाग</td>
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<tr>
<td>4.</td>
<td>अधिकारिक उपयोग के लिए विभाजनाधीन किया गया।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>5.</td>
<td>प्रतिनिधि विभाजनाधीन की बहाली की गयी।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>6.</td>
<td>अथवा द्वितीय मूल्य के लिए निघातन, नियोजन न की गयी।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>7.</td>
<td>निघात नियोजन की क्लियों के लिए मूल्य-विभाजन जानकारी दी।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>8.</td>
<td>संयुक्त मूल्य विभाजन का लाभ हो सकता है।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
</tbody>
</table>

8. नेतृत्वक विधि संयुक्त मूल्य विभाजन का लाभ हो सकता है।

9. जन सशक्ति संयुक्त विधि विभाजन

<table>
<thead>
<tr>
<th>नं.</th>
<th>विषय</th>
<th>प्रतिनिधि विभाजनाधीन</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>भारत सेवा विभाजनाधीन गृह मूल्य स्थान, नर स्थान, प्रत्येक, विभाग, विभाग कर्मचारी, विभाग कर्मचारी की रूपमें स्थानाधीन विभाजन के संबंध में क्षेत्रों और विभाजन के लिए विभाजित निर्देश न की गयी।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>2.</td>
<td>इति दूसरी जन सशक्ति संयुक्त विधि कर्मचारी का लाभ हो सकता है।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>3.</td>
<td>विनियम निर्देशन कर्मचारी का लाभ हो सकता है।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>4.</td>
<td>विनियम प्रचार कर्मचारी का लाभ हो सकता है।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>5.</td>
<td>विनियम प्रचार कर्मचारी का लाभ हो सकता है।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
<tr>
<td>6.</td>
<td>विनियम प्रचार कर्मचारी का लाभ हो सकता है।</td>
<td>सेवानिधियों के विभाग</td>
</tr>
</tbody>
</table>
THE GAZETTE OF INDIA: EXTRAORDINARY

(PART III—SEC. 4)

10. The Union (Ministry) of the Government of India issues the following notification to all concerned:

Ministry of Finance

1. The Government of India hereby issues the following notification:

2. The Government of India hereby issues the following notification:

3. The Government of India hereby issues the following notification:

4. The Government of India hereby issues the following notification:

5. The Government of India hereby issues the following notification:

6. The Government of India hereby issues the following notification:

7. The Government of India hereby issues the following notification:

8. The Government of India hereby issues the following notification:

9. The Government of India hereby issues the following notification:

10. The Government of India hereby issues the following notification:
DENTAL COUNCIL OF INDIA

NEW DELHI, 19TH OCTOBER, 2011

No.DE-120-2011—In exercise of the powers conferred by Section 2 of Section 20 of the Dentists Act, 1948, the Dental Council of India after consultation with the State Government as referred to in clause (1) of Section 20 of the Dentists Act, 1948, and with the previous sanction of the Central Government in the Ministry of Health and Family Welfare, made 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 Affiliated University/State Government are free to make applicable these amendment even to its students who would have been pursuing BDS Course during the academic session 2011-12 onwards. It is up to the University to implement the changes and decided as above by their Affiliating and Regulations.

2. The existing Revised BDS Course Regulations 2007 are continued to the extent indicated hereunder—

(i) Duration of the Course:

The existing provision relating to BDS Degree shall be of 4 (four) academic years; that is, four year full-time BDS programme shall be required, after passing the final BDS examination, to be admitted to a dental college. The detailed regulations are given under Annexure-A.

NOTE—In case of any failing the BDS Course student in 2011-12 batch is free to select the respective University to decide.

For those students admitted in the academic year 2011-12, the students may be included in this academic year period as decided by the concerned University rules permit.

(ii) EXAMINATIONS:

There is no change in syllabus upto 3rd year (2007)

The following will be substituted for para 4 of the Existing Regulations, 2007.

Any candidate who has failed 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 own regulations.

After Sl. No. 5 of the subject, 'Physiology', the following be added:

Any candidate who has been absent in an Examination is permitted to go to the next higher class and complete the said 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 own regulations.
The following will be substituted at page No. 4 of the existing regulations, 2007:
Final BDS (Part 4 Year):

- Public Health Dentistry
- Pedodontics
- Orthodontics and Dentofacial Orthopaedic
- Oral Medicine and Radiology
- Oral & Maxillofacial Surgery
- Conservative and Endodontics
- Restorative and Crown & Bridge
- Pedodontics and Preventive Dentistry
- Orthopantomography

Part I:

- Public Health Dentistry
- Pedodontics
- Orthodontics and Dentofacial Orthopaedic
- Oral Medicine and Radiology

Part II:

- Oral & Maxillofacial Surgery
- Conservative and Endodontics
- Restorative and Crown & Bridge
- Pedodontics and Preventive Dentistry

Note:

1. The concerned universities may opt for any one of the examination pattern mentioned above for BDS final year.
2. If any university opts for the part examination system then any candidate who fails in any part of the examination is permitted to go to the next higher examination and to complete both parts successfully before the last inspection of the examination.
3. Those candidates who wish to go to the Department of Public Health in the final year would have to go for the course of Periodontology.

At page No. 5, 5th year additional syllabus is added.

(b) SCHEME OF EXAMINATION:

Paragraph 1:- In the page for the original syllabus examination the following shall be included:

The Scheme of Examination for 5th Year BDS examination at the end of the first second year of BDS examination at the end of second year, 5th BDS examination at the end of third, 4th and final BDS examinations of 5th year. The examination shall consist of two examinations, each of 3 and 3 and a half hours. There shall be two examinations in the final year; one at the end of each year and Part 2 of the respective examination (regulation) for the BDS examination and the respective part of the second examination is mandatory.

For the new scheme of examination examination in each year shall be covered in each semester.

Part I:

- Public Health Dentistry
- Pedodontics
- Orthodontics and Dentofacial Orthopaedic
- Oral Medicine and Radiology

Part II:

- Oral & Maxillofacial Surgery
- Conservative and Endodontics
- Restorative and Crown & Bridge
- Pedodontics and Preventive Dentistry

*At page No. 6, V BDS examination will be added
(iv) The minimum working hours for each subject of 1st year BDS Course, as substituted for the existing as indicated at page No. 16 of the existing principal regulations, as under:

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Lecture Hours</th>
<th>Practical Hours</th>
<th>Clinical Hours</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Human Anatomy Including Embryology, Histology and Histology</td>
<td>120</td>
<td>60</td>
<td>60</td>
<td>240</td>
</tr>
<tr>
<td>General Human Physiology</td>
<td>70</td>
<td>60</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Dental Materials</td>
<td>90</td>
<td>90</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>Dental Anatomy &amp; Embryology and Oral Histology</td>
<td>90</td>
<td>90</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>Dental Pharmacology &amp; Therapeutics</td>
<td>70</td>
<td>70</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>General Pathology</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Microbiology</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>General Medicine</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>General Surgery</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Oral Pathology &amp; Microbiology</td>
<td>350</td>
<td>350</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>Oral Medicine &amp; Radiology</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Paediatric &amp; Preventive Dentistry</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Orthodontics &amp; Dental Implantology &amp; Periodontology</td>
<td>120</td>
<td>120</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>Oral &amp; Maxillofacial Surgery</td>
<td>70</td>
<td>70</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Conservative Dentistry &amp; Endodontics</td>
<td>135</td>
<td>135</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>Prosthodontics &amp; Crown &amp; Bridge</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public Health &amp; Community Medicine Lectures on Tobacco Control &amp; Hotel Cessation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1500</td>
<td>1500</td>
<td>3000</td>
<td></td>
</tr>
</tbody>
</table>

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 - 2400 hours (1200 clinical hours)

(v) The following teaching of subjects for the remaining 2nd year BDS Course, as indicated at Page No. 17 of the existing principal regulations, 2007, as substituted for the under:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lecture Hours</th>
<th>Practical Hours</th>
<th>Clinical Hours</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prosthodontics</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Oral Medicine</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Periodontology</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Public Health</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Conservative Dentistry</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Oral Surgery</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Orthodontics</td>
<td>60</td>
<td>60</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Pedodontics</td>
<td>45</td>
<td>45</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>440</td>
<td>440</td>
<td>880</td>
<td></td>
</tr>
</tbody>
</table>

Provided that nothing contained in the provision of this regulations or statute or rules, regulations or guidelines or notification of the concerned university, or any other law for the time being in force shall prevent any student pursing the other 1st 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 these 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 the 6th year will be applicable.
- Provided the concerned University clears 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:
   "6th year."
3. Under Note No. 5, at the end, the following be deleted:
   "7th 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 therefore decided by the Dentist Council of India to conduct inspections, at any of the colleges, at any time during the calendar year for

Inspector whether the colleges are following the Internship norm as laid down by DCI.

Col. (Retd). Dr. S.K. G. I.A.H., Offg. Socy.

[ADV'T. III/45/8/11(P.O.)/Exy.]

Footnotes:


2. 1st Amendment to the Principal Regulations, published in Part III, Section 4 of the Gazette of India, Extraordinary, on 28.8.2010.

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 posts of Internship shall be done in a Dental College having recognized by the Dental Council of India for the purpose of imparting education and training to Dental graduates in the country.

3. The Internship shall be paid stipendary 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. This Internship BDS shall be after the completion of Final year.

Determinant of Curriculum for Internship for Dental Graduates:

The curriculum 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 graduate in Dentistry in various practice settings, private and government service actually perform.
   v) Epidemiological studies conducted to find out the 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 participation of learners in active acquisition of knowledge and skills
   i. To develop critical thinking and decision-making skills.
   ii. To foster clinical reasoning and problem-solving abilities.
   iii. To promote effective communication and interpersonal skills.

B. To facilitate the development of dental professionals with a balanced approach towards care.
   i. To achieve optimal patient outcomes.
   ii. To promote evidence-based practice.
   iii. To cultivate a commitment to ongoing professional development.

C. To facilitate the understanding of ethical and legal principles.
   i. To recognize the importance of ethical considerations.
   ii. To prioritize patient welfare and autonomy.

D. To facilitate understanding of the interdisciplinary nature of dental care.
   i. To acknowledge the contributions of other health professionals.
   ii. To foster collaborative practice.

E. To initiate individual and group actions, leading to improved oral health awareness, at all levels of the community and amongst the dental professions.

Content (subheadings)

The compulsory rotating paid Dental Internship, shall be conducted in an Oral Medicine & Radiology, Oral & Maxillofacial Surgery, Prosthodontics, Paedodontics, Orthodontics, Endodontics, Periodontics, and Periodontology. The Internship shall be of a minimum duration of six months.

General Guidelines:

1. The Internship shall be conducted under the supervision of a duly qualified Dental Professional.
2. The Internship shall be conducted in the format of a Hospital-Based Internship.

Oral Medicine & Radiology

1. Standardized examination of patients
   - 25 Cases
2. Exposure to clinical, pathological laboratory procedures
   - 5 Cases
3. Effective training in taking of Radiographs
   - 2 Full mouth (Intra-oral) I. O. (Extra-oral) E. O.
   - 1 Cephalogram
4. Effective management of cases in wards
   - 2 Cases

Oral and Maxillofacial Surgery

A. The Internship during the posting in oral surgery shall perform the following procedures:
   1. Extractions
   2. Surgical extractions
   3. Impactions
   4. Simple Intra-Maxillary Fixation
   5. Cysts, etc.
   6. Incision and drainage
   7. Biopsies, Biopsies & Removables, etc.

25 Cases
5 Cases
2 Full mouth (Intra-oral) I. O. (Extra-oral) E. O.
1 Cephalogram
2 Cases
50
2
2
1
1
2
3
B. The internes shall perform the following on Consecutive Patients:
1. Maintain inflow.
2. Do extractions for endodontic cases.
3. Perform biopsies.
4. Observe varied cases of oral infections.
C. The internes shall have 15 days posting in the emergency services of a district/general hospital with extended responsibilities in emergency dentistry in the wards. During this period they shall attend to all emergencies under the direct supervision of oral surgeons during any operation:
1. Emergencies.
   (i) Toothache
   (ii) Trismus
   (iii) Bleeding from mouth due to trauma, post extractions, bleeding disorders or haemophilia.
2. Work in l.c.u. with periodic reference to maxillofacial procedures.
3. Conduct tutorial on medicolegal aspects including reporting of actual cases coming to casualty. They should have visits to law courts.

3. Prostodontics
   The dental graduates during their internship posting in Prostodontics 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 maxillofacial injuries of maxillofacial Prostheses 1
   6. Learning use of Face bow and Semi-anatomic articulator technique 1
   7. Crowns 1
   8. Introduction of implants 1

4. Periodontology
   A. The dental graduates shall perform the following procedures:
   1. Periapical 15 Cases
   2. Flap Operation 2
   3. Root Planing 1
   4. Osteoplasty 1
   5. Gingivectomy 1
   6. Periodontal cases 1
   
B. During their one week posting in the community health centres, the internes shall educate the public in prevention of Periodontal diseases.

5. Conservative Dentistry
   To facilitate reinforcement of learning and achievement of basic skills, the internes shall perform the following procedures independently or under the guidance of supervisors:
   1. Restoration of extensively mutilated teeth 5 Cases
   2. Inlay and Onlay preparations 1
   3. Use of tooth coloured restorative materials 4 Cases
   4. Treatment of discoloured vital and non-vital teeth 1
   5. Management of dento alveolar fracture 1
   6. Management of pulpless, single-rooted teeth without perapical lesion. 4 Cases
   7. Management of acute dental alveolar infections 2 Cases
   8. Management of pulpal, single-rooted teeth with periradicular lesion 1 Case

6. Paedodontics and Preventive Dentistry
   During their posting in Paedodontics the dental 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 maintainers 1 Case
   6. Oral habits breaking appliances 1 Case
Oral Pathology and Microbiology

The interns shall perform the following:
1. History-taking and clinical examination
2. Blood, Urine and Stool examination
3. Excavative Cytology and smear study
4. Biopsy and Laboratory Procedure & reporting

Orthodontics

A. The interns shall observe the following procedures during their posting in Orthodontics:
1. Detailed diagnosis and procedures for 6 patients.
2. Laboratory technique of making and fabrication of removable appliances, soldering and processing of orthodontic appliances.
3. Treatment of orthodontic movements.
5. Use of extra oral anchorage and observation of progress.
6. Retaining.
7. Observation of handling of patients with oral habits causing malocclusions.

The dental graduates shall do the following laboratory work:
1. Wire bending for removable appliances and partial removable orthodontic appliances including welding and heat treatment procedures.

Public Health Dentistry

1. The interns shall conduct health education sessions for individuals and groups on oral health and public health, nutrition, dental hygiene, and dental care practices.
2. They shall conduct an oral health intervention program in the community, or in the alternate, participate in the planning and methodology.
3. They shall arrange for demonstrations of:
   a) Prevention and treatment of prevalent dental diseases.
   b) Oral hygiene and other health education demonstrations
   c) Orthodontic appliances

Conduction of oral health education programmes at:
A. School setting
B. Community setting
C. Adult education programmes

Preparation of Health Education materials

Exposure to team concept and National Health Care systems:
1. Observation of functioning of health care team including multipurpose workers in rural and urban areas.
2. Observation of dental care team and other related health workers.
3. Observation of atleast one National Health Programme.
4. Observation of interlinkages of delivery of oral health care with Primary Health care.

Elective Posting

The interns shall be posted for a period of 15 days in any of the dental departments of their choice, mentioned in the following:

1. Oral Medicine
2. Oral Surgery
TheCurriculum during the four years of BDS training is 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 interns along with the minimum performance level are given under the course content of different departments of Dental Education. The supervisors should see that proper facilities are provided in all departments and attached institutions for their performance.
Specification of Teaching Activities:

Didactic sessions are delivered during the four years training in BDS. These shall be aided 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, slides projectors, film projectors charts, diagrams, photographs, posters, specimen, studies and other audiovisual aids shall be provided in all the Dental Colleges and affiliated Institutions and field areas. If possible, television/video and tapes showing different procedures and techniques to be mastered by the interns should be provided.

Evaluation:

1. Formative Evaluation:
   Day-to-day assessment of the interns during their internship posting should be done. The objective is that the interns must acquire necessary skills and be familiar with carrying out day-to-day professional work competently. This can be achieved by maintaining records and performance data book by all interns. This will not only provide a demonstrable evidence of the progress of training but more importantly, of the interns' own acquisition of competencies as related to performance. It shall form a part of formative evaluation and shall also constitute a component of the grading of interns.

2. Summative Evaluation:
   It shall be based on the observation of the supervisor at different departments and the medical record analysis and the performance data book maintained by the interns. Grading shall be done accordingly.

Rural Services

The rural services, the student will have to participate is—

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. Conduct of Oral Health Education Programmes at—
   (a) School Setting
   (b) Community Setting
   (c) Adult Education Programmes

4. Compulsory setup of satellite clinics in remote areas

5. Lectures to create awareness and educational programs about the harmful effects of tobacco consumption and the predisposition to oral cancer. 2 lectures per student.

Period of Postings

1. Oral Medicine & Radiology  —  1 month
2. Oral & Maxillofacial Surgery  —  1 ½ months
3. Prosthodontics
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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भारत का राजप्रत्यर

The Gazette of India

EXTRAORDINARY
भाग III—खण्ड 4
PART III—Section 4
प्राप्ति तत्त्वा से प्रकाशित

PUBLISHED BY AUTHORITY

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No. 239] NEW DELHI, FRIDAY, DECEMBER 9, 2011/AGRAHAYANA 18, 1933

भारतीय दल परिषद्
अधिसूचना

म. ब्रह्म-130-2011—नव विकिन्त्र अधिनियम, 1948
c. खंड 20 द्वारा प्रस्ताव लिखित है तथा दत्तक अनुसूचा
अधिनियम, 1948 के खंड 20 के अंत-खंड 2 को पाया गया (क) वषा
(ज) में स्वतंत्र रूप से यथाक्रम में शर्तों को जाना है
के बाद उपर्युक्त रक्षक की पूर्ण रूप से सहस्रीय दल परिषद् भारत के
अधिनियम राज्य के भाग III, खंड 4 में रिकार्ड 10 दिसम्बर, 2007
cो प्रकाशित मौद्रिक संरक्षित वाचन वाचक पत्रकार विपक्ष, 2007 में
न्यायिक विधि से संवादित करता है —

1. न्याय और तथा प्रयोग
   (i) यह विनियम फलतः दल परिषद् संरक्षित वाचन वाचक
   पत्रकार (पृथ्वी संहरण) विपक्ष, 2011 कहता है।
   (ii) यह विनियम सरकार राज्य के उन्नत प्रतिष्ठित की
   सार्थकता से ग्रस्त होता है।

2. मात्र परिषद् परिषद् संरक्षित वाचन वाचक (महात्मा
   सरस्वती) विपक्ष, 2011 में "विनियम 2(1)" में "पत्रकार की
   अधिकता" में संरक्षित उपलब्ध को उधार नहीं
   संरक्षित है किंतु विनियमों ने संरक्षित वाचन वाचक पत्रकार विपक्ष,
   2007 में दिन 2007 से ही कार्यान्वित किया जा रहा है उन्हें शीघ्र
   वाचन वाचक पत्रकार जाना दिया।

3. यहाँ वह साहित्यकर्ता का साहित्य पत्रकार का स्वरूप है,
   इसमें यह रूप से संरक्षित विकिन्त्र विनियम नियम
   लेखन" को एक दिवसांक द्वारा जाना है तथा विमनियमों की जीवन निविज्ञान
   एकाधिकों को अनुभव करता है, अर्थात् —

4. पत्रकार विनियम 2007-2008 में दाखिल हो गए वात
   इसके समस्त वाचन वाचक पत्रकार विपक्ष, 2007 में
   विकिन्त्र पत्रकार के बाद वे के भाषकाओं और पत्रकार
   को अंतर्गत नियंत्रक, तथा अपने वाढ़ियों (जाने) विययों के चा।

<table>
<thead>
<tr>
<th>विषय</th>
<th>लेखक पत्रकार</th>
</tr>
</thead>
<tbody>
<tr>
<td>मुख्य</td>
<td>30</td>
</tr>
<tr>
<td>परिषद् (वाचन वाचक)</td>
<td>50</td>
</tr>
<tr>
<td>प्रेमोक्षित (पत्रकार)</td>
<td>10</td>
</tr>
<tr>
<td>पत्रकार (वाचन वाचक)</td>
<td>10</td>
</tr>
<tr>
<td>लेखक</td>
<td>160</td>
</tr>
</tbody>
</table>

इसे अद्यतन पूरा करने पर उन्नत विस्तारित कर ताकि उन्नत और सत्यवादी परिषद् पाठ करने वालों के लिए किए गए हैं
उन्हें निविज्ञान अधिक तथा उन्नत पत्रकार विपक्ष का जानकारी दी जाएगी।

<table>
<thead>
<tr>
<th>विभाग</th>
<th>लेखक पत्रकार</th>
</tr>
</thead>
<tbody>
<tr>
<td>मुख्य</td>
<td>30</td>
</tr>
<tr>
<td>परिषद्</td>
<td>50</td>
</tr>
<tr>
<td>प्रेमोक्षित</td>
<td>10</td>
</tr>
<tr>
<td>पत्रकार</td>
<td>10</td>
</tr>
<tr>
<td>लेखक</td>
<td>160</td>
</tr>
</tbody>
</table>

कर्तहरु (संस्थान द्वारा) एवं एवं अधिकारिक संचार

THE GAZETTE OF INDIA: EXTRAORDINARY

PART III—SEC. 4

No. DR-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, have 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 provision 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 180 Lecture hours within a period of 6 (six) months as given below:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lecture Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral &amp; Maxillofacial Surgery</td>
<td>30</td>
</tr>
<tr>
<td>Conservative Dentistry &amp; Endodontics</td>
<td>30</td>
</tr>
<tr>
<td>Prosthodontics and Crown &amp; Bridge</td>
<td>30</td>
</tr>
<tr>
<td>Public Health Dentistry</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>160</strong></td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Departments</th>
<th>Period of Posing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oral Medicine &amp; Radiology</td>
<td>20 days</td>
</tr>
<tr>
<td>2. Oral &amp; Maxillofacial Surgery</td>
<td>30 days</td>
</tr>
<tr>
<td>3. Prosthodontics</td>
<td>30 days</td>
</tr>
<tr>
<td>4. Periodontics</td>
<td>15 days</td>
</tr>
<tr>
<td>5. Conservative Dentist</td>
<td>10 days</td>
</tr>
<tr>
<td>6. Pedodontics</td>
<td>15 days</td>
</tr>
<tr>
<td>7. Oral Pathology &amp; Microbiology</td>
<td>10 days</td>
</tr>
<tr>
<td>8. Orthodontics</td>
<td>10 days</td>
</tr>
<tr>
<td>9. Community Dentist/Rural Service</td>
<td>30 days</td>
</tr>
<tr>
<td>10. Elective</td>
<td>10 days</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180 days</strong></td>
</tr>
</tbody>
</table>

Col. (Retd). Dr. S.K. OJHA, Offg. Secy. [ADVT. III/4/98/11/Finy]

Foot Notes:


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 28-8-2011.
भारत का राजपत्र
The Gazette of India

अस्पष्टता
EXTRAORDINARY
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PUBLISHED BY AUTHORITY

स. 139]
NEW DELHI, FRIDAY, JUNE 1, 2012/VAISTHA 11, 1934

भारतीय दंप परिषद्
अधिसूचना

नव दिल्ली, 31 मई, 2012

सं. वी.सी., 22-2012—इस विलिक्तक अभिनियम, 1948 के खंड 20 द्वारा प्रस्तावित शासनों का प्रस्ताव करते हुए एवं अन्यत्र सरकार के पूर्व—अनमोलियन से भारतीय दंप परिषद्, भारत के समाधान अंजन के भाग III, खंड 4 में 10 सितंबर, 2007 को प्रकाशित मानदुर्गा मूर्ति संरक्षित बीडीएस पादरम, 2007 में स्थित संरक्षण करती है।

1. लूट शौच तथा प्रवर्तन
(i) ये विविध भारतीय दंप परिषद् संरक्षित बीडीएस पादरम (मानदुर्गा) विविध, 2007 कहलाएगा।
(ii) ये विविध सरकारी समूह में इनके प्रशासन की पारी तथा जीवन शैक्षिक सत्र 2013-14 से लागू होगा।

2. "भारतीय दंप परिषद् संरक्षित बीडीएस पादरम विविध, 2007" में नियन अंतर्क्षण/उपयोग/विलोपन/प्रतिक्रिया उसने विनाशित किए जाएंगे।

3. '1. दंप पादरम में दाखिल/पादरम आयुक्त शीर्षक के अधीन विविध 1 के एवं—विविध 1 के बाद निम्न एवं/विविध अंतर्क्षण विनाशित किया जाएगा जो मानदुर्गा उप/विविध 2' 3' के रूप में पुनर्शैक्षितिक किया जाएगा: निम्नलिखित दंप परिषद् के अधीन विविध II के एवं—विविध 5 में विनाशिति राष्ट्रीय पादरम—एवं/संवेद विविध में 'पुनर्शैक्षित किया जाएगा।

4. भारतीय दंप परिषद् संरक्षित बीडीएस पादरम विविध, 2007 के विविध 1 के एवं—विविध 2 में उसने गृहीत अनुसार अनुसार अन्य शीर्षक का पता करता है, साथ में वह पादरम पादरम एवं प्रवाहित परिवार में देखने का पता करता है राष्ट्रीय भाषा एवं प्रवाहित परिवार में देखने का पता करता है देखने का पता।

5. (i) इस संस्थान के गृहीत के बाद विविध 1 के एवं—विविध 3 में बीडीएस पादरम में दाखिलते के लिए देखने में गृहीत एवं प्रवाहित परिवार।
(ii) उप्रोक्त दंप परिषद् के अधीन गृहीत विविध II में 1 से 4 तक के एवं—विविध विनाशित किया जाएगा।

(1)
6. सीटीएस में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में विशेषता किया जाना और निवन्यासार अवधारणाएँ जारी कराया जाएगा।

i. राष्ट्रीय नियोजन बोर्ड में सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में विशेषता किया जाना और निवन्यासार अवधारणाएँ जारी कराया जाएगा।

ii. विनिमय वाले आयोग के अंतर्गत सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में विशेषता किया जाना और निवन्यासार अवधारणाएँ जारी कराया जाएगा।

iii. विनिमय वाले आयोग के अंतर्गत सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में निवन्यासार अवधारणाएँ जारी कराया जाएगा।

iv. आयोग के अनुसार सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में निवन्यासार अवधारणाएँ जारी कराया जाएगा।

v. सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में निवन्यासार अवधारणाएँ जारी कराया जाएगा।

vi. सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में निवन्यासार अवधारणाएँ जारी कराया जाएगा।

लेखक अर्थ है कि विनिमय वाले आयोग के अंतर्गत सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में निवन्यासार अवधारणाएँ जारी कराया जाएगा। उपर्युक्त विनिमय में सरकार के निकट के अंतर्गत गठित विनिमय वाले आयोग के अंतर्गत सीटीएस पायदान में आकर प्राप्त होने पर आयोग के अनुसार विनिमय II के मामूली अंक-विनिमय में निवन्यासार अवधारणाएँ जारी कराया जाएगा।
vii. दीर्घास पादयक्षम ने दाखिले के लिए राष्ट्रीय प्रत्येक-या-प्रत्येक परीक्षा आयोजित करने
पारा समझदार सर्वशास्त्रीय महाविद्यालय रिजिडेंट बनाए दर्जा।

फर्मल (रेखान्वित) के प्र. म. ओझा, कर्मचारी राष्ट्रीय
[सिद्धांत III/4/98/12/उत्तर]

याद दिखाने: मूल विनियम अंतर्राष्ट्रीय दाता "राष्ट्रीय पदयक्षम परीक्षा 2007" विनियम 10
रिजिडेंट को अपियस्यन के अंतर्राष्ट्रीय भारत के राष्ट्रीय उपर के भाग III, याद (4) में प्रकाशित किए गए थे जिन्हें

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 "1. 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 locomotor 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/Biotechnology taken together in qualifying examination shall be 40%.
instead of 50%. In respect of candidates with locomotor disability of lower limbs in terms of sub-regulation 4, after the commencement of these amendments, of Regulation 1 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 1.

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/4/96/12/Exty.]

बालाजी तथा परिवार

भारतीय गृह विभाग
अधिनियम

र. र. र., 24 जून, 2013

सं. जी-130-2013—भारतीय गृह विभाग अधिनियम 1948 के खंड 20 द्वारा प्रदत्त समय परिवारों का प्राप्त करने के लिए, भारतीय गृह विभाग खंड 20 के खंड-खंड 2 और खंड 19 के खंड-खंड 3 में प्रभारित प्रार्थना राज्य सरकार से प्राप्त करने के बाद 1948 के खंड 20 के अनुसार भारत के राष्ट्रपति से निर्णय प्राप्त हुआ।

1. अधिकार शीर्षक तथा प्रवेश

(i) भारतीय गृह विभाग राष्ट्रसेवक बी.एस.सी. संगठन (बाल अधिनियम) नियम, 2015 केन्द्र सरकार द्वारा जारी किया गया।

(ii) भारतीय गृह विभाग अन्तर्द्वारा राष्ट्रसेवक बी.एस.सी. संगठन (बाल अधिनियम) नियम, 2007 से पहले परिणाम ने नए नियम द्वारा प्रवेश किए जाएगे।

2. गृह विभाग राष्ट्रसेवक बी.एस.सी. संगठन (बाल अधिनियम) नियम, 2007 के अनुसार परिणाम ने नए नियम द्वारा प्रवेश किए जाएगे।

"अग्नि दिवस" यह बाल अधिनियम 2007—2008 के अनुसार राष्ट्रसेवक बी.एस.सी. संगठन (बाल अधिनियम) नियम, 2007 से पहले परिणाम ने नए नियम द्वारा प्रवेश किए जाएगे।

राष्ट्रपति बी.एस.सी. संगठन (बाल अधिनियम) नियम, 2011 के अनुसार सभी आवेदन और प्रमाणित रूप से जारी किए गए बाल सेवकों के लिए सरकार द्वारा प्रदत्त तथ्यात्मक संदर्भ के अनुसार संगठन से संबंधित प्रक्रिया की समीक्षा कितने आवेदन से प्राप्त किए गए।

291 GI/2011
(1)
1. भारतीय वैदिकीयक अधिनियम 1948 के खंड 20 द्वारा ग्राहित आदेशों का प्रयोग करते हुए, भारतीय वित्त परिषद खंड 20 के एवं खंड 2 की भत्ता (अ) तथा (ब) में ववासितारता राज्य सरकार ने परमान के बाद तथा भारतीय सरकार की पूर्व सीईटी द्वारा भारत के निर्णय 10 जिनवेर, 2007 के वरिष्ठदार्व सरकार के भाषा. खंड 4 ने प्रकटित घूम संलग्नित वैधता प्राप्त करने के लिए वेबसाइट परिवर्तन 2007 के 4 जून, 2012 को महादेव ने वस्त्रारता राज्य सरकार के भाषा III. खंड 4 में प्रकटित संलग्नित वैधता प्राप्त करने के लिए वेबसाइट परिवर्तन 2007 के निर्माण और तीन संलग्नित करती है —

2. भारतीय वैदिकीयक अधिनियम 1948 के खंड 20 द्वारा प्राप्त स直营ित ध्वनि के प्रयोग करते हुए, भारतीय राष्ट्र परिषद खंड 20 के बाद-खंड 2 की भत्ता (अ) तथा (ब) में ववासितारता राज्य सरकार में परमान के बाद तथा भारतीय सरकार की पूर्व सीईटी द्वारा भारत के निर्णय 10 जिनवेर, 2007 के वरिष्ठदार्व सरकार के भाषा III. खंड 4 में प्रकटित घूम संलग्नित वैधता प्राप्त करने के लिए वेबसाइट परिवर्तन 2007 के 25 अगस्त, 2011 को परमान के असंवरण सरकार के खंड 3, भाषा 4 में प्रकटित संलग्नित वैधता प्राप्त करने के लिए वेबसाइट परिवर्तन 2007 के निर्माण और तीन संलग्नित करती है —

3. शीर्ष (III) वैधता की लोकतन्त्री के बीच पूरे 2 की भविष्य की प्रवृत्ति में एकत्रित "सैनिकों" शब्द के स्थान पर वहाँ कही नहीं समझा है यहाँ भाषा 1 में संलग्नित किया जाएगा।

गर्भात्म (लोकोक्षणी) सं/एप. के आयुक्त, कार्यालयीत राज्य

[विशेषण-III/ए/वस्त्रारता/83/11]

लेख फ्राम: भूमि विनियोग तथा भारतीय दौर वरिष्ठ ववासितारता लेखात्मक प्राप्त करने के लिए वेबसाइट परिवर्तन 2007 के भवानी सरकार के भाषा III. खंड 4 (a) में 10 जिनवेर, 2007 को प्रकटित किये गए हैं जिसे विशेष निर्देश 11.1.2008, 29.10.2010, 25.11.2011, 30.11.2011, 11.12.2012 द्वारा राज्यसरकार अधिनियम 2007 द्वारा वापसित किया गया।

DENTAL COUNCIL OF INDIA
NOTIFICATION
New Delhi, the 24th June, 2013

No. D.D.-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 4.5 + 6 months Paid Rotatory Internship or 5-year duration course, as the case may be, as per Revised BDS Course (4th Amendment) Regulations, 2011, shall be deemed as part-equivalent with 4½-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 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 “2012” be read as “2014”.

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 (5th Amendment) Regulations, 2011, published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 25th August 2011, to 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. DhHA, Oftg. Secy

[ADVT-III/411x98/13]

अभाव राष्ट्रीय विश्वविद्यालय

भारत सरकार, भारतीय संस्कृति समिति

उपाध्यक्ष: डॉ. श्री सत्यश्री मंगलदेव दत्त

लिखित संबंधीतता निर्णय

सभी विद्यालयों के लिए सदस्यता स्थापना (साधन पंजीकरण) निर्देशन, 2013 में निर्माण की गई है।

(3) कानूनी स्थापना में इसे स्थापना की शर्ति दौरे दे सकते हैं।

2 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

3 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

4 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

5 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

6 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

7 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

8 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

9 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

10 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

11 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

12 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

13 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

14 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

15 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

16 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

17 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

18 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

19 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

20 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

21 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --

22 सदस्यता क्रिएशन विभाग के अनुसार, सदस्य स्थापना की शर्ति दौरे दे सकते हैं। तो --
EMPLOYEES' STATE INSURANCE CORPORATION

Annexed-38/2014, the 17th April 2015

No. U-16/80/2000/ES/RT/3740/P/PMR/BMC/DD.M. Khalsa/09—In pursuance of resolution passed by ESI Corporation at its meeting held on 25.04.1991 containing upon the Director General the power of Corporation under regulation 165 of the ESI (General) regulations, 1950 and such power further delegated to me vide Director General order on File No. Pr File-No/17/1/2/2000-PMR/(Med.) dated 04.02.2008. I hereby authorized the following doctors to function as Medical Authority at a monthly remuneration in accordance with norms w.e.f. The dates given below for one year or till a full time Medical Referee joins, whichever is earlier, for centres as stated below for areas allocated by unassigned, for the purpose of medical examination of line of potion and grant of further certification to them, when the correctness of the original certificate is in doubt.

Name    Centre    Name of Centre/Place/Dist/State
Dr. Darshamandeep M. Khalsa 03.05.2015 to 02.05.2016 Baroda, Gujarat

SANT RAM
State Medical Commissioner

DENTAL COUNCIL OF INDIA

New Delhi, the 27th April 2013

No DE-97(1)-2013 - 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 principle 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 Revised BDS Course, (Amendment) Regulations, 2013.
   (ii) They shall come into force on the date of their publication in the Official Gazette.

In Revised BDS Course Regulations, 2007, the following insertion/modifications/deletions/substitutions, shall be as indicated therein:

1. In the existing Regulations under heading mentioned as "EXAMINATIONS", sub-heading "SCHEDULE: Examinations" and sub-heading "1. B.D.S. Examination," the existing clause "Any student who does not clear the 1st year BDS examination in all the subjects within 3 years from the date of admission shall be discharged from the course." Substituted by the following clause that—

"Any student who does not clear the BDS Course in all the subjects within a period of 5 years, including one year compulsory Residency paid Internship from the date of admission shall be discharged from the course."

S.K. GUHA
Gen. Secretary
Dental Council of India

Foot Note: The Principal Regulations namely, "Revised BDS Course Regulations, 2007" were published in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10th September 2007 and amended vide Notification (i) dated 07.05.2008 (ii) dated 27.10.2010 (iii) dated 23.06.2011 (iv) dated 6.12.2011 (v) dated 31.03.2012 (vi) dated 24.06.2013

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भारत का राजपत्र
The Gazette of India

EXTRAORDINARY
भाग III—खण्ड 4
PART III—Section 4
प्रकाशित से प्रकाशित
PUBLISHED BY AUTHORITY

भारतीय सरकार
संविधान अधिनियम
जारी है कि, 12 जुलाई, 2017


1. यापू दोरी और वितरण:
   (i) इस विनियम को संरक्षित श्रेणी I-ए में, अधिनियम (अपनाय संबंध) विनियम, 2017 का अंश है।
   (ii) ये सरकारी राजस्व में प्रकाशित की गई विनियम से प्रति होगा।

2. “बुध दिनों में एकदिवसीय स्थिरता के लिए विनियम 2007” के अन्तर्गत धीरेरेखा प्रवेश, श्रम और राजश्रेणी की प्रवेश, प्रवेश, परमाणु और प्रवेश श्रेणी में प्रवेश करने के लिए अन्तर दिनों में विनियम अधिनियम जारी होगा।

3. यथा पूर्वक से श्रेणी—2 के अन्तरां बाग-III कल्लों का प्रवेश ने विनियम अधिनियम जारी होगा।

(1) यह समान एकत्रित (कार्यक्षेत्र)

1. सभी नव विस्तार संस्थाओं में श्रेणी-1-ए में, प्रवेश के लिए शास्त्रीय राजस्व सह-अवसर परीक्षा की धीरेरेखा पूरी से आवश्यक रूप से राजस्व परामाणु (कार्यक्षेत्र) होगी।

2. नविनियम अधिनियम और संरक्षण के अन्तर्गत स्थापित क्षेत्र नक्सल से विद्युत संचार, विविध देशों में श्रेणी-1-ए में, सीटों और संरक्षित दर्जों के लिए 15% कोटा सीटों को कार्यक्षेत्र के लिए वित्तीय संचालन स्वाभाविक, स्वाभाविक और परिषद् कल्लों पर बांटना, भारत सरकार प्रतिस्पर्धा प्रवेशित होगी।

3. यथा सरकार द्वारा विस्तारित अपने संचालक और खाने/फार्म नक्सल क्षेत्र के विधान परमाणु अधिनियम के द्वारा स्थापित वित्तीय संचालन रुपरेखा और संस्थान क्षेत्र के विधान परमाणु अधिनियम के द्वारा स्थापित वित्तीय संचालन रुपरेखा, रुपरेखा, अन्य और संचालन अपने संचालन परमाणु अधिनियम के द्वारा स्थापित रुपरेखा के लिए कार्यक्षेत्र राजस्व सह-अवसर कल्लों की जारी होगी।
DENTAL COUNCIL OF INDIA
AMENDMENT NOTIFICATION

New Delhi, the 12th July, 2017

No. DE-87/(1)(H)-2017.—In exercise of the powers conferred upon the Dental Council of India under 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 and notified in Part III, Section 4 of the Gazette of India, Extraordinary, dated 10.9.2007:—

1. Short title and commencement:—

(i) These Regulations may be called the Revised BDS Course (8th Amendment) Regulations, 2017.

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

2. Under the heading “REGULATION FOR THE DEGREE OF BACHELOR OF DENTAL SURGERY, 2007” the heading ‘ADMISSION, SELECTION, AND MIGRATION’ the title shall be read as ‘ADMISSION, SELECTION, COUNSELLING AND MIGRATION’.

3. In heading 2 above, under clause II. ‘Selection of Students’ the following shall be added:—

II. A Common Counselling:

1 There shall be a common counselling for admission to BDS course in all dental educational institutions on the basis of merit list of the National Eligibility-cum-Entrance Test.

2 The designated authority for counselling for the 15% All India Quota seats of the contributing States and all BDS seats of Dental Education Institutions of the Central Government, universities established by an Act of Parliament and the Deemed Universities shall be the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India.

3 The counselling for admission to BDS course in a State/Union Territory, including, Dental Education Institutions established by the State Government, University established by an Act of State/Union Territory Legislature, Trust, Society, Minority Institutions shall be conducted by the State/Union Territory Government.

4 In case any dispute arises on such common counselling, the respective State Government shall refer the matter to the Central Government and its decision shall be final, in this regard.

Dr. SABYASACHI SAHA, Secy.

[ADVT.-III/4/Exty./163/17]

Foot Note: The Principal Regulation 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 notification dated 11.01.2008, 29.10.2010, 25.08.2011, 09.12.2011, 01.05.2012, 24.06.2013, 23.05.2015.

RAKESH SUKUL

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