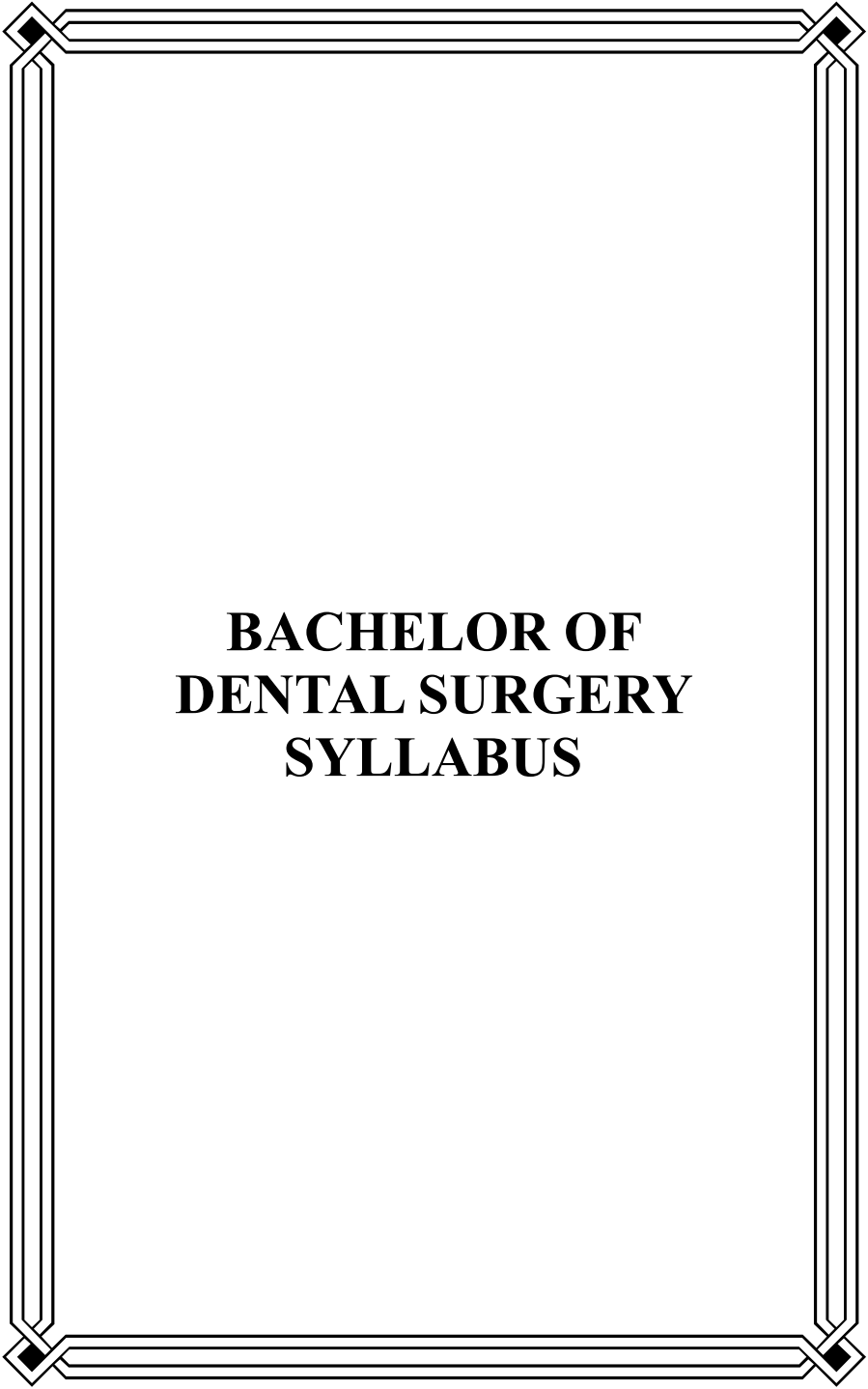


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**BACHELOR OF
DENTAL SURGERY
SYLLABUS**

1. INTRODUCTION

B.D.S stands for the Bachelor of Dental Surgery, this degree is conferred by the Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune and is governed by the Dental Council of India. The primary act governing this degree was passed in 1948, 'Act' means the Dentists Act, 1948 (16 of 1948).

2. 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 the 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 programs existing in the country.

ATTRIBUTES:

The attributes of a graduating student are dealt under three headings:

- (a) Knowledge and understanding
- (b) Skills and
- (c) Attitudes.

(A) KNOWLEDGE AND UNDERSTANDING:

The graduate acquires 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 and be able to evaluate and analyze scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also bearing on physical and social well-being of the patient.
3. Adequate knowledge of clinical disciplines and methods which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of dentistry.

4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of the constitution, biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health in so far as it affects dentistry.

(B) SKILLS :

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

1. Able to 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. Acquire the skill to prevent and manage complications if encountered while carrying out various surgical and other procedures.
3. Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help prevent oral diseases where possible.
5. Competent in the control of pain and anxiety among the patients during dental treatment.

(C) ATTITUDES:

A graduate develops during the training period the following attitudes.

1. Willing to apply the current knowledge of dentistry in the best interest of the patients and the 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 Programs to update the knowledge and professional skill from time to time.
5. To help and participate in the implementation of the national oral health policy.

RECOMMENDATIONS:

1. The undergraduate course involves organization of teaching programs 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 pre-clinical to clinical phase. Collaboration should be encouraged between teachers of basic sciences, dental sciences and clinical subjects.
2. The undergraduate dental course consists of three main components. The first component consists subjects common to medicine and dentistry like anatomy, physiology, biochemistry and behavioral 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 behavior, 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 behavioral 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 emphasized along with treatment planning before actual treatment procedures are undertaken.

In addition to acquiring the 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 the 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 should 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 the society as a whole, needs to be stressed along with the knowledge and treatment skills gained. Instruction in public health dentistry should emphasize 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, behavioral, 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 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 facility 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 specialties. The teaching and training methodology should be such that the students are motivated to think and indulge in self-study rather than playing a passive role. Provision should be made in the daily schedules for adequate time for reading. Proper library facilities with adequate timings and seating capacity should be made available in all dental colleges. Adequate audio-visual aids, like video tapes, computer assisted learning aids, Medline and internet facilities should be provided in all dental colleges to encourage self-study. Students should be encouraged to participate in simple research project work and the system of electives, spending some stipulated amount of time in another dental college within the country or outside should be given a serious consideration by all the dental institutions.
8. The society has a right to expect high standards and quality of treatment. Hence, it is mandatory and a social obligation for each dental surgeon to upgrade his or her knowledge and professional skills from time to time. The Dental Council of India strongly recommends that facilities and proper infrastructure should be developed to conduct the continuous professional education programs 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 continuing dental education in each of the dental colleges. In addition, the practitioners should be encouraged to attend conferences of state and national level, workshops, seminars and any other such activity which the Council feels is suitable to upgrade the knowledge and skills.
9. The undergraduate curriculum should stress the significance of infection and cross- infection control in dental practice. Aspects like sources of infection, measures to be adopted both general and specific for control particularly the HIV and hepatitis should be properly incorporated into the curriculum so that the graduates are aware of its significance and follow it in their practice.
10. The 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.

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 recognized 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 and 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 behavioral 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 and 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 familiarize with clinical set-up and working. The period of instruction in the clinical subjects shall be not less than three years full time. During this, 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 recognize or diagnose various dental and oral diseases, to undertake general dental treatment, advise on the provision of specialized treatment available and finally advise the patient on prevention. The student should also understand the relationship between oral and systemic diseases.

5. The general medicine and surgery training should provide sufficient knowledge on human disease to enable the student to understand its manifestations as relevant to the practice of dentistry. This requires clinical teaching on patients and shall be carried out in in-patient and outpatient medical departments and specialist clinics.

This clinical instruction should enable the student to understand and perhaps diagnose common systemic diseases which have relevance to dental practice, by adopting a systematic approach of history taking and clinical examination. The student should also realize the significance of various general and special investigations in the diagnosis of diseases. The ability to recognize physical and mental illness, dealing with emergencies, effective communication with patients, interaction with various professional colleges 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 (pediatric), 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 should be competent on graduation to carry out all routine general procedures.

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 anesthesia. The value of behavioral methods of anxiety management should be emphasized. The students should also have the practical experience in the administration of intra-muscular and intravenous injections. Knowledge of pain mechanisms and strategies to control post-operative pain is essential for practice of dentistry.
10. All students will 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 the recent times, the subjects of esthetic dentistry, oral implantology, behavioral sciences and forensic odontology have assumed great significance. Hence, the Council recommends that these four specialties 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 and 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 and Maxillofacial Surgery, Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology and Periodontology and Oral Implantology. The instruction in behavioral 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 and Preventive Dentistry and Pedodontics and Preventive Dentistry. Forensic Odontology will be a part of Oral Pathology and 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 and skills in day to day practice

Apply principles of ethics

1. Analyze the outcome of treatment
2. Evaluate the scientific literature and information to decide the treatment
Participate and involve in professional bodies.
3. Self-assessment and willingness to update the knowledge and skills from time to time
Involvement in simple research projects
Minimum computer proficiency to enhance knowledge and skills
Refer patients for consultation and specialized treatment
Basic study of forensic odontology and geriatric dental problems

PRACTICE MANAGEMENT

Evaluate practice location, population dynamics and reimbursement mechanism

Co-ordinate and supervise the activities of allied dental health personnel

Maintain all records Implement and monitor infection control and environmental safety programs

Practice within the scope of one's competence

COMMUNICATION AND 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 Able to order appropriate investigations

Patient Care – Treatment Recognition and initial management of medical emergencies that may occur during Dental treatment.

Perform Basic Cardiac Life Support
Management of pain including post-operative
Administration of all forms of local anaesthesia
Administration of intramuscular 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 intraoral radiographs
Various kinds of restorative procedures using different materials available
Simple endodontic procedures
Removable and fixed prosthodontics
Various kinds of periodontal therapy.

ORAL MEDICINE AND 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, radiations 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 AND 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 parents in regard to various treatment modalities including different facets of preventive dentistry.
- Able to treat dental diseases occurring in child patient.
- Able to manage the physically and mentally challenged disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS

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

PERIODONTOLOGY

- Diagnose the patients periodontal problem, plan and perform appropriate periodontal treatment
- Competent to educate and motivate the patient

- Competent to perform thorough oral prophylaxis, subgingival scaling, root planning and minor periodontal surgical procedures
- Give proper post treatment instructions and do periodic recall and evaluation
- Familiar with concepts of osseointegration and basic surgical aspects of implantology

PROSTHODONTICS AND CROWN AND BRIDGE

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

CONSERVATIVE DENTISTRY AND ENDODONTICS

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

ORAL AND 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 sterilization
- Should be competent in the extraction of the teeth under both local and general anaesthesia
- Competent to carry out certain minor oral surgical procedure under LA like trans-alveolar extraction, frenectomy, dentoalveolar 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 the inpatient management

PUBLIC HEALTH DENTISTRY

- Apply the principles of health promotion and disease prevention
- Have knowledge of the organization 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 and hygiene instructions, topical fluoride therapy and fissure sealing.
- Educate patients concerning the etiology and prevention of oral disease and encourage them to assure responsibility for their oral health.

3. PROGRAM OUTCOMES:

NAME OF PROGRAM : B.D.S

PO No	STATEMENT
	The graduate at the end of the program will have adequate:
PO- 1	Knowledge and Skills
PO- 2	Planning and Problem-Solving Abilities
PO- 3	Communication
PO- 4	Research Aptitude
PO- 5	Professionalism and Ethics
PO- 6	Leadership
PO- 7	Societal Responsibilities
PO- 8	Environment and Sustainability
PO- 9	Lifelong Learner

4. COURSE CODES

Sr. No.	Year	Subject	Course code
1	1 st B.D.S	Gen. Human Anatomy including Embryology and Histology	BD- 101
2		General Human Physiology and Biochemistry	BD- 102
3		Dental Anatomy, Embryology and Oral Histology	BD- 103
4	2 nd B. D.S	Gen. Pathology and Microbiology	BD- 201
5		Gen. & Dental Pharmacology & Therapeutics	BD- 202
6		Dental Materials	BD- 203
7	2 nd Year	Pre- Clinical Prosthodontics	BD- 204
8		Pre- Clinical Conservative Dentistry	BD- 205
9	3 rd Year	General Medicine	BD- 301
10		General Surgery	BD- 302
11		Oral Pathology	BD- 303
12	4 th year 1 st Sem	Public Health Dentistry	BD- 401
13		Periodontology	BD- 402
14		Orthodontics and Dentofacial Orthopaedics	BD- 403
15		Oral Medicine and Radiology	BD- 404
16	4 th year 2 nd Sem	Oral and Maxillofacial Surgery	BD- 405
17		Conservative Dentistry and Endodontics	BD- 406
18		Prosthodontics and Crown and Bridge	BD- 407
19		Pedodontics and Preventive Dentistry	BD- 408

5. REGULATIONS

5.1 ELIGIBILITY FOR ADMISSION

ADMISSION, SELECTION, COUNSELLING AND MIGRATION:-

- I. Admission to the Dental Course – Eligibility Criteria: No Candidate shall be allowed to be admitted to the Dental Curriculum of first Bachelor of Dental Surgery (BDS) Course until:
1. He/she shall complete the age of 17 years on or before 31st December, of the year of admission to the BDS course;
The following has been inserted, and the existing sub-regulation “2.” is re-numbered as “3”., in terms of (5th Amendment) notification published on 31st May, 2012 in the Gazette of India.
 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.”
The following has been inserted in terms of (5th Amendment) notification published on 1st June, 2012 in the Gazette of India
 3. In order to be eligible to take National Eligibility-cum-Entrance Test 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; Note: Where the course content is not as prescribed for 10+2 education structure of the National Committee, the candidates will have to undergo a period of one year preprofessional training before admission to the dental colleges; or
 - b. The intermediate examination in science of an Indian University/Board or other recognized examining body with Physics, Chemistry and Biology which shall include a practical test in these subjects and also English as a compulsory subject; or

- c. The pre-professional/pre-medical examination with Physics, Chemistry and Biology, after passing either the higher secondary school examination, or the pre-university or an equivalent examination. The pre-professional / pre-medical examination shall include a practical test in Physics, Chemistry and Biology and also English as a compulsory subject; or
- d. The first year of the three years degree course of a recognized university, with Physics, Chemistry and Biology including a practical test in three subjects provided the examination is a "University Examination" and candidate has passed 10+2 with English at a level not less than a core course; or e. B.Sc. examination of an Indian University, provided that he/she has passed the BSc. examination with not less than two of the following subjects Physics, Chemistry, Biology (Botany, Zoology) and further that he/she has passed the earlier qualifying examination with the following subjects-Physics, Chemistry, Biology and English. or f. Any other examination which, in scope and standard is found to be equivalent to the intermediate science examination of an Indian University/Board, taking Physics, Chemistry and Biology including practical test in each of these subjects and English.

The following have been added under the heading "Admission to the Dental Course- Eligibility Criteria" after sub-clause 2 (f), in terms of (2nd Amendment) notification published on 29th October, 2010 in the Gazette of India.

"3. 3% seats of the annual sanctioned intake capacity shall be filled by candidates with locomotory disability of lower limbs between 50% to 70% Provided that in case any seat in this 3% quota remains unfilled on account of unavailability of candidates with locomotory disability of lower limbs between 50% to 70% then any such unfilled seat in this 3% quota shall be filled up by persons with locomotory disability of lower limbs between 40% to 50% before they are included in the annual sanctioned seats for General Category candidates.

Provided further that this entire exercise shall be completed by each Dental College/Institution as per the statutory time schedule for admissions and in no case any admission will be made in the BDS course after 30th of September." The following has been deleted in terms of (5th Amendment) notification published on 1st June, 2012 in the Gazette of India

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

II. Selection of Students:

The selection of students to dental college shall be based solely on merit of the candidate and for determination of the merit, the following criteria be adopted uniformly throughout the country:

The following has been deleted in terms of (5th Amendment) notification published on 1st June, 2012 in the Gazette of India.

- 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 of 50th percentile in ‘National Eligibility cum-Entrance Test to BDS course’ held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes, Other Backward Classes, the minimum marks shall be at 40th percentile. In respect of candidates with locomotory disability of lower amendments, the minimum marks shall be at 45th percentile. The percentile shall be determined on the basis of highest marks secured in the All-India common merit list in “National Eligibility-cum-Entrance Test for admission to BDS course.” Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to BDS Course, the Central Government in consultation with Dental Council of India may at its discretion lower the minimum marks required for admission to BDS Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said academic year only.
- iii. The reservation of seats in dental colleges for respective categories shall be as per applicable laws prevailing in States/Union Territories. An all India merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in National Eligibility-cum-Entrance Test and candidates shall be admitted to BDS course from the said lists only.
- iv. No Candidate who has failed to obtain the minimum eligibility marks as prescribed in Clause (ii.) above shall be admitted to BDS course in the said academic year.

- v. All admissions to BDS course within the respective categories shall be based solely on marks obtained in the National Eligibility-cum-Entrance Test.
- vi. To be eligible for admission to BDS Course, a candidate must have passed in the subjects of Physics, Chemistry, Biology/Biotechnology and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology/Biotechnology at the qualifying examination as mentioned in Sub-regulation 2 of Regulation I and in addition must have come in the merit list of “National Eligibility-cum-Entrance Test” for admission to BDS course. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other Backward Classes the minimum marks obtained in Physics, Chemistry and Biology/Bio-technology taken together in qualifying examination shall be 40% instead of 50%. In respect of candidates with locomotory disability of lower limbs in terms of sub-regulation 4, after the commencement of these amendments, of Regulation 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 Uttar Pradesh 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 fulfills 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. The following has been added under clause II ‘Selection of Students’, in terms of (8th Amendment) notification published on 27th July, 2017 in the Gazette of India:

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.

5.2 REGISTRATION

A candidate on admission to the BHMS programme shall apply to the university for registration and submit the following documents in original and 3 sets of attested copies of the following:

- Application Form duly filled
- Original NEET mark list
- Original Higher Secondary Examination and SSLC mark list and certificate
- Medical Fitness certificate
- Address Proof
- Nationality Certificate
- College Leaving certificate
- Aadhar Card
- Domicile certificate
- Caste Certificate and Caste Validity and Non creamy Layer certificate (for Category students)
- Date of birth certificate
- Gap affidavit (if applicable)

5.3 DURATION OF THE COURSE:

The following provision has been substituted to the extent indicated hereunder in terms of (3rd Amendment) notification published on 25th August, 2011 in the Gazette of India and the same is as under:-

The undergraduate dental programme leading to BDS Degree shall be of 4 (four) Academic years with 240 teaching days in each academic year, plus one year paid rotating Internship in a dental college. Every candidate will be required, after passing the final BDS Examination to undergo one year paid rotating internship in a dental college. The detailed curriculum of Dental Internship Programme is annexed as Annexure-A. The internship shall be compulsory and BDS Degree shall be granted after completion of one-year paid Internship.

5.4 : MEDIUM OF INSTRUCTION

The medium of instruction will be English.

5.5 PROGRAM OUTLINE:

Year	Subject of study	Subject of the examination
First year	General Human Anatomy Including Embryology, Osteology and Histology	General Human Anatomy Including Embryology, Osteology and Histology
	General Human Physiology, Biochemistry, Nutrition and Dietetics	General Human Physiology, Biochemistry, Nutrition and Dietetics
	Dental Anatomy and Dental Histology	Dental Anatomy and Dental Histology
Second year	General Pathology and Microbiology	General Pathology and Microbiology
	Dental Pharmacology and Therapeutics	Dental Pharmacology and Therapeutics
	Dental Materials	Dental Materials
	Pre-Clinical Prosthodontics	Pre-Clinical Prosthodontics
	Pre-Clinical Conservative Dentistry	Pre-Clinical Conservative Dentistry
Third year	General Medicine	General Medicine
	General Surgery	General Surgery
	Oral Pathology and Microbiology	Oral Pathology and Microbiology
	Oral Medicine and Radiology	
	Pediatric And Preventive Dentistry	
	Orthodontics and Dental Orthopedics	
	Periodontology	
	Oral and Maxillofacial Surgery	
	Conservative Dentistry and Endodontics	
	Prosthodontics and Crown and Bridge	

Year	Subject of study	Subject of the examination
	Public Health Dentistry	
Final year-1st semester	Oral Medicine and Radiology	Oral Medicine and Radiology
	Orthodontics and Dental Orthopedics	Orthodontics and Dental Orthopedics
	Periodontology	Periodontology
	Public Health Dentistry	Public Health Dentistry
	Oral and Maxillofacial Surgery	
	Conservative Dentistry and Endodontics	
	Prosthodontics and Crown and Bridge	
	Pediatric and Preventive Dentistry	
Final year-2nd semester	Oral and Maxillofacial Surgery	Oral and Maxillofacial Surgery
	Conservative Dentistry and Endodontics	Conservative Dentistry and Endodontics
	Prosthodontics and Crown and Bridge	Prosthodontics and Crown and Bridge
	Pediatric and Preventive Dentistry	Pediatric and Preventive Dentistry

5.6 TEACHING HOURS:

Subjects	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General Human Anatomy Including Embryology, Osteology and Histology.	100	175		275
General Human Physiology	120	60		180
Biochemistry	70	60		130
Dental Materials	80	240		320
Dental Anatomy Embryology and Oral Histology	105	250		355
Dental Pharmacology and Therapeutics	70	20		90
General Pathology Microbiology	55	55		110
	65	50		115

Subjects	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General Medicine	60		9	150
General Surgery	60		90	150
Oral Pathology and Microbiology	145	130		275
Oral Medicine and Radiology	65		170	235
Pediatric and Preventive Dentistry	65		170	235
Orthodontics and dental Orthopedics	50		170	220
Periodontology	80		170	250
Oral and Maxillofacial Surgery	70		270	340
Conservative Dentistry and Endodontics	135	200	370	705
Prosthodontics and Crown and Bridge	135	300	370	805
Public Health Dentistry including Lectures on Tobacco Control and Habit Cessation	60		200	260
Total	1590	1540	1989	5200

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

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

IInd B.D.S

Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
General and Dental Pharmacology and therapeutics	70	20		90
General Pathology	55	55		110
Microbiology	65	50		115
Dental Materials	60	200		260
Oral Pathology and Oral Microbiology	25	50		75
Pre-Clinical Prosthodontics and Crown and Bridge	25	200		225
Pre-Clinical Conservative Dentistry	25	200		225
Total	325	775		1100

IIIrd B.D.S

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

IVth B.D.S

The following has been substituted in terms of (3rd Amendment) notification published on 25th August,2011 in the Gazette of India and the same is as under:-

Subjects	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
Prosthodontics	80		300	380
Oral Medicine	45		100	145
Periodontics	50		100	150
Public Health	60		200	260
Conservative Dentistry	80		300	380
Oral Surgery	50		200	250
Orthodontics	30		100	130
Pedodontics	45		100	145
Total	440		1400	1840

5.7 ATTENDANCE AND MIGRATION

- (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.
- (iii) Migration from one dental college to other 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 ground*, provided following criteria are fulfilled.
- (iv) Routine migrations on other ground shall not be allowed.
- (v) Both the colleges, i.e. one at which the student is studying at present and one to which migration is sought, are recognized by the Dental Council of India.
- (vi) The applicant candidate should have passed first professional BDS examination.

- (vii) 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.
- (viii) The applicant candidate must submit an affidavit stating that he/she will pursue 240 days of prescribed study before appearing at 2nd professional Bachelor of Dental Surgery (BDS) examination at the transferee dental college, which should be duly certified by the Registrar of the concerned University in which he/she is seeking transfer. The transfer will be applicable only after receipt of the affidavit.
- (ix) **Note 1:**
 - (i) Migration is permitted only in the beginning of 2nd year BDS Course in recognized Institution.
 - (ii) All applications for migration shall be referred to Dental Council of India by college authorities. No Institution/University shall allow migrations directly without the prior approval of the Council.
 - (iii) Council reserved 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.
- (x) **Note 2:** *Compassionate ground criteria:
 - (i) Death of supporting guardian.
 - (ii) Disturbed conditions as declared by Government in the Dental College area.

5.8 UNIVERSITY EXAMINATION

WRITTEN EXAMINATION:

1. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum marks of 70.
2. In the subjects of Physiology and Biochemistry and Pathology and 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 like essay, 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 to be provided. This can include clinical procedures, laboratory experiments, spotters etc. Evaluation must be made objective and structured. The method of objective structured clinical examinations should be followed. This will avoid examiner bias because both the examiner and the examinee are given specific instructions on what is to be observed at each station.
2. **Records/ Logbooks:** 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 finalized 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 timetable for the practical examinations. This scheme should be brought to the notice of the external examiner as and when the examiner reports. The practical and clinical examinations should be evaluated by two examiners of which one shall be an external examiner appointed from other universities preferably outside the State. Each candidate should be evaluated by each examiner independently and marks computed at the end of the examination.

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

MARKS DISTRIBUTION IN EACH SUBJECT:

Each subject shall have a maximum of 200 marks.

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

Practical and Viva Voce Only in University Examination

Pre-clinical Prosthodontics

Pre-clinical Conservative Dentistry

Internal Assessment - 20

Practical - 60

Viva Voce - 20

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 practical's 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 Preclinical 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 up to a maximum of 5 marks may be awarded to students who have failed only in one subject but passed in all other subjects.

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

1. **Re-totaling:** The University on application and remittance of a stipulated fee to be prescribed by the university, shall permit a recounting or opportunity to recount the marks received for various questions in an answer paper/ papers for theory of all subjects for which the candidate has appeared in the university examination. Any error in addition of the marks awarded if identified should be suitably rectified.
2. **Re-evaluation:** Re-evaluation of theory papers in all years of study of the BDS course may be Permissible by the university on application and remittance of a prescribed fee. Such answer script shall be re-evaluated by not less than two duly qualified examiners and the average obtained shall be awarded to the candidate and the result accordingly reconsidered. However, in those universities where double evaluation provision exists, this provision of re-evaluation will not be applicable.

6.0. INTERNSHIP TRAINING

1. The duration of Internship shall be one year.
2. All parts of internship shall be done in a Dental College duly recognized/approved by the Dental Council of India for the purpose of imparting education and training to Dental graduates in the country.
3. The Interns shall be paid stipendiary allowance during the period of an Internship not extending beyond a period of one year.
4. The internship shall be compulsory and rotating as per the regulations prescribed for the purpose.
5. The degree - BDS shall be granted after completion of internship.

Determinants of Curriculum for internship for Dental Graduates:

The curricular contents of internship training shall be based on.

- i) Dental health needs of the society.
- ii) Financial, material and manpower resources available for the purpose.
- iii) National Dental Health Policy.
- iv) Socio-economic conditions of the people in general.
- v) Dental service to be a part of the existing primary health care concept, for the delivery of health services.
- vi) Task analysis of what graduates in Dentistry in various practice settings, private and government service actually perform.

- vii) Epidemiological studies conducted to find out prevalence of different dental health problems, taking into consideration the magnitude of dental problems, severity of dental problems and social disruption caused by these problems.

Objectives:

- A. To facilitate reinforcement of learning and acquisition of additional knowledge:-
 - a) Reinforcement of knowledge.
 - b) Techniques and resources available to the individual and the community; Social and cultural setting.
 - c) Training in a phased manner, from a shared to a full responsibility.
- B. To facilitate the achievement of basic skills: attaining competence Vs. maintaining competence in: -
 - i) History taking.
 - ii) Clinical Examination.
 - iii) Performance and interpretation of essential laboratory data.
 - iv) Data analysis and inference.
 - v) Communication skills aimed at imparting hope and optimism in the patient.
 - vi) Attributes for developing working relationship in the Clinical setting and Community teamwork.
- C To facilitate development of sound attitudes and habits: -
 - i) Emphasis on individual and human beings and not on disease / symptoms.
 - ii) Provision of comprehensive care, rather than fragmentary treatment.
 - iii) Continuing Dental Education and Learning of accepting the responsibility.
- D To facilitate understanding of professional and ethical principles: -
 - Right and dignity of patients.
 - Consultation with other professionals and referral to seniors / institutions.
 - Obligations to peers, colleagues, patients, families and Community.
 - Provision of free professional services in an emergent situation.
- E To initiate individual and group action, leading to disease prevention and dental health promotion, at the level of individual families and the community.

Content (subject matter)

The compulsory rotating paid Dental Internship shall include training in Oral Medicine and Radiology; Oral and Maxillofacial Surgery; Prosthodontics; Periodontics; Conservative Dentistry; Pedodontics; Oral Pathology and Microbiology; Orthodontics and Community Dentistry.

General Guidelines:

1. It shall be task-oriented training. The interns should participate in various institutional and field programs and be given due responsibility to perform the activities in all departments of the Dental Colleges and associated Institutions.
2. To facilitate achievement of basic skills and attitudes the following facilities should be provided to all dental graduates:
 - i) History taking, examination, diagnosis, charting and recording treatment plan of cases.
 - ii) Presentation of cases in a group of Seminar.
 - iii) Care and sterilization of instruments used.
 - iv) Performance and interpretation of essential laboratory tests and other relevant investigations.
 - v) Data analysis and inference.
 - vi) Proper use of antibiotics, anti-inflammatory and other drugs, as well as other therapeutic modalities.
 - vii) Education of patients, their relatives and community on all aspects of dental health care while working in the institution as also in the field.
 - viii) Communication aimed at inspiring hope, confidence and optimism.
 - ix) Legal rights of patients and obligations of dental graduate under forensic jurisprudence.

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

2 Oral and Maxillofacial surgery

A. The Interns during their posting in oral surgery shall perform the following procedures:

1.	Extractions	50
2.	Surgical extractions	2
3.	Impactions	2
4.	Simple Intra Maxillary Fixation	1
5.	Cysts enucleations	1
6.	Incision and drainage	2
7.	Alveoloplasties, Biopsies and Frenectomies, etc.	3

B. The Interns shall perform the following on Cancer Patients:

1. Maintain file work.
2. Do extractions for radiotherapy cases.
3. Perform biopsies.
4. Observe varied cases of oral cancers.

C. The internees shall have 15 days posting in emergency services of a dental/general hospital with extended responsibilities in emergency dental care in the wards. During this period, they shall attend to all emergencies under the direct supervision of oral surgeon during any operation:

1. Emergencies :

1. Toothache; (ii) trigeminal neuralgia; (iii) Bleeding from mouth due to trauma, post extraction, bleeding disorder or haemophilia; (iv) Airway obstruction due to fracture mandible and maxilla; dislocation of mandible; syncope or vasovagal attacks; ludwig's angina; tooth fracture; post intermaxillary fixation after general Anaesthesia.
2. Work in I.C.U. with particular reference to resuscitation procedures.
3. Conduct tutorials on medico-legal aspects including reporting on actual cases coming to casualty. They should have visits to law courts.

2. Prosthodontics :

The dental graduates during their internship posting in Prosthodontics shall make:-

1.	Complete denture (upper and lower)	2
2.	Removable Partial Denture	4
3.	Fixed Partial Denture	1
4.	Planned cast partial denture	1
5.	Miscellaneous-like reline/overdenture / repairs of Maxillofacial Prosthesis	
6.	Learning use of Face bow and Semi anatomic articulator technique	
7.	Crowns	
8.	Introduction of Implants	1

3. Periodontics :

D. The dental graduates shall perform the following procedures

1. Prophylaxis 15 Cases
2. Flap Operation 2 Cases
3. Root Planning 1 Case
4. Curettage 1 Case
5. Gingivectomy 1 Case
6. Perio-Endo cases 1 Case

E. During their one week posting in the community health centers, the interns shall educate the public in prevention of Periodontal diseases.

4. Conservative Dentistry

To facilitate reinforcement of learning and achievement of basic skills, the interns shall perform at least the following procedures independently or under the guidance of supervisors :

1. Restoration of extensively mutilated teeth 5 Cases
2. Inlay and onlay preparations 1 Case
3. Use of tooth coloured restorative materials 4 Cases
4. Treatment of discolored vital and non-vital teeth 1 Case
5. Management of dento alveolar fracture 1 Case
6. Management of pulp less, single-rooted teeth without periapical lesion. 4 Cases
7. Management of acute dento alveolar Infections 2 Cases
8. Management of pulp less, single-rooted teeth with periapical lesion. 1 Case
9. Non-surgical management of traumatised teeth during formative period.

5. Pedodontics and Preventive Dentistry

During their posting in Pedodontics 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 habit breaking appliances 1 Case

6. Oral Pathology and Microbiology

The interns shall perform the following:

1. History-recording and clinical examination 5 Case
2. Blood, Urine and Sputum examination 5 Case
3. Exfoliative Cytology and smears study 2 Case
4. Biopsy- Laboratory Procedure and reporting 1 Case

7. Orthodontics

A. The interns shall observe the following procedures during their posting in Orthodontics:

1. Detailed diagnostic procedures for 5 patients
2. Laboratory techniques including wire - bending for removable appliances, soldering and processing of myo-functional appliances.
3. Treatment planning options and decisions.
4. Making of bands, bonding procedures and wire insertions.
5. Use of extra oral anchorage and observation of force values.
6. Retainers.
7. Observe handling of patients with oral habits causing malocclusions.

The dental graduates shall do the following laboratory work:-

1. Wire bending for removable appliances and space maintainers including welding and heat treatment procedure - 5 Cases
2. Soldering exercises, banding and bonding procedures - 2 Cases
3. Cold-cure and heat-cure acrylisation of simple Orthodontic appliances - 5 Cases

8. Public Health Dentistry

1. The interns shall conduct health education sessions for individuals and groups on oral health public health nutrition, behavioral sciences, environmental health, preventive dentistry and epidemiology.
2. They shall conduct a short-term epidemiological survey in the community, or in the alternate, participate in the planning and methodology.
3. They shall arrange effective demonstrations of:
 - a) Preventive and interceptive procedures for prevalent dental diseases.
 - b) Mouth-rinsing and other oral hygiene demonstrations 5 Cases
 - c) Tooth brushing techniques 5 Cases
4. Conduction of oral health education programs at
 - a) School setting 2 Visits
 - b) Community setting 2 Visits
 - c) Adult education programs 2 Visits
5. Preparation of Health Education materials 5
6. Exposure to team concept and National Health Care systems:
 - a) Observation of functioning of health infrastructure.
 - b) Observation of functioning of health care team including multipurpose workers male and female, health educators and other workers.
 - c) Observation of at least one National Health Program:-
 - d) Observation of interlinkages of delivery of oral health care with Primary Health care.
 - e) Mobile dental clinics, as and when available, should be provided for these teachings.

10 Elective Posting

The Interns shall be posted for 15 days in any of the dental departments of their choice mentioned in the foregoing.

Organization of content:

The Curriculum during the 4 years of BDS training is subject based with more emphasis on learning practical skills. During one year internship the emphasis will be on competency-based, community oriented training. The practical skills to be mastered by the interns along with the minimum performance level are given under the course content of different departments of Dental Education. The supervisors should sending it that proper facilities are provided in all departments and attached institutions for their performance.

Specification of teaching activities:

Didactic lectures are delivered during the four years training in BDS. These shall be voided during the internship programme. Emphasis shall be on chair-side teaching, small group teaching and discussions tutorials, seminars, ward posting, laboratory posting, field visits and self-learning.

Use of Resource Materials:

Overhead projectors, slide projectors, film projectors, charts, diagrams, photographs, posters, specimens, models and other audiovisual aids shall be provided in all the Dental Colleges and attached institutions and field area. If possible, television, video and tapes showing different procedures and techniques to be mastered by the 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 all the interns must acquire necessary minimum skills required for carrying out day-to-day professional work competently. This can be achieved by maintaining records and performance data book by all interns. This will not only provide a demonstrable evidence; of the processes of training but more importantly, of the interns own acquisition of competencies as rotated to performance. It shall form a part of formative evaluation and shall also constitute a component of final grading of interns.

2. Summative Evaluation:

It shall be based on the observation of the supervisors of different departments and the records and performance data book maintained by the interns. Grading shall be done accordingly.

11. Rural Services

In the rural services, the student will have to participate in-

1. Community Health Monitoring programs and services which include Preventive, Diagnostic and corrective procedures
2. To create educational awareness about dental hygiene and diseases.
3. Conduction of Oral Health Education Programs at –
 - (a) School Setting- 5
 - (b) Community Setting - 5
 - (c) Adult Education Programme - 5
4. Compulsory setup of satellite clinics in remote areas - 1
5. Lectures to create awareness and education in public forums about the harmful effects of tobacco consumption and the predisposition to oral cancer – two Lectures per student.

Period of Postings

- 1 Oral Medicine and Radiology - 1 month
- 2 Oral and Maxillofacial Surgery - 1 ½ months
- 3 Prosthodontics - 1 ½ months
- 4 Periodontics - 1 month
- 5 Conservative Dentistry - 1 month
- 6 Pedodontics - 1 month
- 7 Oral Pathology and Microbiology - 15 days
- 8 Orthodontics - 1 month
- 9 Community Dentistry / Rural Services - 3 months
Elective - 15 days

**SYLLABUS COMBINED RESOLUTIONS
IMPLEMENTATION OF REVISED B.D.S REGULATIONS
FOR 4 YEAR B.D.S COURSE, 2011**

DCI Letter No.DE-130-2011, dated 26/08/2011

Dr. D. Y. Patil Vidyapeeth, Board of Management, vide notification No- BM-39-11, dated 05/12/2011.

DCI Notification in Gazette of India extraordinary No. DE-130-2011, dated 25/08/2011.

The Hon'ble Vice Chancellor is pleased to order the implementation of the "Revised DCI Regulations for the BDS course, 3rd amendment, 2011." This notification is valid for all students admitted from 2008-2009. The students appearing for final BDS exam shall be required to appear for the following subjects:

- 1 - Oral Medicine and Radiology
- 2 - Oral Surgery
- 3 - Periodontics
- 4 - Prosthodontics
- 5 - Conservative Dentistry
- 6 - Community Dentistry
- 7 - Orthodontics
- 8 - Pedodontics.

Syllabus split into must know (80%) and desirable to know (20%)

Passed by the Dr. D. Y. Patil Vidyapeeth, Board of Management, vide notification No- BM-21(i)-13, dated 17/08/2013.

- BM-08(iv)-14 dt 28/01/2014 Regarding changes in Prosthetic Dentistry MDS Exam Pattern
- BM-08(v)-14 dt 28/01/2014 Regarding changes in Internship Quota in Prosthetic Dentistry.
- BM-32-14(i) dt 18/07/2014 Regarding changes in syllabus.

REVISED INTERNSHIP PROGRAMME 2011

DCI Letter No.DE-130-2011, dated 26/08/2011.

Dr. D. Y. Patil Vidyapeeth, Board of Management, vide notification No- BM-15 (I) -12, dated 23/10/2012.

DCI Notification in Gazette of India extraordinary No. DE-130-2011, dated 25/08/2011. Annexure-A

SYLLABUS REVISION DONE FROM JANUARY 2019,

- Resolution No-BM-24 (vii) – 19 Curriculum enhancement by Prosthodontics
- Resolution No-BM-05 (vi) – 19 Bio-Ethics Syllabus for BDS (Clinical and Pre-Clinical) in following subjects

- 1 - Oral Medicine and Radiology
- 2 - Oral Surgery
- 3 - Periodontics
- 4 - Prosthodontics
- 5 - Conservative Dentistry
- 6 - Community Dentistry
- 7 - Orthodontics
- 8 - Pedodontics.
- 9 - Oral Pathology and Microbiology



I YEAR BDS

SECTION - 1
CHAPTER - 1

**1.1. GENERAL HUMAN ANATOMY INCLUDING EMBRYOLOGY,
HISTOLOGY AND OSTEOLOGY**

1.1.1 a AIM : To know the structure and organization of tissues, organs and apparatus in the human body.

1.1.1 b OBJECTIVES :

Knowledge and understanding: To understand the relationships between structure and function in the tissues and most organs in the human body.

SKILLS

The student shall gain perspective into the dissection processes of the human body.

ATTITUDES

The student shall learn to co-relate the anatomical structures with the body processes and pathologies.

1.1.1c OUTCOMES:

On successful completion of the program students will be able to:

- Describe in detail the structure and function of musculoskeletal, cardio-respiratory, nervous and other associated systems.
- Demonstrate advanced experiential knowledge and handling skills, in clinical examination of the musculoskeletal and nervous system.
- Demonstrate advanced experiential knowledge in laboratory and field-based exercise testing in athletic and non-athletic populations.
- Demonstrate an advanced knowledge of the diagnosis, biological basis, treatment and rehabilitation of exercise and sports related injuries, and common illnesses impacting on sports and exercise performance.
- Demonstrate a detailed knowledge and critical understanding of selected areas of sports and exercise medicine gained through independent research.
- Apply an empirical approach to problem solving.

1.1.2 SYLLABUS (Including Teaching Hours)

1. General Anatomy: Anatomical terms, planes, brief outline of different systems of body.
2. Regional anatomy of head and neck with osteology of bones of head and neck with emphasis on topics of dental and maxillofacial importance
3. General disposition of thoracic, abdominal and pelvic organs
4. Clinical anatomy: sites of intramuscular injections, intravascular injections, lumbar puncture
5. General Embryology and systemic embryology with reference to development of head and neck
6. Histology of basic tissues, head and neck structures and alimentary, respiratory, excretory systems, endocrine glands and gonads.
7. Medical genetics

I) MUST KNOW 80Hrs.

1) General Anatomy:

- A. Anatomical terms
- B. Skin, superficial fascia and deep fascia
- C. Cardiovascular system, portal system, collateral circulation, arteries
- D. Lymphatic system including lymphatic organs, and regional drainage
- E. Skeletal system: classification of bones, ossification and growth of bones.
- F. Muscular system: classification of muscles.
- G. Arthrology : classification of joints
- H. Nervous system: Central, peripheral and autonomic nervous system.

2) Head and Neck :

- A. Scalp, face, temple, lacrimal apparatus
- B. Neck : Deep fascia of neck, facial neck spaces, triangles of neck, deep structures in the neck
- C. Cranial cavity : meninges, dural folds, dural venous sinuses, parts of brain, ventricles, cranial nerves attached to brain, pituitary gland
- D. Cranial nerves – III, IV, V, VI, VII, IX, XII in detail.
- E. Orbital cavity- bony orbit, ocular muscles, supports of eyeball, nerves and vessels of Orbit
- F. Parotid gland
- G. Infratemporal fossa, pterygo palatine fossa, muscles of mastication, temporomandibular joint
- H. Nasal cavity
- I. Paranasal sinuses
- J. Oral cavity- tongue, soft and hard palate
- K. Pharynx, palatine tonsil , auditory tube, Larynx
- L. Osteology : adult skull, external features and interior of skull, individual skull bones, hyoid bones and cervical vertebrae.

3) Thorax:

- A. Thoracic wall
- B. Pleural cavity and pleura
- C. Mediastinum
- D. Lungs: surfaces, relations, blood supply and bronchopulmonary segments
- E. Heart: pericardium, external features, chambers, and blood supply
- F. Diaphragm

4) Clinical Procedures with anatomical background:

- A. Intramuscular injections: Demonstrations on dissected person Deltoid- relation to axillary nerve Gluteus maximus- relation to sciatic nerve
- B. Intravenous injections and Venesection:
Demonstration of veins in dissected specimen and on a living person:
 - 1. Median cubital vein
 - 2. Cephalic vein
 - 3. Basilic vein
 - 4. Long saphenous vein
- C. Arterial Pulsations in dissected bodies and 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 spinal cord, cauda equina and at intervertebral space between L4 and L5.

5) Embryology:

- A. Gametogenesis- male and female
- B. Fertilization
- C. Placenta
- D. Primitive streak
- E. Neurulation and neural crest
- F. Bilaminar and trilaminar embryo
- G. Formation and fate of intraembryonic mesoderm
- H. Formation and fate of notochord
- I. Pharyngeal arches clefts and pouches derivatives
- J. Development of face, palate, tongue.
- K. Development of thyroid, pituitary, salivary glands
- L. Relevant developmental anomalies
- M. Development of tooth

6) Histology:

- A. Cell
- B. Basic tissues: Epithelium, Muscle, Connective tissue and nervous tissue
- C. Nervous tissue: peripheral nerve, optic nerve, sensory ganglion, autonomic ganglion,
- D. Skin
- E. Lymphatic tissue,
- F. Glands: Classification, salivary glands
- G. Blood vessels, tongue, lip, tooth, soft palate, epiglottis, thyroid gland, parathyroid gland, pituitary gland

7) Medical genetics:

- A. Mitosis and Meiosis
- B. Chromosome structure and classification
- C. Gene structure
- D. Numerical and structural abnormalities
- E. Pattern of inheritance

II) DESIRABLE TO KNOW: 20 Hrs.

Internal capsule, blood supply of brain, circle of Willis, Ventricles, corpus callosum
Imaging modalities, X ray skull, Paranasal sinuses, CT scan and MRI of skull, orthophantomograph of mandible
Mechanism of thorax
Abdominal organs and pelvic organs
Peritoneal cavity
Angiography and imaging of coronary vessels.
Brief osteology of femur, muscles of arm.
Brief osteology of bones of gluteal region, gluteal muscles and structures under cover of gluteus maximus.
Brief study of anatomical landmarks with reference to peripheral pulsations.
Brief study of anatomical landmarks of back.
GIT
Kidney, ureter, urinary bladder, ovary and testes.
Mendelian laws. Gene mapping, Microdeletions and dental anomalies.

1.1.3 EXAMINATION PATTERN

Name of the exercise	Time Allotted	Marks Allotted
Identification of organs and slides	1.15 minutes	80
Journal	N. A	10

SECTION-1
CHAPTER-2

1.2. GENERAL PHYSIOLOGY AND BIOCHEMISTRY, NUTRITION AND DIETETICS

1.2.1. a In this course, students learn to recognize and to apply the basic concepts that govern integrated body function (as an intact organism) in the body's nine organ systems.

1.2.1.b OBJECTIVES:

a) Knowledge and Understanding:

It is expected that the student understands the unique role of each organ and organ system in maintaining health. Students should be able to describe the functions of the distinctive cells that comprise each major organ and when appropriate define the role of physiological functional units.

b) Skills:

The students learn to recognize and explain the basic concepts that govern each organ and organ system and their integration to maintain homeostasis, as well as some clinical aspects of failure of these systems.

c) Attitude:

The students learn to identify bodily processes, which enables them to recognize impairments

1.2.1. c GOALS :

Upon completion of this course the student should be knowledgeable in the following areas of bodily function:

- Integration of the organ systems to maintain constancy of the internal environment
- Regulation of homeostasis by neuronal, endocrine, and local chemical messengers
- Role of the Autonomic Nervous System in regulating organ function
- Adaptive responses to exercise and the role of exercise in maintaining health
- Adaptive physiological responses to stress, infectious organisms, and toxins
- Changes in bodily function through the life span.
- Demonstrate knowledge of the molecular structures of fundamental biological building blocks.

1.2.2 SYLLABUS (Including Teaching Hours)

A. GENERAL PHYSIOLOGY

MUST KNOW- 100Hrs.

1. HOMEOSTASIS:

Basic concept, Feedback mechanisms
Structure of cell membrane, transport across cell membrane Membrane potentials

2. BLOOD :

Composition and functions of blood.
Specific gravity, Packed cell volume, factors affecting and methods of determination.

Plasma proteins - Types, concentration, functions and variations.

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

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

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

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

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

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

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

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

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

Blood volume: Normal values, variations.

3. MUSCLE AND NERVE:

Classification of nerves, structure of skeletal muscle – Molecular mechanism of muscle contraction, neuromuscular transmission. Properties of skeletal muscle.

Structure and properties of cardiac muscle and smooth muscle.

4. DIGESTIVE SYSTEM:

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

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

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

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

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

Gall bladder: structure, functions.

Small intestine - Composition, functions and regulation of secretion of intestinal juice.

Large intestine - Functions.

Motor functions of GIT: Mastication, deglutition, gastric filling and emptying, movements of small and large intestine, defecation.

5. EXCRETORY SYSTEM :

Structure and functions of kidney, functional unit of kidney and functions of different parts.

Juxta glomerular apparatus, renal blood flow.

Formation of Urine: Glomerular filtration rate - definition, determination, normal values, factors influencing G.F.R. Tubular reabsorption - Reabsorption of sodium, glucose, water and other substances.

Tubular secretion - secretion of urea, hydrogen and other substances.
Mechanism of concentration and dilution of urine.

Role of kidney in the regulation of pH of the blood.

Micturition, anatomy and innervation of Urinary bladder mechanism of micturition and abnormalities.

6. BODY TEMPERATURE

7. ENDOCRINOLOGY

General endocrinology - Enumeration of endocrine glands and hormones -
General functions of endocrine system, chemistry, mechanism of secretion,
transport, metabolism, regulation of secretion of hormones.

Hormones of anterior pituitary and their actions, hypothalamic regulation of anterior pituitary function.

Disorders of secretion of anterior pituitary hormones.

Posterior pituitary: Functions, regulation and disorders of secretion.

Thyroid: Histology, synthesis, secretion and transport of hormones, actions of hormones, regulation of secretion and disorders, Thyroid function tests.

Adrenal cortex and Medulla -synthesis, secretion, action, metabolism, regulation of secretion of hormones and disorders.

8. REPRODUCTION

Sex differentiation, Physiological anatomy of male and female sex organs,

Female reproductive system : Menstrual cycle, functions of ovary, actions of oestrogen and Progesterone, control of secretion of ovarian hormones, tests for ovulation, fertilisation, implantation, maternal changes during pregnancy, pregnancy tests and parturition.

Lactation, composition of milk, factors controlling lactation, milk ejection, reflex, Male reproductive system: spermatogenesis, semen and contraception.

9. CARDIOVASCULAR SYSTEM

Functional anatomy and innervation of heart, Properties of cardiac Muscle
Origin and propagation of cardiac impulse and heart block.

Electrocardiogram - Normal electrocardiogram. Two changes in ECG in myocardial infarction.

Cardiac cycle - Phases, Pressure changes in atria, ventricles and aorta.
Volume changes in ventricles arterial pulse.

Heart sounds: Mention of murmurs.

Heart rate: Normal value, variation and regulation.

Cardiac output: Definition, normal values, one method of determination, variation, factors affecting heart rate and stroke volume.

Arterial blood pressure: Definition, normal values and variations, determinants, regulation and measurement of blood pressure.

10. RESPIRATORY SYSTEM

Physiology of Respiration: External and internal respiration.

Functional anatomy of respiratory passage and lungs.

Respiratory movements: Muscles of respiration, Mechanism of inflation and deflation of lungs.

Intra pleural and intra pulmonary pressures and their changes during the phases of respiration.

Mechanics of breathing - surfactant, compliance and work of breathing.

Spirometry: Lung volumes and capacities definition, normal values, significance, factors affecting vital capacity, variations in vital capacity, FEV and its variations.

Pulmonary ventilation - alveolar ventilation and dead space – ventilation.

Exchange of gases: Diffusing capacity, factors affecting it.

Transport of Oxygen and carbon dioxide in the blood.

Regulation of respiration – neural and chemical.

Hypoxia, cyanosis, dyspnoea, periodic breathing.

CENTRAL NERVOUS SYSTEM

Organisation of central nervous system

Neuronal organisation at spinal cord level

Synapse receptors, reflexes, sensations and tracts

Physiology of pain

Functions of cerebellum, thalamus, hypothalamus and cerebral cortex.

Formation and functions of CSF

Autonomic nervous system

11. SPECIAL SENSES

Fundamental knowledge of vision, hearing, taste and smell.

EXPECTED TO KNOW - 20 Hrs.

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

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

Tissue fluids and lymph : Formation of tissue fluid, composition, circulation and functions of lymph.

Oedema - causes.

Functions of reticulo endotrelial system.

Functions of Skin.

Other hormones - Angiotensin, A.N.F.

Coronary circulation.

Cardiovascular homeostasis - Exercise and posture

Jugular venous pulse

Artificial respiration, pulmonary function tests.

Composition of inspired air, alveolar air and expired air.

HUMAN BIOCHEMISTRY, NUTRITION AND DIETETICS

MUST KNOW 50 Hrs.

A) Chemistry of Carbohydrates:

Definition, Classification and Functions of Carbohydrates
Biological importance of Monosaccharides
Chemical properties of Monosaccharides
Osazone Formation of Monosaccharides
Derivatives of Monosaccharides
Structure of maltose, sucrose and Lactose,
Structure of starch and Glycogen and their functions.
Structure and functions of glycosaminoglycans.

B) Chemistry of Lipids

Definition, Classification and Functions of Lipids
Fatty acids and their classification and functions.
Essential fatty acids and its functions.
Phospholipids and their Functions.
Glycolipids and its functions
Prostaglandins and its functions
Steroids, Bile salts, micelle
Cholesterol and its functions
Lipoproteins and its classification.
Lipoproteins and their site of synthesis and functions.

C) Chemistry of Proteins

Structure of Amino acids found in protein, classification,
Nutritional classification of amino acids.
Importance of Amino Acids
Biologically important compounds formed by amino acids.
Properties of amino acids
Biologically important Peptides
Structure of proteins
Primary, secondary, tertiary and quaternary
Zwitter ion, isoelectric PH
Definition, classification (functional) of proteins
Classification based on physical and chemical properties.
Functions of Albumin

D) Enzymes

Definition, zymogen or Proenzyme
Co-factors,
Mechanism of enzyme action
Classification of enzymes
Specificity factors affecting enzymes activity.
Enzyme inhibition, types of Inhibitors.
Types, composition, location and diagnostic importance of lactate dehydrogenase, creatine kinase.
Isoenzymes.
Diagnostic importance of different enzymes

E) Vitamins (Micronutrients):

Definition, Classification, Sources, Daily Requirement, Functions and deficiencies of
Vit. B1 and B2
Vit B3 and B5
Vit B6 and B7
Folic acid (Vit B9)
Cynocobalmin (Vit B12)
Ascorbic acid with functions, sources, daily requirement
Functions, sources, daily requirement of Vit. A with its deficiencies including visual process.
Vit D and its role in calcium Metabolism
Vit. E and Vit K.

F) Hemoglobins (Haemoglobin):

Bilirubin.
Chemistry and Functions of Haemoglobin.
Introduction to hemesynthesis
Heme degradation and types of normal and abnormal haemoglobin.
Types of Jaundice

G) Nucleic Acids

Introduction of nucleic acids
Building units Nucleotides
Types of RNA
Outline structure and functions of DNA and RNA

H) Biological Oxidations

Introduction, Enzymes and Coenzymes of Biological Oxidation.
ETC (Electron Transport Chain) Or Respiratory Chain
Reactions of electron transport chain.
Oxidative Phosphorylation, Inhibitors and uncouplers of oxidative phosphorylation

I) Nutrition:

Energy needs: Basal metabolic rate, dietary carbohydrates Fibres, dietary lipids, essential fatty acids.
Nitrogen Balance, essential amino acids, protein quality and requirement.
Protein Calorie Malnutrition
Kwashiorkar's disease
Marasmus
Balance Diet

J) Energy Metabolism:

Enzymatic hydrolysis of dietary carbohydrates, mechanism of uptake of monosaccharides
Synthesis and breakdown of Glycogen (glycogenesis and Glycogenolysis)
Outline of glycolysis, Rapaport Luebering cycle, lactate metabolism.
Glucogenic and Ketogenic amino Acids.
Pyruvate oxidation and citric acid cycle.
Oral GTT and glycosuria, diabetes mellitus and related disorder.
Blood glucose level and its regulation.
Gluconeogenesis
Digestion and Absorption of Triglycerols.

Metabolism of Ketone bodies:

- a) Ketogenesis
- b) Ketolysis
- c) Ketosis

Functions of Cholesterol

Adipose tissue metabolism

Lipolysis, Lipogenesis

Digestion and Absorption of Proteins

Amino acid pool

Nitrogen Balance

- a) Transamination
- b) Deamination
- c) Transmethylation

Fate and Formation of ammonia Urea cycle

K) Mineral Metabolism:

Definition, Classification and Daily Requirement of Calcium, Phosphorus sources, uptake, excretion and function.

Trace Elements Def. eg. Copper, zinc, magnesium, Chromium, Cobalt, Manganese,

Molybdenum, Selenium

Serum Calcium regulation, iron sources, uptake, transport.

Iodine: Brief introduction to Thyroxine synthesis, general functions of thyroxine.

Fluoride:- Functions, deficiency and excess.

Role of other minerals Sodium, Potassium, Chloride.

L) Metabolic Regulation:

Hormones: Definition, General characteristics, Classification.

Mechanism action of steroid Hormones.

Epinephrine, glucagone and insulin in brief.

Acid base regulation.

Water and electrolyte balance

Detoxification Mechanism.

M) Structural components and blood proteins:

Connective tissue, collagen and Elastin, Structure of bone and membranes.

Myofibrils and Muscle Contraction.

N) Medical Biochemistry:

Blood sugar level and its regulation.

Oral GTT and glycosuria

Diabetes mellitus and related disorders.

Jaundice: Classification and evaluation.

Liver Function tests:-

Kidney Function tests

Gastric Function tests

Gout; Lesch Nyhanes Syndrome,

O) Genetics:

DNA as genetic material
Replication and Transcription
Genetic code and mutations
Translation process
Introduction to cancer, viruses Oncogenes.
PCR Recombinant DNA Technology Applications.

DESIRED TO KNOW 20 Hrs.

Structure of glucose, Isomerism, Epimerism, Anomerism, Mutarotation

Prostaglandins and its functions
Steroids, Bile salts, micelle
Properties of proteins
Denaturation, denaturing agents
Significance of denaturation.
Coagulation of proteins.
Plasma proteins, Separation of plasma proteins.
Immunoglobulins: Structure Types and their functions.
Michaelis – Menton Equation and its significance.

Allosteric Enzymes

Active forms of all water-soluble vitamins and Vit A and Vit D.
To know the absorption, transportation and storage of
Vit A, D, E and K

Direct bilirubin and indirect

Haemoglobin derivatives.
Difference between DNA and RNA
Nucleotides, Biologically important free nucleotides

Substrate level phosphorylation
S. D. A. (Specific dynamic action)

HMP shunt pathway and its significance.
Glucuronic acid formation.
Hyperglycemia and Hypoglycemia
- Outline of Cholesterol biosynthesis and breakdown
- Fatty acid synthesis
Fatty liver, Lipotropic factor
Atherosclerosis

Metabolism of glycine

- a) Synthesis
- b) Degradation.

Metabolism of sulphur containing aminoacids

Eg. Methionine, cysteine, Cystine one carbon metabolism

Heme and non-heme iron and its functions, deficiency.

Second messenger

CAmp, Calciumion

Inositol triphosphate

Hyperglycemia

Hypoglycemia

Hyperlipoproteinemia

1.2.3 EXAMINATION PATTERN

Name of the exercise	Time Allotted	Marks Allotted
Haematology	1 Hr. 20 Min.	25
Clinical Physiology	40 Min.	15
Biochemistry Experiment - A	60 Mins.	20
Biochemistry Experiment - B	55 Mins.	15
Spot - C	05 Mins.	05
Journal Record -	N. A.	
(a) Physiology		5
(b) Biochemistry		5

S N.	Date of BOM	Resolution No	Previous	Changes
1	09/07/2014	BM-32 - 14 (i)	Previously was not there	- Change in the exam pattern for Theory paper of Physiology and Biochemistry paper of 1 st year BDS. One structured long question of 10 marks.
2	29/12/2015	BM - 27(ii) - 15	None	It was resolved that following topics on bioethical aspects be incorporated in the BDS syllabus, to be implemented from Academic Year 2016-17 be approved.

Year	Topics to be covered	No of hours	Concerned Department
I BDS	Orientation of bioethics	1 Lecture	Public Health Dentistry
	Topic related to dissection of human bodies	1 Lecture	Anatomy

**SECTION-1
CHAPTER-3**

1.3 DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY

1.3.1 a : AIM : The dental students should acquire complete knowledge of embryology, anatomy and physiology of hard and soft tissues of oral and paraoral region and to train dental graduates so as to ensure competence and necessary skills in the diagnosis and prevention of dental and oral diseases.

1.3.1 b : OBJECTIVES :

i - KNOWLEDGE AND UNDERSTANDING:

Adequate knowledge about the morphology of the teeth.

Adequate knowledge about histology of teeth and other oral structures.

Adequate knowledge of the embryology, development of face, tooth and salivary glands.

ii - SKILL:

Able to carve teeth of permanent dentition

Able to differentiate the normal from abnormal tissues based on macro and microscopic features.

iii - ATTITUDES:

1. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
2. To apply the knowledge of morphology of the teeth in the clinical practice of restorative dentistry.

1.3.1 c : OUTCOME: Student is able to complete clinical practises optimally.

1.3.2: SYLLABUS (Including Teaching Hours.)

DENTAL ANATOMY

I) Must Know 95 Hrs.

1) Introduction 04 Hrs.

Definitions and Nomenclature in Dental Anatomy

Tooth numbering systems

Differences between permanent and deciduous dentition

Definition of elevations and depressions on the tooth

Different Traits

2) Maxillary Incisor	03 Hrs.
Introduction	
Chronology	
Crown morphology	
Root morphology	
Pulp morphology	
3) Mandibular Incisor	03 Hrs.
Introduction	
Chronology	
Crown morphology	
Root morphology	
Pulp morphology	
4) Maxillary / Mandibular Canine	03 Hrs.
Introduction	
Chronology	
Crown morphology	
Root morphology	
Pulp morphology	
5) Maxillary Premolar	03 Hrs.
Introduction	
Chronology	
Crown morphology	
Root morphology	
Pulp morphology	
6) Mandibular Premolar	03 Hrs.
Introduction	
Chronology	
Crown morphology	
Root morphology	
Pulp morphology	
7) Maxillary molar	03 Hrs.
Introduction	
Chronology	
Crown morphology	
Root morphology	
Pulp morphology	

8) Mandibular molar 03 Hrs.
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

9) Occlusion 05 Hrs.
Development of occlusion
Concepts
Theories
Keys to occlusion
Teeth and jaw associated factors
Occlusion in dentures

10) Morphology of individual deciduous tooth 02 Hrs.

DENTAL HISTOLOGY

1) Histotechniques 02 Hrs.
Introduction
Fixation
Tissue processing
Staining
Ground section
Special stains
Clinical implications

2) Development of face and oral cavity (Embryology) 06 Hrs.
Origin, development and differentiation of facial tissues
Branchial arches
Development of face, Tongue and palate
Development of Mandible, Maxilla

3) Development of teeth 03 Hrs.
Dental lamina
Developmental and histophysiological stages of teeth
Development of root

- 4) Enamel 04 Hrs.
 Introduction
 Physical and chemical properties
 Structures (Enamel rods, lamellae, tufts, spindles, Hunter Schreger bands, dentinoenamel junction)
 Amelogenesis: Life cycle of ameloblast
- 5) Dentin 06 Hrs.
 Introduction
 Physical and chemical properties
 Structures
 Dentinogenesis
 Types of dentin
 Theories of Hypersensitivity
 Functions
- 6) Maxilla and Mandible (alveolar process) 05 Hrs.
 Definition and development
 Anatomy
 Classification
 Types of Ossification
 Alveolar bone
 Histology of bone
 Bone morphogenic protein
 Bone Remodeling and factors affecting
- 7) Eruption and shedding 03 Hrs.
 Theories of eruption
 Pre-eruptive, Eruptive and Post-eruptive tooth movement
 Definition and Shedding pattern
 Histology of shedding
 Mechanism of resorption and shedding
 Clinical considerations
- 8) Pulp 04 Hrs.
 Development, Anatomy and Structure
 Histology of pulp
 Functions

9) Cementum 06 Hrs.

Introduction

Physical and chemical properties

Structures

Histology and cementogenesis

Types of cementum, cemento - enamel junctions

Functions

10) Maxillary sinus 01 Hrs.

Definition and development

Anatomy

Functions

Histology

11) Salivary glands 06 Hrs.

Embryogenesis

Classification

Anatomy of major and minor salivary glands

Histology of major and minor salivary glands

Saliva: Composition, formation and functions of saliva

12) Periodontal ligament 04 Hrs.

Development and Classification

Histology: cells and fibres

Functions

13) Oral Mucous Membrane (OMM) 12 Hrs.

Definition and classification of OMM

Types of epithelium

Histology of keratinized and non-keratinized epithelium

Non-Keratinocytes

Clinical and histological aspects of buccal mucosa, gingiva, palate, floor of the mouth, vermilion border.

Tongue-clinical and histological aspects of papillae and taste buds

Junctional epithelium

14) Temporomandibular Joint 02 Hrs.

Anatomy

Development

Histology

Clinical considerations

15) Muscles of Mastication and Deglutition 02 Hrs.

DESIRABLE TO KNOW 12 Hrs.

1 - Special stains 03 Hrs.

- Immuno histochemistry and enzyme histochemistry (suggested) - Applied aspects of Development of face and oral cavity (Embryology) 01 Hrs.

2 - Molecular aspects of tooth genesis Applied aspects of Development of teeth 02 Hrs.

3 - Applied aspects of enamel, dentin, pulp cementum, maxillary sinus, salivary glands, periodontal ligament, oral mucous membrane, temporomandibular joint, muscles of mastication, deglutition. Bone morphogenic protein, Bone Remodelling and factor affecting it, Bone Grafts 08 Hrs.

4 - Applied aspects of eruption and shedding 01Hrs.

Modifications in Syllabi from January 2019

Resolution No-BM-05 (vi) – 19

Dental Anatomy and Dental Histology

Bio-Ethics Syllabus

<i>Name of the Topic</i>	<i>Year</i>	<i>Time</i>	<i>Included in Syllabus as</i>
<i>Bioethics of Handling Tooth Specimen</i>	<i>I BDS</i>	<i>15 min</i>	<i>Must Know</i>

1.3.3 EXAMINATION PATTERN

Name of the exercise	Time allotted	Marks
Tooth carving	45 minutes	20
1- Identification of slides (8) : 5 marks each	40 minutes	60
2- Identification of specimens (4) : 5 marks each		
3. Journal	-	10

<i>I</i>	<i>29/12/2015</i>	<i>BM-27(iii) – 15</i>	<i>None</i>	<i>Modifications in University Theory examination pattern for 1st, 2nd and 3rd year BDS subjects.</i>
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II YEAR BDS

SECTION-2
CHAPTER-1

2.1. GENERAL PATHOLOGY AND MICROBIOLOGY

2.1.1. a Aim: The aim of this course is to provide graduate-level instruction in Pathobiology and microbiology. The study of biochemical, structural and functional changes in cells, tissues and organs, which cause or are caused by diseases and the micro-organisms that cause infections.

2.1.1. b Objectives:

i- Knowledge and understanding:

- To become familiar with pathology nomenclature. By the end of the course, the students are expected to be able to communicate an understanding of tissue injury and diseases processes, using appropriate vocabulary.
- To recognize morphological and functional differences between normal and injured or diseased tissue.
- To acquire a working knowledge of basic bacterial laboratory techniques, as well as to the foundations of Microbiology – the concepts of classification, evolution and growth of microorganisms, as well as a factual and laboratory knowledge of specific microorganism types.

ii – Skills :

- To learn to distinguish pathological lesions from normal tissue. The second goal is to understand, from a structural, functional and biochemical perspective, the different types of pathological lesions, and provide scenarios for how they each arise.
- To develop an understanding of microbial ecology and of medical and practical uses for microorganisms, and how they relate to basic biological concepts.

iii - Attitudes:

- To integrate pathological findings with clinical manifestations of disease
- To integrate the principles and information presented in this course with that from related disciplines

2.1.1. c Outcomes:

Students are expected to work towards meeting the following objectives:

- To become familiar with pathology nomenclature. By the end of the course, the students are expected to be able to communicate an understanding of tissue injury and diseases processes, using appropriate vocabulary.
- To recognize morphological and functional differences between normal and injured or diseased tissue. The first goal of the course is to learn to distinguish pathological lesions from normal tissue. The second goal is to understand, from a structural, functional and biochemical perspective, the different types of pathological lesions, and provide scenarios for how they each arise.
- To integrate pathological findings with clinical manifestations of disease.
- In working towards a current understanding of the pathologic basis of disease, the student should develop a sense of which questions in pathology remain to be resolved.
- Students should acquire a good understanding of the concepts above. They should be able to show their mastery of them in oral and written form, in lecture, in the laboratory and in exams.
- They should be able to design experiments to identify microorganisms, interpret the data and communicate it.

2.1.1.d: SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 Hrs.

1. Introduction to Pathology
 - Different sections in pathology
 - The Cell in health
 - Normal cell structure
 - The Cellular functions
2. Definitions and causes of diseases
 - Aetiology and Pathogenesis of diseases.
 - Congenital /Acquired diseases
 - Morphological changes
 - Functional derangements and clinical manifestation.
 - Cellular response to stress and noxious stimuli

3. Mode of cell Injury
 - Different agents causing cell injury
 - Hypoxic / Chemical / physical injury.
 - Mechanism of reversible injury.
 - Mechanism of irreversible injury.
- 4 Cellular adaptations and intracellular accumulations
 - Reversible cell injury (Degeneration)
 - Fatty Change
 - Cloudy change
 - Hyaline change
5. Disturbances of pigment and mineral metabolism
 - Exogenous / Endogenous pigments
 - Dystrophic / metastatic calcification mechanism, Causes etc.
6. Acute inflammation I
 - Definition
 - Types
 - Causes, Historical aspects
 - Cellular events
 - Vascular events.
7. Acute inflammation II
 - Chemical mediators
 - Fate of inflammation
8. Chronic inflammation
 - Definition
 - Causes
 - Granulomatous inflammation.
9. Repair I
 - Repair
 - Regeneration
 - Healing by primary intension
 - Healing by secondary intension
10. Repair II
 - Types of fracture
 - Healing of a fracture
 - Factors affecting wound healing.
 - Complications of healing.

11. Necrosis / Gangrene
 - Def., Causes
 - Types of necrosis
 - Features of necrosis
 - Gangrene – Definition Dry/wet/gas
12. Thrombosis
 - Normal homeostasis
 - Definition of thrombus
 - Path physiology, Complications
 - Fate
13. Embolism.
 - Definition
 - Types
 - Effects
14. Infarction
 - Definition
 - Aetiology, Types
 - Changes in different organs.
15. Derangements of body fluids.
 - Oedema – Pathogenesis.
 - Different Types
 - Clinical manifestations.
16. Disorders of circulation.
 - Hyperemia – Definition, Types, Causes.
 - Chronic Passive Venous Congestion of different Organs
 - Shock - Different type, Pathogenesis
17. Amyloidosis.
 - Chemical nature
 - Physical nature
 - Diagnosis
 - Special stains.
18. Hypersensitivity reaction /Transplant Rejection
 - Humoral and cellular immunity
 - Mechanism of hypersensitivity reactions Type I-IV

19. Leprosy
 - Epidemiology
 - Pathology
 - Types
 - Diagnosis

20. Syphilis.
 - Epidemiology
 - Types /Stages
 - Pathological features
 - Diagnosis

21. Tuberculosis I
 - Epidemiology, Pathogenesis.
 - BCG vaccine / Tuberculin Test
 - Lesions of primary TB

22. Tuberculosis II
 - Secondary TB Lesions
 - Complications
 - Diagnosis
 - Extra pulmonary TB

23. Fungal Diseases
 - Etiological agents
 - Types of lesions
 - Morphology
 - Diagnosis

24. Adaptive Disorders
 - Atrophy
 - Hypertrophy / Hyperplasia
 - Metaplasia / Dysplasia.

25. Neoplasia – Nomenclature
 - Definition
 - Terminology
 - Classification
 - Difference between benign and malignant tumors

26. Neoplasia - Carcinogenesis
 - Epidemiology
 - Incidence
 - Geographic and environmental factors

27. Neoplasia -Carcinogenesis
 - Different Carcinogenic agents
 - Chemical Carcinogenesis
 - Radiation Carcinogenesis
 - Microbial Carcinogenesis

28. Neoplasia – Staging and Spread.
 - Mechanism of invasion and metastasis.
 - Grading and staging of tumors

29. Lab diagnosis of cancer
 - Histologic and Cytologic methods
 - IHC
 - Molecular diagnosis
 - Tumors markers

30. Tumors of oral cavity and skin
 - Pigmented and non-pigmented tumors of skin
 - Precancerous lesions of oral cavity
 - Squamous cell carcinoma
 - Basal Cell carcinoma
 - Malignant melanoma

31. Diseases of salivary glands
 - Normal structure
 - Sialadenitis
 - Mikulicz disease
 - Tumors of salivary gland

32. Diabetes Mellitus
 - Definition
 - Classification
 - Pathogenesis
 - Clinical features
 - Diagnosis
 - GTT

- 33. Atherosclerosis
 - Definition
 - Pathogenesis
 - Complications

- 34. Other Diseases of oral cavity
 - Lichen Planus
 - Leukoplakia
 - Dental caries
 - Dentigerous Cyst

- 35. Common Diseases of bone
 - Osteomyelitis
 - Metabolic bone diseases
 - Tumors of jaw

- 36. Diseases of CVS
 - Cardiac Failure
 - IHD
 - Endocarditis etc.

- 37. Hypertension
 - Definition, classification

- 38. AIDS

DESIRABLE TO KNOW

Genetic basis of diseases
Patterns of inflammation
Cell cycle
Chemical Mediators Responsible for repair
Apoptosis
Morphologic changes in disorders of circulation
Morphology of Organs in amyloidosis
Mechanism of transplant rejection
Molecular basis of cancer
Paraneoplastic syndromes
Recent Advances in Diagnosis
Pathology of different organs in diabetes mellitus
Congenital Heart Diseases
Effects on various organs in hypertension

HEMATOLOGY

MUST KNOW 15Hrs.

1. Introduction to hematology and haemopoiesis.
 - Normal development of blood cells.
 - Origin and differentiation of haemopoietic cells
 - General aspects of bld. Disorders
 - Blood Indices.
2. Classification and general features of anemia
 - Etiological /Pathophysiological Classification
 - Morphological classification
 - General features of anemia
3. Microcytic anaemias
 - Iron deficiency anemia
 - Iron metabolism
 - Morphology
 - Lab. Diagnosis
 - Differential diagnosis.
4. Macrocytic Anaemias
 - Causes of Macrocytosis
 - Megaloblastic anemia
 - B12 deficiency
 - Folate deficiency
 - Morphology PBS, B.M.
 - Lab. Diagnosis.
5. Hemolytic anemia
 - Features .classification
 - Intravascular and extra vascular haemolysis
 - Signs of haemolysis
 - Acute Leukemia I
 - Definition
 - Aetiopathogenesis.
 - Classification
 - Acute Myeloid Leukemia
6. AC. Leukemia II
 - Acute Lymphocytic Leukemia
 - Clinical Features and Lab diagnosis of Ac. Leukemia

7. Chronic Leukemia.
 - Classification
 - Aetiopathogenesis
 - Morphology, Chronic Myeloid and Lymphoid Leukaemias
 - Lab. Diagnosis.
 8. Other WBC and RBC disorders
 - Leukocytosis
 - Leukaemoid reaction
 - Leucopenia
 - Polycythemia
 9. Hemorrhagic Disorder I
 - Coagulation cascade
 - Classification of bleeding disorders.
 - Disorder related to thrombocytopenia, defective platelet function.
 10. Hemorrhagic Disorder II
 - Related to clotting factor abnormality.
 - Hemophilia A, B
 - VW Disease.
 - DIC
 - Lab diagnosis
 11. Blood groups
 - Historical aspects
 - Classification
 - Importance
 12. Blood transfusion
 - Selection of donor
 - Different blood group system
 - Blood components
 - Cross matching
 - Transfusion reactions
- II) DESIRABLE TO KNOW 05 Hrs.**
- Sickle cell anemia
 - Thalassemia
 - Diagnosis
 - Diseases Transmitted during blood transfusion

GENERAL MICROBIOLOGY

MUST KNOW 55 Hrs.

General Microbiology 08 Hrs.

1. Introduction, History, Scope, Aim and objective
2. Morphology and Physiology of Bacteria
3. Sterilization and Disinfection
4. Culture media and culture techniques
5. Normal microbial flora of oral cavity
6. Oral microbiology and dental plaque and dental Caries

Immunology 11 Hrs.

1. Infection
2. Immunity
3. Antigen
4. Antibodies
5. Antigen – Antibody reactions and Immunodeficiency disorder
6. Hypersensitivity reactions + autoimmune disorders

Systematic Bacteriology 19 Hrs.

1. Staphylococcus
2. Streptococcus, Cariogenic Streptococci
3. Pneumococcus
4. Neisseria: Meningococcus (mainly)
5. Corynebacterium diphtheriae
6. Mycobacterium Tuberculosis
7. M. Leprae and Atypical mycobacteria
8. Clostridium perfringens
9. Clostridium tetani
10. Non – sporing anaerobes
11. Spirochaetes
12. Noscomial infection

Virology 10 Hrs.

1. Introduction and General Properties of viruses
2. A few viruses of relevance to dentistry
 - Herpes virus
 - Hepatitis B viruses including HCV, HDV
 - Human Immunodeficiency Virus (HIV)
 - Mumps Virus, Measles and Rubella Virus

Mycology 04 Hrs.

1. Introduction
2. Candidiasis
3. Briefly on oral lesions of Systemic Mycoses
4. Cryptococcus and Histoplasma

Parasitology 03 Hrs.

1. Introduction
2. Mode of transmission and prevention of commonly seen parasitic infection
 - Amoebae, leishmania
 - Protozoa

E. histolytica, Malaria, Helminths
Round worm, Hook Worm, Tape worm

DESIRABLE TO KNOW 10 Hrs.

Bacterial genetics and drug resistance in bacteria

Structure and functions of Immune system

Complement system

Immune response

Enterobacteriaceae - 1, 2 and 3

Vibrio cholera

Actinomycetes

Biosafety and Biomedical waste management

Cultivation

Host -virus interaction

Brief account of laboratory diagnosis and immune prophylaxis in general populations.

Protozoa, Giardia, Trichomonas, Helminths, W. bancrofti

2.1.4 EXAMINATION PATTERN

General Pathology

Name of the exercise	Time Allotted	Marks Allotted
Spot Identification.	10 Mins.	10
Table Work- Clinical Pathology/ Haematology	1 hour	20
Histopathology Slides.	30 Mins.	10
Journal	N. A	10

General Microbiology

Name of the exercise	Time Allotted	Marks Allotted
Spot Identification	10 Mins.	10
Staining	1 hour	20
Journal	N.A	10

SECTION-2
CHAPTER-2

GENERAL DENTAL PHARMACOLOGY AND THERAPEUTICS

2.2.1. a: AIM :

The central aim of Pharmacology as the course is two-fold. First, to provide the students with a solid grounding in the basic concepts and scientific underpinnings of Pharmacology. Second, to provide the students with a comprehensive introduction to the fundamental Pharmacology and uses of the major classes of clinically important drugs currently used in medical practice.

2.2.1. b: OBJECTIVES :

i - KNOWLEDGE AND UNDERSTANDING :

To understand the fundamental scientific principles of drug action and the various mechanisms by which drugs can mediate their pharmacological effects.

To understand the fundamental principles of pharmacokinetics that underly the absorption, distribution, metabolism and elimination of drugs in the body and thereby affect drug effectiveness.

To understand the biochemical reactions that result in the metabolism of drugs within the body.

ii - SKILLS:

To understand the rationale behind designing different dosing regimens of particular drugs in specific patient populations.

To understand how specific patient characteristics and genetics can affect the response to a particular class of drugs.

iii - ATTITUDES:

To understand the implications of drug prescriptions and prescribing the best possible drug regime.

2.2.1. c: OUTCOMES :

The student at the end of this program should be able to rationally treat a patient with no adverse outcomes.

2.2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW- 60 Hrs.

General Pharmacology
Drugs acting on the Autonomic Nervous System
Drugs acting on the Central Nervous System
Drugs acting on the Cardiovascular and Renal System
Antimicrobial drugs
Antihistaminics
Antidiabetic Drugs
Corticosteroids
Pharmacotherapy of emergencies in dental practice

DESIRABLE TO KNOW 15 Hrs.

Drugs acting on blood
Drugs acting on the Gastrointestinal System
Drugs acting on the Respiratory System
Vitamins
Chelating Agents
Antithyroid Drugs
Skeletal Muscle Relaxants
Drugs affecting calcium balance

2.2.3 EXAMINATION PATTERN

Name of the exercise	Time Allotted	Marks Allotted
Drug of choice (Single drug preparation) (4 drugs)	15 Mins.	20
Pharmacy Written (1 preparation)	15 mins.	30
Rewrite the wrong prescription	15 Mins.	15
Fixed drug combination	15 Mins.	15
Journal	N. A.	10

1	29/12/2015	BM-27(ii)- 15	None	<i>It was resolved that following topics on bioethical aspects be incorporated in the BDS syllabus, to be implemented from Academic Year 2016-17 be approved.</i>
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Year	Topics to be covered	No of hours	Concerned Department
II BDS	<i>1) Judicious use of drugs in dental scenario</i>	<i>1-2 Lectures</i>	<i>Pharmacology / Oral Surgery</i>
	<i>2) Emergency drugs</i>		
	<i>Oriental lecture on disposal of used dental materials</i>	<i>1-2 Lectures</i>	<i>Prosthodontics and Conservative Dentistry</i>

SECTION-2
CHAPTER-3

2.3 DENTAL MATERIALS

2.3.1. a: Aim:

To understand the evolution and development of science of dental material.

- Emphasis the purpose of course in dental materials to students of faculty of dentistry.
- To impart knowledge of biological, physical and chemical properties of dental materials along with biomechanical requirement of particular restorative procedure.
- To know the standards or specifications of various materials to guide the manufacturers as well as help professionals.
- Search of newer and better materials for research orientation.
- To understand and evaluate the claims made by manufactures of dental materials

2.3.1. b: Objectives:

i) Knowledge :

The graduate should acquire the adequate knowledge of science on which Dental materials are based and good understanding of various properties, composition, uses, advantages and disadvantages of these materials
Adequate knowledge of physical, biological and biomechanical properties of Dental materials.

ii) Skills :

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

- Able to select the best materials for each dental restorative procedure.
- Able to manipulate each dental material.
- Able to use these materials for various dental procedures in best possible way.

iii) Attitude :

- A graduate should develop following attitudes during the training period:
- Selection of better and appropriate materials using acquired knowledge of dental materials and restorative dentistry.
- To follow professional ethics and conduct its application in all aspect of professional life.
- Participate in CDE programme to updates the knowledge and professional skill.

2.3.1. c Outcomes:

To be able to use the dental materials in clinical dentistry to the best of their potential.

2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW :

PROSTHETIC SYLLABUS:

1. Introduction to Dental Materials 01 HR
 - a) History of Dental Materials
 - b) Scope
 - c) Standardization of Materials
2. Bio-compatibility of Materials 02 Hrs.
 - a) Tests for evaluation of Biocompatibility
 - b) Allergic responses to Dental Materials
 - d) Pulp responses to Experimental and clinical procedures
3. Physical Properties 03 Hrs.
 - a) Abrasion and Abrasion Resistance
 - b) Viscosity
 - d) Creep and flow
 - e) Color and color perception
 - f) Thermo physical properties
4. Mechanical Properties 03 Hrs.
 - a) Stress and Strain
 - b) Mechanical properties (Elastic deformation, elastic modulus, flexibility, resilience, poisson's ratio)
 - c) Strength Properties (Proportional limit, elastic limit, yield strength, tensile strength, flexure strength, fatigue strength, impact strength)
 - d) Ductility and malleability
 - e) Hardness, Toughness, Brittleness

5. Hydrocolloid impression materials 04 Hrs.
 - a) Classification and colloids
 - b) Agar (Reversible Hydrocolloid)
 - c) Manipulation of Agar imp. Material
 - d) Alginate (Irreversible Hydrocolloid)
 - e) Manipulation of Alginate imp. Material
 - f) Care and properties of Hydrocolloid impression

6. Rigid impression materials 03 Hrs.
 - a) Impression plaster
 - b) Impression compound, composition, manipulation and properties
 - b) Zinc oxide-Eugenol Impression Paste
 - c) Physical and Mechanical Properties of Zinc Oxide-Eugenol impression paste
 - d) Noneugenol paste

7. Elastomeric Impression Materials 03 Hrs.
 - a) Overview of Elastomeric Impression Materials
 - b) Polysulfide Impression Material
 - c) Condensation Silicone Impression Material
 - d) Addition Silicone Impression Material
 - e) Polyether Impression Material
 - g) New Advances in Impression Materials
 - h) Infection Control Concerns

8. Gypsum Products 04 Hrs.
 - a) Types of Gypsum Products
 - b) Uses of Gypsum in Dentistry
 - c) Setting of Gypsum Products
 - d) Tests for working, Initial Setting, and Final Setting Times
 - d) Control of the Setting Time
 - e) Setting Expansion
 - f) Accelerators and Retarders; Practice and Theory
 - i) Strength
 - j) Infection Control Concerns

9. Dental Resins 04 Hrs.
 - a) Classification of Resins
 - c) Requisites for Dental Resin
 - d) Cold cure denture base resins
 - d) Heat-activated denture base resins
 - e) Compression- molding Technique
 - f) Injection molding technique

10. Dental casting alloys 03 Hrs.
 - a) Historical Perspective on Dental Casting Alloys
 - b) Desirable Properties of Casting Alloys
 - d) Classification of Dental Casting Alloys
 - e) Alloys for All-metal Restorations
 - f) High Noble Alloys for Metal –ceramic Restorations
 - h) Base Metal Alloys for Cast Metal and Metal ceramic Restorations
11. Die and Die materials 02 Hrs.
 - a) Definition, Classification, Ideal requirements
 - b) Types of die material, Advantages and Disadvantages
12. Dental Waxes 02 Hrs.
 - a) Types of waxes
 - b) Composition
 - c) Desirable Properties
 - d) Flow
 - e) Thermal Properties
 - f) Wax Distortion
 - g) Manipulation of Inlay Wax
 - h) Other Dental Waxes
13. Investment materials 03 Hrs.
 - a) Gypsum –bonded Investments
 - b) Phosphate-bonded Investments
 - c) Ethyl Silicate- bonded Investment and their properties
14. Casting procedures 04 Hrs.
 - a) Introduction
 - b) Preparation of the master die
 - c) The sprue former
 - d) Casting ring liners
 - e) Investment procedure
 - f) Casting procedure
 - g) Compensation for solidification shrinkage
 - h) Causes of Defective castings
15. Tarnish and Corrosion 01 Hrs.
 - a) Introduction
 - b) Causes of Tarnish and Corrosion
 - c) Classification of Corrosion
 - d) Electrochemical Corrosion
 - e) Corrosion of Dental Restorations
 - f) Clinical Significance of Galvanic Currents

16. Dental ceramics 05 Hrs.
- a) Historical perspective on ceramic
 - b) Classification of dental ceramics
 - c) Methods of strengthening ceramic
 - d) Metal ceramic restoration
 - e) All-ceramic restoration

EXPECTED TO KNOW 04 Hrs.

Bio-compatibility of Materials and Minimizing Dental Iatrogenesis 01 HR

Physical Properties 01 Hrs.

Stress relaxation

Dental casting alloys 02 Hrs.

Alternatives to Cast Metal Technology

Noble Alloys for metal ceramic Restorations

CONSERVATIVE DENTISTRY SYLLABUS:

MUST KNOW: 30 Hrs.

Introduction to Material Science

Dental Amalgam

Definition, History, Classification

Manufacturing, Composition, Roll of each ingredients

Low Copper and High Copper – Setting Reaction

Properties

Manipulation

Mercury toxicity and hygiene

Dental Cements

Introduction and Classification

Cavity Liners, bases and Varnishes

Calcium Hydroxide

Zinc Phosphate

Zinc Polycarboxylate

Zinc Oxide Eugenol and its modifications

Glass Ionomer cements and its modifications

Resin Cements Application, Classification, types, setting reaction, mode of supply, properties, factors affecting setting, manipulation, biocompatibility, advantages,

Disadvantages, uses and all other relevant information about above individual cements.

Restorative Resins – Composite Resins
History, Classification, Composition
Polymerization, Filled and unfilled, other types
Properties, Biocompatibility
Acid Etching in detail
Dentin Bonding Agents-Generations, Concepts
Sandwich technique
Pit and Fissure Sealants
Clinical Implications

Root Filling materials
Gutta Percha
Sealers

Direct Filling Gold
Types
Degassing
Properties
Compaction
Clinical Considerations

DESIRABLE TO KNOW: 05 Hrs.

Newer modified amalgams
Bonded amalgams

Dental Cements
Silicate cements
Zinc silico Phosphates
Restorative Resins – Composite Resins
Recent Advances
Indirect Composite materials
Root Filling materials
Mineral Trioxide Aggregate (MTA)
Advances in Obturating materials

Miscellaneous Materials
Smart Materials

2.3.3 EXAMINATION PATTERN

Name of exercise	Time allotted	Marks allotted
Spotters	40 Mins	40
Manipulation	40 Mins	40
Journal	NA	10

1	29/12/2015	BM-27(ii) – 15	None	<i>It was resolved that following topics on bioethical aspects be incorporated in the BDS syllabus, to be implemented from Academic Year 2016-17 be approved.</i>
2	29/12/2015	BM-27 (iii)– 15	None	<i>Modifications in University Theory examination pattern for 1st, 2nd and 3rd year BDS subjects.</i>

<i>Year</i>	<i>Topics to be covered</i>	<i>No of hours</i>	<i>Concerned Department</i>
IIBDS	<i>Oriental lecture on disposal of used dental materials</i>	<i>1-2 Lectures</i>	<i>Prosthodontics and Conservative Dentistry</i>



III YEAR BDS

4. CVS

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

5. RS

Pneumonia, COPD, Bronchiectasis, Pulmonary TB, Bronchial asthma, Lung Abscess.

6. Hematology

Anaemias, bleeding and clotting disorders, leukemias, lymphomas, agranulocytosis, splenomegaly, oral manifestations, hematologic disorders, generalized Lymphadenopathy.

7. Renal System

Acute nephritis
Nephrotic syndrome

8. Nutrition

Avitaminosis, PEM

9. CNS

Facial palsy, facial pain including trigeminal neuralgia, Epilepsy, Meningitis and headaches including migraine.

10. Endocrines

Diabetes Mellitus Acromegaly, Hypothyroidism, Thyrotoxicosis, Calcium metabolism and parathyroids.

11. Critical care

Syncope, cardiac arrest, CPR, shock

DESIRABLE TO KNOW 20Hrs.

Infectious mononucleosis mumps
Measles, rubella
Malaria
Diarrhoea
Dysentery including Amoebiasis
Malabsorption
Pleural effusion, Pneumothorax
Lung cancers.
Renal failure.
Balanced diet

Examination of comatose patient
Examination of cranial nerves.
Addison's disease, Cushing's syndrome.
Acute LVF
ARDS

CLINICAL TRAINING:

The students must be able to:

- Take History
- Do general physical examination including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, oedema, nails, lymph nodes and Oral Cavity.
- Examination of CVS, RS, abdomen and facial nerve.

3.1.3: EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks Allotted
Long case	45 Mins.	35
Short Case	25 Mins.	25
Radiographs and Drugs	25 Mins.	25
Journal	NA	05

**SECTION-3
CHAPTER-2**

3.2. GENERAL SURGERY

3.2.1. a : AIM : By taking on the clinical care of the patients with graduated responsibilities the residents develop their communication and surgical skills and apply their medical knowledge to the surgical diseases of their patients.

3.2.1. b : OBJECTIVES :

- i) Knowledge and understanding: Students shall learn to communicate effectively, caringly and professionally with patients, families and colleagues
- ii) Skills: Students will be able to make evidence based decisions about diagnostic and therapeutic interventions, utilizing up-to-date scientific evidence and clinical judgment.
- iii) Attitudes: Students shall be given an understanding of the basic science that is the foundation for surgical practice and have a clinical knowledge necessary to treat the broad range of surgical diseases.

3.2.1. c : OUTCOMES :

Student must develop the manual dexterity appropriate at each level to deal with all surgical eventualities.

3.2.2 : SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 Hrs.

- 1 Introduction to Surgery (History and Principles)
- 2 Wounds
- 3 Inflammation, Aetiology, Pathology and Management
- 4 Carbuncle, Cellulitis, Abscess, Ludwig's angina, Erysipelas
- 5 Tetanus
- 6 Gas Gangrene
- 7 Chronic Infection – Tuberculosis, Syphilis, Leprosy, Actinomycosis
- 8 Viral Infections, HIV and Hepatitis B
- 9 Shock-Definition, Classification, Pathophysiology and Management

- 10 Haemorrhage – Types, Aetiology, Clinical features and Management and Syncope
- 11 Blood groups and Blood transfusion
- 12 Tumours – classification, Aetiology, Methods of spread, Investigations and modalities of treatment
- 13 Ulcer, Cyst, Sinuses and fistulae – Definition, Classification, Aetiology and treatment
- 14 Lymphoma
- 15 Resuscitation
- 16 Tracheostomy – Indication, Procedure and management
- 17 Facial Nerve affections and Trigeminal Neuralgia
- 18 Salivary gland – Tumours, Classification, Pathology, Investigation and treatment
- 19 Fractures – Principles, Classification, Healing and management
- 20 Sterilization
- 21 Dressings – Types and uses
- 22 Sutures – Types of uses
- 23 Diathermy and other methods of Haemostasis
- 24 Swellings of Jaw – Dentigerous cyst, Admantinoma
- 25 Cleft Lip and Cleft Palate – Principles of management
- 26 Neck – Anatomy, Triangles, midline and lateral Swellings
- 27 Thyroid – Anatomy Physiology Benign and management diseases, clinical features and management
- 28 Biopsy – Types, Indication and Procedure
- 29 Benign diseases of mouth, Lip, Tongue and Palate
- 30 Oral Carcinoma – Aetiology, Pathology, investigation and management

DESIRABLE TO KNOW 10Hrs.

- 1 Burns – Aetiology, Classification Pathophysiology and management
- 2 Principles of Radiotherapy
- 3 Principles of Chemotherapy
- 4 Lymphoedema
- 5 Laryngocele, Tumours of Nasopharynx
- 6 Peripheral nerve Injuries
- 7 Parathyroid – Anatomy, Physiology Benign and Malignant diseases, Clinical features and Management
- 8 Operation Theatre techniques
- 9 Disease of Tonsils
- 10 Head Injury
- 11 Blood Coagulation – Factors, mechanism Intrinsic and Extrinsic pathways.
- 12 Deep Vein Thrombosis.
- 13 Local Anaesthesia – Indications, Nature of Drugs used, Dosage, Toxicity
- 14 Principles of General Anaesthesia – Preoperative evaluation, stages of Anaesthesia, Nature of Drugs used and their toxicity
- 15 Peripheral Nerve Injuries
- 16 Varicose Veins

3.3.3 EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks Allotted
Long case	45 Mins.	35
Short Case	25 Mins.	25
Radiographs Instruments and Catheters Drugs	25 Mins.	25
Journal		05

SECTION-3
CHAPTER-3

3.3 ORAL PATHOLOGY AND MICROBIOLOGY

3.3.1. a : AIM :

The dental students should acquire complete knowledge of embryology, anatomy and physiology of hard and soft tissues of oral and paraoral region and to train dental graduates so as to ensure competence and necessary skills in the diagnosis and prevention of dental and oral diseases.

3.3.1.b OBJECTIVES:

i) Knowledge And Understanding :

- Adequate knowledge about the morphology of the teeth.
- Adequate knowledge about histology of teeth and other oral structures.

- Adequate knowledge of the embryology, development of face, tooth and salivary glands.

- Understanding the etiopathogenesis of oral potential malignant disorders and oral cancer.

- Understanding the etiopathogenesis of various oral lesions and developmental anomalies.

- Understanding the basics of the histopathologic techniques.

ii) Skill:

- Able to carve teeth of permanent dentition

- Able to diagnose oral lesions based on histopathological features.

- Able to differentiate the normal from abnormal tissues based on macro and microscopic features

- Develop the skill of preparing and interpretation of ground section of teeth

iii) Attitudes:

1. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life
2. Apply the current knowledge of etiopathogenesis of the oral lesions for their diagnosis in general clinical practice
3. To apply the knowledge of morphology of the teeth in the clinical practice of restorative dentistry
4. To help and to participate in the implementation of oral potential malignant disorders and oral cancer screening surveys and camps.

3.3.1. c : OUTCOMES :

- At the end of the course the student should be able to do definite diagnosis and treatment competently.
- The student should be able to make decision about higher education related to research pertaining to oral pathology.
- The student should be able to refer the cases properly to the concern discipline.

3.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 109 Hrs.

- 1 Developmental Disturbances of oral and paraoral structures 03 Hrs.

Developmental disturbances of hard tissues:

- Dental arch relations,
- Disturbances related to -
- Size, shape, number and structure of teeth,
- Disturbances related to eruption and shedding.

Developmental disturbances of soft

Tissues : Lip, palate, oral mucosa, gingival, tongue and salivary glands

Craniofacial anomalies

- 2 Benign and Malignant tumors of oral cavity 25 Hrs.

Potentially Malignant Disorders of epithelial tissue origin.

- Definitions and nomenclature
- Epithelial dysplasia
- Lesions and conditions: leukoplakia, erythroplakia, oral lichen planus and oral submucous fibrosis.

Benign tumors of epithelial tissue origin.

- Squamous papilloma, Oral nevi.

Malignant tumors of epithelial tissue origin.

- Oral squamous cell carcinoma: Definition and nomenclature, etiopathogenesis, TNM staging, Broder's and Bryne's grading systems.
- Verrucous carcinoma
- Basal cell carcinoma: Definition etiopathogenesis and histopathology
- Malignant melanoma: Definition etiopathogenesis and histopathology

Benign and malignant tumors of connective tissue

- Fibroblast origin : oral fibromas and fibromatosis, peripheral ossifying fibroma peripheral giant cell granuloma, pyogenic granuloma and Fibrosarcoma
- Adipose tissue origin: Lipoma
- Endothelial origin (blood and lymphatics: Hemangiomas and lymphangiomas, Hereditary hemorrhagic telangiectasia, Kaposi's sarcoma

Bone and cartilage: Chondroma, osteoma, osteoid osteoma, benign osteoblastoma, osteosarcoma, torus palatinus and mandibularis

- Muscle tissue origin:

Leiomyoma. Rhabdomyoma, rhabdomyosarcoma.

- Nerve tissue origin : Traumatic neuroma, neurilemmoma, neurofibroma
- Lymphomas: Definition, classification, differences between Hodgkins and Non - Hodgkins lymphoma and Burkitts lymphoma

3 Tumors of salivary glands 05 Hrs.

- Histogenesis
- Classification.
- Benign tumors : pleomorphic adenoma, Warthin tumor, myoepithelioma
- Malignant tumors : mucoepidermoid carcinoma, adenoid cystic carcinoma, polymorphous low-grade adenocarcinoma

4 Non-neoplastic diseases of salivary glands 04 Hrs.

- Xerostomia, Sjogren syndrome, Mickuliz syndrome, Sialadenosis, necrotizing sialometaplasia, mucocele and sialolithiasis

- 5 Odontogenic and Non - Odontogenic cysts 08 Hrs.
- Definition
 - Classification
 - Lesions: Keraocystic odontogenic tumor, dentigerous cyst, calcifying odontogenic cyst, radicular cyst and dental lamina cyst of newborn and eruption cysts.
 - Non - Odontogenic cysts: Solitary bone cyst and aneurismal bone cyst
- 6 Odontogenic tumors 09 Hrs.
- Definition
 - Classification
 - Lesions: Ameloblastoma, Squamous odontogenic tumour, Calcifying epithelial odontogenic tumour, - Ameloblastic fibroma, fibro-dentinoma, Ameloblastic fibro-dentinoma, Ameloblastic fibro-odontoma, Complex odontoma, Compound odontoma, Ameloblastic carcinoma and malignant ameloblastoma.
 - Odontogenic fibroma (simple and WHO type), Odontogenic myxoma or myxofibroma, Benign cementoblastoma
- 7 Bacterial infections of oral cavity 02 Hrs.
- Tuberculosis, Syphilis, Diphtheria, Noma, Leprosy, Actinomycosis, Tetanus.
- 8 Viral infections of oral cavity 04 Hrs.
- Herpes simplex, Herpes zoster, Measles, Rubella, Herpangina, Mumps, Chicken pox, Molluscum contagiosum and Oral manifestations of HIV infection.
- 9 Mycotic infections of oral cavity 02 Hrs.
- Candidiasis, South American Blastomycosis, North American Blastomycosis, Mucormycosis
- 10 Diseases of the periodontium 04 Hrs.
- Classification
 - Etiopathogenesis
 - Lesions: Gingivitis, ANUG, Gingival enlargement, desquamative gingivitis, Chronic and aggressive periodontitis.
 - Trauma from occlusion

- 11 Dental caries 05 Hrs.
- Definition
 - Classification
 - Etiopathogenesis, Theories, microbiology of dental caries, histopathology of enamel, dentinal and cemental caries.
- 12 Diseases of pulp and periapical tissue 04 Hrs.
- Definition
 - Classification
 - Lesions: acute pulpitis, chronic pulpitis, chronic hyperplastic pulpitis, pulp abscess, pulp necrosis, pulp fibrosis, periapical granuloma, periapical abscess, periapical cyst
 - Sequale of pulpitis.
 - Osteomyelitis: Definition, classification, etiopathogenesis,
 - Types: Acute and chronic suppurative Osteomyelitis, Garre's Osteomyelitis
- 13 Spread of oral infection 02 Hrs.
- Focus of infection
 - Focal infection
 - Routes of spread of infection
 - Space infections: cellulitis, space infections, ludwing's angina, Maxillary sinusitis,
- 14 Physical and chemical injuries to the oral tissues 02 Hrs.
- Traumatic cyst, bruxism, tooth ankylosis, linea alba, traumatic ulcerations of oral mucosa (eosinophilic granuloma), denture sore mouth, epulis fissuratum, mucocele, ranula, sialolithiasis, radiation effects of oral and paraoral tissues-osteoradionecrosis
 - Plumbism, mercury poisoning, argyria, effects of tetracycline
- 15 Regressive alterations of the teeth 02 Hrs.
- Attrition, abrasion and erosion
 - Sclerotic dentin, dead tracts, secondary dentin, pulp calcification, resorption of teeth, hypercementosis, cementicles
- 16 Healing of oral wounds 03 Hrs.
- Factors affecting wound healing
 - Complications
 - Healing of wounds : gingivectomy, biopsy, extraction and fracture),
 - Biopsy techniques, exfoliative cytology

- 17 Oral aspects of metabolic diseases 03 Hrs.
- Classification
 - Disturbances of mineral metabolism: calcium and phosphorus-osteoporosis, rickets. Fluoride and fluorosis.
 - Disturbances of protein metabolism: marasmus and Kwashiorkor
 - Amyloidosis
 - Avitaminosis: vitamin A, D, K, C and B-complex
 - Disturbances of hormonal metabolism: Hypo and hyper pituitarism, Addison's disease, hypo and hyper parathyroidism, diabetes mellitus
- 18 Allergic and immunologic diseases of the oral cavity 03 Hrs.
- Definition and nomenclature
 - Lesions: recurrent aphthous stomatitis, reiter's syndrome, behcet's syndrome, contact dermatitis and stomatitis, sarcoidosis
- 19 Diseases of bone and joints 05 Hrs.
- Osteogenesis imperfecta, fibrous dysplasia, cherubism, cleidicranial dysplasia, Down's syndrome, Pagets disease, Cementoblastoma
 - Hyper and hypo parathyroidism, rickets
 - Developmental disturbances of TMJ, : ankylosis, rheumatoid arthritis, osteoarthritis
- 20 Diseases of blood and blood forming organs 04 Hrs.
- RBC diseases:
 - Anemias: iron deficiency anemia and plummervinson syndrome, pernicious anemia and megaloblastic anemia, thalassemia, sickle cell anemia, aplastic anemia, erythroblastosis foetalis & polycythemia vera.
 - WBC diseases: agranulocytosis, cyclic neutropenia, leukocytosis and leucopenia, infectious mononucleosis, leukemias
 - Platelet and coagulation diseases: Purpura, thrombocytopenia, hemophilia, von Willebrand's disease
- 21 Diseases of the skin 06 Hrs.
- Ectodermal dysplasia, oral lichen planus, psoriasis, erthema multiformae, pemphigus pemphigoid (bullous, cicatricial), epidermolysis bullosa, Lupus erythematosus, systemic sclerosis, Dyskeratosis congenita,
- 22 Diseases of nerves and muscles 02 Hrs.
- Trigeminal neuralgia, auriculotemporal syndrome, Bell's palsy, burning mouth syndrome, glossodynia and glossopyrosis, migraine
 - Classification of diseases of muscles, myasthenia gravis, myositis ossificans

23 Forensic odontology 02 Hrs.

- Definitions and nomenclature
- Personal identification
- Dental identification
- Palatal rugae patterns
- Age estimation,
- Bite marks: classification, appearance, investigations, analysis, comparison and conclusion
- Lip prints.

DESIRABLE TO KNOW: 40Hrs.

- 1 Developmental disturbances of oral lymphoid tissue and Fissural (inclusion) cysts of oral region - lateral periodontal cyst, residual cyst, glandular odontogenic cyst, cysts of maxillary antrum and cysts of soft tissues. 03 Hrs.

- 2 Benign and Malignant Tumors of Oral Cavity 05 Hrs.
 - Squamous acanthoma, Keratoacanthoma,
 - Angiomyoma, leiomyosarcoma
 - MEN syndrome, malignant nerve tumors, granular cell tumor,
 - Different histological grading systems,
 - Histological variants and molecular biology of squamous cell carcinoma
 - Histological variants
 - Clarks and Breslow system
 - Giant cell fibroma, myofibroma, fibromatosis, benign and malignant fibrous histiocyoma.
 - Lipoblastoma
 - Liposarcoma-Vascular malformations, sturge weber syndrome, angiofibroma. hemangioendothelioma, hemangiopericytoma.
 - Chondroblastoma and Ewing's sarcoma and other variants of lymphomas

- 3 Oncocytoma, Ductal Papillomas, Cyst Adenomas, Other Malignant Tumors Oncocytosis. 04 Hrs.

- 4 Odontoameloblastoma, odontogenic carcinomas, odontogenic sarcomas 04 Hrs.

- 5 Infections of Oral Cavity 06 Hrs.
Botromycosis, Tularemia, Melioidisis, Gonorrhoea,
Rhinoscleroma, Cat-Scratch disease
 - Rhinosporidiasis, Cryptococcosis, Coccidioidomycosis, Sporotrichosis

- 6 Deposits on Teeth (Stains, Plaque And Calculus),
Periodontal Abscess, Pericoronitis 01 Hrs.
- 7 Caries Activity Tests, Immunology of Dental Caries,
Caries Vaccine, Methods of Caries Control 02 Hrs.
- 8 Aerodontolgia, Condensing Osteitis, Chronic Diffuse
Sclerosing Osteomyelitis, Florid Osseous Dysplasia,
Sclerotic Cemental Masses 01 HR
- 9 Cavernous Sinus Thrombosis, Mechanism And
Significance of oral Foci of Infection 01 Hrs.
- 10 Reactions to Preparation of Teeth for Restorative Procedures, High Speed
Instrumentation for Cavity and Crown Preparation, Restorative Materials,
Direct Adhesive And Non-Adhesive Restorations, Indirect Restorations,
Bacteria At Tooth Restoration Interface And Microleakage.
- Effects of orthodontic tooth movement and burns.
- Non-allergic local reactions to drugs and chemicals
- Effects of cancer chemotherapeutic agents. 02 Hrs.
- 11 Abfraction, Reticular Atrophy of the Pulp 01 Hrs.
- Replantation and transplantation of teeth
- Implants and osseointegrated implants
- 12 Disturbances of Mineral Metabolism (Trace Elements)
- Porphyria
- Lysosomal storage diseases
- Disturbances of carbohydrate
Metabolism : mucopolysaccharidosis
- Vitamin E
- Progeria 01 Hrs.
- 13 Chronic Granulomatous Disease.
Midline Lethal Granuloma, Uveoparotid Fever,
Wegeners Granulomatosis, Angioedema 01 Hrs.
- 14 Craniofacial Dysostosis, Mandibulofacial Dysostosis,
Pierre-Robin's Syndrome, Apert Syndrome 02 Hrs.
- Luxation and subluxation, TMJ syndrome,
Langerhans cell histiocytosis, eosinophilic granuloma
and Hand-Schuller-Christian disease

- 15 Chediak –Higasi Syndrome, Thrombasthenia, Parahemophilia 01 Hrs.
- 16 Keratosis Follicularis, White Sponge Nevus, Acanthosis Nigricans, Paraneoplastic Pemphigus, Hailey- Hailey Disease, Ehlers –Danlos Syndrome, Goltz’s Syndrome 2Hrs.
- 17 Spenopalatine Neuralgia, Miscellaneous Disturbances of Nerves and Muscles 01Hrs.
- 18 Identification in Disasters, Identification from Dental DNA, Dental Profiling, Sex Identification from Craniofacial Morphology and Dimensions and By DNA Analysis 02Hrs.

S. N	Date of BOM	Resolution No	Previous	Changes
1	09/07/2014	BM-32 – 14 (i)	Previously was not there .	<ul style="list-style-type: none"> - Asepsis, Sterilization and Infection Control were added to the 3rd BDS syllabi. Effective from 2015-16. - Disaster Management. Effective from 2015-16. - 10 classes on Research Methodology. Effective from 2015-16. - Oral Pathology Practical: <ol style="list-style-type: none"> 1) Discussion on General Pathology Slides. 2) Preparation of Ground Section of tooth. 3) OMDR Posting. 4) Preparation of Agar Plates. (Culture of aerobic and anaerobic micro-organisms.) 5) Immunohistochemistry- staining of 10 slides as a quota.
2	29/12/2015	BM-27(ii)–15	None	It was resolved that following topics on bioethical aspects be incorporated in the BDS syllabus, to be implemented from Academic Year 2016-17 be approved.

<i>Year</i>	<i>Topics to be covered</i>	<i>No of hours</i>	<i>Concerned Department</i>
<i>III BDS</i>	<i>Principals of dental ethical as per DCI 1 - Pt autonomy (Self-governance) 2 - Non-maleficence (do no harm) 3 – Beneficence (As good) 4 - Justice (fairness) 5 - Veracity (truthfulness)</i>	<i>2 Lectures</i>	<i>Public Health Dentistry</i>
		<i>1 Lecture Psychologist</i>	<i>Paedodontics and (Mrs. Ubhe) Patient Management and Communication Skills.</i>

Modifications in Syllabi from January 2019
Resolution No-BM-05 (vi) – 19
ORAL PATHOLOGY AND MICROBIOLOGY

BIO-ETHICS SYLLABUS

<i>Name of the Topic</i>	<i>Year</i>	<i>Time</i>	<i>Included in Syllabus as</i>
<i>Bioethics of withdrawing blood</i>	<i>III BDS</i>	<i>15 min</i>	<i>Must Know</i>
<i>Bioethics of handing Biopsy Specimens</i>	<i>III BDS</i>	<i>15 min</i>	<i>Must Know</i>
<i>Bioethics of confidentiality of Patient Diagnosis</i>	<i>III BDS</i>	<i>15 min</i>	<i>Must Know</i>
		<i>Total = 45 mins</i>	

3.3.3 EXAMINATION PATTERN

Name of the exercise	Time allotted	Marks
i) Identification of slides (10) : 5 marks each	50 minutes	80
ii) Identification of specimens (6) : 5 marks each		
2. Journal	-	10
Total		90

<i>1</i>	<i>29/12/2015</i>	<i>BM-27 (iii)– 15</i>	<i>None</i>	<i>Modifications in University Theory examination pattern for 1st, 2nd and 3rd year BDS subjects.</i>
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**IV YEAR BDS
PART - 1**

SECTION-4A
CHAPTER-1

4A.1. PUBLIC HEALTH DENTISTRY

4A.1.1. a : AIM: The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and such attitudes which are required for carrying out all the activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate should also understand the concept of community oral health education and be able to participate in the rural health care delivery programs existing in the country.

4B.1.1. b OBJECTIVES:

i Knowledge and understanding:

- The graduate should acquire the following during the period of training.
- Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyze various scientifically established facts and data.
- 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 the bearing on physical and social well-being of the patient.
- 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.
- Adequate clinical experience required for general dental practice.
- Adequate knowledge of biological function and behavior of persons in health and sickness as well as the influence of the natural and social environment on the state of health so far as it affects dentistry.

ii Skills:

- A graduate should be able to demonstrate the following skills necessary for practice of dentistry.
- Able to 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.
- Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical and other procedures.
- Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.
- Promote oral health and help to prevent oral diseases wherever possible.
- Competent in control of pain and anxiety during dental treatment.

iii Attitudes:

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

- Willing to apply current knowledge of dentistry in the best interest of the patients and the community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
- Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
- To help and to participate in the implementation of national health programmes.

4 A.1.1. c OUTCOMES :

- The student should be able to function independently as a dental clinician.
- At the end of the 4 +1 year program the student should be able to handle clinical situations competently.
- The student should be able to make an informed decision about further education.
- The student should be able to make a judicious choice to refer cases beyond her / his competency.

4A.1.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 46 Hrs.

- 1 Introduction: 01 HR
 - History of Dentistry (India and abroad),
 - Definitions - Public Health
 - Introduction, Definition, History, Changing concepts, History of Public Health in India Characteristic method and Technique
- 2 Dental Public Health 01 HR
 - Aims, and objectives, Tools, Procedural Steps in Dental Public Health, Similarities and dissimilarities between Clinical Dentistry and Public Health Dentistry, Functions of the public health dentist
- 3 Survey 02 HR
 - Need, Aims of a Survey, types of survey, Oral health Surveys
 - Basic Methods (WHO-1997)
- 4 Program Planning and Evaluation. 01 HR
 - Planning cycle, types of evaluation
- 5 Biostatistics 03 Hrs.
 - Introduction, Application in Dentistry, data collection, Sampling techniques -Measures of Central Tendency,
 - Measures of Dispersion, Normal Curve, Presentation of data- Tables, charts and Diagram.
 - Tests of Significance, Confidence limits.

- 6 General Epidemiology 03 Hrs.
 - Introduction, Definition, Aims and Objectives, Principles, Difference between clinical medicine and Epidemiology, Basic measurement in Epidemiology, Incidence and Prevalence. Descriptive Epidemiology, Analytical Epidemiology (Case control and Cohort study), Experimental Epidemiology. Uses of Epidemiology.
- 7 Health 01 HR
 - Definition, Changing concepts, Dimension, Determinants, Ecology, and Spectrum of health.
- 8 Disease 01 HR
 - Concepts, Natural history, Epidemiological Triad, Iceberg Phenomenon, Spectrum of disease and Dynamics of disease transmission. Concepts of prevention (Levels and modes of intervention)
- 9 Environment and Health 02 Hrs.
 - Water: Norms of Portability, uses of water and sources, purification of water (Large and small scale), hardness of water
 - Air: Composition, air pollution, effects, prevention and control of air pollution.
- 10 Social Environment 01 HR
 Definitions, Types of Family
 Influence of culture on oral health, Influence of social class on oral health
 Types of social classes.
 Utilization of dental care according to social class
- 11 Waste Disposal 01 HR
 - Sources of refuse, health hazard and methods of Disposal
- 12 Communication for Health Education. 02 Hrs.
 - Definition, communication process, types, barriers, approaches in health education, health education and Propaganda,
 Contents of Health Education, Principles, methods, and aids
- 13 School health programmes 01 HR
 Aims, elements, advantages, disadvantages
 School Health programs in developing and developed countries

- 14 Epidemiology of Dental caries 02 Hrs.
Host, agent and Environmental factors.
Levels of prevention for dental caries
- 15 Prevention and control of Dental caries. Fluorides 02 Hrs.
- Introduction, History, Physiology of Fluoride, sources,
- Systemic fluoridation, topical fluoride
- Defluoridation, toxicity, safety dose, Caries vaccine.
- 16 Caries Activity tests 01 HR
- Pit and fissure sealant.
- 17 Epidemiology of Periodontal disease. 01 HR
- Host, agent and Environmental factors.
- Prevalence of periodontal disease.
- 18 Prevention and control of Periodontal Disease. 01HR
- Levels of prevention for periodontal disease.
- Plaque control
- 19 Epidemiology and Prevention and control of malocclusion. 01 HR
- 20 Epidemiology Prevention and control of oral cancer. 02 Hrs.
Host, agent and Environmental factors. Prevalence
Levels of prevention for oral cancer.
- 21 Indices. 03 Hrs.
- Introduction, classification, ideal requisites, uses.
- Dental caries indices – DMFT, DMFS, dmft, deft, dft, dfs, defs,
Gingival Indices - Loe and Sillness index
- Plaque Indices- Sillness and Loe index.
- Oral hygiene indices- OHI and OHI-S
Periodontal Indices- Russell's periodontal index, CPITN, CPI.
- Dental fluorosis Index- Dean's fluorosis index
WHO proforma 1997
- 22 Provision of dental care 01 HR
Private and group practice, Part time practice, HMO, PPO,
Neighborhood health clinic, Portable equipments.
- 23 Dental Payments. 01 HR
Types of dental payments in detail
Dental insurance

- 24 Dental Auxiliaries. 01 HR
 Definition, classification, description of each in Detail,
 New type of dental auxiliaries, Degree of supervision of auxiliaries
- 25 Health care of the community 01 HR
 - PHC, Elements of primary health care, Principles of
 primary health care.
 Health care system in India.- Public sector, private sector,
 indigenous systems voluntary health agency, National
 health program and National oral health care program
- 26 Health agencies around the world. 01 HR
- 27 WHO 01 HR
- 28 Dental council of India 01 HR
 Dentist's Act 1948
- 29 Indian Dental Association. Structure, functions. 01 HR
- 30 Ethics, Ethical Principles, Ethical rules for Dentists 01 HR
- 31 Dental Jurisprudence and Consumer Protection Act 01 HR
- 32 Dental Practice Management 01 HR
 - Areas for consideration - planning, finance, setting up of fees, quality
 care, records, Legal implications, Consumer related aspects.
- 33 Child psychology Classification and behavior management. 01 HR
- 34 Computers in dentistry 01 HR
- 35 Atraumatic restorative treatment 01 HR

DESIRABLE TO KNOW 15Hrs.

The UN Millennium developmental goals.
 National oral health Policy
 Indian Association of Public Health Dentistry.
 Training and calibration of examiners.
 Evaluating a public health problem (Problem Based learning)
 Regression techniques
 Association and Causation
 Investigation of an epidemic

Recent advances in epidemiology
Epidemic, endemic and pandemic diseases across the world.
Light, Requirement of good lighting, Natural and artificial light, methods of artificial lighting.
Noise: Sources, properties, effects, control.
Radiation: Sources, Types, Biological Effects, Radiation protection.
Social and Cultural Anthropology.
Dental waste disposal.
Health promotion, Approaches to Health Promotion.
WHO contribution, Implementation of school health program.
Trends in dental caries in developed and developing countries
Caries risk assessment i.e. Cariogram
Chairside caries activity test newer advances in pit and fissure sealants
Periodontal risk assessment
Tobacco control and Habit cessation. New modalities in diagnosis of oral cancer
Genetics and oral cancer
Malocclusion indices-.
Recent dental caries index i.e. ICDAS
Indices for incipient caries
Community fluorosis index.
Provision of dental care in India
National Rural Health Mission
Contribution of centre and state in oral health in India, oral health care for special groups

Indian Association of Public Health Dentistry, International Labor organization.
International food Organization.
WHO goals for oral health.
Organisation of IDA in India
Nuremberg code,
Declaration of Geneva,
World medical association
International code of Medical ethics,
Declaration of Helsinki Ethics in Dental Research
Classification of malpractice
New materials for ART

Modifications in Syllabi from January 2019

Resolution No-BM-05 (vi) – 19

BIO-ETHICS SYLLABUS

<i>Name of the Topic</i>	<i>Year</i>	<i>Time</i>	<i>Following Topics which are already in the syllabus will be emphasized. (Included in Syllabus as)</i>
<i>Benefit and Harm.</i>	<i>3rd BDS</i>	<i>1 hour</i>	<i>Must Know- Ethics, Ethical Principles Good to know- International code of Medical ethics.</i>
<i>Doctors Rights and Patients Right</i>	<i>3rd BDS</i>	<i>1 hour</i>	<i>Must Know: Dental Jurisprudence. Consumer Protection Act Good to Know: India's 1st charter of patients' rights</i>
<i>Access to Oral Health Care</i>	<i>4th BDS</i>	<i>1 hour</i>	<i>Must Know: Social Environment. Influence of culture on oral health, Influence of social class on oral health Good to Know: BPOC- a right to health, step taken by Government</i>
<i>Health Laws</i>	<i>3rd BDS</i>	<i>1 hour</i>	<i>Must Know: Ethical Principles Good to Know: Nuremberg Code Drug and Cosmetic Act</i>
<i>Informed Consent</i>	<i>3rd BDS</i>	<i>1 hour</i>	<i>Must Know: Ethical Rules for Dentist Good to Know: Declaration of Geneva, Issues and challenges related to informed consent</i>
<i>Justice and equal distribution of public health resource</i>	<i>4th BDS</i>	<i>1 hour</i>	<i>Must Know: Health disparity and ethical issues</i>
<i>Professional Ethics and Advertising</i>	<i>4th BDS</i>	<i>1 hour</i>	<i>Must Know: Ethical Rules for Dentists, Dental Practice Management, Duties and obligations towards patient, society and other dentist. Good to Know:- Web advertising and marketing</i>

4A.1.3 EXAMINATION PATTERN

Name of exercise	Time allotted	Marks allotted
Case History including Indices.	01 Hr	50
Project Work	NA	15
Journal	NA	05
Preventive Procedure	20 mins	20
Viva	10 mins	20

1	30/03/2016	BM-04 (i)-16		<i>It was resolved that the following University Examination Pattern recommended by the Academic Council for Dental Subjects for Final Year BDS Part - I and Part - II, be approved. The said University Examination Pattern be implemented from the examinations to be held from Nov. / Dec. 2016 onwards.</i>
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Approved University Exam Pattern

Section	Particular	Marks	Total Marks
<i>Section - A</i>	<i>Multiple Choice Questions</i>	<i>20 X 1</i>	<i>20 Marks</i>
<i>Section - B</i>	<i>Long answer questions</i>	<i>2 (out of 3) x 10 marks</i>	<i>20 Marks</i>
<i>Section - C</i>	<i>Short answer questions</i>	<i>10 (out of 11) x 3 marks</i>	<i>30 Marks</i>
	<i>Theory Viva</i>		<i>20 Marks</i>
	<i>Internal assessment</i>		<i>10 Marks</i>
		Total Marks	100 Marks

**SECTION-4A
CHAPTER-2**

4A.2. PERIODONTOLOGY

4A.2.1. a AIMS:

The dental graduate during training in the institution should acquire adequate knowledge, necessary skills and attitude which are required to perform diagnosis of periodontal diseases and render periodontal therapy and maintenance of the same.

The graduate should also understand the concept of preventive periodontics and should be able to participate in health care delivery programs.

4A.2.1. b OBJECTIVES:

The Students shall acquire the necessary knowledge and skills to perform Dental scaling diagnostic tests and use various instruments for periodontal therapy and its maintenance

I Knowledge and understanding :

- Student should have knowledge regarding etiology pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population.
- Basic knowledge regarding biochemical, microbiology, immunologic and genetic aspects of periodontal pathology.
- Knowledge regarding various treatment modalities of periodontal diseases from historical aspect to present with emphasis on newer advances like LASERS, Microsurgery and Piezo surgery.
- Knowledge regarding various preventive periodontal procedures.
- Basic Knowledge regarding interrelationship of periodontal diseases and systemic conditions and its effect on pathogenesis and treatment planning.
- Knowledge regarding periodontal hazards of deleterious habits and its prevention.
- Knowledge of decision making regarding surgical and non-surgical periodontal therapy.
- Brief knowledge, understanding and skills regarding art and science of oral Implantology.

II Skills :

- Take a proper clinical history and thorough examination of extra oral and intra oral structures with special emphasis on gingiva and periodontal tissues.
- Medical history evaluation and advising essential diagnostics test and its interpretation.
- Skills regarding basic life support and management of medical emergencies in dental practice.
- Following appropriate infection control protocol and asepsis.
- Skills regarding use of various surgical and non-surgical periodontal instruments.
- Application of knowledge regarding chair position and principles of instrumentation.
- Skills of sharpening blunt periodontal instruments.
- Skills in use of ultrasonic scalers.
- Skills to use R.V.G. and its interpretation.

III Attitudes :

- The students should develop attitude to impart periodontal preventive measures for causation and progression of periodontal diseases.
- Students should develop and attitude to perform the treatment with full aseptic precautions.
- Develop and an attitude to prevent iatrogenic diseases.
- Attitude to conserve the tooth to maximum possible time by maintaining periodontal health.
- Attitude to understand ones limitation and timely referral to a specialist.

4A.2.1. c OUTCOMES:

- Students should be able to independently record case history of a periodontal patient.
- Student should be able to determine diagnosis, prognosis and make a treatment plan.
- Student should be able to perform scaling and root planning and local drug delivery.
- Student should be able to render supportive periodontal care after active periodontal treatment is completed and motivate the patient to this effect.
- Student should be able to make a judicious choice regarding referral about cases beyond his/ her competency.

4A.2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 73Hrs.

1. Introduction: 01 Hrs.
Definition of Periodontology, Periodontics, Periodontia
2. Development of periodontal tissues: 02 Hrs.
Micro –structural Anatomy and biology of periodontal tissues in detail, gingiva, junctional epithelium in detail, epithelial - mesenchymal interaction, periodontal ligament cementum alveolar bone.
3. Defensive mechanisms in the oral cavity: 02 Hrs.
Role of epithelium, gingival fluid, saliva and other defensive mechanisms in the oral environment.
4. Age change in periodontal structures 01 HR
5. Classification of periodontal diseases: 02 HR
Need for classification, classification of gingival and periodontal diseases as described in world workshop 1989, AAP 1999.

Gingivitis:-

Plaque associated, ANUG, steroid hormone influenced, medication influenced, desquamative gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc.

Periodontitis :-

Chronic periodontitis, aggressive periodontitis, and refractory periodontitis.

6. Gingival Diseases: 03 Hrs.
- Localized and generalized gingivitis.
 - Papillary, marginal and diffuse gingivitis.
Etiology, pathogenesis, clinical signs,
Symptoms and management of Plaque associated gingivitis.
 - Systemically aggravated gingivitis, hormones, drugs and systemic diseases
 - ANUG
 - Peri coronitis
 - Gingival enlargement (Classification and differential diagnosis)
7. Extension of Inflammation from Gingiva:- 01 HR
- Mechanism of spread of inflammation from gingival area to deeper periodontal structures.
Factors that modify the spread
8. Pocket 03 Hrs.
- Definition, signs and symptoms, classification, pathogenesis, histopathology, root surface changes and contents of the pocket
9. Etiology 05 Hrs.
- Dental Plaque (Bio film) - Definition, new concept of bio film
- Types composition, bacterial colonization, growth, maturation and disclosing agents.
 - Role of dental plaque in periodontal diseases.
 - Plaque microorganisms in details and bacteria associated with periodontal diseases.
 - Plaque retentive factors
 - Material 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 and sequelae of treatment

Trauma from Occlusion

- Definition, types
- Histopathological changes
- Role in periodontal disease
- Measures of management in brief

Systemic Disease 02 Hrs.

- Diabetes, sex hormones, nutrition (Vit. C. and proteins)
- Aids and periodontium
- Hemorrhagic diseases, Leukemia, clotting factor disorders, PMN disorders

10. Risk factors 01 HR

- Definition, risk factors for periodontal diseases.

11. Host Response 03 Hrs.

- Mechanism of initiation and progression of periodontal diseases
- Basic concepts about cells, mast cells neutrophils, macrophages, lymphocytes, immunoglobulins, complement system, immune mechanisms and cytokines in brief.
- Stages in gingivitis –initial, early, established and advanced

12. Periodontitis 07 Hrs.

- Etiology, histopathology, clinical signs and symptoms, diagnosis and treatment of chronic periodontitis
- Periodontal abscess, definition, classification, pathogenesis, differential diagnosis and treatment.
- Furcation involvement Glickman's, classification, prognosis and management.
- Aggressive periodontitis.
- Periodontitis associated with systemic diseases
- Refractory periodontitis

13. Diagnosis 03 Hrs.

- Routine procedures, method of probing, type of probes (according to case history)
- Halitosis etiology and treatment, mention advanced diagnostic aids and their role in brief.

14. Prognosis 01 HR
 - Definition, types, purpose and factors to be taken into consideration
15. Treatment Plan 10 Hrs.
 Factors to be considered
 Periodontal therapy
 A. General principles of periodontal therapy. Phase I, II, III, IV therapy
 - Definition of periodontal regeneration, repair, new attachment.
 B. Plaque control
 - Mechanical toothbrushes, interdental cleaning aids, dentifrices.
 - Chemical: Classification and mechanism of action of each and pocket irrigation.
17. Pocket eradication procedures 04 Hrs.
 - Scaling and root planning
 - Indication
 - Aims and objectives
 - Healing following root planning
 - Hand instruments, sonic, ultrasonic and piezo electric scalers.
 - Curettage and present concepts
 - Definition
 - Indications
 - Aims and objectives
 - Procedures and healing response
 - Flap surgery
 - Definition
 - Types of flaps designs of flap papilla preservation
 - Indication and contraindications
 - Armamentarium
 Surgical procedure and healing response
18. Osseous surgery 04 Hrs.
 - Osseous defects in periodontal diseases
 - Definition
 - Classification
 Surgery:
 - Resective, Additive Osseous Surgery (osseous grafts with classification of grafts)
 - Healing responses
 - Other regenerative procedures: root conditioning
 Guided tissue regeneration

19. Mucogingival surgery and periodontal plastic surgeries 03 Hrs.
 - Definition
 - Mucogingival problem: etiology, classification of gingival recession (P.D. Miller Jr. and Sullivan and Atkins)
 - Indication and objectives
 - Gingival extension procedures: lateral pedicle graft frenectomy, frenotomy, frenoplasty
 - Crown lengthening procedures
 Periodontal microsurgery in brief
20. Splints 01 HR
 - Periodontal splints
 - Purpose and classification principles of splinting
21. Hypersensitivity 01 HR
 - Causes, theories and management
22. Implants 02 Hrs.
 - Definition, types scope and biomaterials uses.
23. Maintenance phase 01 HR
 - Aims, objective, and principles
 - Importance
24. Pharmaco – Therapy 01 HR
 - Periodontal dressings
 - Antibiotics and anti-inflammatory drugs local drugs delivery system.
25. Periodontal management of medically compromised patients 02 Hrs.
 - Topics concerning periodontal management of medically compromised patients
26. Inter - disciplinary care 03 Hrs.
 - Pulpo- periodontal involvement
 - Perio ortho
27. Systemic Effects of periodontal diseases in brief 02 Hrs.
 - Cardiovascular diseases, low birth weight babies diabetes etc.
28. Infection control protocol 02 Hrs.
 - Sterilization and various aseptic procedures.

DESIRABLE TO KNOW 09 Hrs.

- Desquamative Gingivitis:- 02 Hrs.
- Gingivitis associated with lichen planus, pemphigoid, pemphigus, and other vesiculobullous lesions,
 - Allergic gingivitis
 - Infective gingivitis – herpetic, bacterial and candidial.

- Epidemiology of Periodontology Disease: 02 Hrs.
- 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 and Loe Plaque index, loe and silness Gingival index, CPITN and CPI
 - Prevalence of periodontal disease in India and other countries.
 - Public health significance (All these topics)

- Habits 01 Hrs.
- Their periodontal significance
 - Bruxism and parafunctional habits, tongue thrusting, lip biting, occupational habits.

- Prosthodontics 01 HR
- Interrelationship, Bridges and other prosthesis, pontics (types), surface contour, relationships of margins to the periodontium, gingival protection theory, muscle action theory and theory of access to oral hygiene.

- Orthodontics 01 HR
- Interrelationship, removable appliances and fixed appliances Retention of plaque, bacterial changes
 - Periodontal disease activity, continuous paradigm, random burst and asynchronous multiple burst hypothesis. Periodontal considerations; such as implant bone interface, implant – gingival interface, implant failure, peri- implantitis and management.

Procedures 01 HR

Maintenance of implants 01 HR

Resolution No-BM-05 (vi) – 19
Modifications in Syllabi from January 2019
BIOETHICS IN PERIODONTOLOGY BDS SYLLABUS

Name of the Topic	Year	Time	Included in Syllabus as
CASE HISTORY IN PERIODONTICS Bioethics related to 1) Confidentiality of Case History Findings 2) Informed consent for Investigations 3) Patient Rights to education regarding Final Diagnosis 4) Patients' Rights to know alternatives of treatment choices 5) Informed Consent regarding Treatment (Benefits and Risks) 6) Informed Consent regarding follow-up visits and importance of Supportive Periodontal Therapy	III BDS	1 Hour (Theory Class)	Must Know
CASE HISTORY IN PERIODONTICS Bioethics related to 1) Confidentiality of Case History Findings 2) Informed consent for Investigations 3) Patient Rights to education regarding Final Diagnosis 4) Patients' Rights to know alternatives of treatment choices 5) Informed Consent regarding Treatment (Benefits and Risks) 6) Informed Consent regarding follow-up visits and importance of Supportive Periodontal Therapy	IV BDS	1 Hour (Clinical Posting)	Must Know
Bioethics related to 1) Sterilization 2) Biomedical waste disposal	III BDS	15 Min (Clinical Posting)	Must Know
Bioethics related to 1) Sterilization 2) Biomedical waste disposal	IV BDS	15 Min (Clinical Posting)	Must Know
		Tot. = 150 mins (2hrs 30 mins)	

4A.2.3 EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks Allotted
Scaling and Polishing	45 Mins	40
Clinical Case examination, History Taking and Treatment Planning.	45 Mins	25
Post-Operative Instructions, Chairside Viva.	30 Mins	20
Journal	NA	05

**SECTION-4A
CHAPTER-3**

4A.3 ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS

4A.3.1a Aim:

The subject of Orthodontics and Dentofacial Orthopaedics is directed toward providing the dental student with the knowledge and skills necessary to recognize a developing or established malocclusion, provide preventive and therapeutic treatment within the scope of the general dental practice, consult as a team member with the specialist, refer cases requiring specialist care as appropriate, and coordinate comprehensive care of the patient. Didactic and laboratory exercises provide a strong foundation for delivery of limited orthodontic treatment as part of an adult and child patient's comprehensive dental care.

4A.3.1.b. Objectives:

The training programme in this subject is to structure and achieve the following objectives.

Knowledge and Understanding:

1. The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment
2. The etiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems
3. Various treatment modalities in Orthodontics: preventive, interceptive and corrective
4. Basic sciences relevant to the practice of Orthodontics
5. Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro - facial deformities.
6. Factors affecting the long-range stability of orthodontic correction and their management
7. Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.

Skills:

1. To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, and interpret them and arrive at a reasonable diagnosis about the Dentofacial deformities.
2. Should be competent to fabricate and manage the most appropriate removable appliance (active or passive) for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of oro-facial deformities.

Attitudes:

1. Develop an attitude to adopt ethical principles in all aspects of orthodontic practice.
2. Professional honesty and integrity are to be fostered
3. Treatment care is to be delivered irrespective of the social Status, cast, creed or colleagues
4. Willingness to share the knowledge and clinical experience with professional colleagues
5. Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which are in the best interest of the patient.
6. Respect patient's rights and privileges, including patient's right to information and right to seek a second opinion.
7. Develop attitude to seek opinion from allied medical and dental specialists as and when required.

4A.3.1.c. OUTCOMES

1. Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Dento facial problem and to obtain a true informed consent from them for the most appropriate treatment available at that point of time.
2. Develop the ability to communicate with professional colleagues, in Orthodontics or other specialities through various media like correspondence, Internet, e-video, conference, etc. To render the best possible treatment.

4A.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 Hrs.

1. Introduction 01 HR
Definition, Historical Background, aims and Objectives of Orthodontics and Need for Orthodontics care
2. Growth and Development 02HR
In General
 - a. Definition
 - b. Growth spurts and Differential growth
 - c. Factors influencing growth and Development
 - d. Methods of measuring growth
 - e. Growth theories
(Genetic, Sicher's, Scott's, Moss's, Petrovic's, Multifactorial)
 - f. Genetic and epigenetic factors in growth
 - g. Cephalocaudal gradient in growth
3. Morphologic Development of Craniofacial structures 02 HR
 - 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 02 HR
 - a. Factors influencing functional development of dental arches and occlusion
 - b. Forces of Occlusion
 - c. Wolff's law of transformation of bone
 - d. Trajectories of forces
5. Clinical Application of Growth and development. 02Hrs.
6. Malocclusion - In General 02 Hrs.
 - a. Concept of normal occlusion
 - b. Definition of malocclusion
 - c. Description of different types of dental, skeletal and functional malocclusion.
7. Classification of Malocclusion 02 Hrs.
Principle, description, advantages and disadvantages of classification of malocclusion by Angle's, Simon's, Lischer's and Ackerman and Proffitt's

8. Normal and Abnormal Function of Stomatognathic system 01 HR
9. Etiology of Malocclusion 02Hrs.
- a. Definition, importance, classification, local and general etiological 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
 - 9) Habits
10. Diagnosis And Diagnostic Aids 03 Hrs.
- 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 & uses
 - f. Cephalometrics : Its advantages, disadvantages
 1. Definition
 2. Description and use of cephalostat
 3. Description and uses of anatomical landmarks
lines and angles used in cephalometric analysis
 4. Analysis - Steiner's, Down's, Tweed's, Rickett's- E- line
 - g. Electromyography and its uses in orthodontics
 - h. Hand and Wrist X-rays and its importance in orthodontics
11. General Principles in Orthodontic Treatment Planning of Dental And Skeletal Malocclusions 02 Hrs.
12. Anchorage In Orthodontics – 02Hrs.
Definition, Classification, Types and Stability of Anchorage
13. Biomechanical Principles In Orthodontics Tooth movement 02 Hrs.
- a. Different types of tooth movements
 - b. Tissue response to orthodontic force application
 - c. Age factor in orthodontic tooth movement
 - d. Theories of Tooth Movement

14. Preventive Orthodontics 03Hrs.
 a. Definition
 b. Different procedures undertaken in preventive orthodontics and their limitations.
15. Interceptive Orthodontics 03Hrs.
 a. Definition
 b. Different procedures undertaken in interceptive orthodontics
 c. Serial extractions: Definition, indications, contraindication, technique, advantages and disadvantages.
 d. Role of muscle exercises as an interceptive procedure
16. Corrective Orthodontics 02Hrs.
 a. Definition, factors to be considered during treatment planning.
 b. Model analysis: Pont's, Ashley Howe's, Bolton's, Carey's, Moyer's Mixed Dentition Analysis
 c. Methods of gaining space in the arch:-
 Indications, relative merits and demerits of proximal stripping, arch expansion and extractions
 d. Extractions in Orthodontics - indications and selection of teeth for extraction
17. Orthodontic Appliances: 01 Hrs.
General
 a. Requisites for orthodontics appliances
 b. Classification, indications of Removable and Functional Appliances
 c. Methods of force application
 d. Materials used in construction of various orthodontic appliances - uses of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antfluxes.
 e. Preliminary knowledge of acid etching and direct bonding
18. Ethics 01HR
19. Orthodontic appliances 08Hrs.

REMOVABLE ORTHODONTIC APPLIANCES

- 1) Components of removable appliances
- 2) Different types of clasps and their uses
- 3) Different types of labial bows and their uses
- 4) Different types of springs and their uses
- 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) Myofunctional Appliances
 - v) Rapid maxillary expansion

FIXED ORTHODONTIC APPLIANCES

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

EXTRAORAL APPLIANCES

1. Headgears
2. Chincup
3. Reverse pull headgears

MYOFUNCTIONAL APPLIANCES

1. Definition and principles
 2. Muscle exercise and their uses in orthodontics
 3. Functional appliances:
 - i) Activator, Oral screens, Frankel's functional regulator, Bionatar, Twin Block, lip bumper
 - ii) Inclined planes - upper and lower
- Orthodontic Management of Cleft Lip And Palate

20. Principles of Surgical orthodontics 03Hrs.
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

21. Principle, Differential diagnosis and methods of Treatment of : 03Hrs.

1. Midline diastema
2. Cross bite
3. Open bite
4. Deep bite
5. Spacing
6. Crowding
7. Class II -Division 1, Division 2
8. Class III Malocclusion - True and Psuedo Class III

22. Retention And Relapse 04 Hrs.

- Definition,
- Need for retention
- Causes of relapse
- Methods of retention,
- Different types of retention devices,
- Duration of retention,
- Theorems of retention

DESIRED TO KNOW 10Hrs.

- Role of Genetic Control In Growth And Development
- Late Adult Growth
- Mandibular Rotation
- Electromyography
- Hand Wrist X-Rays
- Anchorage Preparation and in Various Treatment Modality
- Age Factors In Tooth Movement
- Detailed Biomechanics of the moment to force ratio for various tooth movements
- Distalisation of molars
- Distal Driving of Entire Arches
- Elastomeric Impression
- Ethics
- Types and Principles Of Pre Adjusted Edgewise Appliance.
- Fixed Functional Appliances
- Surgical Management Of Cleft Lip and Palate
- Surgical Procedure for Orthognathic Surgery
- True Class III
- Fabrication of Retainers
- Repair of Lingual Bonded Retainer

*Resolution No-BM-05 (vi) – 19
Modifications in Syllabi from January 2019*

**BIOETHICS IN ORTHODONTICS AND DENTOFACIAL
ORTHOPEDECS**

BDS SYLLABUS

<i>Name of the Topic</i>	<i>Year</i>	<i>Time</i>	<i>Included in Syllabus as</i>
<p>CASE HISTORY IN ORTHODONTICS</p> <p>Bioethics related to</p> <ol style="list-style-type: none"> 1) Confidentiality of Case History Findings 2) Informed consent for Investigations 3) Patient Rights to education regarding Final Diagnosis 4) Patients' Rights to know alternatives of treatment choices 5) Informed Consent regarding Treatment (Benefits and Risks) 6) Informed Consent regarding follow-up visits and importance of supportive measures required during orthodontic treatment. 	<i>III BDS</i>	<i>1 Hour (Theory Class)</i>	<i>Must Know</i>
<p>CASE HISTORY IN ORTHODONTICS</p> <p>Bioethics related to</p> <ol style="list-style-type: none"> 1) Confidentiality of Case History Findings 2) Informed consent for Investigations 3) Patient Rights to education regarding Final Diagnosis 4) Patients' Rights to know alternatives of treatment choices 5) Informed Consent regarding Treatment (Benefits and Risks) 6) Informed Consent regarding follow-up visits and importance of supportive measures required during orthodontic treatment. 	<i>III BDS</i>	<i>1 Hour (Clinical Posting)</i>	<i>Must Know</i>

Bioethics related to 1) Sterilization 2) Biomedical waste disposal	<i>III BDS</i>	<i>15 Min (Clinical Posting)</i>	<i>Must Know</i>
Bioethics related to 1) Sterilization 2) Biomedical waste disposal	<i>IV BDS</i>	<i>15 Min (Clinical Posting)</i>	<i>Must Know</i>
		<i>Total- 150Mins (2hrs30 min)</i>	

4A.3.3 EXAMINATION PATTERN

Name of Exercise	Time allotted	Marks Allotted (90)
Wire Bending	45 Mins.	50 Marks
Model Analysis	30 Mins.	15 Marks
Identification of Appliances, Cephalometric Landmarks and Spotters	45 Mins.	20 Marks
Journals	NA	05 Marks

SECTION-4A
CHAPTER-4

4A.4 ORAL MEDICINE, DIAGNOSIS AND RADIOLOGY

4A.4.1.a AIM :

The subject of Oral Medicine and Radiology aims to train the students ardently to use basic diagnostic procedures and techniques useful in recognizing the disease of the oral and paraoral tissues of local and constitutional origin and their medical management. The subject also includes formulation of the diagnosis and medical management of diseases specific to the orofacial tissues and of oral manifestations of systemic diseases. It also aims towards management of behavioral disorders and oral and dental treatment of medically compromised patients.

4A.4.1.b: OBJECTIVES:

i-Knowledge and understanding:

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

- The students should be able to record a detailed case history and clinical examination of the patient to arrive at a provisional diagnosis.
- They should have knowledge regarding the chair side and advanced diagnostic methods including radiographic techniques to formulate final and differential diagnosis.
- Students should be aware of medical complications that can arise while treating patients and management for the same. They should be able to manage medically compromised patients and modifications in the dental treatment for such patients.
- Students should have the knowledge of various intraoral and extraoral radiographic techniques, radiation safety and radiation hazards.

ii-Skills:

- A graduate should be able to demonstrate the following skills necessary for practice of dentistry.
- To diagnose various premalignant and malignant lesions and conditions, other mucosal disorders and undertaking their medical management.
- To carry out intraoral radiographic techniques like periapical, bitewing and occlusal radiographs.
- To carry out the required investigative procedures like tooth vitality testing, vital staining.
- To prescribe medicines for the common oral and dental pathologies.

b – Attitudes:

- A graduate should develop during the training period the following attitudes.
- Willing to apply current knowledge of Oral Medicine and Radiology in the best interest of the patients and the community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- To handle the patients with great compassion, explain them the required treatment options and also educate about the preventive aspects of oral diseases.
- To counsel and educate the population regarding ill effects of habits like betel nut, tobacco, alcohol etc.

4 A.4.1.c: OUTCOMES:

1. The student should be able to function independently as a dental clinician.
2. At the end of the 4+1 year program the student should be able to handle clinical situations competently.
3. The student should be able to make an informed decision about further education.
4. The student should be able to make a judicious choice to refer cases beyond her/his competency.

4 A.4.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW

1.Oral medicine and diagnostic AIDS:

Section A-Diagnostic Methods 06 Hrs.

- (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

- (3) Investigations
 - (a) Biopsy and exfoliative cytology
 - (b) Hematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis

Section B- Diagnosis, Differential Diagnosis 04 Hrs.

- (1) Teeth : Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
- (2) Inflammation – Injury, infection and spread of infection, fascial space infections, osteoradionecrosis.
- (3) Temporomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Subluxation and luxation.
- (4) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma
- (5) Common cysts and Tumors:
 - Cysts: Cysts of soft tissue: Mucocele and Ranula 07 Hrs.
 - Cysts of bone: Odontogenic and nonodontogenic.
 - Tumors:
 - Soft Tissue:
 - Epithelial: Papilloma, Carcinoma, Melanoma
 - Connective tissue: Fibroma, Lipoma, Fibrosarcoma
 - Vascular: Haemangioma, Lymphangioma
 - Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis
 - Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.
- (6) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
- (7) Inflammation – Injury, infection and spread of infection, fascial space infections, osteoradionecrosis.
- (8) Temporomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Subluxation and luxation.
- (9) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma

(10) Common cysts and Tumors:

Cysts: Cysts of soft tissue: Mucocele and Ranula
Cysts of bone: Odontogenic and nonodontogenic.

Tumors:

Soft Tissue:

Epithelial: Papilloma, Carcinoma, Melanoma

Connective tissue: Fibroma, Lipoma, Fibrosarcoma

Vascular: Haemangioma, Lymphangioma

Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis

Salivary Glands: Pleomorphic adenoma,

Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.

Hard Tissue:

Non-Odontogenic: Osteoma, Osteosarcoma,

Osteoclastoma, Chondroma, Chondrosarcoma, Central giant cell tumor,
and Central haemangioma

Odontogenic: Enameloma, Ameloblastoma, Calcifying Epithelial
Odontogenic tumor, Adenomatoid Odontogenic tumor, Periapical
cemental dysplasia and

Odontomas

Section C-Oral medicines and therapeutics

18 Hrs.

(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, Fordyce spots,
stomatitis nicotina palatinus, white sponge nevus, candidiasis, lichen
planus, discoid lupus erythematosus

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:
Organic pain: Pain arising from the diseases of orofacial tissues like teeth, pulp, gingival, periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone, paranasal sinus, salivary glands etc.,
- (5) 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.)
- (6) Oral manifestations of:
- (i) Metabolic disorders :
 - (a) Porphyria
 - (b) Haemochromatosis
 - (c) Histocytosis X diseases
 - (ii) Endocrine disorders:
 - (a) Pituitary: Gigantism, acromegaly, hypopituitarism
 - (b) Adrenal cortex: Addison's disease (Hypofuntion) Cushing's syndrome (Hyperfunction)
 - (c) Parathyroid glands: Hyperparathyroidism.
 - (d) Thyroid gland: (Hypothyroidism) Cretinism, myxedema
 - (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 anemia)
Haemolytic anemias: (Thalassemia, sickle cell anemia, erythroblastosis fetalis) Aplastic anemia, Polycythemia
 - (b) White Blood cell diseases :
Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias
 - (c) Haemorrhagic disorders: Thrombocytopenia, purpura, hemophillia, christmas disease and Von Willebrand's disease

- (7) Disease of salivary glands:
- (i) Development disturbances: Aplasia, atresia and aberration
 - (ii) Functional disturbances: Xerostomia, ptyalism
 - (iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis, Heerfort's syndrome (Uveoparotid fever), Necrotising sialometaplasia
 - (iv) Cysts and tumors: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma
 - (v) Miscellaneous: Sialolithiasis, Sjogren's syndrome, Mikulicz's disease and sialosis
- (8) Dermatological diseases with oral manifestations:
- (a) Ectodermal dysplasia (b) Hyperkeratosis palmarplantaris with periodontopathy (c) Scleroderma (d) Lichen planus including Gianini's syndrome (e) Lupus erythematosus (f) Pemphigus (g) Erythema multiforme (h) Psoriasis
- (9) 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
- (10) Allergy: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)
- (11) Foci of oral infection and their ill effects on general health
- (12) 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.
- (13) Precancerous lesions and conditions
- (14) Neuralgic pain due to unknown causes: Trigeminal Neuralgia
- (15) MPDS, Bell's Palsy

DESIRABLE TO KNOW**10Hrs.**

Forensic examination – Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics

- (1) Diseases of bone and Osteodystrophies: Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, Marfans syndrome, osteopetrosis.
 - (2) Metabolic disorders – Histiocytosis
 - (3) Endocrine – Acro-megaly and hyperparathyroidism
Miscellaneous – Paget's disease, Mono and polyostotic fibrous dysplasia, Cherubism.
 - (4) Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma, Crohn's Disease and Histiocytosis X
 - (5) Miscellaneous Disorders: Burkitt lymphoma, sturge – Weber syndrome, CREST syndrome, rendu-osler-weber disease
- (1) 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: glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain
 - (c) Referred pain: Pain arising from distant tissues like heart, spine etc.,
 - (2) Altered sensations: paresthesia, halitosis
 - (3) Nerve and muscle diseases:
 - (i) Nerves:
 - (a) Neuropraxia (b) Neurotmesis (c) Neuritis (d) Facial nerve paralysis including Heerfordt's syndrome, Melkerson Rosenthal syndrome and ramsay hunt syndrome (e) Neuroma (f) Neurofibromatosis (g) Frey's syndrome
 - (ii) Muscles:
 - (a) Myositis ossificans (b) Myofascial pain dysfunction syndrome (c) Trismus

- (4) Forensic odontology:
 - (a) Medicolegal aspects of orofacial injuries
 - (b) Identification of bite marks
 - (c) Determination of age and sex
 - (d) Identification of cadavers by dental appliances, Restorations and tissue remanants

- (5) 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, sialogogues, antisialogogues and drugs used in the treatment of malignancy.

ORAL RADIOLOGY

MUST KNOW 20 Hrs.

- (1) Scope of the subject and history of origin

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

- (3) Biological effects of radiation

- (4) Radiation safety and protection measures

- (5) Principles of image production

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

 - (ii) Extra-oral:
 - (a) Lateral projections of skull and jaw bones and paranasal sinuses (c) Cephalograms (d) Orthopantomograph (e) Projections of temporomandibular 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 mAs 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 tissue.

DESIRABLE TO KNOW 10 Hrs.

Principles of radiotherapy of orofacial malignancies and complications of radiotherapy

Contrast radiography and basic knowledge of radio-active isotopes

Radiography in Forensic Odontology - Radiographic age estimation and post-mortem radiographic methods

**Modifications in Syllabi from January 2019
Resolution No-BM-05 (vi) – 19**

BIO - ETHICS FOR BDS

BDS SYLLABUS BIO-ETHICS SYLLABUS

<i>Name of the Topic</i>	<i>Year</i>	<i>Time</i>	<i>Included in Syllabus as</i>
<i>Informed Consent</i>	<i>BDS Third Year</i>	<i>1/2 hour</i>	<i>Must Know (In case history)</i>
<i>Rationale of drug use</i>	<i>BDS Final Year</i>	<i>1 hour</i>	<i>Must Know</i>
<i>Radiation hazard</i>	<i>BDS Third Year</i>	<i>1 hour</i>	<i>Must know</i>
<i>Radiation safety for population</i>	<i>BDS Third Year</i>	<i>1 hour</i>	<i>Must Know</i>
<i>Chair side Investigations</i>	<i>BDS Final Year</i>	<i>1 hour</i>	<i>Must know</i>
		<i>Total= 270 mins.(4.5 Hrs.)</i>	

4A.4.3 EXAMINATION PATTERN

Sr. No	Name of the exercise	Time allotted	Marks allotted
1.	Spotters	18 mins	25 marks
2	Case history taking	30 mins	25 marks
3	IOPA taking and Interpretation	30 mins	25 marks
4	Journal		5 marks
5	Internal assessment and Attendance		20 marks
	Total	1 Hour and 18 mins	100 marks



**IV YEAR BDS
PART - 2**

SECTION-4B

4B.1 ORAL AND MAXILLOFACIAL SURGERY

4 B.1.1. a AIMS :

The dental graduates should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out diagnosis, prevention, surgical and adjunctive treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues.

4 B.1.1.b OBJECTIVES:

i) Knowledge and understanding:

- The graduate should acquire the following during the period of training.
- Adequate knowledge of the scientific foundations on which oral and maxillofacial surgery is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.
- 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 the bearing on physical and social well-being of the patient.
- 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 oral and maxillofacial surgery.
- Adequate clinical experience required for general dental practice.
- Adequate knowledge of 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 so far as it affects dentistry.

ii) Skills:

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

- Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical procedures.
- Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.
- Promote oral health and help to prevent oral diseases wherever possible.
- Competent in control of pain and anxiety during dental treatment.
- Possess skill to administer local anesthesia properly
- Possess skill to perform extractions and simple minor surgical procedures
- Possess skill to manage complications in the dental clinic

iii) Attitudes:

- A graduate should develop during the training period the following attitudes.
- Willing to apply current knowledge of oral surgery in the best interest of the patients and the community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
- Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
- To help and to participate in the implementation of national health programmes.
- To assume legal, ethical and moral responsibilities of the patients for oral surgical procedures.

4 B.1.2: SYLLABUS (Including Teaching Hours.)

MUST KNOW	59 Hrs.	
INTRODUCTION TO ORAL SURGERY		01 HR
<ul style="list-style-type: none"> • Introduction. • Definition. • Scope. • Aims and objectives. 		

- DIAGNOSIS IN ORAL SURGERY 03 Hrs.
- History taking.
 - Clinical examination.
 - Investigations.
- PRINCIPLES OF INFECTION CONTROL 01 HR
- GENERAL PRINCIPLES OF ORAL SURGERY 02 Hrs.
- Asepsis and sterilization.
 - Access:
 1. Intra-oral:
 - Mucoperiosteal flaps -principles.
 - Commonly used intra oral incisions.
 - Bone Removal: Methods of bone removal.
 2. Extra-oral-
 - Skin incisions – principles.
 - 2) Control of haemorrhage during surgery:
 - Normal Haemostasis
 - Local measures available to control bleeding
 - 3) Drainage and Debridement:
 - Purpose of drainage in surgical wounds.
 - Debridement: Purpose
 - 4) Closure of wounds:
 - Suturing: Principles.
 - Suture material.
 - Classification.
 - 5) 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.

EXODONTIA 03 Hrs.

- 1) General considerations.
- 2) Ideal Extraction.
- 3) Indications and contraindications for extraction of teeth
- 4) Extractions in medically compromised patients.
- 5) Methods of extraction –
 - (a) Forceps or intra-alveolar or closed method. Principles, types of movement, force etc.
 - (b) Trans-alveolar / surgical method. Indications, surgical procedure.
- 6) Dental elevators: uses, classification, principles in the use of elevators, Commonly Used elevators

IMPACTED TEETH: 04 Hrs.

- Incidence definition, aetiology.

- (a) Impacted mandibular third molar.
 - Classification, reasons for removal.
 - Assessment - both clinical and radiological
 - Surgical procedures for removal.
 - Maxillary third molar- Indications for removal, classification, Surgical procedure for removal.
 - Impacted maxillary canine- Reasons for canine impaction, Localization, indications for removal,
 - Methods of management, labial and Palatal approach, Surgical exposure, transplantation, Removal

PRE-PROSTHETIC SURGERY: 02 Hrs.

1. Definition, classification of procedures.
2. Corrective procedures:
 - a. Alveoloplasty,
 - b. Frenotomies.
3. Ridge extension or Sulcus extension procedures
 - a. Indications
4. Ridge augmentation and reconstruction.
 - a. Indications
5. Implants –
 - a. Concept of osseointegration
 - b. Knowledge of various types of implants

DISEASES OF THE MAXILLARY SINUS 02 Hrs.

1. Surgical anatomy of the sinus.
2. Sinusitis:
 - a. Etiology.
 - b. Clinical features.
 - c. Non – surgical management.
 - d. Names of surgical procedures and its principles.
3. Removal of root from the sinus.
4. Oro-antral fistula:
 - a. Etiology.
 - b. Clinical features.
 - c. Names of surgical procedures and its principles

DISORDERS OF T.M. JOINT 04 Hrs.

1. Applied surgical anatomy of the joint.
2. Dislocation:
 - a. Definition of related terminologies.
 - b. Types.
 - c. Aetiology.
 - d. Clinical features.
 - e. Management – Non surgical.
 - f. Comparison of dislocation and subluxation.
3. Ankylosis:
 - a. Definition and classification.
 - b. Aetiology
 - c. Clinical features
 - d. Management- Non surgical

INFECTIONS OF THE ORAL CAVITY 05 Hrs.

1. Introduction
2. Factors responsible for infection
3. Course of Infections.
4. Spread of odontogenic infections through various fascial spaces.
5. Dento-alveolar abscess - aetiology, clinical features and management.
6. Osteomyelitis of the jaws –
 - a. definition,
 - b. aetiology, pre-disposing factors.
 - c. Classification
 - d. Clinical features
 - e. Management- Non surgical.

7. Ludwig's angina –
 - a. Definition
 - b. Aetiology
 - c. Clinical features
 - d. Management- Non surgical.

BENIGN CYSTIC LESIONS OF THE JAWS - 03 Hrs.

1. Definition
2. Classification
3. Pathogenesis.
4. Diagnosis –
 - a. Clinical features
 - b. Radiological
 - c. Aspiration biopsy
 - d. Use of contrast media
 - e. Histopathology.
5. Management –
 - a. Types of surgical procedures
 - b. Rationale of the techniques,
 - c. Indication

TUMOURS OF THE ORAL CAVITY – 03 Hrs.

1. General considerations
2. Non odontogenic benign tumours
 - a. Fibroma,
 - b. Papilloma,
 - c. Lipoma,
 - d. Ossifying fibroma,
 - e. Myxoma
 - f. Ameloblastoma
 - i. Clinical features,
 - ii. Radiological appearance.
3. Carcinoma of the oral cavity -
 - a. Biopsy
 - b. TNM classification.
 - c. Outline of management of squamous cell carcinoma
4. Role of dental surgeons in the prevention and early detection of oral cancer

FRACTURES OF THE JAWS 06 Hrs.

General considerations,
Types of fractures,
Aetiology
Clinical features
General principles of management.
Mandibular fractures –
Applied anatomy
Classification.
Diagnosis - Clinical
Radiological
Fractures of the condyle
Aetiology
Classification
Clinical features
Fractures of the middle third of the face.
Definition of the mid face
Applied surgical anatomy
Classification
Clinical features
Alveolar fractures - methods of management

Fractures of the Zygomatic complex
Classification
Clinical features
Indications for treatment.

Salivary gland diseases 03 Hrs.

Diagnosis of salivary gland disease
Sialography, contrast media,
procedure.
Infections of the salivary glands
Sialolithiasis - Sub mandibular duct and gland and parotid duct.
Clinical features, management

Jaw deformities 02 Hrs.

Basic forms – Prognathism
Retrognathism
Open bite
Reasons for correction.

Neurological disorders 03 Hrs.

Trigeminal neuralgia –

Definition, etiology, clinical features and medical management.

Facial paralysis –

Definition, etiology and clinical features.

Nerve injuries – Classification

Cleft Lip and Palate 01 HR

Aetiology of the clefts.

Incidence of the clefts.

Classification of the clefts.

Medical Emergencies in dental practice 03 Hrs.

Primary care of medical emergencies in dental practice particularly –

- a. Cardiovascular
- b. Respiratory
- c. Endocrine
- d. Anaphylactic reaction
- e. Epilepsy

Emergency drugs and procedures 01 HR

Emergency drugs

Oral Implantology 02 Hrs.

- a. Concept of osseo integration
- b. Knowledge of various types of implants

ANAESTHESIA 05 Hrs.

LOCAL ANAESTHESIA:

1. Introduction
2. Concept of L.A
3. Classification of local anaesthetic agents
4. Ideal requirements
5. Mode of action
6. Types of local anaesthesia
7. Use of Vasoconstrictors in local anaesthetic solution -
8. Advantages, contra-indications, various vaso constrictors used.

9. Anaesthesia of the mandible

- a. Pterygomandibular space - boundaries, contents etc.
 - i. Inferior Dental Nerve Block – various techniques
 - ii. Complications
- b. Mental foramen nerve block

10. Anaesthesia of Maxilla -
- a. Intra - orbital nerve block.
 - b. Posterior superior alveolar nerve block
 - c. Maxillary nerve block - techniques.

DESIRABLE TO KNOW 28 Hrs.

Infection control 01 HR

Cross-infection control with particular reference to HIV/AIDS and Hepatitis

General principles of Oral Surgery 01 HR

a) Surgery set up.

b) Access:

1. Intra-oral-

1) Use of Burs:

Advantages,

Precautions.

2) Bone cutting instruments: Principles of using chisel and osteotome.

2. Extra-oral-

Various extra-oral incisions to expose facial skeleton.

1) Submandibular.

2) Pre auricular.

3) Incisions to expose maxilla and orbit.

4) Bicoronal incision.

c) Control of haemorrhage during surgery:

1) Hypotensive anaesthesia.

d) Drainage and Debridement:

1) Types of drains used.

2) Debridement:

Soft tissue and Bone debridement.

e) Closure of wounds:

1) Body response to various materials.

f) Long term post-operative followup – significance

Exodontia 01 HR

1) Complications of Exodontia:

- (a) Operative complications common to both maxilla and mandible.
- (b) Post-operative complications.
- (c) Prevention and management of complications

Impacted teeth: 02 Hrs.

Complications during and after removal,
Prevention and management

Pre-prosthetic Surgery 01 HR

1. Corrective procedures:

- a. Reduction of maxillary tuberosities,
- b. Removal of tori.

2. Ridge extension or Sulcus extension procedures

- a. Surgical procedures

3. Ridge augmentation and reconstruction.

- a. Use of bone grafts, Hydroxyapatite

4. Implants -

- a. Surgical procedure to place implants.

Diseases of the maxillary Sinus 01 HR

1. Sinusitis

- a. Surgical approach of sinus – description of various surgical procedures and complications.

2. Oro-antral fistula:

- a. Various surgical methods for closure.
- b. Complications

Disorders of T. M. Joint 01 HR

1. Dislocation –

- a. Management – surgical.

2. Ankylosis –

- a. Management- surgical.

3. Internal derangement

4. Arthritis of T.M. Joint.

Infections of the Oral cavity 01 HR

1. Osteomyelitis of the jaws –
 - a. Management.
2. Ludwigs angina –
 - a. Management
3. Complications

Benign cystic lesions of the jaws 01 HR

1. Management -
 - a. Procedures
2. Complications

Tumours of the Oral cavity 01 HR

1. Ameloblastoma. methods of management.
2. Carcinoma of the oral cavity
 - a. Management of squamous Cell carcinoma:
 - i. Surgery
 - ii. Radiation
 - iii. Chemotherapy

Fractures of the jaws 02 Hrs.

Mandibular fractures

Management – Reduction Closed/Open

Fixation and immobilization methods

Outline of rigid and semi-rigid internal fixation.

Fractures of the condyle

Principles of management.

Fractures of the middle third
of the face.

Outline of management.

Fractures of the Zygomatic complex

Various methods of reduction and fixation.

Complications of fractures -

Delayed union

Non-union

Malunion

Salivary gland diseases 01 HR

Salivary fistulae

Common tumours of salivary glands like Pleomorphic adenoma including
minor salivary glands

Jaw deformities 02 Hrs.
Outline of surgical methods carried out on mandible and maxilla

Neurological disorders 02 Hrs.
Trigeminal neuralgia –Surgical management.
Facial paralysis –Management.
Nerve injuries –Neurorrhaphy

Cleft Lip and Palate 01 HR
Role of dental surgeon in the management of cleft patients.
Outline of the closure procedures

Emergency drugs and procedures. 01 HR
Intramuscular I.V. Injections – Applied anatomy, Ideal location for giving these injections, techniques etc

Oral Implantology 01 HR
Surgical procedure to place implants

Ethics 01 HR
Patient- doctor relationship.
Doctor – doctor relationship.
Informed consent.
Medicolegal considerations

ANAESTHESIA 03 Hrs.

LOCAL ANAESTHESIA:

- a. Complications of local anesthesia.

GENERAL ANAESTHESIA

1. Concept of general anaesthesia.
2. Indications of general anaesthesia in dentistry.
3. Pre-anaesthetic evaluation of the patient.
4. Pre-anaesthetic medication - advantages, drugs used.
5. Commonly used anaesthetic agents.
6. Complication during and after G.A.
7. I.V. sedation with Diazepam and Medazolam.
8. Indications, mode of action, technique etc.
9. Cardiopulmonary resuscitation
10. Use of oxygen and emergency drugs
11. Tracheostomy

Recent advances 03 Hrs.

1. Peizosurgery
2. Nanosurgery
3. Navigation surgery
4. Endoscopic surgery
5. Computer assisted local anaesthesia delivery system.

Modifications in Syllabi from January 2019
Resolution No-BM-05 (vi) – 19
BIO-ETHICS SYLLABUS FOR BDS 120 Mins. (2 Hrs.)

Name of the Topic	Year	Time	Included in Syllabus as
<i>Bio-ethics in infection control (Use of sterilized instruments, cap, mask, sterile gloves, always segregate waste according to infection control/waste disposal protocol in respective colour coded bags)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>30 mins</i>	<i>Must Know</i>
<i>Bio-Ethics in the use of Antibiotics. (avoid irrational use of antibiotics, always prescribe generic drugs, prescribe the right dosage based on body weight/mass.)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>15 mins</i>	<i>Must Know</i>
<i>Bio-Ethics in exodontia. (avoid extraction of teeth which can be saved by endodontic / periodontics / orthodontic treatment)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>15 mins</i>	<i>Must Know</i>
<i>Bio-Ethics in the treatment of facial fractures (when to operate facial fractures and when to treat facial fractures by conservative treatment, timing of the treatment, amount of hardware to be used)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>15 mins</i>	<i>Good to Know</i>
<i>Bio-Ethics in lab investigations and imaging techniques. (always prescribe only the necessary lab / radiographic investigations to reduce unnecessary exposure of the patient to radiation and reduce cost of treatment.)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>15 mins</i>	<i>Good to Know</i>
<i>Bio-Ethics in impacted teeth. (always advice the right imaging technique, evaluate relationship with adjacent vital structures to avoid damage)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>15 mins</i>	<i>Good to Know</i>
<i>Bio-Ethics in Informed Consent. (the importance of consent form, informing patient about pros & cons of treatment & possible risk of complications, informing the patient immediately if any complications arise intra-operatively)</i>	<i>3rd BDS, 4th BDS, Interns</i>	<i>15 mins</i>	<i>Must Know</i>

4B.1.3 EXAMINATION PATTERN :

Sr. No.	Exercises	Marks	Duration
1.	Case history and clinical examination	10	15 min
2.	Local anesthesia technique	10	40 min
3.	Exodontia technique	25	
4.	Spots	30	25 min
5.	Postoperative instructions, management and chair side orals	10	10 min
6.	Journal	05	NA

**SECTION-4B
CHAPTER-2**

4B.2. PROSTHODONTICS AND CROWN AND BRIDGE

4B.2.1.a AIM:

- To impart knowledge and provide training in the field of Prosthodontic treatment modalities to undergraduates, to examine, diagnose and formulate a treatment plan to deal with edentulous conditions by way of providing suitable prosthesis for e.g. Complete denture, Removable and Fixed partial dentures, Crowns, Special prostheses, Dental Implants and Maxillofacial Prosthesis.
- To inculcate communication skill in order to practice ethical Prosthodontic treatments and to generate judgment skill in making appropriate decision regarding prevention, treatment aftercare and referral to deliver comprehensive dental care to patient.
- To generate manpower and technical expertise for outreach and extension activities in rural and tribal areas.

4B.2.1.b OBJECTIVES :

a. Knowledge:

- The dental graduate should acquire basic knowledge related to dental science in the field of Prosthodontics and should have proper understanding of various steps involved/techniques and materials to be used for fabrication of various prosthesis.
- The information related to the stomatognathic system and its applied Prosthodontic considerations.
- Adequate knowledge to treat the patients having partial or total edentulism, to restore the functions affected due to loss of teeth.
- The learner should be able to detect anomalies or abnormalities of oral hard and soft tissues including jaw bones and to treat the problem / disease.

b. Skill:

- A dental graduate should be able to demonstrate the following skill necessary in the field of prosthodontics:
- To record relevant history, to perform details examination and to diagnose the condition and decide treatment modalities required for that case.

- To interpret radiographs and should be in position to refer complicated cases to concerned specialist.
- To inculcate the sense of discipline, conversation skill and to develop rapport with patient and community.
- Adequate technical skill to perform various steps in clinic and laboratory while fabrication of required prosthesis.

c. Attitude:

- A dental graduate should develop during the following attitude required for successful practice
- To treat all patients with equity and respect.
- To develop attitude for ethical practice and perfect patient care and management.
- To develop interest for research and participation in research activities and importance of research publications and opportunities in global perspectives.
- Should participate in CDE programme to update the knowledge and professional skill from time to time.

4B.2.1c: OUTCOMES :

- 1) To provide training in the subject to Undergraduate.
- 2) To inculcate technical and communicative skill to practice Prosthodontic.
- 3) To render quality treatment to patients for complete denture, removable partial denture and fixed partial denture
- 4) To provide manpower and technical expertise for outreach and extension activities related to Community oral health care
- 5) To achieve excellence in academics and providing the State-of-Art services to the community including selection and manipulation of various dental materials.
- 6) To inculcate communication skill and advice related to ethical practices

4B.2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 30 Hrs.

1. Introduction to Complete Dentures:
Components / Parts of a Complete Dentures
Steps in fabrication of Complete Dentures
2. Diagnosis and Treatment Planning
Clinical History taking
3. Mouth Preparation in Complete Dentures
Pre-prosthetic surgery
4. Impression Making
Objectives of impression making
Theories of impression making
Anatomical landmarks
Recording PI and FI
Beading and Boxing
5. Maxillo and mandibular Relation
Mandibular Movements
Orientation JR
Vertical JR
Centric JR
Anatomy of TMJ
Facebow Parts
6. Articulators and Articulation
Articulators
Selection and Arrangement of teeth
Balanced occlusion
7. Lab Steps in CD
8. Complete Denture Insertion
Denture Insertion
Post insertion instructions
Post insertion problems
9. Relining and Rebasing
Relining
Rebasing

- 10 Special Complete Denture
 - Over denture Basic aspect
 - Immediate Denture Basic Concept
 - Single CD Basic Aspect

EXPECTED TO KNOW 10 Hrs.

- Introduction to CD
- Definition of Prosthodontics
- Definition of CD
- Diagnosis and Treatment Planning
- Patient evaluation
- Radiographic Examination
- Mouth Preparation in CD
- Mouth preparation in CD
- Impression Making
- Impression Techniques in Special Cases
- Reading of Impression
- Indexing Master cast
- Articulators and Articulation
- Remounting
- Lab Steps in CD
- Lab Steps in CD
- Special Complete Denture
- Basic aspect of implant dentures

MUST KNOW

- 1. Relining and Rebasing: 02 Hrs.
 - Definition
 - Indications
 - Contra-indications
 - Advantages
 - Disadvantages
 - Relining procedures
 - Rebasing procedure

- 2. Single complete denture 02 Hrs.
 - Definition
 - Indications
 - Contra-indications
 - Advantages
 - Disadvantages
 - Occlusal modification techniques

3. Dentogenic concept and characterization: 02 Hrs.
 - Introduction
 - Definition
 - Dentogenic concept
 - SPA factors

4. Overdentures: 03 Hrs.
 - Definition
 - Indications
 - Contra-indications
 - Advantages
 - Disadvantages
 - Types of over denture
 - Over denture attachment

5. Immediate Denture: 01 HR
 - Definition
 - Types of immediate Denture
 - Indications
 - Contra-indications
 - Advantages
 - Disadvantages
 - Treatment procedure

6. Implants in CD: 03 Hrs.
 - Definition
 - Indications
 - Contra-indications
 - Advantages
 - Disadvantages
 - Types of Implant

7. Introduction classification term and terminology in RPD: 01 HR
 - Terminology
 - Indications
 - Contra-indications of FPD
 - Rationale of RPD Treatment
 - Kennedys Classification System
 - Apple gate rules for Classification

8. Diagnosis and treatment planning in RPD: 03 Hrs.
 - Introduction
 - Diagnostics Examination
 - Patient interview
 - Effect of physical problems on dental treatment
 - Effects of drug
 - Patients expectation
 - Dental history
 - Infection control and disinfection
 - Evaluation of oral hygiene
 - Radio Graph
 - Diagnostic impression

9. Evaluation of diagnostic cast
 - Treatment plan

- 10 Major connectors: 01 HR
 - Definition
 - Structural Requirements
 - Types maxillary major connectors
 - Indication of maxillary major connectors
 - Types mandibular major connectors
 - Indication of mandibular major connectors

- 11 Minor connectors: 01 HR
 - Definition
 - Structural Requirements
 - Types minor connectors

- 12 Direct retainers: 03 Hrs.
 - Definition
 - Classification
 - Parts of the clasp
 - Requirements of clasp design
 - Types of supra bulge clasps
 - Types of infra bulge clasps

- 13 Indirect Retainers: 01 HR
 - Definitions
 - Principles of indirect retention
 - Factors determining the effectiveness
 - Forms of indirect retention

- 14 Rest and Rest Seats: 01 HR
 Definition
 Structural Requirements of rest seats
 Types of rest seats
- 15 I - Bar Removable Partial Dentures: 03 Hrs.
 How does differ from conventional barclasp
 Components of I bar
 Design concepts
 RPI system
- 16 Stress breakers: 01 HR
 Definition
 Principles of stress breakers
 Types of stress breakers
- 17 Principles of RPD design: 01 HR
 Mechanics of movement
 Support vs force
 Type of lever force and inclined plane
 Types of fulcrum
 Forces acting on partial denture
 Factors influencing the magnitude of stresses
 Controlling stress by design considerations
- 18 Surveying and Designing: 03 Hrs.
 Definition
 Parts of surveyor
 Surveying the diagnostic cast
 Tripoding of cast
 Importance consideration in use of dental surveyor
 Path of insertion
 Factors influencing path of insertion
 Principles and Philosophy of design
- 19 Functional impression in RPD: 01 HR
 Influencing support of distal extension base
 Indications, Impression methods
- 21 Diagnosis and Treatment Planning in FPD: 03 Hrs.
 Abutment definition
 Ante's Law
 Criteria for selection of the abutment

- | | | |
|----|---|---------|
| 22 | Principal of Occlusion:
Ideal Occlusion
Balanced occlusion
Group function occlusion
Mutually protected occlusion | 02 Hrs. |
| 25 | Principles of Tooth Preparation:
Ideal requirements
Biological considerations
Mechanical considerations
Esthetic considerations | 01 HR |
| 26 | Restoration of endodontically treated teeth:
Treatment planning
Consideration for anterior teeth
Principles of tooth preparation | 01 HR |
| 27 | Complete Cast crown preparation:
Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation | 03 Hrs. |
| 28 | Metal ceramic crown preparation:
Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation | 03 Hrs. |
| 29 | All ceramic crown preparation:
Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation | 03 Hrs. |

- 30 Metal ceramic Restoration: 03 Hrs.
 Indications
 Contra-indications
 Advantages
 Disadvantages
 Trouble shooting
- 31 All ceramic restoration 03 Hrs.
 Ideal requirements
 Indications
 Contra-indications
 Advantages
 Disadvantages
 Methods to strengthen ceramics
 Trouble shooting
- 32 Impression materials and techniques in FPD 01 HR
 Fluid control
 Retraction of the gingival
 Elastic impression materials
 Impression trays
 Impression making methods
- 33 Provisional restoration 01 HR
 Ideal requirements
 Biological consideration
 Mechanical consideration
 Esthetic consideration
 Techniques of temporization

DESIRABLE TO KNOW

- Dentogenic concept and characterization 01 HR
 General considerations
 Classification
 Technique of characterization
- Overdentures: 03 Hrs.
 General considerations
 Patient selection
 Abutment selection
 Basic principles

Implants in CD 02 Hrs.
Clinical procedure
Lab procedure
Prosthetic phase

Mouth Preparation in RPD 03 Hrs.
I- Bar Removable Partial Dentures:
Design variation
Surveying and Designing:
Essentials of design
Design procedure

Functional impression in RPD:
Altered cast techniques
Lab Procedure in RPD

Diagnosis and Treatment Planning in FPD: 02 Hrs.
Introduction
Examination
Patient interview
Effect of physical problems
Effects of drug
Dental history
Infection control and disinfection
Evaluation of oral hygiene
Radio Graph
Diagnostic impression
Facebow recording
Evaluation of diagnostic cast
Centric relation recording
Treatment plan
Selection of the abutment

Principal of Occlusion: 01 HR
Centric relation recording
Mandibular movement
Pathologic occlusion
Occlusal treatment

Periodontal Consideration in FPD: 01 HR

Anatomy
Examination diagnosis and treatment plan
Evaluation of initial therapy
Surgical therapy evaluation

Mouth Preparation in FPD: 01 HR

Oral Surgery procedure
Restorative procedure
Endodontic procedure
Periodontic procedure
Orthodontic procedure

Restoration of endodontically treated teeth: 01 HR

Procedures
Removal of the Endodontic filling material
Enlargement of canal
Preparation of the coronal tooth structure
Post fabrication procedures
Core fabrication procedures

Partial Veneer Crown, Inlay, Onlay preparation: 01 HR

Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation

All ceramic, Inlay, Onlay, Laminates preparation: 01 HR

Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation

Metal ceramic Restoration	01 HR
History	
Metal Preparation	
Porcelain preparation	
Types of porcelain	
Porcelain metal bonding	
Procedure	
All ceramic restoration	01 HR
History	
Types of ceramic	
All ceramic system	

Modifications in Syllabi from January 2019
Resolution No-BM-24 (vii) – 19

CURRICULUM ENHANCEMENT MADE BY PROSTHODONTICS :

1. A) *Topic: - Discussion and Demonstrations on concepts and steps in Full Mouth Rehabilitation for Post Graduate Students.*
B) *Duration: - 6 Months.*
C) *Period: - In Second Term of 1st MDS Academic Calendar.*
D) *Schedule: - 1 Hour Per week.*
E) *Framework: - Detailed Discussion on Topics of Full Mouth Rehabilitation between Post Graduate students and teachers. Discussion will be followed by demonstrations of important steps involved in Full Mouth Rehabilitation.*
F) *Outcome: - Students will become well versed with concept of Full Mouth Rehabilitation which is an important aspect of Prosthodontics.*

2. A) *Topic: - Seminars for Final BDS Students.*
B) *Period: - During their clinical posting in second term of Final Year.*
C) *Schedule: - 1 Seminar per Student thrice a week for 1 Hour.*
D) *Framework: - Topics on Removable and Fixed Prosthodontics.*
E) *Outcome: - Students will have a better understanding of the subject and seminar presentation will boost confidence of students particularly during viva in examination.*

3. A) *Topic: - Demonstration of steps in casting procedures for II BDS students from wax pattern fabrication to casting.*
B) *Period: - During practical Hours in II year of undergraduate training Program.*
C) *Schedule: - Demonstration of a step will be given immediately after the theory class of the same step.*
D) *Outcome: - Better understanding of the theoretical and practical aspects of casting Procedures.*

4. A) *Topic: - Implant osteotomy and Impression procedures in Implantology on dummy casts as a preclinical exercise in 1st MDS.*
B) *Period: - During First 3 months of date of joining course.*
C) *Outcome: - Students will receive demonstration and perform osteotomy and impression procedures in dental implantology on dummy casts.*

**BIO-ETHICS SYLLABUS FOR BDS
(CLINICAL AND PRE-CLINICAL) AND MDS**

DEPARTMENT OF PROSTHODONTICS CROWN AND BRIDGE

<i>Name of the Topic</i>	<i>Year</i>	<i>Time</i>	<i>Included in Syllabus as</i>
<i>Biocompatibility</i>	<i>II BDS</i>	<i>20 mins</i>	<i>Must know</i>
<i>Biomaterials and biosafety</i>	<i>III BDS</i>	<i>20 mins</i>	<i>Must know</i>
<i>Clinical testing and research</i>	<i>IV BDS</i>	<i>20 mins</i>	<i>Must know</i>
<i>Indigenous materials/ cheaper materials</i>	<i>II BDS</i>	<i>15 mins</i>	<i>Must know</i>
<i>Sources of dental materials especially graft and implant</i>	<i>IV BDS</i>	<i>15 mins</i>	<i>Must know</i>
<i>Prudence in testing and diagnostic testing</i>	<i>IV BDS</i>	<i>10 mins</i>	<i>Must know</i>
<i>Implants and graft</i>	<i>IV BDS</i>	<i>20 mins</i>	<i>Need to know</i>
<i>Benefit and harm</i>	<i>III BDS</i>	<i>15 mins</i>	<i>Need to know</i>
<i>Vulnerable population</i>	<i>IV BDS</i>	<i>15 mins</i>	<i>Need to know</i>
<i>Breaking bad news</i>	<i>IV BDS</i>	<i>20 mins</i>	<i>Must know</i>
<i>Doctor's right' patient's right</i>	<i>IV BDS</i>	<i>20 mins</i>	<i>Must know</i>
<i>Technician right</i>	<i>IV BDS</i>	<i>15 mins</i>	<i>Need to know</i>
<i>Informed consent</i>	<i>III BDS</i>	<i>20 mins</i>	<i>Must know</i>
<i>Futility of treatment</i>	<i>III BDS</i>	<i>15 mins</i>	<i>Must know</i>
<i>End of life issues</i>	<i>IV BDS</i>	<i>20 mins</i>	<i>Need to know</i>
<i>Palliative care</i>	<i>IV BDS</i>	<i>15 mins</i>	<i>Must know</i>
		<i>275 mins (4.6 Hrs.)</i>	

4B.2.3 EXAMINATION PATTERN

Name of the Exercise	Time	Marks
Case History	20 min	10
Tray Selection	10 min	10
Border moulding and Final impression	1hr and 20 min	35
Tooth preparation and wax pattern	1hr	30
Journal		05

SECTION-4B
CHAPTER-3

4B.3. CONSERVATIVE DENTISTRY AND ENDODONTICS

4B.3.1.a AIM:

To impart adequate knowledge and skill to the undergraduate and post graduate students to treat the patients by preserving the natural tooth with conservative approach and concept of esthetics by having research-oriented approach.

4B.3.1.b OBJECTIVES:

Knowledge and Understanding:

To learn adequate knowledge and understanding about the normal anatomy and basic guidelines for the treatment by stepwise learning from preclinics to clinics

Skills:

To acquire necessary skills required for the diagnosis, treatment plan and treatment for simple to complex cases with the knowledge of preventing complications and management of those if occur.

Attitudes:

To have the attitude towards the wellbeing of the society with research-oriented approach and participation in the implementation of health education program.

4B.3.1.c: OUTCOME:

To sculpt the student to become an independent dental clinician with clinical decision-making ability and to serve the best to the patient in turn to society.

4B.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW

Nomenclature of Dentition:

Tooth numbering systems - A.D.A. Zsigmondy Palmer and F.D.I. systems

01 Hrs.

Principles Of Cavity Preparation :

Steps and nomenclature of cavity preparation

Classification of cavities

Nomenclature of floors and angles of cavities. 07Hrs.

Dental Caries :	03Hrs.
Aetiology Types of direct filling gold	
Classification and clinical features	
Morphological features	
Microscopic features	
Treatment Plans	
Diagnosis and sequel of dental caries	
Treatment Planning For Operative Dentistry:	02 Hrs.
Detailed clinical examination	
Radiographic examination	
Tooth vitality tests	
Diagnosis	
Treatment planning	
Preparation of the case sheet	
Armamentarium For Cavity Preparation:	04 Hrs.
General classification of operative instruments	
Hand cutting instruments design formula	
Rotary cutting instruments and dental bur	
Mechanism of cutting	
Evaluation of hand piece and speed	
Current concepts of rotary cutting procedures	
Sterilization	
Maintenance of instruments.	
Basic instrument tray set up	
Control of Operating Field:	02 Hrs.
Light source, Sterilization of field of operation and control of moisture	
Rubber dam in detail	
Cotton rolls and anti sialogogues	
Amalgam Restoration	03 Hrs.
Indication and contraindication	
Physical and mechanical properties	
Clinical features	
Cavity preparation for Class I , II, V and III.	
Step wise procedure for cavity preparation and restoration.	
Failure of amalgam restoration	

Pulp Protection :	06 Hrs.
Liners – Calcium Hydroxide	
Varnishes and bases	
Zinc phosphate	
Zinc polycarboxylate	
Zinc oxide eugenol	
Glass ionomer cements	
Anterior Restoration	06 Hrs.
Selection of cases	
Selection of material	
Step wise procedures for using restorations.	
Glass ionomer, composites including sandwich restorations and bevels of the same with a note on status of the dentine bonding agents.	
Preventive Measures In Restorative Practice:	06 Hrs.
Plaque Control	
Pit and fissure sealants	
Dietary measures	
Periodontal health	
Contact and contour of teeth	
Tooth separation.	
Matrices and wedges	
Temporization or Interim Restoration	1 HR
Pin retained Amalgam Restoration	3 Hrs.
Indication and Contra Indication	
Advantages disadvantages	
Types of pin	
Methods of placements	
Use of automatrix	
Failure of pin amalgam restoration	
Management Of Deep Carious Lesions	02 Hrs.
Direct Pulp Capping.	
Indirect Pulp Capping	
Restorative measures	
Non Carious Destruction's Tooth Structures	04 Hrs.
Diagnosis and Clinical Management	
Hyper Sensitive Dentine And Its Management	

Cast Restorations 05 Hrs.

Indications

Contra indications

Advantages and disadvantages and materials used for same

Cavity preparation

Gingival Tissue Management For Cast Restoration And Impression
Procedures 02 Hrs.

Recent Cavity Modification for Amalgam Restoration 01 Hrs.

Differences between Amalgam And Inlay Cavity preparation 01 Hrs.

Note on all the types of Bevels used for Cast Restoration 01 Hrs.

Control Of Pain During Operative Procedure 01 Hrs.

Treatment Planning For Operative Dentistry 02 Hrs.

Detailed Clinical Examination

Radiographic Examination

Vitality Tests 01 Hrs.

Diagnosis And Treatment Planning.

Preparation Of Case Sheet

Applied Dental Materials. 23 Hrs.

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

Calcium hydroxides

Varnishes

Dental amalgam

Technical considerations mercury toxicity mercury hygiene

Composite, Dentine bonding agents, chemical and light curing composites

Rubber base Impression Materials

Nobel metal alloys and non-noble metal alloys

Investment and die materials

Inlay casting waxes

Dental porcelain

Aesthetic Dentistry 04 Hrs.
 Anatomy and physiology of smile
 Bleaching of teeth

Endodontics and introduction 04 Hrs.
 Introduction, definition, scope and future of endodontics
 Clinical diagnostic methods
 Emergency endodontic procedures

Pulpal diseases 02 Hrs.
 Causes
 Types
 Treatment.

Periapical diseases 02 Hrs.
 Acute periapical abscess
 Acute periodontal abscess, phoenix abscess
 Chronic alveolar abscess granuloma cysts condensing osteitis
 External and internal resorption

Vital pulp therapy 02 Hrs.
 Indirect and direct pulp capping, pulpotomy
 Different types of medicaments used

Apexogenesis and apexification or problems of open apex. 01 Hrs.

Rationale of endodontic treatment, Objectives, Indication and
 Contraindications for root canal treatments 01 Hrs.

Anatomy of the pulp cavity 01 Hrs.
 Root canals apical foramen
 Anomalies of pulp cavities access cavity preparation of anterior and premolar
 teeth

Principles of root canal treatment 05 Hrs.
 Access cavity preparation.
 Root canal instruments
 Hand instruments,
 Power driven instruments
 Standardization
 Color coding principle of using endodontic instruments
 Sterilization of root canal instruments and materials.
 Rubber dam application

Determination of working length 02 Hrs.
 Traditional methods
 Apex locator

Cleaning and shaping of root canals 02 Hrs.
 Irrigating solution
 Chemical aids to instrumentation
 Chelators

Disinfection of root canal space 02 Hrs.
 Intracanal medicaments
 Poly antibiotic paste
 Grossman's paste.

Methods of cleaning and shaping –principle and objectives02Hrs.
 Methods – step back technique
 Crown down technique

Obturation of the root canal system 03 Hrs.
 Requirements of an ideal root canal filling material
 Obturation methods using gutta percha
 Obturation material
 Cold lateral condensation
 Warm vertical condensation
 Thermoplasticized obturation technique
 Failures in endodontics.

Root canal sealers 02 Hrs.
 Ideal properties
 Classification
 Manipulation of root and canal sealers

Problems during cleaning and shaping of root canal spaces
(Endodontic mishaps) - 02 Hrs.
Perforation and its management.
Broken instruments and its management
Management of single and double curved root canals.

Post endodontic restoration - 02 Hrs.
Material used
Post and core

Smear layer and Its importance in endodontics and
conservative dentistry 01 Hrs.

Discoloured teeth and its management 02 Hrs.
Bleaching agents
Vital and non-vital bleaching method

Traumatic Injuries 03 Hrs.
Classification
Management of fractured tooth and root
Luxated teeth and its management

Endodontic surgeries 02 Hrs.
Indication contraindications
Pre-operative preparation
Premedication
Surgical instruments
Techniques apicectomy
Retrograde filling
Post-operative sequale
Terphination
Hemisection
Radisectomy techniques of tooth reimplantation (both intentional and
accidental)
Endodontic implant

Root resorption 01 Hrs.
Emergency endodontic procedures 01 Hrs.
Lasers in conservative endodontics (introduction only) 01 Hrs.
Practice management 01 Hrs.

GOOD TO KNOW

Gnathological Concepts Of Restoration : 02 Hrs.

Physiology of occlusion
Normal occlusion
Ideal occlusion
Mandibular movements and occlusal analysis.
Occlusal rehabilitation and restoration

Direct Filling Gold Restorations : 02 Hrs.

Types of direct filling gold
Indications and limitations of cohesive gold.
Annealing of gold foil cavity
Preparation and condensation of gold foils.

Professional association dentist act 1948 and its amendment 1993.
Duties towards the govt. Like payments of professional tax, income tax.
Financial management of practice

Anterior Restorations
Silicate (theory only)
Dental material and basic equipment management.

Ethics
Cast Restorations 03 Hrs.
Fabrication of wax pattern
Class II and Class I cavity preparation for inlays
Investing
Spruing
Casting procedures
Casting defects
Biological Considerations
Silicate cement
Smart materials

Aesthetic Dentistry 03 Hrs.
Introduction and scope of esthetic dentistry
Role of the color in esthetic dentistry
Simple procedures (rounding of central incisors to enhance esthetic appearance)
Veneers with various materials
Preventive and interceptive esthetics
Simple gingival contouring to enhance the appearance

Disinfection of root canal space intracanal medicaments 02 Hrs.
Mummifying agents
Culture methods.

Cleaning and shaping
Newer methods and systems
Rotary endodontics

MTA 01 Hrs.

Modifications in Syllabi from January 2019
Resolution No-BM-05 (vi) – 19

BIO- ETHICS FOR BDS

<i>Name of the topic</i>	<i>Year</i>	<i>Time</i>	<i>Included in syllabus</i>
<i>Prudency in testing and diagnostic testing</i>	<i>III, BDS,</i>	<i>15 min. Included in lecture on diagnostic aids</i>	<i>Must know</i>
<i>Benefit and harm</i>	<i>III, IV BDS</i>	<i>15 min During clinical posting (Vary as per individual case diagnosis)</i>	<i>Must know</i>
<i>Doctors right; patient's right</i>	<i>IV BDS</i>	<i>30 min.</i>	<i>Must know</i>
<i>Informed consent</i>	<i>III BDS</i>	<i>30 min as a part of treatment planning lecture</i>	<i>Must know</i>
<i>Futility of Treatment</i>	<i>III,IV BDS</i>	<i>15 min During clinical posting (Vary as per individual case diagnosis)</i>	<i>Must know</i>
<i>Palliative care</i>	<i>III,IV BDS</i>	<i>15 min. During clinical posting- (Vary as per individual case diagnosis)</i>	<i>Must know</i>
<i>Ethical chair-side manners</i>	<i>III,IV, BDS</i>	<i>15 min. During clinical posting-</i>	<i>Must know</i>
<i>Case-based learning</i>	<i>III, IV BDS</i>	<i>15 min. during clinical posting (Vary as per individual case)</i>	<i>Must know</i>
		<i>Total= 120 mins. (2 hours)</i>	

4 B.3.3 EXAMINATION PATTERN

<i>Exercise</i>	<i>Time allotted</i>	<i>Marks awarded</i>
<i>Journal</i>	<i>NA</i>	<i>05</i>
<i>Class 2 cavity preparation for silver amalgam restoration cavity base and restoration.</i>	<i>85 min</i>	<i>85</i>

**SECTION-4B
CHAPTER-4**

4B.4. PEDODONTICS

4B.4.1.a AIM :

The broad goal of the teaching of undergraduate students in Pedodontics and Preventive Dentistry, being an age defined specialty, aims at providing the student the knowledge of both the primary and comprehensive, preventive and therapeutic oral health care for infants and children through adolescence, including those with special health care needs who demonstrate mental, physical or emotional problems.

4B.4.1.b OBJECTIVES:

Knowledge:

- At the end of the course, the student shall be able to
- Provide a good oral health care in the child
- Instill a positive attitude and behavior in children
- Understand the principles of prevention and Preventive Dentistry right from birth to adolescents
- Guide and counsel the parents in regard to various treatment.

Skills:

- At the end of the course, the student shall be able to take case history of the child patient including thorough clinical and radiographic examination as well as other investigations, diagnosis and treatment planning.
- Manage to repair and restore the lost tooth structure to maintain harmony between both hard and soft tissues of the oral cavity
- Diagnose and treat the child patient appropriately
- Prevent and intercept developing malocclusion
- Manage the disabled children effectively and efficiently to the needs of individual requirement and conditions

Attitude:

A graduate should develop during the training period the following attitude,

- Willing to apply the acquired knowledge of Pedodontics in the best interests of the patients and community
- Maintain a high standard of professional ethics and conduct and apply these in all aspect of professional life

- Seek to improve awareness and provide possible solution to the Pedodontics needs throughout the community
- Should participate in CDE programme to update the knowledge and professional skills from time to time

4B.4.1.b OUTCOME:

- Guide and counsel the parents in regard to various treatment modalities including different facets of Preventive Dentistry
- Manage to repair and restore the lost tooth structure to maintain harmony between both hard and soft tissues of the oral cavity
- Prevent and intercept developing malocclusion
- Manage the disabled children effectively and efficiently to the needs of individual requirement and conditions

4 B.4.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW

- 1 Introduction to Pedodontics 01 HR
2. Growth and Development : 02 Hrs.
Prenatal and Postnatal
Development arches of Cranium, face, jaws, teeth and supporting structures.
Chronology of dental development and development of occlusion.
3. Child Psychology : 07 Hrs.
Development and Classification of behavior, personality, intelligence in children, theories of child psychology management.
Behavior Management : Non- Pharmacological.
Child Abuse and Dental Neglect.
Conscious sedation, Deep Sedation and General anesthesia in pediatric Dentistry(Including Other Drugs, Synergic and Antagonistic Actions of Various Drugs Used In children)

4. Dental Caries 10 Hrs.
 Historical background
 Definition, Aetiology and Pathogenesis.
 Caries pattern in primary, Young permanent and permanent teeth in children.
 Rampant caries, early childhood caries and extensive caries.
 Definition, aetiology, pathogenesis, Clinical features Complications
 Management.
 Subjective and Objective methods of caries detections with emphasis on caries
 Activity : Tests, Caries Prediction, caries susceptibility and their clinical Applications.
5. Case History :
 Recording, Outline of Principles of examinations, diagnosis and treatment planning. 05 Hrs.
6. Pediatric Oral Medicine and clinical Pathology : 02 Hrs.
 Recognition and Management of development dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.
7. Preventive Pedodontics : 03 Hrs.
 Concept, chair side preventive measures for dental diseases, high-risk caries including rampant and extensive caries- Recognition, Features and preventive Management, Pit Fissures Sealants, Oral Hygiene measures, correlation of brushing with dental caries and periodontal diseases
8. Microbiology and Immunology as related to oral Diseases in Children : 02 Hrs.
 Basic concepts, Immune system in human body, Auto Immune diseases
9. Dental Material used in pediatric Dentistry. 05 Hrs.
 Pediatric Operative Dentistry.
10. Gingival and Periodontal diseases in children : 02 Hrs.
 Gingival and Periodontium in children .
 Gingival and Periodontal diseases – Etiology. Pathogenesis and Management in Short

11. Pediatric Endodontics : 08 Hrs.
 Primary Dentition :- Diagnosis of Pulpal diseases and their management –
 Pulp capping, pulpotomy, pulpectomy, (Materials and Methods),
 Controversies and recent concepts.
 Young Permanent teeth and permanent teeth, pulp capping,
 Pulpotomy, Apexogenesis,
 Apexification, concepts, Techniques and materials used for different
 procedures.
 Prosthesis consideration in pediatric Dentistry. 02 Hrs.
12. Traumatic Injuries in Children : 09 Hrs.
 Classification and Importance
 Sequelae and reaction of teeth to trauma
 Management of trauma.
 Management of Traumatized teeth with latest concepts
14. Space Maintenance 07 Hrs.
 Oral Habits in Children :
 Definition, Etiology
 Classification.
 Factors to be considered before giving a space maintainer.
 Different space maintainers according to clinical situations.
 Clinical features of digit sucking, tongue thrusting, mouth breathing and
 various other secondary habits.
 Management of oral habits in children.
15. Fluorides : 07 Hrs.
 Historical background.
 Systemic and topical fluorides.
 Mechanism of action.
 Toxicity and Management.
 Defluoridation techniques
16. Management of handicapped child and management of patients with
 systemic condition. 08 Hrs.
 Definition, Etiology and Classification , Behavioral ,clinical features, and
 Management of
 Physically handicapping Conditions
 Mentally compromising Conditions

DESIRABLE TO KNOW

History of Pedodontics and Pedodontics treatment triangle 01 HR

Dimensional Changes in dental arches and □ Cephalometric evaluation of growth. 01 HR

Stage of Psychological child development, fear, anxiety, apprehension and Pharmacological Methods of management. 01 HR

Dietary Modifications and Diet Counseling 01 HR

Congenital Abnormalities in Children 01 HR
Definition, Classification, Clinical Features and management .
Dental Emergencies in children and their Management

Diet and Nutrition as related to dental caries and Diet Counseling. 01 HR

Histopathology, Pathogenesis, Immunology of dental caries, Periodontal diseases, Tumors, Oral Mucosal Lesions etc. 01 HR

Nanotechnology and Recent advances in dental materials. 01 HR

Genetics related to gingival and periodontal diseases. 01 HR

Recent Advances in Paediatric Endodontics 01 HR

Management of Jaw fracture in children 01 HR

Space Analysis and Cephalometrics. 01 HR

Genetic disorders 01 HR

Modifications in Syllabi from January 2019
Resolution No-BM-05 (vi) – 19

BIO-ETHICS IN BDS SYLLABUS

Name of the Topic	Year	Time	Included in Syllabus as
<i>Informed Consent and Ascent in Pediatric Patient</i>	<i>BDS 3rd year</i>	<i>½ hour</i>	<i>Must Know (In case history)</i>
<i>Rational drug use in children</i>	<i>BDS IV year</i>	<i>1 hour</i>	<i>Must know (In Minor surgical procedures/ Pediatric endodontics)</i>
<i>Prudency in testing and diagnostic testing</i>	<i>BDS IV year</i>	<i>½ hour</i>	<i>Desirable to know (In case history)</i>
<i>Biocompatibility, Biomaterials and Biosafety</i>	<i>BDS IV year</i>	<i>1 hour</i>	<i>Must know (Operative Pediatric Dentistry)</i>
		<i>Total= 180 mins (3 Hours)</i>	

4B.4.3 EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks
Case history taking and radiograph	1 hour	90 marks

EVALUATION PATTERN OF INTERNAL ASSESSMENT

A total of 3 sessional examinations are conducted during the entire academic year. These three internal assessment exams are conducted on a regular basis according to the university norms. For continuous assessment of students every Monday, exam for one subject is conducted so that each subject is evaluated once a month. The aggregate of the monthly exams is considered as the 4th exam.

All exams are considered for final calculation of internal assessment marks. The best score of three exams is taken for calculation.

REGULAR BATCH

Exams	I BDS	II BDS	III BDS	IV/I semester	IV/II semester
First sessional	October	September	September	III BDS II Term (Jan)	IV/I semester August
Second sessional	December	December	December	July	January
Third/ prelims	April	March	March	September	March
Monthly exam	Monday	Monday	Monday	Monday	Monday

ODD BATCH/WINTER

Exams	I BDS	II BDS	III BDS	IV/I Semester	IV/II Semester
First sessional	-	March	March	III BDS/II Term (July)	IV/I semester (Feb)
Second sessional	-	June	June	January	July
Third/ Prelims	-	September	September	March	September
Monthly exam	-	Monday	Monday	Monday	Monday

The distribution of marks in each exam [for theory and practical] is given below

THEORY

Exams	MCQs	SAQs	LAQs	Attendance marks	Total marks
First sessional	10 marks	20 marks	10 marks	10 marks	50 marks
Second sessional	10 marks	20 marks	10 marks	10 marks	50 marks
Third sessional	20 marks	40 marks	20 marks	20 marks	100 marks
Fourth /Monthly	-	6 marks	4 marks	-	10 marks

PRACTICAL

Exam	Marks	Attendance	Total marks
First	40	10	50
Second	40	10	50
Third	80	20	100

- If student remains absent for sessional exam, marks for monthly exam are considered
- If student remains absent on medical grounds, then, exam will be conducted within 15 days, on departmental level, for the practical examination

The marks for attendance are given in the following manner

For first and second sessional exam : Total 10 marks

- For 75% to 85% attendance - 5 marks will be given
- For 86% to 100% - 10 marks will be given

For third sessional/ prelims: Total 20 marks

- For 75% to 85% - 10 marks will be given
- For 86% to 100% - 20 marks will be given

Attendance is calculated for each sessional exam as follows

1. First sessional exam : From the beginning of the academic year to first sessional.
2. Second sessional exam : From the beginning to the second sessional.
3. Third sessional/prelims exam : From the beginning to third sessional (Complete year till the prelims).

For IV/I and II semester subjects attendance calculated from III BDS.

Final internal assessment marks will be calculated as follows.

Theory:

The marks of best of 3 out of 4 exams will be sent to the university as a part of internal assessment for the final university examination.

Sr no	Name of the student	First Test max 10	Second Test max 10	Third Test max 10	Fourth Test max 10	Aggregate best of 3 30 marks	Aggregate Total out of 10	Signature of student

The university examinations are conducted at the end of the academic year.

EXAMINATION PATTERN FOR THE UNIVERSITY EXAMINATION

Regular batch I, II, III BDS examinations are conducted in the month of May /June.

Regular batch IV/I Semester examinations are conducted in the month of November

IV/II Semester are conducted in the month of May/June

Odd batch I, II, III BDS examinations are conducted in the month of November/December

Odd batch IV/I Semester examinations are conducted in the month of May / June.

IV/II Semester are conducted in the month of November/December

Distribution of marks

I to IV BDS -

Theory – Total 100 marks

Section A – MCQs- 20 marks (20x1)

Section B- SAQs- 30 marks (10x3)

Section C – LAQs – 20 marks (2x10)

Theory Viva-voce – 20 marks

(Taken during practical examination)

Internal assessment – 10 marks

Practical examination – Total 100 marks

Practical - 90 marks

(distribution of marks is done according to individual subjects)

Internal assessment – 10 marks

II BDS Pre-clinical Prosthodontics and Pre-clinical Conservative Dentistry

Practical Examination – Total 100 marks

Practical - 80 marks

Internal assessment – 20 marks

Outcome of these internal assessment examinations will be displayed and the marks will be informed to both the parents and the students.

Underperforming students will be given extra attention and every effort is made at the departmental level to improve the performance of the student/s in the subsequent examinations.

At the departmental level discussion will be taken regarding the answers for the questions asked in the examinations.

The theory syllabus is divided into “must know” and “desired to know”. The question paper consists of 80% questions from the category of “must know” and 20% from “desired to know” category.

The compilation of all the question papers will be done at the departmental level, so that each department will have its own question bank.

This helps the subsequent batches of students for better referencing and preparation for the examinations.

S. N	Date of BOM	Resolut ion No	Previ ous	Changes
1	09/07/2014	BM-32 – 14 (i)	2 short notes of 5 marks each.	- The following topics were added to BDS theory: 1) Oral Surgery (4 th BDS) basics of distraction Osteogenesis. 2) Prosthodontics; Introduction to Clinical Implantology. 3) Conservative Dentistry (4 th BDS) revascularization of Pulp, LASERs in endodontics and conservative Dentistry, Prescription writing. 4) Pedodontics (4 th BDS); LASERs in pediatric dentistry, revascularization of Pulp. 5) Orthodontics (4 th BDS); Role of distraction Osteogenesis, basics of Orthodontic Mini-Implants (TAD), Invisalign technique. 6) Periodontics (4 th BDS); LASERs in Periodontics, Micro-surgical Periodontics.

2	29/12/2015	BM-27(ii)-15	None	<i>It was resolved that following topics on bioethical aspects be incorporated in the BDS syllabus, to be implemented from Academic Year 2016-17 be approved.</i>
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Year	Topics to be covered	No of hours	Concerned Department
IV BDS	<i>Integrated case based teaching</i>	<i>Practical hours last 30 min</i>	<i>Concerned Department</i>
	<i>Medico legal cases / Code of conduct / Case based situations</i>	<i>2 Lectures</i>	<i>Oral Surgery and Lawyer</i>

3	30/03/2016	BM-04(i)-16		<i>It was resolved that the following University Examination Pattern recommended by the Academic Council for Dental Subjects for Final Year BDS Part - I and Part - II, be approved. The said University Examination Pattern be implemented from the examinations to be held from Nov./Dec. 2016 onwards. Approved University Exam Pattern</i>
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Section	Particular	Marks	Total Marks
<i>Section - A</i>	<i>Multiple Choice Questions</i>	<i>20 x 1</i>	<i>20 Marks</i>
<i>Section - B</i>	<i>Long answer questions</i>	<i>2 (out of 3)x10 marks</i>	<i>20 Marks</i>
<i>Section - C</i>	<i>Short answer questions</i>	<i>10 (out of 11)x 3 marks</i>	<i>30 Marks</i>
	<i>Theory Viva</i>		<i>20 Marks</i>
	<i>Internal assessment</i>		<i>10 Marks</i>
Total Marks			100 Marks

4	28/03/2018	BM-04(i)-18		<i>After detail presentation, it was resolved that, modified syllabus for Subjects of Basic Sciences for 1st Year MDS as per the DCI Guidelines 2017 be approved. It was further resolved that the modified syllabus for Subjects of Basic Sciences for 1st Year MDS will be made applicable for</i>
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			<p><i>students admitted to MDS course from Academic Year 2018-19 onwards. Accordingly, Dr. Deepak Kulkarni, Dean Faculty of Dentistry, informed that the faculty of Dental College will teach applied aspects of the topics of their subjects immediately after the theory taught by the faculty of Medical College. It was further resolved that the timetable will be finalized by the college staff in consultation with respective subjects teacher of Medical college. The modified syllabus for Subjects of Basic Sciences for Ist Year MDS as per the DCI guidelines 2017 is annexed as Appendix-I.</i></p> <p><i>Members also suggested that, as the Vidyapeeth has declared Category-I University by UGC under Graded Autonomy Regulations, 2018, the Formative assessment be started in Medical College also for Post Graduate (MD/MS) courses as being started in the Dental College.</i></p> <p><i>It was resolved that Value Added Courses in various departments of Dental College be started from the Academic Year 2018-19. The syllabus of these courses are also approved which are enclosed separately. The details of Value Added Courses are as follows:</i></p> <p><i>Further members suggested that, the above value added courses be linked with internship evaluation through log book approach, as the above courses are made for the interns.</i></p>
		BM-04(ii)-18	

Sr. No.	Name of Value Added Course	Name of Department	Duration	Learners
<i>I</i>	<i>Tooth preparation for Metal, Metal Ceramic and Zirconia Crowns-Clinical Perspective</i>	<i>Prosthodontics, Crown and Bridge and Implantology</i>	<i>30 hours</i>	<i>Interns</i>
<i>II</i>	<i>Preceptorship in Surgical Periodontics</i>	<i>Periodontics</i>	<i>30 hours</i>	<i>Interns</i>
<i>III</i>	<i>Suturing technique</i>	<i>Oral and Maxillofacial Surgery</i>	<i>30 hours</i>	<i>Interns</i>
<i>IV</i>	<i>Wiring technique</i>	<i>Oral and Maxillofacial Surgery</i>	<i>32 hours</i>	<i>Interns</i>
<i>V</i>	<i>Rubber dam application</i>	<i>Conservative Dentistry and Endodontics</i>	<i>32 hours</i>	<i>Interns</i>
<i>VI</i>	<i>Business of Dentistry-Creating the Clinical Entrepreneur</i>	<i>Orthodontics and Dentofacial Orthopedics</i>	<i>30 hours</i>	<i>Interns</i>
<i>VII</i>	<i>Surgical Orthodontics</i>	<i>Orthodontics and Dentofacial Orthopedics</i>	<i>30 hours</i>	<i>PGs: Ortho and OMFS</i>
<i>VIII</i>	<i>Age estimation by cemental thickness</i>	<i>Oral Pathology</i>	<i>32 hours</i>	<i>Interns</i>
<i>IX</i>	<i>Tobacco cessation counseling</i>	<i>Public Health Dentistry</i>	<i>30 hours</i>	<i>Interns</i>
<i>X</i>	<i>Stainless Steel Crowns</i>	<i>Pedodontics and Preventive Dentistry</i>	<i>32 hours</i>	<i>Interns</i>
<i>XI</i>	<i>Chairside diagnosis for oral malignancies</i>	<i>Oral Medicine and Radiology</i>	<i>30 hours</i>	<i>Interns</i>

5	27/12/2018	BM-53-18	<p><i>Planning and Monitoring Board recommended to start the following Certificate Course in the Dental College:</i></p> <ul style="list-style-type: none"> • <i>Name of the Course: Certificate course in Forensic Odontology</i> • <i>Duration of Course: 6 months</i> • <i>Eligibility: BDS from DCI recognized institute</i> • <i>SCOPE: Dental identification plays an important role when identification of remains of deceased person is skeletonized, decomposed, burned or dismembered and is invalid by visual or fingerprint methods. Forensic Odontology is proper handling, examination, and evaluation of dental evidence, which will be presented in the interest of justice.</i> • <i>Contact Session: 3days in a Month (Total 6 contact session, that includes 12 demonstrations also)</i>
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LIST OF BOOKS

SUBJECT:

General Human Anatomy including Embryology and Histology

- 1) Clinical Anatomy for Medical Students, Snell (Richard S.), Little Brown and company, Boston.
- 2) Anatomy, R J Last's - McMinn,
- 3) Cunningham Manual of Practical Anatomy: Head and Neck and Brain. Vol. III, Romanes (G.J) Oxford Medical publication.
- 4) Functional Histology, Wheater, Burkitt and Daniels, Churchill Livingstone.
- 5) Medical Embryology, Sadler, Langman's,
- 6) Grant's Atlas of Anatomy, James E Anderson, Williams and Wilkins.
- 7) Gray's Anatomy, Williams, Churchill Livingstone.
- 8) Medical Genetics, Emery.
- 9) Essentials of Anatomy for Dentistry Students, D R Singh, Wolters Kluwer.

Subject: **Physiology**

- 1) Textbook of Physiology, Guyton
- 2) Review of Medical Physiology, Ganong
- 3) Human physiology, Vander
- 4) Concise Medical Physiology, Choudhari
- 5) Human Physiology, Chaterjee
- 6) Human Physiology for BDS students, A.K. Jain

Reference books;

- 1) Physiology, Berne and Levey
- 2) Physiological basis of Medical Practice, West-Best and Taylor's

Experimental Physiology:

- 1) Practical Physiology, Rannade
- 2) A textbook of practical physiology, Ghai
- 3) Clinical Methods, Hutchison's

Subject: **Biochemistry**

- 1) Textbook of Biochemistry for Dental Students, DM Vasudevan, Sreekumari S
- 2) Textbook of Biochemistry-U Satyanarayana

Reference books;

- 1) Harper's Biochemistry, R.K. Murray et.al.
- 2) Textbook of Biochemistry with clinical correlations T.N. Devlin
- 3) Basic and applied Dental Biochemistry, R.A.D. Williams and J.C. Elliot
- 4) Nutritional Biochemistry S. Ramakrishnan and S.V. Rao

Subject: **Dental Anatomy, Embryology and Oral Histology**

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

Subject: **General Pathology**

- 1) Robbins - Pathologic Basis of Disease Cotran, Kumar, Robbins
- 2) Anderson's Pathology Vol 1 and 2 Editors - Ivan Damjanov and James Linder
- 3) Wintrobe's clinical Haematology Lee, Bithell, Foerster, Athens, Lukens

Subject: **Microbiology**

- 1) Textbook of Microbiology - R. Ananthanarayan and C.K. Jayaram Paniker.
- 2) Medical Microbiology - David Greenwood et al.

Reference books;

- 1) Microbiology - Prescott, et al.
- 2) Microbiology - Bernard D. Davis, et al.
- 3) Clinical & Pathogenic Microbiology - Barbara J Howard, et al.
- 4) Mechanisms of Microbial diseases - Moselio Schaechter, et al.
- 5) Immunology an Introduction – Tizard
- 6) Immunology - Evan Roitt, et al.

Subject: **Dental Materials**

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

Reference books:-

- 1) Introduction to Dental Materials, Van Noort,
- 2) Applied Dental Materials, McCabe,

Subject: **General and Dental Pharmacology and Therapeutics**

- 1) Basic and Clinical pharmacology, Bertam G. Katzung, Appleton and Lange
- 2) Clinical Pharmacology, Lauerence DR, Churchill Livingstone
- 3) Pharmacology and Pharmacotherapeutics Part I and Part II, Satoskar R.S. and Bhandarkar S. D, Popular Prakashan Mumbai.
- 4) Essentials of Medical Pharmacology, Tripathi K.D, Jaypee Brothers
- 5) Medical Pharmacology, Udaykumar, CBS publishing

Subject: **General Medicine**

- 1) Textbook of Medicine Davidson
- 2) Textbook of Medicine Hutchinsonson

Subject: **General Surgery**

- 1) Short practice of Surgery Baily and Love

Subject: **Oral Pathology and Oral Microbiology**

- 1) A Textbook of Oral Pathology Shafer, Hine and Levy
- 2) Oral Pathology - Clinical Pathologic correlations Regezi and Sciubba.
- 3) Oral Pathology Soames and Southam.
- 4) Oral Pathology in the Tropics Prabhu, Wilson, Johnson and Daftary
- 5) Synopsis of Oral Pathology, Bhaskar, CBS publishing

Subject: **Public Health Dentistry**

- 1) Dentistry Dental Practice and Community by David F. Striffler and Brain A. Burt, W. B. Saunders Company
- 2) Principles of Dental Public Health by James Morse Dunning, Harward University Press.
- 3) Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby Company

- 4) Community Oral Health-A system approach by Patricia P. Cormier and Joyce I. Levy published by Apple ton-Century-Crofts/ New York,
- 5) Community Dentistry-A problem oriented approach by P. C.
- 6) Dental Handbook series Vol.8 by Stephen L. Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton Massachusetts,
- 7) Dental Public Health- An Introduction to Community Dentistry. Edition by Geoffrey L. Slack and Brain Burt, Published by John Wright and sons Bristol.
- 8) Oral Health Surveys- Basic Methods, 1997, published by W. H. O Geneva available at the regional office New Delhi.
- 9) Preventive Medicine and Hygiene-By Maxcy and Rosenau, published by Appleton Century Crofts,
- 10) Preventive Dentistry-by J. O. Forrest published by John Wright and sons Bristol,
- 11) Preventive Dentistry by Murray,
- 12) Textbook of Preventive and Social Medicine by Park and park,
- 13) Community Dentistry by Dr. Soben Peter.
- 14) Public Health dentistry, Sikri. CBS Publishing

Subject: **Research methodology and Bio-statistics**

- 1) Introduction to Bio-statistics by B. K. Mahajan
- 2) Introduction to Statistical Methods by Grewal

Subject: **Paediatric and Preventive Dentistry**

- 1) Dentistry for the Child and Adolescence - Mc. Donald.
- 2) Pediatric Dentistry (Infancy through Adolescence) - Pinkham.
- 3) Pediatric Dentistry : Total Patient Care – Stephen H.Y. Wei
- 4) Clinical Pedodontics – Sidney B. Finn
- 5) Fundamentals of Pediatric Dentistry – R.J. Mathewson
- 6) Handbook of Clinical Pedodontics - Kenneth. D.
- 7) Text Book of Pedodontics- Shobha Tandon
- 8) Pediatric Dentistry - Damle S. G.
- 9) Kennedy's Pediatric Operative Dentistry - Kennedy & Curzon.
- 10) Handbook of Pediatric Dentistry – Cameron and Widmer
- 11) Pediatric Dentistry - Richard R. Welbury
- 12) Pedodontics: A Clinical Approach - Goran Koch
- 13) Orthodontics and Pediatric Dentistry (Colour Guide) - D Millet and R Welbury
- 14) Color Atlas of Oral Diseases in Children and Adolescents - George Laskaris

- 15) Dental Management of the Medically Compromised Patient – J.W. Little
- 16) Pediatric Dentistry – Scientific Foundations and Clinical Practice – Stewart and Barber.
- 17) Clinical Use of Fluorides - Stephen H. Wei.
- 18) Understanding of Dental Caries - Niki Foruk.
- 19) Essentials of Community and Preventive Dentistry - Soben Peters.
- 20) Behaviour Management – Wright
- 21) Traumatic Injuries - Andreason.
- 22) Occlusal Guidance in Pediatric Dentistry - Stephen H. Wei / Nakata
- 23) Pediatric Oral and Maxillofacial Surgery - Kaban.
- 24) Pediatric Medical Emergencies - P. S. Whatt.
- 25) An Atlas of Glass Ionomer Cements - G. J. Mount..
- 26) Textbook of Pediatric Dentistry - Braham Morris.
- 27) Primary Preventive Dentistry - Norman O. Harris.
- 28) Preventive Dentistry - Forrester.
- 29) Contemporary Orthodontics - Profitt..
- 30) Preventive Dentistry - Depaola.
- 31) Endodontics - Ingle.
- 32) Pathways of Pulp - Cohen.
- 33) Management of Traumatized anterior Teeth - Hargreaves.

Subject: **Oral Medicine and Radiology**

Oral Diagnosis, Oral Medicine and Oral Pathology

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

Oral Radiology

- 1) Oral Radiology White and Goaz, Mosby year Book
- 2) Dental Radiology, Weahrman,C.V. Mosby Company
- 3) Oral Roentgenographs Diagnosis, Stafne ,W.B. Saunders Co
- 4) Fundamentals of Dental radiology, Sikri, CBS Publishing.

Forensic Odontology

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

Subject: **Orthodontics and Dentofacial Orthopedics**

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

Subject: **Oral and Maxillofacial Surgery**

- 1) Impacted teeth, Alling John et al
- 2) Principles of Oral and maxillofacial Surgery vol1,2and3 Peterson LJ et al
- 3) Textbook of Oral and maxillofacial Surgery, Srinivasan B
- 4) Handbook of Medical emergencies in the dental office, Malamed SF
- 5) Killey's Fracture of the Mandible, Banks
- 6) Killey's Fractures of the Middle 3 of the Facial Skeleton; Banks P
- 7) The Maxillary Sinus and its Dental Implications; Mc Govanda
- 8) Killey and Kays Outline of Oral Surgery - Farland 2; Seward GR and et al
- 9) Essentials of Safe Dentistry for the Medically Compromised Patients; Mc Carthy FM
- 10) Oral and Maxillofacial Surgery, Vol land 2; Laskin DM
- 11) Extraction of Teeth; Howe GL
- 12) Minor Oral Surgery; Howe GL
- 13) Contemporary Oral and Maxillofacial Surgeiy; Peterson LJ
- 14) Textbook of Oral andMaxillofacial Surgery , Neelima Anil Malik
- 15) Textbook of Oral andMaxillofacial Surgery, SM Balaji
- 16) Principles of Oral Surgery; Moore J'R
- 17) Handbook of Local Anaesthesia, Malamed
- 18) Sedation; Malamed
- 19) Textbook of Oral and Maxillofacial Surgery; Gustav O Kruger
- 20) A Practical guide to Hospital Dentistry, Dr. George Varghese, Jaypee brothers publishing, New Delhi.

- 21) A Practical guide to the Management of Impacted Tooth, Dr. George Varghese, Jaypee brothers publishing, New Delhi.
- 22) Textbook of Local Anaesthesia; Monheim

Subject: **Prosthodontics, and Crown and Bridge**

- 1) Syllabus of Complete denture -Charles M. Heartwell Jr. and Arthur O. Rahn
- 2) Prosthodontic treatment for edentulous patients- Carl O. Boucher
- 3) Essentials of complete denture prosthodontics by - Sheldon Winkler.
- 4) Maxillofacial prosthetics by - Willam R. Laney.
- 5) McCracken's Removable partial Prosthodontics
- 6) Removable partial Prosthodontics by - Ernest L. Miller and Joseph E. Grasso.
- 7) Stewart's Clinical Removable Partial Prosthodontics, Quintessence Publishing Co.
- 8) Fundamentals of Fixed Prosthodontics, Shillingburg, Quintessence Publishing Co.
- 9) Management of Temporomandibular Disorders and Occlusion, Jeffery P. Okeson, Mosby Yearbook, Inc.

Subject: **Periodontology**

- 1) Glickman's Clinical Periodontology-Carranza
- Reference books
- 1) Essentials of Periodontology and periodontics- Torquil MacPhee
 - 2) Contemporary periodontics- Cohen
 - 3) Periodontal therapy- Goldman
 - 4) Orbans' periodontics- Orban
 - 5) Oral Health Survey- W.H.O.
 - 6) Preventive Periodontics- Young and Stiffler
 - 7) Advanced Periodontal Disease- John Prichard
 - 8) Clinical Periodontology- Jan Lindhe
 - 9) Periodontics- Baer and Morris.

Subject: **Conservative Dentistry and Endodontics**

- 1) The Art and Science of Operative Dentistry, Sturdivant, Mosby U.S.A
- 2) Principle and Practice of Operative Dentistry, Charbeneu, Varghese Publishing, Mumbai.
- 3) Grossman's Endodontic Practice, B. Suresh Chandra and V. GopiKrishna, Wolters Kluwer

Subject: **Esthetic Dentistry**

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

Subject: **Forensic Odontology**

- 1) Practical Forensic Odontology- Derek Clark

Subject: **Behavioural Science**

- 1) General Psychology- Hans Raj, Bhatia
- 2) Behavioural Sciences in Medical Practice- Manju Mehta
- 3) General Psychology — Hans Raj, Bhatia
- 4) General Psychology —Munn
- 5) Sciences basic to Psychiatry -- Basanth Puri and Peter J Tyrer

Subject: **Ethics**

- 1) Medical Ethics, Francis C M, Jaypee Brothers, New Delhi

Subject: **Implantology**

- 1) Contemporary Implant Dentistry, Carl. E. Misch, Mosby
- 2) Osseointegration, Occlusal Rehabilitation, Hobo S., Ichida. E.&
- 3) Garcia L.T. Quintessence Publishing Company,

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

List of Journals -

- 1) Journal of Dentistry
- 2) British Dental Journal
- 3) International Dental Journal
- 4) Dental Abstracts
- 5) Journal of American Dental Association
- 6) British Journal of Oral and Maxillofacial Surgery
- 7) Oral Surgery, Oral Pathology and Oral Medicine
- 8) Journal of Periodontology
- 9) Journal of Endodontics
- 10) American Journal of Orthodontics and Dentofacial Orthopedics
- 11) Journal of Prosthetic Dentistry
- 12) International Journal of Prosthodontics
- 13) Journal of Public Health Dentistry
- 14) Endodontics and Dental Traumatology

- 15) Journal of Dental Education
- 16) Dental Update
- 17) Journal of Dental Material
- 18) International Journal of Pediatric Dentistry
- 19) International Journal of Clinical Pediatric dentistry

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

INTERNSHIP PROGRAMME

After passing the Final BDS part II Degree Examination the candidate has to undergo Compulsory Paid Rotating Internship programme for Twelve months (i.e. 365 days) in the same institution. During this period the candidates will be posted in all the clinical departments of the institution. The Degree will be awarded only after successful completion of the Internship programme. During this training period they will have to attend to the routine clinical activities of the department under the supervision of faculty members. The interns will also be posted in the Dental Casualty for attending to the emergency services of the institution and may also include rural postings.

a) The duration of posting of interns in various departments will be as -

Sr. No.	Department	No. of Days
1.	Prosthodontics	60
2.	Conservative Dentistry	60
3.	Oral and Maxillofacial Surgery	60
4.	Orthodontics	30
5.	Pedodontics	30
6.	Oral Medicine and Radiology	30
7.	Periodontics	30
8.	Community Dentistry/ Rural services/Palliative care	30
9.	Oral Pathology	15
10.	Elective (any of the subjects listed from 1 to 7)	20

b) Duties and responsibilities of Intern posted in various departments include:-

- i. Attending to the routine in the Department
- ii. Carrying out the routine clinical procedures in the department
- iii. Carrying out Patient and instrument Preparation for clinical procedures.
- iv. Carrying out all Clinical procedures including impression making, and pouring casts (i.e. steps including mixing of impression materials and gypsum products, mixing of restorative materials and removal of casts from impressions to be done by the internee without seeking assistance)
- v. Fabrication insertion and follow up of removable orthodontic appliances.
- vi. Attending to the casualty duties of the institution
- vii. Maintenance of logbook and records
- viii. Carrying out any other duty as instructed by the Head of the Department.
- ix. Maintenance of proper dress code and attire.

Note: The entire clinical work done by intern will be under the supervision of faculty members. In the absence of faculty the intern will be under the supervision of Senior/Junior Resident.

b) Suggested internship programme in Community Dentistry:

i	<p>At the college :</p> <p>Interns are posted to the department to get training in dental practice management.</p> <ul style="list-style-type: none"> 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). b) The practice of chair side preventive dentistry including oral health education
ii	<p>At the community oral health care centre (adopted by the dental college in rural areas)</p> <p>Graduates posted to familiarize in :</p> <ul style="list-style-type: none"> 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	<p>In Pain and palliative care centre</p>
iv	<p>DESIRABLE :</p> <p>Practical knowledge in the use of computers : Operating system, word processor, spread sheet, power point and patient management software etc.</p>