King George’s Medical University
Bachelor of Dental Surgery
PROSPECTUS
# Index

<table>
<thead>
<tr>
<th>Welcome message</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hippocratic Oath</td>
<td>2</td>
</tr>
<tr>
<td>King George’s Medical University, Lucknow</td>
<td>4</td>
</tr>
<tr>
<td>Faculty of Dental sciences, KGMU, Lucknow</td>
<td>6</td>
</tr>
<tr>
<td>Programs offered</td>
<td>12</td>
</tr>
<tr>
<td>Teaching Facilities</td>
<td>13</td>
</tr>
<tr>
<td>Library</td>
<td>14</td>
</tr>
<tr>
<td>Faculty and Staff</td>
<td>15</td>
</tr>
<tr>
<td>Patient Care</td>
<td>16</td>
</tr>
<tr>
<td>Research Facilities</td>
<td>16</td>
</tr>
<tr>
<td>Extracurricular Facilities</td>
<td>19</td>
</tr>
<tr>
<td>Hostel Facilities</td>
<td>19</td>
</tr>
<tr>
<td>Affiliated Colleges</td>
<td>20</td>
</tr>
<tr>
<td>Collaborations</td>
<td>21</td>
</tr>
<tr>
<td>Eminent Georgians in Dentistry</td>
<td>23</td>
</tr>
<tr>
<td>Bachelor of Dental Surgery</td>
<td>24</td>
</tr>
<tr>
<td>Academic calendar</td>
<td>24</td>
</tr>
<tr>
<td>Fee details</td>
<td>25</td>
</tr>
<tr>
<td>University Awards</td>
<td>25</td>
</tr>
<tr>
<td>Curriculum</td>
<td>26</td>
</tr>
<tr>
<td>Administrative officers</td>
<td>120</td>
</tr>
<tr>
<td>Anti-ragging Information</td>
<td>126</td>
</tr>
<tr>
<td>Mentor List</td>
<td>127</td>
</tr>
</tbody>
</table>
Welcome Message

Prof MLB Bhatt
Vice Chancellor
King George's Medical University Lucknow

It’s a matter of great privilege for me to welcome the new generation of learners to the centre of excellence in healthcare education, King George’s Medical University, Lucknow. The faculty of Dental sciences has contributed immensely in the education and training of thousands of graduate and post-graduates for both academic and professional excellence. In this new academic year, I look forward to new beginnings and new opportunities, where the faculty shall facilitate your learning from novice to a professional. You shall be nurtured through effective teaching learning methods, recent advances in infrastructural support and material science, quality patient oriented training, our robust research facilities and infrastructure, our core values of professionalism and ethics and above all a mentored environment. This training shall enable your capacity to stand out both as a professional and an expert. We aim to ultimately build you as an individual that can serve the needs of the society.

Prof. Anil Chandra
Dean, Faculty of Dental Sciences

Prof. Divya Mehrotra
Vice Dean, Faculty of Dental Sciences, KGMC, Lucknow

We heartily welcome the new BDS batch to join one of the best dental college in India and hope that you will make the most with the opportunities in this campus and develop as a young dental professional with not only the needed competency and skills but also as a good human being and take the Georgian flag further to even more heights. We wish you all a great success ahead.
The Hippocratic Oath

I swear by Apollo the physician and Aesculapius and Hygeia, and panacea, while I take to witness All the Gods and Goddesses, that I shall fulfil according to my ability and judgment this OATH and this covenant.

That I shall esteem my teacher in this ART as I do my parents; and contribute towards his subsistence, and share my goods with him if he is in need, and regard his offspring as my own brothers, and teach them this art, without fee and covenant, should they wish to study it, and impart its general precepts and oral lessons and all the rest of the science to my sons and those of my teacher, and to students who have been registered and sworn according to the law of medicine, but to none other. I will follow the dietetic regimen for the benefit of the sick according to my ability and my judgement, and will withhold that which would be for their injury and hurt. I will not administer a deadly drug to anyone though solicited thereto, nor will I suggest any such advice. In like manner I will not administer abortive drugs to women.

Purely and holily will I live and practice my art, nor will I use the Knife on those suffering from stone, but will leave to specialists in this operation. Into whatever house I enter, I will go with the object of helping the sick, holding aloof from all voluntary and all other hurtful wrong doing, and from licentious practices whether with women or with men, free or bond, and regarding the things I see or hear, in the exercise of my ART, or outside its exercise, in my intercourse with men, which ought not to be divulged, I will keep silent, regarding them as inviolable secrets. If then I fulfil this OATH, without any violation, may I enjoy life and the fruits of my ART, held in honour by all men for evermore, But if I transgress it and commit perjury, may quite the contrary befall me.
महार्षि चरक भाष्प

मेरा व्यवहार सत्तकात्पूर्ण, सेवापार्याण तथा उद्दाञ्ज्या और ईश्वर से रहित होगा। मैं अपने आचरण में संतोषी, आज्ञापालक, विनिमय, निरस्तर मननशील एवं शंतियुक्त रहूँगा/रहूँगी।

गुरु के अभिशेष लक्ष्य के प्रति सम्पूर्ण सामर्थ्य से प्रयत्नशील रहूँगा/रहूँगी। चिकित्सक के रूप में अपनी सफलता, यश एवं अर्थप्राप्ति के लिए मैं सदैव अपनी विद्या का उपयोग प्राणीमात्र के कल्याण हेतु करता रहूँगा/करती रहूँगी।

अत्याधिक व्यस्तता एवं विश्राम की अवसथा में भी, मैं दिन-रात रोगी की सेवा हेतु आत्मवत्ता तपत रहूँगा/रहूँगी। निज स्वार्थ एवं अर्थ लाभ के लिए किसी रोगी का अहित नहीं रहूँगा/रहूँगी तथा परस्त्री एवं पराये धन की कामना नहीं रहूँगा/रहूँगी। अभ्यतिका मेरे विचारों में भी नहीं आयेगी।

मैं सदैव मद्दर, पवित्र, उचित, आनन्द्वर्धक, सत्य, हितकारी तथा विनिमय वाणी प्रयुक्त रहूँगा/रहूँगी तथा अपने पूर्व अनुभवों का उपयोग करते हुए, ज्ञान के विकास एवं नवीनतम उपलब्धि के लिए निरंतर प्रयत्नशील रहूँगा/रहूँगी।

किसी रोगी की चिकित्सा उसके पति अथवा आत्मीय की उपस्थिति में ही करूँगा/करूँगी। रोगी के परीक्षण के समय मेरा विवेक, ध्यान एवं इन्द्रियाँ रोग-विनिदान हेतु ही केन्द्रित होगी।

मैं रोगी या उसके घर से संबंधित गोपनीय बातों का प्रचार नहीं रहूँगा/रहूँगी। मैं मरणासन्न रोगी की विवेचना नहीं रहूँगा/रहूँगी, क्योंकि वह रोगी या उसके आत्मीयजनों को आघातकारक हो सकती है। मैं अधिकृत विद्वान होते हुए भी अपने ज्ञान की अभिव्यक्ति अहंकार के रूप में नहीं रहूँगा/रहूँगी, क्योंकि इससे रोगी के स्वजन आपमानित अनुभव कर सकते हैं।
King George's Medical University has remained a representation of excellence in the field of public health care and healthcare education since more than hundred years. More than 20,500 professionals from the University are serving India and abroad. The university has a position of repute amongst all other healthcare institutes in India. It was ranked 5th among all medical institutions in India by recent Outlook survey.

The Foundation stone of the University was laid in 1905 by Prince of Wales who travelled to India second time as emperor in 1911. It received the Status of Medical University in year 2002, and was declared as Apex Medical Institution in 2008 by Government of Uttar Pradesh. King George’s Medical University UP has acquired national & global eminence for contributions in academics, research, and patient care. It caters to need of States of UP and others like Bihar, Chhattisgarh, Madhya Pradesh and neighbouring Nepal and offer medical services to more than 20 crore population. It is the largest Residential Medical University in India with Faculty of Medicine, Faculty of Dental Sciences, Faculty of Nursing and Faculty of Paramedical Sciences. King George Medical University was ranked fifth by the National Institutional Ranking Framework (NIRF) among medical colleges in 2018.

Ranked V (2018) amongst medical institutions
More than 20,500 professionals from the University are serving India and abroad. The University is proud to have 02 Padma Vibhushan, 04 Padma Bhushan, 22 Padma Shri as jewels of recognition. The alumni from the University have been appointed at posts of high repute in India as Directors, Vice Chancellors of National Institutions of India, with many of them holding higher positions abroad (United States and other countries)
National Assessment and Accreditation Council (NAAC) has given KGMU 'A' grade certification. This certification will remain valid from May 2017 to May 2022. Ministry of Human Resource Development, Government of India has shortlisted KGMU among the probable list of 'Institute of Eminence'.

Grade ‘A’
(2017-22)
Score 3.14

The University campus is spread over an area of 7 sq.km. with more than 50 buildings. There are 2105 hostel rooms, 550 faculty positions, 700 resident doctors and in all 5000 employees. This Prestigious Government University has approximately 5300 undergraduate/Post graduate students, (250 MBBS, 100 BDS seats) getting medical education. This University imparts 181 MD/MS/Diploma Courses in 24 Specialties & 38 DM/M.Ch. courses in 28 super specialties. Postgraduate courses are offered in MD (119 seats in 16 departments), MS (34 seats in 4 departments), Diploma (26 seats in 4 departments), Diploma (PMHS) 35 seats, MDS (27 seats in 7 departments, DM (15 seats in 4 departments), M.Ch. (23 seats in 7 departments), M.Phil (4 seats in Clinical Psychology) and Ph.D (in various departments).

The Gandhi Memorial & Associated Hospitals of KGMU has over 4500 functional beds with over 4500 patients admitted at any given time, with on an average 10,000 new patient attending the OPD every day. The competencies and capabilities are utilized to the fullest in order to serve the droves of patients flocking in, incessantly, with greater expectations, every day. More than 15 lac patients visit this Tertiary Care Centre, with 1,00,000 indoor admissions, in a year's time.
Faculty of Dental Sciences

The Dental Wing of King George's Medical College started as a part of ENT Department in 1949 with Dr. B Sampat in charge. It shifted to separate premises as Department of Dentistry in 1952. The department made steady progress with constituent sections of different specialties offering comprehensive dental care to patients under the stewardship of Prof. TN Chawla who succeeded Dr Sampat. The Dental Department became a full fledged separate faculty in 1980 with the six respective sections serving as independent departments. At present, there are 9 departments, with an annual intake of 70 BDS students and 27 MDS students. Besides the BDS and MDS courses, certificate courses in Dental Hygiene and Dental Mechanics are also offered with 20 seats in each course. At present these courses are stopped by court order. Each department is equipped with the latest dental armamentarium.

The Faculty of Dental Sciences has made significant contributions in the field of research. A research unit in Periodontology was established under Prof TN Chawla by the Indian Council of Medical Research, New Delhi in 1965. Fluoride Study and Oral Prophylaxis Study units were established with PL480 grants. DHR MRU molecular biology and stem cell Lab and DST FIST digital lab have recently been funded by Department of Health Research and Department of Science and Technology.

**Vision:** To be a centre of excellence and leader in the world in dental education, research and patient care.

**Mission:**

- Be one of the world's best providers of high quality teaching and excellence in education.
- Promote multi-disciplinary scientific biomedical research.
- Provide compassionate, patient-centered care of the highest quality.
- Generate outstanding leaders in health sciences.
Our Glorious Moments

Padmashree Award to Prof. Mohammad

Prof. & Head Dr. Pradeep Tandon received Prestigious Dr. B.C. Ray award from Hon’ble President of India
Oldest Dental Building
New Dental Building
Programs Offered at KGMU:

1. Undergraduate Programs
   - Bachelor of medicine and Bachelor of Surgery (MBBS)
   - Bachelor of Dental sciences (BDS)
   - Bachelor of Science Nursing (BSc Nurs)

2. Postgraduate Programs
   (a) Doctor of Medicine (MD) 119 seats
   1. Anaesthesiology
   2. Anatomy
   3. Community Medicine
   4. Forensic medicine
   5. General Medicine
   6. Microbiology
   7. Obstetrics & Gynaecology
   8. Paediatrics
   9. Pathology
   10. Pharmacology
   11. Physical Medicine & Rehabilitation
   12. Physiology
   13. Psychiatry
   14. Radio Diagnosis
   15. Radio Therapy
   16. Tuberculosis & Respiratory Diseases

   (b) Master of Surgery (MS) 34 seats
   1. Orthopaedic Surgery
   2. Ear Nose Throat

   (c) Master in Dental Sciences (MDS) : 27 seats
   1. Oral & Maxillofacial Surgery
   2. Prosthodontics
   3. Conserv Dentistry & Endodontics
   4. Periodontics
   5. Orthodont & Dentofacial Orthopedics
   6. Pedodontics
   7. Oral Medicine & Radiology

3. PG Diploma Courses for PMS
   1. Anaesthesiology 16 (2 years)
   2. Child Health: 5-8 (1 year)
   3. Clinical Pathology 3-4 (2 years)
   4. Obstetrics Gynaecology: 9 (2 year)
   5. Radio-diagnosis: 4 (2 years)
   6. Ophthamology: 3-4 (2 years)
   7. Orthopaedic Surgery: 9 (2 years)
   8. Public Health: 9-10 (2 years)
   9. Tuberculosis & chest Diseases: (2 year)

4. Diploma Dental Hygienist/Diploma Dental Mechanics

5. Super Speciality Courses (DM/MCh)
   (a) Doctor of Medicine (DM) 15 seats
   1. Cardiology
   2. Geriatric Mental Health
   3. Rheumatology
   4. Neurology

   (b) Magister Chirurgiae (MCh) 23 seats
   1. Cardio Thoracic & Vascular Surgery
   2. Neuro Surgery
   3. Paediatric Surgery
   4. Plastic Surgery
   5. Surgical Gastroenterology
   6. Surgical Oncology
   7. Urology
6. M.Phil in Translational Health Science/Clinical Psychology
7. PhD
8. MD-PhD
9. Paramedical Courses
   1. Medical Laboratory
   2. OT
   3. Emergency Trauma Care
   4. Optometry
   5. Physiotherapy
   6. Dialysis
   7. Cardiology
   8. X-Ray
   9. MRI
   10. CT Scan
   11. Sanitation
   12. Radiotherapy

10. Skill Courses
    - BLS
    - ACLS
    - ATLS
    - Hand Hygiene

Professional Accreditation
All programmes are registrable with the professional governing bodies in Uttar Pradesh. MBBS course: UP Medical Council of India BDS course: UP Dental Council Of India Nursing: Indian Nursing Council

TEACHING FACILITIES AT KGMU:
CLASSROOMS: The classes for teaching are located at Kalam centre within the University campus. It consists of 60 classrooms with seating capacity ranging from 60-650. There are 29 E-Classrooms/lecture theatres. Teaching and Learning is encouraged through audio visual aids, use of Power-point presentations. Lectures are uploaded on KGMU online portal accessible to students. There are 112 for teaching learning of skills.
LIBRARY:
Spread over an area of 4012.11 square meters, the Central Library has a collection of 38013-books, 4381-Ebook, 197-print journals, 27438-bound volumes, 2681-Book Bank, 3031 Thesis and 339 CDs of title’s till July 2016 (as per holding shown on KOHA-Library Management Software). Library has been automated with ‘KOHA’ (Library Management Software). Online searching of documents through OPAC (Online Public Access Catalogue) is available on the computers connected to Central Library LAN via URL searching mode http://172.16.26.35 All the books, journals and thesis tagged with radio-frequency identification system (RFID) and for its Security to Magnetic Detection Gates have been installed in the Library for ensuring the security of documents. Closed Circuit TV’s installation have been done in all wings of the library. It has a separate computer/internet access area for students. Photocopy facility is also available.

**E Learning Access:** The University has subscribed to various e-portals for the learning of students and also for Faculty. They include access to Clinical key, BMJ journals, BMJ Case Reports, BMJ best practice, Up-to-date, Ermed, Clinical Learning, Jaypee Publishers.

**FACULTY & STAFF:**

The University is enriched with about 450 Faculty members, 600 Residents, 5300 Medical & Dental students, and 5000 Employees.

<table>
<thead>
<tr>
<th>Faculty of Medical Sciences</th>
<th>Faculty of Dental Sciences</th>
<th>Faculty of Nursing Sciences</th>
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<tbody>
<tr>
<td>Faculty Strength: 360</td>
<td>Faculty Strength: 61</td>
<td>Faculty Strength: 14</td>
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<tr>
<td>Senior Residents: 235</td>
<td>Senior Residents: 26</td>
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<tr>
<td>Postgraduate trainees: 745</td>
<td>Postgraduate trainees: 77</td>
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<tr>
<td>Undergraduate trainees: 1496</td>
<td>Undergraduate trainees: 350</td>
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<tr>
<td>Paramedical Staff:</td>
<td>Paradental Staff: 70</td>
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# Faculty of Dental Sciences

## Department of Orthodontics & Dentofacial Orthopedics
1. Dr. Pradeep Tandon  
   Professor & Head
2. Dr. G.K. Singh  
   Professor
3. Dr. Amrit Nagar  
   Professor
4. Dr. Gyan Prakash Singh  
   Professor
5. Dr. Alka Singh  
   Professor
6. Dr. Dipti Shastri  
   Assistant Professor

## Department of Periodontology
1. Dr. Nand Lal  
   Professor & Head
2. Dr. Umesh Pratap Verma  
   Professor
3. Dr. Shalini Kaushal  
   Professor
4. Dr. Pavitra Kumar Rashtogi  
   Professor
5. Dr. Rameshwar Singhal  
   Associate Professor
6. Dr. Anjan Kumar Pathak  
   Associate Professor

## Department of Conservative Dentistry & Endodontics
1. Dr. A.P. Tikku  
   Professor & Head
2. Dr. Anil Chandra  
   Professor
3. Dr. Promila Verma  
   Professor
4. Dr. Rakesh Kumar Yadav  
   Professor
5. Dr. Ramesh Bharti  
   Associate Professor
6. Dr. Rhythm  
   Associate Professor
7. Dr. Vijay Kumar Shaktiya  
   Associate Professor
8. Dr. Pragya Pandey  
   Assistant Professor

## Department of Prosthodontics & Dentofacial Materials
1. Dr. Rama Shanker  
   Professor & Head
2. Dr. Pooran Chand  
   Professor
3. Dr. Jitendra Kumar Rao  
   Professor
4. Dr. Saumyendra Vikram Singh  
   Professor
5. Dr. Raghuvir Yadav Singh  
   Professor
6. Dr. Niraj Kumar Mishra  
   Professor
7. Dr. Balendra Pratap Singh  
   Professor
8. Dr. Shuchi Tripathi  
   Associate Professor
9. Dr. Kamleshwar Singh  
   Associate Professor
10. Dr. Deeksha Arya  
    Associate Professor
11. Dr. Sunit Kumar Jurel  
    Associate Professor
12. Dr. Lakshya Kumar  
    Associate Professor
13. Dr. Kaushal Kishor Agarwal  
    Associate Professor
14. Dr. Bhaskar Agarwal  
    Associate Professor
15. Dr. Mayank Singh  
    Assistant Professor

## Department of Oral & Max. Surgery
1. Dr. S. Mohammad  
   Professor & Head
2. Dr. R.K. Singh  
   Professor
3. Dr. Divya Mehrotra  
   Professor
4. Dr. Uma Shankar Pal  
   Professor
5. Dr. Vibha Singh  
   Professor
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<tr>
<th>VI</th>
<th>Department of Oral Pathology &amp; Microbiology</th>
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<tbody>
<tr>
<td>1</td>
<td>Dr. Shaleen Chandra</td>
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<td>Professor &amp; Head</td>
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<tr>
<td>2</td>
<td>Dr. Shalini Gupta</td>
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<td></td>
<td>Professor</td>
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<td>3</td>
<td>Dr. Diksha Singh</td>
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<td>4</td>
<td>Dr. Fahad Mansoor Samadi</td>
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<td>5</td>
<td>Dr. Priyanka Singh</td>
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<td>Assistant Professor</td>
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<th>Department of Pediatrics &amp; Preventive Dentistry</th>
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<tr>
<td>1</td>
<td>Dr. Rakesh Kumar Chak</td>
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<td>Professor &amp; Head</td>
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<td>2</td>
<td>Dr. Rajeev Kumar Singh</td>
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<td></td>
<td>Professor</td>
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<td>3</td>
<td>Dr. Richa Khanna</td>
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<td>Associate Professor</td>
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<td>4</td>
<td>Dr. Afroz Alam Ansari</td>
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<td></td>
<td>Professor</td>
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<th>Department of Oral Medicine &amp; Radiology</th>
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<td>1</td>
<td>Dr. Ranjeet Kumar Namdeo Patil</td>
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<td>2</td>
<td>Dr. Anurag Tripathi</td>
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<td>Associate Professor</td>
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<td>3</td>
<td>Dr. Akhilanand Chaurasia</td>
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<td>Associate Professor</td>
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<td>4</td>
<td>Dr. Vikram Khanna</td>
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<td>Associate Professor</td>
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<td>5</td>
<td>Dr. Vandana Singh</td>
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<td>Assistant Professor</td>
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<th>IX</th>
<th>Department of Community Dentistry (Public Health Dentistry)</th>
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<tr>
<td>1</td>
<td>Dr. Vinay Kumar Gupta</td>
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<td>Associate Professor &amp; Officiating Head</td>
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<tr>
<td>2</td>
<td>Dr. Gaurav Mishra</td>
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<td>Assistant Professor</td>
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<td>3</td>
<td>Dr. Sumit Kumar</td>
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<td>Assistant Professor</td>
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PATIENT CARE:

The university is equipped with 4000 beds, and 4000-5000 new patients visit the Out Patient Departments daily.

Dental OPD 2018: Annual 1,71,702 patients 11118, and RCT procedures 4408
Admitted: 799 1760
Restorations and conservative procedures
Extractions
Minor Surgeries: 2368
Major Surgeries : 424
Partial dentures delivered
Complete dentures delivered
Crowns and bridges delivered
Pediatric procedures: 30,000
Periodontal procedures 16281
Orthodontic procedures Removable appliances delivered 1025, Fixed treatment 430
Dental Camps organized 52

Medical OPD 2018: 18,32,367 patients

Research Facilities

Following research facilities are available for students.
Centre for Advance Research (CFAR) Equipment worth Rs. 30 crores have been established in this centre. Facilities include Molecular Biology, Forensic Odontology, DNA Finger Printing, Medical Genetics, and Stem Cell Culture.: Genomics including third generation sequencer, microarray, real time PCR, proteomics, cell culture, microscopy and cryofreezing.
DHR Multi speciality Research Lab: This lab is equipped with latest equipment worth Rs 5 crores

VRDL in the Dept of Microbiology: This lab is getting equipped with latest equipment worth Rs 5 crores
Our Research metrics:

Data provides a glimpse of research projects being implemented in the University under the guidance of eminent faculty members:

2017-18:
Industry sponsored projects: 2.10 cr (50 projects)
Agency sponsored projects: 13.82 cr (50 projects)

2016-17:
Industry sponsored projects: 3.21 cr (46 projects)
Agency sponsored projects: 12.34 cr (113 projects)

2015-16:
Industry sponsored projects: 3.49 cr (44 projects)
Agency sponsored projects: 12.84 cr (121 projects)

Research is funded by various reputed funding agencies like ICMR, CCRUM, CSIR, DST, UGC-NET, UPCST, UNICEF, ICSSR, DBT, DRDO, UGC-Rajeev Gandhi Fellowship, UGC-Govt. of U P Ministry of Health and Family welfare, Department of Health of BILL & MELINDA GATES foundation, USA; Jiv Daya foundation, Dallas, Texas, USA; National Brain Research Centre, Haryana; RNTCP, Government of U.P.

Publications from Faculty of Dental Sciences

<table>
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<tr>
<th>Journals published</th>
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<tbody>
<tr>
<td>Journal of Oral Biology &amp; Craniofacial Research</td>
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<tr>
<td>National Journal of Oral &amp; Maxillofacial Surgery</td>
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</tbody>
</table>
EXTRACURRICULAR FACILITIES:

• Sports and Games facilities: Fully illuminated playground for football, cricket, hockey, volleyball, basketball, running track etc
• Fully equipped ultramodern indoor facilities for table tennis, badminton etc
• Fully functional swimming pool with life guard
• Indoor Gymnasium

HOSTEL FACILITIES:

There are 2105 hostel rooms for providing accommodation to students in different courses. The Proctorial board is responsible for the allotment of these rooms. Following hostel premises are available for allotment:

- New CV: 85 rooms
- Old CV: 87 rooms
- SP hostel: 294 rooms
- TG hostel: 352 rooms
- Nehru (old): 66 rooms
- Nehru (new): 56 rooms
- Resident hostel: 99 rooms
- LR hostel: 50 +34 rooms
- Gautam Buddha: 288 +20 rooms
- New VL hostel: 107 rooms
- Old VL hostel: 54 rooms
- Mahamaya: 33 rooms
- DK hostel: 95 rooms
- New girls hostel: 54 rooms
- Navin boys hostel: 51 rooms
- TG Annexy: 17 rooms
OUR AFFILIATED COLLEGES

Following medical colleges are affiliated to the University:

1. MLN Medical College, Allahabad
2. Govt Medical College, Kannaoj
3. Govt Medical College, Jalaun
4. Govt Medical College, Azamgarh
5. Govt Medical College, Banda
6. Ram Manohar Lohia Institute of Medical Sciences, Lucknow (256 sq m)
7. Command Hospital, Lucknow
8. Regional Institute of Ophthalmology, Sitapur
Affiliated Nursing Colleges
1. Vivekanand college of Nursing, Lucknow (62932.56 sq ft)
2. Sahara college of Nursing, Lucknow (25905 sq ft)
3. Samarpan Institute, Lucknow
4. GSRM Memorial College, Lucknow (85,100 sq ft)
5. College of Nursing, Command Hospital, Lucknow
6. BCM College of Nursing, Sitapur (84053 sq ft)
7. Achal Singh Yadav College of Nursing
8. MS College of Nursing

COLLABORATIONS OF UNIVERSITY

International:

[CURE International India Trust (CIIT)
Lithuanian University of Health Sciences
McMaster University
RMIT University
The University of Melbourne
The University of British Columbia
Rīgas Stradiņa Universitāte
Università di Pavia
University of Manitoba]
Society of Critical Care Medicine
The Intensive Care Professionals

American Heart Association

National:

IGNOU

Shri Pal Memorial Hospital and Research Centre

The Energy and Resources Institute

Super Speciality Cancer Institute & Hospital, C G City, Lucknow

National Hepatitis Eradication Program

SGPGI

CDRI

CSIR-CIMAP

CSIR-NBRI

Established 1953
Eminent Geogians in Dentistry

Late Dr. TN Chawla
Late Dr. CP Govila
Dr. R. Pradhan
Dr. Anil Kohli
Dr. OP Kharbanda
FDS RCPS (Glasgow), Hon. Brig
Padmashree, Padma Bhushan, Hon. Brig

Dr. NK Agarwal
Dr. DS Gupta
Gen. Paramjit Singh
Gen. Vimal Arora
Dr. RS Nanda (USA)

Dr. Pradeep Jayna
Dr. DN Kapoor
Dr. Sanjeev Goel (USA)
Dr. SF Agarwal
Dr. Varun Kalra (USA)

Dr. Ravi Nanda (USA)
Dr. AK Utreja
Prof. Pradeep Tandon
Prof. A.P. Tikku
Prof. Shadab Mohammad
BC Roy awardee 2018
Padmashree awardee 2019
**BACHELOR OF DENTAL SURGERY**

BDS is a 5 years course including one year compulsory rotary internship, as per the gazette of Govt. of India Notification No. 182 dated 10th September, 2007 for undergraduate students. Admissions are made through UP state Combined Pre Medical Test and through All India Medical Entrance Examination conducted by CBSE and 10 seats are reserved for nominees of the Government of India.

**Academic Calendar BDS 1st year 2018 Batch**

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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<td>1 Wk</td>
<td>Holi vac</td>
<td>Term</td>
<td>Exam</td>
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<td>I Prof</td>
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<td>Diwali</td>
<td>Vac</td>
<td>Sports</td>
<td>1 Wk</td>
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<td>Diwali</td>
<td>Vac</td>
<td>Sports</td>
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<td></td>
<td>Rotatory Internship</td>
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Min Attendance should be 80%
50% pass marks essential in Terminal & Professional Exam
Fee Details For BDS Course

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tuition fees</td>
<td>Rs. 18000/- per year (Rs 9000/- OBC/SC/ST/Category)</td>
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<tr>
<td>2.</td>
<td>Others</td>
<td>Rs. 4000/- per year</td>
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<tr>
<td>3.</td>
<td>Development Fees</td>
<td>Rs. 2000/- per year</td>
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<tr>
<td>4.</td>
<td>Examination</td>
<td>Rs. 6000/- per year per examination</td>
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<tr>
<td>5.</td>
<td>Marks sheet fee</td>
<td>Rs. 1000/- per year per examination</td>
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<td>6.</td>
<td>Enrolment fee</td>
<td>Rs. 1000/- (at the time of admission)</td>
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<tr>
<td>7.</td>
<td>Admission fee</td>
<td>Rs. 2000/- (at the time of admission)</td>
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<td>8.</td>
<td>Caution money (refundable)</td>
<td>Rs. 10000/- (at the time of admission)</td>
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<td>9.</td>
<td>Sports</td>
<td>Rs. 100/- (at the time of admission)</td>
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<td>10.</td>
<td>Student welfare</td>
<td>Rs. 1000/- (at the time of admission)</td>
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<td>11.</td>
<td>Computer fee</td>
<td>Rs. 500/- (at the time of admission)</td>
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<tr>
<td>12.</td>
<td>Application form fee</td>
<td>Rs. 100/- (at the time of admission)</td>
</tr>
<tr>
<td>13.</td>
<td>Library fee</td>
<td>Rs. 1000/- per year</td>
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<tr>
<td>14.</td>
<td>Hostel</td>
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<td></td>
<td>Single seated:</td>
<td>Rs. 2400/- per year</td>
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<td></td>
<td>Double seated:</td>
<td>Rs. 3600/- per year</td>
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<tr>
<td>15.</td>
<td>Electricity</td>
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<tr>
<td></td>
<td>Single seated:</td>
<td>Rs. 2500/- per year</td>
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<tr>
<td></td>
<td>Double seated:</td>
<td>Rs. 3500/- per year</td>
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University Awards For Dental Undergraduates

- **Dr. Pradeep Jayana Gold Medal for best Intern**
- **Professor MN Mathur Gold Medal** for highest aggregate marks in BDS First, Second and Third Professional Examinations and passing BDS Final Professional examination in First Attempt without break obtaining 60% or more marks.
- **Dr. HD Gupta Memorial Gold Medal & Cash Prize of Rs. 10,000/-** for obtaining the highest percentage of marks in the aggregate of all the Four Professional of BDS I to IV year examinations in First Attempt without break.
- **Dr. (Smt.) Santosh Jain Memorial Gold Medal** for obtaining the highest number of marks in the B.D.S. Final Professional Examination.
- **Vedavati Sheila Gold Medal** for securing the highest aggregate marks in the BDS Final Professional Examination amongst the Girl candidates.
- **Dr. Govila Gold Medal** for securing maximum number of Medals and Certificate of Honours in BDS Final Professional Examination.
- **Professor K.P. Chowdhary Gold Medal** for securing the highest marks with a minimum of 60% marks in Theory and Practical in Operative Dental Surgery (Orientation in Dentistry and Practice Management with Dental Jurisprudence, Ethics and Economics) BDS Final Professional Examination.
- **Professor K.P. Chowdhary Gold Medal** for securing the highest number of marks in Oral Surgery and Dental Radiodiagnosis of B.D.S. Final Professional Examination.
- **Sri Tribhuvan Nath Ram Dulari Memorial Gold Medal** for obtaining highest marks in "Pedodontics" and passed all four BDS Professional Examinations in first attempt without break.
- **Professor Dr. Gopal Dutt Sharma and Smt. Dial Devi Gold Medal** for securing the highest marks with a minimum of 60% marks in B.D.S. Third Professional Examination.
- **Shri Akhilesh Kumar Misra and Shri Ajay Kumar Gold Medal & Book Prize by BDS 1991 batch in loving memory of their classmate for obtaining highest marks in BDS Second Professional Examination.**
- **Gold, Silver and Bronze Medals for Securing First, Second or Third Highest Marks in First/second/third final Professional BDS regular batch Examination.**

For Dental Post Graduates

- **Dr TN Chawla Gold Medal** for the best Post Graduate student at Faculty of Dental Sciences, King George's Medical University.

Sports

- **Prof. PC Dubey Champion Athlete (Boys) award for the 99th Annual Sports Meet of Athletic Association, KGMU.**
- **Smt Champa devi Champion Athlete (Girls) award for the 99th Annual Sports Meet of Athletic Association, KGMU.**
Department of anatomy

- Teaching by highly trained faculty
- Self-directed and small group learning
- Robust day to day assessment
- Hands on training of dissection on fresh embalmed cadavers
- Live demonstration of prospected parts & histology slides
- Best museum for learning developmental and radiological anatomy
- MRI and CT scan gallery
- Focus on 360° development of students
- Research activities
A) Goal

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

B) Objectives:

a) KNOWLEDGE & UNDERSTANDING:

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

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

b) SKILLS

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

C) Integration

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

This insight is gained in a variety of ways.
1) Lecture & small group teaching
2) Demonstrations
3) Dissection of the human cadaver
4) Study of dissected specimens
5) Osteology
6) Surface anatomy on living individual
7) Study of radiographs & other modern imaging techniques.
8) Study of Histology slides.
9) Study of embryology models
10) Audio-visual aids

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

D) An Outline Of The Course Content:
1. General anatomy: Introduction of anatomical terms and brief outline of various systems of the body.
2. Regional anatomy of head & neck with osteology of bones of head * neck, with emphasis on topics of dental importance.
4. The regional anatomy of the sites of intramuscular & intra vascular injections, & lumbar puncture.
5. General embryology & systemic embryology with respect to development of head & neck.
6. Histology of basic tissues and of the organs of gastrointestinal, respiratory, Endocrine, excretory systems & gonads.
7. Medical genetics.

E) Further Details Of The Course
I. INTRODUCTION TO:
1. Anatomical terms.
2. Skin, superficial fascia & deep fascia
3. Cardiovascular system, portal system collateral circulation and arteries.
4. Lymphatic system, regional lymph nodes
5. Osteology – Including ossification & growth of bones
8. Nervous system

II. HEAD & NECK:
01. Scalp, face & temple, lacrimal apparatus
03. Cranial cavity – Meninges, parts of brain, ventricles of brain, dural venous sinuses, cranial nerves attached to the brain, pituitary gland.
05. Orbital cavity – Muscles of eye ball, its support, nerves and vessels in orbit.
06. Parotid gland.
07. Temporomandibular joint, muscles of mastication, infratemporal & pterygopalatine fossa.
08. Submandibular region
09. Walls of the nasal cavity, paranasal air sinuses
10. Palate
11. Oral cavity, Tongue

OSTEODYODY – Foetal skull, adult skull, individual bones of the skull, hyoid bone and cervical vertebrae.

III. THORAX: Demonstration on a dissected specimen of
1. Thoracic wall
2. Heart chambers
3. Coronary arteries
4. Pericardium
5. Lungs – surfaces; pleural cavity
6. Diaphragm

IV. ABDOMEN: Demonstration on a dissected specimen of
1. Peritoneal cavity
2. Organs in the abdominal & pelvic cavity.

V. CLINICAL PROCEDURES:
a) Intramuscular injections: Demonstration on a dissected specimen and on a living person of the following sites of injection.
   1. Deltoid muscle and its relation to the axillary nerve and radial nerve.
   2. Gluteal region and the relation of the sciatic nerve.
   3. Vastus lateralis muscle.
b) Intravenous injections & venesection: Demonstration of veins in the dissected specimen and on a living person.
   1. Median cubital vein
   2. Cephalic vein
   3. Basilic vein
   4. Long saphenous vein
c) Arterial pulsations: demonstration of arteries on a dissected specimen and feeling of pulsation of the following arteries on a living person.
   1. Superficial temporal
   2. Facial
   3. Carotid
   4. Axillary
   5. Brachial
   6. Radial
   7. Ulnar
   8. Femoral
   9. Popliteal
   10. Dorsalis pedis
d) Lumbar puncture: demonstration on a dissected specimen of the spinal cord, cauda equine & epidural space and the inter vertebral space between LA & L5.

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

VII. HISTOLOGY:
The Cell:
Basic tissues – Epithelium, Connective tissue including cartilage and bone, Muscle Tissue, Nervous tissue: Peripheral nerve, optic nerve, sensory ganglion, motor ganglion, skin

VIII. MEDICAL GENETICS:
Mitosis, meiosis, chromosomes, gene structure, Mendelism, modes of inheritance
**Recommended Books:**
1. SNELL (Richard S.) Clinical Anatomy for Medical Students, Ed. 5, Little Brown & company, Boston.
5. SADLER, LANGMAN’S, Medical Embryology, Ed. 6.
6. JAMES E ANDERSON, Grant's Atlas of Anatomy. Williams & Wilkins.
8. EMERY, Medical Genetics.
A) Goal
The broad goal of teaching undergraduate students. Human Physiology is to provide the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease.

B) Objectives
a) KNOWLEDGE
At the end of the course, the student will be able to:
1. Explain the normal functioning of all the organ systems and their interactions for well coordinated to total body function.
2. Assess the relative contribution of each organ system towards the maintenance of the milieu interior.
3. List the physiological principles underlying the pathogenesis and treatment of disease.

b) SKILLS
At the end of the course, the student shall be able to:
1. Conduct experiments designed for the study of physiological phenomena.
2. Interpret experimental and investigative data.
3. Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

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

C) Course Contents Theory

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

2. BLOOD:
Composition & functions of blood.
Specific gravity, Packed cell volume, factors affecting & methods of determination.
Plasma proteins – Types, concentration, functions & variations.
Erythrocyte – Morphology, functions & variations. Erythropoiesis & factors affecting erythropoiesis.
ESR – Methods of estimation, factors affecting, variations & significance.
Hemoglobin – Normal concentration, method of determination & variation in concentration.
Blood Indices – MCV, MCH, MCHC – definition, normal values, variation.
Anaemia – Definition, classification, life span of RBC’s destruction of RBC’s, formation & fate of bile pigments,
Jaundice – types.
Leucocytes: Classification, number, percentage, distribution morphology, properties, functions & variation. Role
of lymphocytes in immunity, leucopoiesis life span & fate of leucocytes.
Thrombocytes – Morphology number, variations, function & thrombopoiesis.
Haemostasis – Role of vasoconstriction, platelet plug formation in haemostasis, coagulation
factors, intrinsic & extrinsic pathways of coagulation, clot retraction.
Tests of haemostatic function, platelet count, clotting time, bleeding time, prothrombin
Blood groups: ABO & Rh system, method of determination, importance, indications & dangers of blood
transfusion, blood substitutes.
Blood volume: Normal values, variations.
Body fluids: distribution of total body water, intracellular & extracellular compartments, major anions & cations in
intra and extra cellular fluid.
Tissue fluids & lymph: Formation of tissue fluid, compositions, circulation & functions of lymph. Oedema –
causes.
Functions of reticulo endoterial system.

3. MUSCLE AND NERVE
Classification of nerves, structure of skeletal muscle – Molecular mechanism of muscle contraction, neuromuscular

4. DIGESTIVE SYSTEM:
Introduction to digestion: General structure of G.I. tract, Innervations.
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, regulation of secretion -
Gall bladder : structure, functions.
Small intestine – Composition, functions & regulation of secretion of intestinal juice.
Large intestine – Functions.
Motor functions of GIT: Mastication, deglutition, gastric filling & emptying movements of small and large
intestine, defecation.

5. EXCRETORY SYSTEM:
Structure & functions of kidney, functional unit of kidney & functions of different parts.
Juxta glomerular apparatus, renal blood flow.
formation of Urine: Glomerular filtration rate – definition, determination, normal values, factors influencing G.F. R.
Tubular reabsorption – Reabsorption of sodium, glucose, water & other substances. Tubular secretion – secretion of
urea, hydrogen and other substances.
Mechanism of concentration dilution of urine.
Role of kidney in the regulation of pH of the blood.
Micturition: anatomy & innervations of Urinary bladder, mechanism of micturition & abnormalities.
6. BODY TEMPERATURE & FUNCTIONS OF SKIN

7. ENDOCRINOLOGY

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

9. CARDIO VASCULAR SYSTEM

10. RESPIRATORY SYSTEM

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

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

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

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

Demonstration:
1. Determination of packed cell volume and erythrocyte sedimentation rate
2. Determination of specific gravity of blood
3. Determination of erythrocyte fragility
4. Determination of vital capacity and timed vital capacity
6. Electrocardiography: Demonstration of recording of normal Electro cardiogram
7. Clinical examination of cardiovascular and respiratory system.

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

Books For Reference:
1) Berne & Levey, Physiology, 2nd edition
ii) West-Best & Taylor's, Physiological basis of Medical Practise, 11th edition

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

Clinical Biochemistry Lab.

National Referral Centre For Lead Poisoning U.p.

Molecular Cell Biology Laboratory
**Aims and scope of the course in Biochemistry**: The major aim is to provide a sound but crisp knowledge on the biochemical basis of the life processes relevant to the human system and to dental/medical practice. The contents should be organized to build on the already existing information available to the students in the pre-university stage and reorienting. A mere rehash should be avoided. The chemistry portion should strive towards providing information on the functional groups, hydrophobic and hydrophilic moieties and weak valence forces that organize macromolecules. Details on structure need not be emphasized.

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

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

1. Need not know the structure of cholesterol. Should know why it cannot be carried free in plasma.
2. Mutarotation should not be taught. Students should know why amylase will not hydrolyse cellulose.
3. Need not know the details of alpha – helix and beta – pleats in proteins. Should know why haemoglobin is globular and keratin is fibrous.
4. Need not know mechanism of oxidative phosphorylation. Should know more than 90% of ATP is formed by this process.
5. Need not know details of the conversion of pepsinogen to pepsin. Should know hydrochloric acid cannot break a peptide bond at room temperature.
6. Need not remember the steps of glycogenesis. Should know that excess intake of carbohydrate will not increase glycogen level in liver or muscle.
7. Need not know about urea or creatinine clearance tests. Should Know the basis of increase of urea and creatinine in blood in renal insufficiency.
8. Need not know the structure of insulin. Should know why insulin level in circulation is normal in most cases of maturity onset diabetes.

9. Need not know the structural details of ATP. Should know why about 10 g of ATP in the body at any given time meets all the energy needs.

10. Need not know the mechanism of action of prolylhydroxylase. Should know why the gum bleeds in scurvy.

11. Need not know the structure of Vitamin K. Should know the basis of internal bleeding arising due to its deficiency.

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

BIOCHEMISTRY AND NUTRITION

1. CHEMISTRY OF BIOORGANIC MOLECULE


2. MACRONUTRIENTS AND DIGESTION


3. MICRONUTRIENTS


4. ENERGY METABOLISM


5. SPECIAL ASPECTS OF METABOLISM

6. BIOCHEMICAL GENETICS AND PROTEIN SYNTHESIS

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

7. ENZYME AND METABOLIC REGULATION


8. STRUCTURAL COMPONENTS AND BLOOD PROTEINS


9. MEDICAL BIOCHEMISTRY


PRACTICALS: Contact hours 50

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

Recommended Books:
3. Lecture notes in Biochemistry 1984, J.K. Kandish

Reference books:
Dental Anatomy, Embryology And Oral Histology

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

SKILLS
The student should acquire basic skills in:
1. Carving of crowns of permanent teeth in wax.
2. Microscopic study of oral tissues.
3. Identification of Deciduous & Permanent teeth.
4. Age estimation by patterns of teeth eruption from plaster casts of different age groups.

OBJECTIVES
After a course on Dental Anatomy including Embryology and Oral Histology,
1. The student is expected to appreciate the normal development, morphology, structure & functions of oral tissues & variations in different pathological/non-pathological states.
2. The student should understand the histological basic of various dental treatment procedures and physiologic ageing process in the dental tissues.
3. The students must know the basic knowledge of various research methodologies.

I. TOOTH MORPHOLOGY
1. Introduction to tooth morphology:
   - Human dentition, types of teeth, & functions, palmer’s & Binomial notation systems, tooth surfaces, their junctions – line angels & point angles, definition of terms used in dental morphology, geometric concepts in tooth morphology, contact areas & embrasures – Clinical significance.
2. Morphology of permanent tooth:
   - Description of individual teeth, along with their endodontic anatomy & including a note on their chronology of development, differences between similar class of teeth & identification of individual teeth.
   - Variations & Anomalies commonly seen in individual teeth.
3. Morphology of Deciduous teeth:
   - Generalised difference between Deciduous & Permanent teeth.
   - Description of individual deciduous teeth, including their chronology of development, endodontic anatomy, differences between similar class of teeth & identification of individual teeth.
3. Occlusion:
   - Definition, factors influencing occlusion – basal bone, arch, individual teeth, external & internal forces & sequence of eruption.
   - Inclination of individual teeth – compensatory curves.
   - Centric relation & Centric occlusion – protrusive, retrusive & lateral occlusion.
   - Clinical significance of normal occlusion.
   - Introduction to & Classification of Malocclusion.

II. ORAL EMBRYOLOGY
1. Brief review of development of face, jaws, lip, palate & tongue, with applied aspects.
2. Development of teeth:
   • Epithelial mesenchymal interaction, detailed study of different stages of development of crown, root & supporting tissues of tooth & detailed study of formation of calcified tissues.
   • Applied aspects of disorders in development of teeth.
3. Eruption of deciduous & Permanent teeth:
   • Mechanisms in tooth eruption, different theories & histology of eruption, formation of dentogingival junction, role of gubernacular cord in eruption of permanent teeth.
   • Clinical or Applied aspects of disorders of eruption.
4. Shedding of teeth:
   • Factors & mechanisms of shedding of deciduous teeth.
   • Complications of shedding.

III. ORAL HISTOLOGY
1. Detailed microscopic study of Enamel, Dentine, Cementum & Pulp tissue. Age changes & Applied aspects (Clinical and forensic significance) of histological considerations – Fluoride applications, transparent dentine, dentine hypersensitivity, reaction of pulp tissue to varying insults to exposed dentine; Pulp calcifications & Hypercementosis.
2. Detailed microscopic study of Periodontal ligament & alveolar bone, age changes, histological changes in periodontal ligament & bone in normal & orthodontic tooth movement, applied aspects of alveolar bone resorption.
   • Detailed microscopic study of acini & ductal system.
   • Age changes & clinical considerations.
5. TM Joint:
   • Review of basic anatomical aspects & microscopic study & clinical considerations.
6. Maxillary Sinus:
   • Microscopic study, anatomical variations, functions & clinical relevance of maxillary sinus in dental practice.
7. Processing of Hard & soft tissues for microscopic study:
   • Ground sections, decalcified sections & routine staining procedures.
8. Basic histochemical staining patterns of oral tissues.

IV. ORAL PHYSIOLOGY
1. Saliva:
   • Composition of saliva – variations, formation of saliva & mechanisms of secretion, salivary reflexes, brief review of secret motor pathway, functions, role of saliva in dental caries & applied aspects of hyper & hypo salivation.
2. Mastication:
   • Masticatory force & its measurement – need for mastication, peculiarities of masticatory muscles, masticatory reflexes & neural control of mastication.
3. Deglutition:
• Review of the steps in deglutition, swallowing in infants, neural control of deglutition & dysphagia.

4. Calcium, phosphorous & fluoride metabolism:
   • Source, requirements, absorption, distribution, functions & excretion, clinical considerations, hypo & hypercalcemia & hyper & hypo phosphoremia & fluorosis.

5. Theories of Mineralization:
   • Definition, mechanism, theories & their drawbacks.
   • Applied aspects of physiology of mineralization, pathological considerations – calculus formation.

6. Physiology of Taste:
   • Innervation of taste buds & taste pathway, physiologic basic of taste sensation, age changes & applied aspects – taste disorders.

7. Physiology of Speech:
   • Review of basic anatomy of larynx & vocal cords.
   • Voice production, resonators, production of vowels & different consonants – Role of palate, teeth & tongue.
   • Effects of dental prosthesis & appliances on speech & basic speech disorders.

**Recommended Text Books**

1. Orban’s Oral Histology & Embryology – Sft 6bg.N/ Bhaskar
2. Oral Development & Histology – James & Avery
4. Dental Anatomy – relevance to dentistry – Woelfesl & Scheid
5. Applied Physiology of the mouth – Lavelle
6. Physiology & Biochemistry of the mouth – Jenkins
Department of Pathology

No. Of specimens
Surgical pathology - 50108
Cytopathology - 5024
Hematopathology - 279345
Chemical pathology - 411266
OPD lab - 394444
Trauma lab - 1099053
AIM:
At the end of the course the student should be competent to:
Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry

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

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

6. Healing
   - Regeneration
   - Repair
     a. Mechanisms
   b. Healing by primary intention
   c. Healing by secondary intention
   d. Fracture healing
   e. Factors influencing healing process
   f. Complications

7. Tuberculosis
   - Epidemiology
   - Pathogenesis (Formation of tubercle)
   - Complications and Fate

8. Syphilis
   - Epidemiology
   - Types and stages of syphilis
   - Pathological features
   - Diagnostic criteria's
   - Oral lesions

9. Typhoid
   - Epidemiology
   - Pathogenesis
   - Pathological features
   - Diagnostic criteria

10. Thrombosis
    - Definition, Pathophysiology
    - Formation, complications & Fate of a thrombus

11. Embolism
    - Definition
    - Types
    - Effects

12. Ischemia and Infraction
    - Definition, etiology, types
    - Infraction of various organs

13. Derangements of body fluids
    - Oedema – Pathogenesis
      Different types

14. Disorders of circulation
    - Hyperaemia
    - Shock

15. Nutritional Disorders
    - Common Vitamin Deficiencies

16. Immunological mechanisms in disease
    - Humoral & cellular immunity
    - Hypersensitivity & autoimmunity

17. AIDS and Hepatitis
18. Hypertension
   - Definition, classification
   - Pathophysiology
   - Effects in various organs
19. Diabetes Mellitus
   - Def, Classification, Pathogenesis, Pathology in different organs
20. Adaptive disorders of growth
   - Atrophy & Hypertrophy, Hyperplasia, Metaplasia and Dysplasia
21. General Aspects of neoplasia
   a. Definition, terminology, classification
   b. Differences between benign and malignant neoplasms
   c. The neoplastic cell
   d/ Metastasis
   e. Aetiology and pathogenesis of neoplasia, Carcinogenesis
   f. Tumour biology
   g. Oncogenes and anti-oncogenes
   h. diagnosis
   i. Precancerous lesions
   j. Common specific tumours, Squamous papilloma, Carcinoma, Basal cell
      Carcinoma, Adenoma, Fibroma & Fibrosarcoma, Lipoma and lipo-sarcoma
B. Systemic Pathology -
22. Anaemias
   - Iron Deficiency anaemia, Megaloblastic anaemia
23. Leukaemias
   - Acute and chronic leukaemias, Diagnosis and clinical features
24. Diseases of Lymph nodes
   - Hodgkin's disease, Non Hodgkins lymphoma, Metastatic carcinoma
25. Diseases of oral cavity
   - Lichen planus, Stomatitis, Leukoplakia, Squamous cell Carcinoma, Dental caries,
     Dentigerous cyst, Ameloblastoma
26. Disease of salivary glands
   - Normal structure, Sialadenitis, Tumours
27. Common diseases of Bones
   - Osteomyelitis, Metabolic bone diseases, Bone Tumours, Osteosarcoma,
     Osteochondroma, Giant cell Tumour, Ewing's sarcoma, Fibrous dysplasia, Aneurysmal
     bone cyst
28. Diseases of Cardiovascular system
   - Cardiac failure
     - Congenital heart disease – ASD, VSD, PDA
     Fallot's Tetrology
     - Infective Endocarditis
     - Atherosclerosis
     - Ischaemic heart Disease
29. Haemorrhagic Disorders
Coagulation cascade
Coagulation disorder
   - Platelet function
- Platelet disorders
Practical
1. Urine – Abnormal constituents
   - Sugar, albumin, ketone bodies
2. Urine – Abnormal constituents
   - Blood, bile salts, bile pigments
3. Haemoglobin (Hb) estimation
4. Total WBC count
5. Differential WBC count
6. Packed cell volume (PCV7) erythrocyte Sedimentation Rate (ESR)
7. Bleeding Time & Clotting Time
8. Histopathology
   - Tissue Processing
   - Staining
9. Histopathology slides
   - Acute appendicitis, Granulation tissue, fatty liver
10. Histopathology sides
    - CVC lung, CVC liver, Kidney amyloidosis
11. Histopathology slides
    - Tuberculosis, Actinomycosis, Rhinosporidiosis
12. Histopathology slides
    - Papilloma, Basal cell Ca, Sq cell Ca
13. Histopathology slides
    - Osteosarcoma, osteoclastoma, fibrosarcoma
14. Histopathology slides
    - Malignant melanoma, Ameloblastoma, Adenoma
15. Histopathology slides
    - Mixed parotid tumour, metastatic carcinoma in lymph node

**List of Textbooks**
1. Robbins – Pathologic Basis of Disease Cotran, Kumar, Robbins

**MICROBIOLOGY**

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

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

**OBJECTIVES:**

A. KNOWLEDGE AND UNDERSTANDING

At the end of the Microbiology course the student is expected to:
DEPARTMENT OF MICROBIOLOGY

- Year of establishment: 1987
- Prof. Amita Jain, MD, PhD, FRCPath, FAMS, Head of Department of Microbiology
- Annual Sample Collection: >1,00,000
- Annual Publications: 20
- Ongoing Research Projects: 20
- Patents filed: 8
- Well equipped with conventional and modern diagnostic tools
- Offering > 150 diagnostic tests
1. Understand the basics of various branches of microbiology and be able to apply the knowledge relevantly.
2. Apply the knowledge gained in related medical subjects like General Medicine and Genera Surgery and Dental subjects like Oral Pathology, Community Dentistry, Periodontics, Oral Surgery, Paedodontics, Conservative Dentistry and Oral Medicine in higher classes.
3. Understand and practice various methods of sterilization and disinfection in dental clinics.
4. Have a sound understanding of various infectious diseases and lesions in the oral cavity.

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

A brief syllabus of Microbiology is given as follow:

**A. GENERAL MICROBIOLOGY:**
3. Detail account of Sterilisation and Disinfection.
4. Brief account of Culture media and Culture techniques.
5. Basic knowledge of selection, collection, transport, processing of clinical Specimens and identification of bacteria.

**B. IMMUNOLOGY:**
1. Infection – Definition, Classification, Source, Mode of transmission, types of infectious disease.
2. Immunity
3. Structure and functions of Immune system
4. The Complement System
5. Antigen
6. Immunoglobulins – Antibodies – General structure and the role played in defence mechanism of the body.
7. Immune response
9. Immunodeficiency disorders – a brief knowledge of various types of immunodeficiency disorders – A sound knowledge of immunodeficiency disorders relevant to dentistry.
10. Hypersensitivity reactions
11. Autoimmune disorders – Basic knowledge of various types – sound knowledge of autoimmune disorders of oral cavity and related structures.
12. Immunology of Transplantation and Malignancy
13. Immunehaematology

**C. SYSTEMATIC BACTERIOLOGY:**
2. Corynebacterium diphtheria – mode of spread, important clinical feature, Laboratory diagnosis, Chemotherapy and Active immunization.
3. Mycobacteria – Tuberculosis and leprosy
4. Clostridium – Gas gangrene, food poisoning and tetanus.
mechanism of disease production and prevention.
7. Actinomycetes.
D. VIROLOGY:
1. Introduction
2. General properties, cultivation, host – virus interaction with special reference to interferon.
3. Brief account of Laboratory diagnosis, Chemotherapy and immune prophylaxis in general.
4. A few viruses of relevance to dentistry.
   • Herpes Virus
   • Hepatitis B Virus – brief about other types
   • Human immunodeficiency Virus (HIV)
   • Mumps Virus
   • Brief – Measles and Rubella Virus
5. Bacteriophage – structure and significance
E. MYCOLOGY:
1. Brief Introduction
2. Candidosis – in detail
F. PARASITOLOGY:
1. Brief introduction – protozoans and helminthes
2. Brief knowledge about the mode of transmission and prevention of commonly seen parasitic infection in the region.
RECOMMENDED BOOKS FOR REGULAR READING:
BOOKS FOR FURTHER READING/REFERENCE
i) Microbiology – Present, et al.
ii) Microbiology – Benard D. Davis, et al.
iv) Mechanism if Microbial diseases – Moselio Schaechter, et al.
v) Immunology an Introduction – Tizard
Department of Pharmacology

- The Department of Pharmacology was started in the year 1915 as a small Department of Materia Medica. This was later upgraded in the year 1965 as the Department of Pharmacology & Therapeutics.
- There are separate laboratories for Undergraduates- Experimental Pharmacology & Pharmacy Laboratory. For Post Graduates & research there are PG & Research Laboratories, Molecular Biology & Clinical Pharmacology Laboratories.
- The research interests of the department have been towards development of new techniques for studying various actions of drugs and elucidation of their mechanism of action.
- Department organizes Guest Lectures by eminent speakers for Undergraduate (UG) & Post graduate (PG) students.
- Annual Publications: 15
- Ongoing research Projects: 06
General And Dental Pharmacology And Therapeutics

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

OBJECTIVES:
At the end of the course the students shall be able to:
i) Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular.
ii) List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason.
iii) Tailor the use of appropriate drugs in disease with consideration to its coast, efficacy, safety for individual and mass therapy needs.
iv) Indicate special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immune compromised patients.
v) Integrate the rational drug therapy in clinical pharmacology.
vi) Indicate the principles underlying the concepts of“Essential drugs”.

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

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

LECTURE:
I. GENERAL PHARMACOLOGY:
1. General principles of pharmacology; sources and nature of drugs dosage forms; prescription writing; pharmacokinetics (absorption, distribution, metabolism and excretion of drugs), mode of action of drugs, combined effects of drugs, receptor mechanism of drug action, factors modifying drug response, adverse drug reactions; drug interactions, implications of General Principles in clinical dentistry.
2. CNS drugs; General anaesthetics, hypnotics, analgesics psychotropic drugs, anti – epileptics, muscle relaxants, local anaesthetics, Implications of these drugs in clinical dentistry.
3. Autonomic drugs; sympathomimetics antiadrenergic drugs parasympathomimetics and parasympatholytics, Implications of Autonomic drugs in clinical dentistry.
4. Cardiovascular drugs; Cardiac stimulants; antihypertensive drugs, vasopressor agents, treatment of shock, Antianginal agents and diuretics, Implications of these drugs in clinical dentistry.
5. Autocoids: Histamine, antihistamines, prostaglandins, leukotriens and bronchodilators, Implications of Autocoids
in clinical dentistry.
6. Drugs acting on blood: coagulants and anticoagulants, hematinics, Implications of these drugs in clinical dentistry.
7. G.I.T Drugs, Purgatives, anti-diarrhoeal, antacids, anti-emetics, Implications of these drugs in clinical dentistry.
8. Endocrines; Emphasis on treatment of diabetes and glucocorticoids, thyroid and antithyroid agents, drugs affecting calcium balance and anabolic steroids, Implications of these drugs in clinical dentistry.

II. DENTAL PHARMACOLOGY
1. Anti – sepsics, astringents, obtundents, mummifying agents, bleaching agents, styptics, disclosing agents, dentifraces, mouth washes, caries and fluorides.
2. Pharmacotherapy of common oral conditions in dentistry.
Practicals and Demonstrations: To familiarize the student with the methodology: prescription writing and dispensing. Rationale of drug combinations of marketed drugs.

List Of Books Recommended For Reading And Reference

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

1. Introduction
AIMS:
Aim of the course is to present basic chemical and physical properties of dental materials as they are related to its manipulation to give a sound educational background so that the practice of the dentistry emerged from art to empirical status of science as more information through further research becomes available. It is also the aim of the course of Dental materials to provide with certain criteria of selection and which will enable to discriminate between facts and propaganda with regards to claims of manufactures.
OBJECTIVES:
To understand the evolution and development of science of dental materials
To explain purpose of course in dental materials to personnel concerned with the profession of dentistry. Knowledge of physical and chemical properties. Knowledge of biomechanical requirements of particular restorative procedure. An intelligent compromise of the conflicting as well co-ordinating factors into the desired. Laying down standards or specifications of various materials to guide to manufactures as well as to help professionals. Search for newer and better materials which may answer our requirements with greater satisfaction. To understand and evaluate the claims made by manufacturers of dental materials.

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

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

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

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

4) BIOLOGICAL CONSIDERATIONS IN USE OF DENTAL MATERIALS

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

5) GYPSUM & GYPSUM PRODUCTS

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

6) IMPRESSION MATERIALS USED IN DENTISTRY

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

7) SYNTHETIC RESINS USED IN DENTISTRY

Historical background and development of material Denture base materials and their classification and requirement Classification of resins Dental resins – requirements of dental resins, applications, polymerization, polymerization, co-polymerisation, molecular weight, crosslinking, plasticisers, physical properties of polymers, polymer structures types of resins.

ACRYLIC RESINS:
Mode of polymerization: Heat activated, Chemically activated, Light activated, Mode of supply, application,
composition, polymerization reaction of each. Technical considerations: Methods of manipulation for each type of resin. Physical properties of denture base resin. Miscellaneous resins & techniques: Repair resins, Relining and rebasing. Short term and long-terms soft-liners, temporary crown and bridge resins, Resin impression trays, Tray materials, Resin Teeth, materials in maxillofacial prosthesis, Denture cleansers, infection control in detail, Biological properties and allergic reactions.

RESTORATIVE RESINS:

8) METAL AND ALLOYS:

DIRECT FILLING GOLD:

DENTAL CASTING ALLOYS:
9) **DENTAL WAXES INCLUDING INLAY CASTING WAX**


10) **DENTAL CASTING INVESTMENTS.**


11. **SOLDERING, BRAZING AND WELDING**


**WROUGHT BASE METAL ALLOYS**

Applications and different alloys used mainly for orthodontics purpose

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

Properties required for orthodontic wires, working range, springiness, stiffness, resilience, Formability, ductility, ease of joining, corrosion resistance, stability in oral environment, bio compatibility Stainless steels: Description, type, composition & properties of each type. Sensitisation & Stabilisation, Mechanical properties – strength, tensile, yield strength, KHN. Braided & twisted wires their need, Solders for stainless steel, Fluxes, Welding

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

12) **DENTAL CEMENTS**

Definition & Ideal requirements: Cements: Silicate, Glass ionomer, metal modified glass ionomer resin modified glass ionomer zinc oxide eugenol, modified zinc oxide eugenol, zinc phosphate, zinc silico phosphate, zinc poly carboxylate, Cavity liners and cement base, Varnishes Calcium hydroxide, Gutta percha Application, classification (general and individual), setting mechanism, mode of supply, Properties, factors affecting setting, special emphasis on critical procedures of manipulation and protection of cement, mode of adhesion, biomechanism of caries inhibition. Agents for pulp protection, Modifications and recent advances, Principles of cementation. Special emphasis on cavity liners and cement bases and luting agents.
13) DENTAL CERAMICS

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

ABRASIVE ACTION:
Desirable characteristics of an abrasive, Rate of abrasion, Size of particle, pressure and Grading of abrasive & polishing agents. Binder, Polishing materials & procedures used. Technical consideration – Material and procedure used for abrasion and polishing, Electrolytic polishing and burnishing.

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

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

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

Recommended Books:
2. Restorative Dental Materials - 10th edn. Robert G. Craig
3. Notes on Dental Materials – E.C. Combe
Pre Clinical Conservative Dentistry Laboratory Exercises

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

<table>
<thead>
<tr>
<th>Class I</th>
<th>5</th>
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<tbody>
<tr>
<td>Class I with extension</td>
<td>2</td>
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<tr>
<td>Class II</td>
<td>10</td>
</tr>
<tr>
<td>Class II Mods</td>
<td>2</td>
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<tr>
<td>Class V and III for glass ionomers</td>
<td>4</td>
</tr>
<tr>
<td>Class V for amalgam</td>
<td>2</td>
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</table>

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

OBJECTIVES:
At the end of the Oral Pathology & Oral Microbiology course, the student should be able to comprehend -
1. The different types of pathological processes that involve the oral cavity.
2. The manifestations of common diseases, their diagnosis & correlation with clinical pathological processes.
3. The oral manifestations of systemic diseases to help in correlating with systemic physical signs & laboratory findings.
4. The underlying biological principles governing treatment of oral diseases.
5. The principles of certain basic aspects of Forensic Odontology.

SKILLS:
1. Microscopic study of common lesions affecting oral tissues through microscopic slides & projection sliders.
2. Study of the disease process by surgical specimens.
3. Study of teeth anomalies/polymorphisms through tooth specimens & leukemias.
4. Basic exercises in Forensic Odontology such as histological methods of age estimation and appearance of teeth in injuries.

1. Introduction:
   • A bird’s eye view of the different pathological processes involving the oral cavity & oral cavity involvement in systemic diseases to be brought out. Interrelationship between General Medicine & General Surgery & Oral pathology is to be emphasized.
2. Developmental disturbances of teeth, jaws and soft tissues of oral & paraoral region:
   • Introduction to developmental disturbances – Hereditary, Familial mutation, Hormonal etc. causes to be highlighted.
   • Developmental disturbances of teeth – Aetiopathogenesis, clinical features, radiological features & histopathological features as appropriate:-
   The size, shape, number, structure & eruption of teeth & clinical significance of the anomalies to be emphasized.
   • Forensic Odontology.
   • Developmental disturbances of jaws – size & shape of the jaws.
   • Developmental disturbances of oral & paraoral soft tissues – lip & palate – clefts, tongue, gingiva mouth, salivary glands & face.
3. Dental Caries:
   • Aetiopathogenesis, microbiology, clinical features, diagnosis, histopathology, immunology, prevention of dental caries & its sequelae.
4. Pulp & Periapical Pathology & Osteomyelitis.
   • Aetiopathogenesis & interrelationship, clinical features, microbiology, histopathology & radiological features (as appropriate) of pulp & periapical lesions & osteomyelitis.
   • Sequelae of periapical abscess – summary of space infections, systemic complications & significance.
5. Periodontal Diseases:
   • Aetiopathogenesis, microbiology, clinical features, histopathology, histopathology & radiological features (as appropriate) of gingivitis enlargements & periodontitis. Basic immunological mechanisms of periodontal disease to be highlighted.
6. Microbial infections of oral soft tissues:
   • Microbiology, defence mechanisms including immunological aspects, oral manifestations, histopathology and
laboratory diagnosis of common bacterial, viral & fungal infections namely:
Bacterial: Tuberculosis, Syphilis, ANUG & its complications – Cancrum Oris.
Viral: Herpes Simplex, Varicella zoster, Measles, Mumps & HIV infection.
Fungal: Candidal infection, Aphthous Ulcers.

7. Common non-inflammatory diseases involving the jaws:
   • Aetiopathogenesis, Clinical features, radiological & laboratory values in diagnosis of
     Fibrous dysplasia, Cherubism, Osteogenesis Imperfecta, Paget’s disease, Cleidocranial dysplasia, Rickets,
     Achondroplasia, Marfan’s syndrome & Down’s syndrome.

8. Diseases of TM Joint:
   • Ankylosis, summary of different types of arthritis & other developmental malformations, traumatic injuries &
     myofascial pain dysfunction syndrome.

9. Cysts of the Oral & Paroral region:
   • Classification, etiopathogenesis, clinical features, histopathology, laboratory & radiological features (as
     appropriate) of Odontogenic cysts, Non-Odontogenic cysts, Pseudocysts of jaws & soft tissue cysts of oral &
     paraoral region.

10. Tumours of the Oral Cavity:
    • Classification of Odontogenic, Non-Odontogenic & Salivary Gland. Tumours. Aetiopathogenesis, clinical
        features, histopathology, radiological features & laboratory diagnosis (as appropriate) of the following
        common tumours:
        a) Odontogenic – all lesions.
        b) Non-odontogenic - Benign Epithelial – Papilloma, Keratoacanthoma & Naevi. - Benign Mesenchymal – Fibroma,
           Aggressive fibrous lesions, Lipoma, Haemangioma, Lymphangioma Schwannoma, Chondroma, Osteoma & Tori.
           - Malignant Epithelial– Basal Cell Carcinoma, Verrucous Carcinoma, Squamous Cell carcinoma & Malignant
           Melanoma.
           -Malignant Mesenchymal – Fibrosarcoma, Osteosarcoma, Giant cell tumour, Chondrosarcoma,
           Angiosarcoma, Kaposi’s sarcoma, Lymphomas, Ewing’s sarcoma & Other Reticuloendothelial tumours.
        c) Salivary Gland
           -Benign Epithelial neoplasms – Pleomorphic Adenoma, Warthin’s tumour, & Oncocytoma.
           - Malignant Epithelial neoplasms – Adenoid Cystic Carcinoma, Mucoepidermoid Carcinoma, Acinic Cell
           Carcinoma, Adenocarcinomas.
        d) Tumours of Disputed Origin – Congenital Epulis, Granular Cell Myoblastomas.
        e) Metastatic – Tumors metastasizing to/from oral cavity, routes of metastasis.

11. Traumatic, Reactive & Regressive lesions of Oral Cavity:
    • Pyogenic & Giant cell granuloma, exostoses Fibrous Hyperplasia, Traumatic Ulcer & Traumatic Neuroma.
    • Attrition, Abrasion, Erosion, Bruxism, Hypercementosis, Dentinal changes, Pulp calcification & Resorption of teeth.
    • Radiation effects of oral cavity summary of Physical & chemical injuries including allergic reactions of the oral cavity.
    • Healing of Oral wounds & complications – Dry socket.

12. Non neoplastic Salivary Gland Diseases:
    • Sialolithiasis, Sialosis, Sialadenitis, Xerostomia & Ptyalism.

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

14. Mucocutaneous Lesions:
    • Aetiopathogenesis. Clinical features & histopathology of the following common lesions.
      Lichen Planus, Lupus Erythematosus, Pemphigus & Pemphigoid lesions, Erythema Multiforme, Psoriasis,
      Scleroderma, Ectodermal Dysplasia, Epidermolysis bullosa & White sponge naevus.
15. Diseases of the Nerves:
- Facial neuralgias – Trigeminal & Glossopharyngeal. VII nerve paralysis, Causalgia.
- Psychogenic facial pain & Burning mouth syndrome.

16. Pigmentation of Oral & Paraoral region & Discolouration of teeth:
- Causes & clinical manifestations.

17. Diseases of Maxillary Sinus:
- Traumatic injuries to sinus, Sinusitis, Cysts & Tumours involving antrum.

18. a) ORAL PRECANCER – CANCER; Epidemiology, aetiology, clinical and histopathological features, TNM classification. Recent advances in diagnosis, management and prevention.
   b) Biopsy: Types of biopsy, value of biopsy, cytology, histo chemistry & frozen sections in diagnosis of oral diseases.

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

**Recommended Books**

3. Oral Pathology - Soames & Southam
4. Oral Pathology in the Tropics - Prabhu, Wilson,
   - Johnson & Daftary
GUIDELINES:
Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry.
1. Special precautions/ contraindications of anaesthesia and various dental procedures in different systemic diseases.
2. Oral manifestations of systemic diseases.
   A dental student should be taught in such a manner that he/she is able to record the arterial pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice.

Theory Syllabus
CORE TOPICS
(Must know)
1. Aims of medicine Definitions of signs, Symptoms, diagnosis, differential diagnosis Treatment & prognosis.

COLLATERAL TOPICS
(Desirable to know)
2. Infections
Enteric fever, AIDS, herpes simplex, herpes Zoster, syphilis, diphtheria.

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

Diarrhoea
Amoebiasis
Malabsorption

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

Lung Abscess
Pleural effusion
Pneumothorax
Bronchiectasis
Lung cancers.

5. RS
Pneumonia, COPD, Pulmonary TB, Bronchial Asthma

6. Haematology
Anaemias, bleeding & clotting disorders,
Leukemias, lymphomas, agranulocytosis,
Splenomegaly, oral manifestations of
Haematologic disorders, generalized
Lymphadenopathy.

7. Renal System
Acute nephritis
Nephrotic syndrome

8. Nutrition
Avitaminosis

9. CNS
Facial palsy, facial pain including trigeminal
Neuralgia, epilepsy, headache including
Migraine.

10. Endocrines
Diabetes Mellitus Acromegaly, Hypothyroidism,
Thyrotoxicosis, Calcium metabolism and
Parathyroids.

11. Critical care
Syncope, cardiac arrest, CPR, shock

CLINICAL TRAINING:
The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, lymphadenopathy. Oral cavity) and be able to examine CVS, RS and abdomen and facial nerve.
AIMS:
To acquaint the student with various diseases, which may require surgical expertise and to train the student to analyse the history and be able to do a thorough physical examination of the patient. The diseases as related to head and neck region are to be given due importance, at the same time other relevant surgical problems are also to be addressed. At the end of one year of study the student should have a good theoretical knowledge of various ailments, and be practically trained to differentiate benign and malignant diseases and be able to decide which patient requires further evaluation.

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

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

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

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

5. INFECTIONS:
Acute and chronic abscess skin infections, cellulitis, carbuncle, and perysepelas. Specific infections such as tetanus, gangrene, syphilis, gonorrhea, tuberculosis, Actiinomycosis, Vincents angina, cancrum oris, Pyaemia, toxemia and septicaemia.

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

7. SHOCK AND HAEMORRHAGE:

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

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

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

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

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

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

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

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

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

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

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

“The Endo-Family”

Annual Out patients: 39415
Annual Root canal procedures: 4408
Annual restorative procedures: 12118
Publications in last 3 years: 29
Patents filed: 03

Highest number of RCTs (2018) & restorations (2019) in a single day done by the deptt.

Under-Graduate clinic All India invitational PG exchange program 2018
Conservative Dentistry And Endodontics

OBJECTIVES:
A. Knowledge and understanding
B. Skills and
C. Attitudes
A) Knowledge and understanding:
The graduate should acquire the following knowledge during the period training.
   i. Diagnose and treat simple restorative work for teeth.
   ii. Gain knowledge about aesthetic restorative material and to translate the same to patients needs.
   iii. Gain the knowledge about aesthetic restorative material and to translate the same to patients needs.
   v. Carry out simple luxation of tooth and its treatment and to provide emergency endodontic treatment.

SKILLS:
He/she should attain the following skills necessary for practice of dentistry
   i). Use medium and high speed hand – pieces to carry out restorative work.
   ii). Use and be familiar with endodontic instruments and materials needed for carrying out simple endodontic treatment.
   iii). Translate patients aesthetic needs along with function.

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

INTRODUCTION:
Definition aims objectives of Conservative Dentistry scope and future of Conservative Dentistry.
1. Nomenclature of Dentition:
   Tooth numbering systems A.D.A Zsigmondy Palmer and F.D.I. systems.
2. Principles of Cavity Preparation:
   Steps and nomenclature of cavity preparation classification of cavities, nomenclature of floors and angles of cavities.
3. Dental Caries:
   Aetiology, classification clinical features, morphological features, microscopic features, clinical diagnosis and sequel of dental caries.
4. Treatment Planning For Operative Dentistry:
   Detailed clinical examination, radiographic examination, tooth vitality tests, diagnosis and treatment planning, preparation of the case sheet.
5. Gnathological Concepts of Restoration:
   Physiology of occlusion, normal occlusion, ideal occlusion, mandibular movements and occlusal analysis. Occlusal rehabilitation and restoration.
6. Armamentarium for Cavity Preparation:
   General classification of operative instruments, had cutting instruments design formula and sharpening of instruments. Rotary cutting instruments dental bur, mechanism of cutting, evaluation of hand piece and speed.
current concepts of rotary cutting procedures. Sterilization and maintenance of instruments. Basic instrument tray setup.

7. Control of Operating Filed:
   Light source sterilization field of operation control of moisture, rubber dam in detail, cotton rolls and anti-sialagogues.

8. Amalgam Restoration:

9. Pulp Protection:
   Liners, varnishes and bases, Zinc phosphate, zinc polycarboxylate, zinc oxide eugenol and glass ionomer cements.

10. Anterior Restorations:
    Selection of cases, selection of material, step wise procedures for using restorations, silicate (theory only) glass ionomers, composites, including sand witch restorations and bevels of the same with a note on status of the dentine bonding agents.

11. Direct filling Gold Restorations:
    Types of direct filling gold indications and limitations of cohesive gold. Annealing of gold foil cavity preparation and condensation of gold foils

12. Preventive Measures in Restorative Practice:
    Plaque Control, Pit and fissure sealants dietary measures restorative procedures and periodontal health.
    Contact and contour of teeth and restorations matrices tooth separation and wedges.

13. Temporisation or Interim Restoration.

14. Pin Amalgam Restoration Indication and Contra Indication:
    Advantages disadvantages of each types of pin methods of placement use of auto matrix. Failure of pin amalgam restoration.


16. Non Carious Destruction of Tooth Structures Diagnosis and Clinical Management

17. Hyper Sensitive Dentine and its Management.

18. Cast Restorations
    Indications, contra indications, advantages and disadvantages and materials used for same Class II and Class I cavity preparation for inlays fabrication of wax pattern spurring inverting and casting procedures & casting defects.


20. Gingival Tissue Management For Cast Restoration And Impression Procedures


22. Differences between Amalgam and Inlay Cavity preparation with note on all the types of Bevels used for Cast Restoration.

23. Control of Pain During Operative Procedures.

24. Treatment Planning for Operative Dentistry Detailed Clinical and Radiographic Examination

25. Vitality Tests, Diagnosis and Treatment Planning and Preparation of Case Sheet.

   1. Biological Considerations.
      Evaluation, clinical application and adverse effects of the following materials. Dental cements, Zinc oxide eugenol cements zinc phosphate cements, polycarboxylates glass ionomer cements, silicate cement calcium hydroxides varnishes.
   2. Dental amalgam, technical considerations mercury toxicity mercury hygiene.
   4. Rubber base impression Materials
7. Inlay casting waxes
8. Dental porcelain
9. Aesthetic Dentistry
27. Endodontics: introduction, definition, scope and future of endodontics
28. Clinical diagnostic methods
29. Emergency endodontic procedures
30. Pulpal diseases causes, types and treatment
31. Periapical diseases: acute periapical abscess, acute periodontal abscess, chronic alveolar abscess, granuloma cysts, condensing osteitis, external resorption.
32. Vital pulp therapy: indirect and direct pulp capping, pulpotomy, different types and medicaments used.
33. Apexogenesis and apexification or problems of open apex.
34. Rationale of endodontic treatment case selection indication and contraindications for root canal treatments.
37. Preparation of root, canal space. Determination of working length, cleaning and shaping of root canals, irrigating solution, chemical aids to instrumentation.
40. Methods of cleaning and shaping like step-back crown down and conventional methods.
43. Post endodontic restoration fabrication and components of post core preparation.
44. Smear layer and its importance in endodontics and conservative treatment.
45. Discoloured teeth and its management, bleaching agents, vital and non vital bleaching methods.
46. Traumatised teeth classification of fractured teeth, management of fractured tooth and root, Luxated teeth and its management.
47. Endodontic surgeries indication and contraindications, pre operative preparation. Pre medication surgical instruments and techniques apicectomy, retrograde filling, post operative sequelae trephination hemisection, radisection techniques of tooth reimplantation (both intentional and accidental) endodontic implants.
48. Root resorption.
49. Emergency endodontic procedures.
50. Lasers in conservative endodontics (introduction only) practice management
52. Duties towards the govt. like payments of professional tax, income tax.
53. Financial management of practice
54. Dental material and basic equipment management. Ethics
Oral & Maxillofacial Surgery

- Annual Outpatients: 33299
- Annual Indoor patients: 799
- Annual patients operated: 3292
- Annual Publications: 40
- Ongoing research projects: 14
- Patents: 10 filed

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

OBJECTIVES:

a) Knowledge & Understanding:
At the end of the course and clinical training the graduate is expected to –
1. Apply the knowledge gained in the related medical subjects like pathology, microbiology and general medicine in the management of patients with oral surgical problems.
2. Diagnose, manage and treat (understand the principles of treatment of) patients with oral surgical problems.
3. Gain Knowledge of a range of surgical treatments.
4. Be able to decide the requirement of a patient to have oral surgical specialist opinion or treatment.
5. Understand the principles of in-patient management.
6. Understand the management of major oral surgical procedures and principles involved in patient management.
7. Know the ethical issues and have communication ability.

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

DETAILED SYLLABUS
1. Introduction, definition, scope, aims and objectives.
2. Diagnosis in oral surgery:
   (A) History taking
   (B) Clinical examination
   (C) Investigations.
a) Asepsis: Definition, measures to prevent introduction of infection during surgery.
   1. Preparation of the patient
   2. Measures to be taken by operator
   3. Sterilisation of instruments – various methods of sterilization etc.
   4. Surgery set up.
b) Painless Surgery:
   1. Pre-anaesthetic considerations. Pre-medication: purpose, drugs used
   2. Anaesthetic considerations -
      a) Local b) Local with IV sedation
   3. Use of general anaesthetic
c) Access:
   Intra-oral: Mucoperiosteal flaps, principles, commonly used intra oral incisions.
   Bone Removal: Methods of bone removal.
   Use of Burs: Advantages & precautions
   Bone cutting instruments: Principles of using chisel & osteotome.
   Extra-oral: Skin incisions – principles, various extra-oral incision to expose facial Skeleton.
      a) Submandibular
      b) Pre auricular
      c) Incision to expose maxilla & orbit
      d) Bicoronal incision
d) Control of haemorrhage during surgery
   Normal Haemostasis
   Local measures available to control bleeding
   Hypotensive anaesthesia etc.
e) Drainage & Debridement
   Purpose of drainage in surgical wounds
   Types of drains used
   Debridement: purpose, soft tissue & bone debridement.
f) Closure of wounds
   Suturing: Principles, suture material, classification, body response to various materials etc.
g) Post operative care
   Post operative instructions
   Physiology of cold and heat
   Control of pain – analgesics
   Control of infection – antibiotics
   Control of swelling – anti-inflammatory drugs
   Long term post operative follow up – significance.
5. Exodontia: General considerations
   Ideal Extraction.
   Indications for extraction of teeth
   Extractions in medically compromised patients.
   Methods of extraction -
   (a) Forceps of intra-alveolar or closed method.
       Principles, types of movement, force etc.
   (b) Trans-alveolar, surgical or open method, Indications, surgical procedure.
       Dental elevators: uses, classification, principles in the use of elevators, commonly used elevators.
       Complications of Exodontia
       Complications during exodontia
   Common to both maxilla and mandible
   Post-operative complications
   Prevention and management of complications

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

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

8. Diseases of the maxillary sinus
   Surgical anatomy of the sinus
   Sinusitis both acute and chronic
   Surgical approach of sinus – Caldwell-Luo procedure
   Removal of root from the sinus
   Oro antral fistula – aetiology, clinical features and various surgical methods for closure.
9. Disorders of T.M. Joint
   Applied surgical anatomy of the joint.
   Dislocation – Types, aetiology, clinical features and management.
   Ankylosis – Definition, aetiology, clinical features and management.
   Myo-facial pain dysfunction syndrome, aetiology, clinical features, management.
   non surgical and surgical.
   Internal derangement of the joint.
   Arthritis of T.M. joint

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

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

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

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

14. Salivary gland diseases -
    Diagnosis of salivary gland diseases
    Sialography, contrast media, procedure.
    Infections of the salivary glands
Sialolithiasis – Sub mandibular duct and gland and parotid duct. Clinical features, management.
Salivary fistulae
Common tumours of salivary glands like Pleomorphic adenoma including minor salivary glands.

15. Jaw deformities -
   Basic forms – Prognathism, Retrognathism and open bite.
   Reasons for correction.
   Outline of surgical methods carried out on mandible and maxilla.

16. Neurological disorders -
   Trigeminal neuralgia – definition, aetiology, clinical features and methods of management including surgical.
   Facial paralysis – Aetiology, clinical features.
   Nerve injuries – Classification, neurorrhaphy etc.

17. Cleft Lip and Palate -
   Aetiology of the clefts, incidence, classification, role of dental surgeon in the management of cleft patients.
   Outline of the closure procedures.

18. Medical Emergencies in dental practice -
   Primary care of medical emergencies in dental practice particularly -
   (a) Cardio vascular   (c) Endocrine
   (b) Respiratory      (d) Anaphylactic reaction   (e) Epilepsy

19. Emergency drugs, Intra muscular, I.V. Injections -
   Applied anatomy, Ideal location for giving these injections, techniques etc.

20. Oral Implantology

21. Ethics

LOCAL ANAESTHESIA:
Introduction, concept of L.A., classification of local anaesthetic agents, ideal requirements, mode of action, types of local anaesthesia, complications.
   Use of Vasoconstrictors in local anaesthetic solution -
   Advantages, contra-indications, various vasoconstrictors used.
   Anaesthesia of the mandible -
   Pterygomandibular space – boundaries, contents etc.
   Interior Dental Nerve Block – various techniques
   Complications
   Mental foramen nerve block
   Anaesthesia of Maxilla
   Intra – orbital nerve block.
   Posterior superior alveolar nerve block
   Maxillary nerve block – techniques.

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

**Recommended Books:**

1. Impacted teeth; Alling John Fetal.
2. Principles of oral and maxillofacial surgery; Vol. 1,2 & 3 Peterson LJ et al.
3. Text book of oral and maxillofacial surgery, Srinivasan B.
4. Handbook of medical emergencies in the dental office, Malamed SF.
5. Killeys Fractures of the mandible; Banks P.
6. Killeys fractures of the middle 3rd of the facial skelton; Banks P.
7. The maxillary sinus and its dental implications; McGovanda
8. Killey and Kays outline of oral surgery – Part – I; Seward GR et al
9. Essentials of safe dentistry for the medically compromised patients; Mc Carthy FM
10. Oral & maxillofacial surgery, Vol.2; Laskin DM
11. Extraction of teeth; Howe. GL
12. Minor Oral Surgery; Howe. GL
13. Contemporary oral and maxillofacial surgery; Peterson I. J. et al
14. Oral and maxillofacial infections; Topazian RG & Goldberg MH
### ANNUAL DATA

<table>
<thead>
<tr>
<th>OPD</th>
<th>EXTRA ORAL RADIOGRAPHS</th>
<th>INTRA ORAL RADIOGRAPHS</th>
<th>CBCT</th>
<th>BIOPSIES</th>
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- Enhance Student and staff satisfaction/relation
- Enhance academic results of our students
- Enhance training of faculty and supporting staff
- Enhance research activities
- Provide quality based patient service
Oral Medicine And Radiology

AIMS:
(1) To train the students to diagnose the common disorders of Orofacial region by clinical examination and with the help of such investigations as may be required and medical management of oro-facial disorders with drugs and physical agents.
(2) To train the students about the importance, role, use and techniques of radiographs/digital radiograph and other imaging methods in diagnosis.
(3) The principles of the clinical and radiographic aspects of Forensic Odontology.

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

COURSE CONTENT
(1) Emphasis should be laid on oral manifestations of systemic diseases and ill-effects of oral sepsis on general health.
(2) To avoid confusion regarding which lesion and to what extent the student should learn and know, this elaborate syllabus is prepares. As certain lesions come under more than one group, there is repetition.

Part-I ORAL MEDICINE AND DIAGNOSTIC AIDS

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

SECTION (B) – DIAGNOSIS, DIFFERENTIAL DIAGNOSIS
While learning the following chapters emphasis shall be given only on diagnostic aspects including differential diagnosis
(1) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
(2) Diseases of bone and Osteodystrophies: Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, Marfans syndrome, osteopetrosis. Inflammation – Injury,
infection and spread of infection, fascial space infections, osteoradionecrosis.

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

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

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

(5) Altered sensations: Cacoguesia, halitosis

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

(7) Oral manifestations of:
(i) Metabolic disorders:
(a) Porphyria
(b) Haemochromatosis
(c) Histiocytosis X diseases
(ii) Endocrine disorders:
(a) Pituitary: Gigantism, acromegaly, hypopituitarism
(b) Adrenal cortex: Addison's disease (Hypofunction)
Cushing’s syndrome (Hyperfunction)
(c) Parathyroid glands: Hyperparathyroidism.
(d) Thyroid gland: (Hypothyroidism) Cretinism, myxoedema
(e) Pancreas: Diabetes
(iii) Nutritional deficiency: Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy)

(iv) Blood disorders:
(a) Red blood cell diseases
Deficiency anemias: (Iron deficiency, Plummer – Vinson syndrome, pernicious anaemia)
Haemolytic anaemia: (Thalassemia, sickle cell, erythroblastosis foetalis)
Aplastic anaemia
Polycythemia
(b) White Blood cell diseases
Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononucleosis and leukemias
(c) Haemorrhagic diseases
Thrombocytopenia, purpura, haemophilia, christmas disease and von Willebrand's disorders

(8) Disease of salivary glands:
(i) Development disturbances: Aplasia, atresia and aberration
(ii) Functional disturbances: Xerostomia, ptalism
(iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis hererfordt’s syndrome (Uveo-parotid fever), Necrotising sialo-metaplasia
(iv) Cysts and tumours: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma
(v) Miscellaneous: Sialolithiasis, Sjogren’s syndrome, mikulicz’s disease and sialosis

(9) Dermatological diseases with oral manifestations:
   (a) Ectodermal dysplasia (b) Hyperkerotosis palmar-plantaris with periodontopathy
   (c) Scleroderma (d) Lichen planus, grinspan syndrome (e) Lupus erythematosus
   (f) Pemphigus (g) Erythema multiforme (h) Psoriasis

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

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

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

(13) Management of dental problems in medically compromised persons:
   (i) Physiological changes: Puberty, pregnancy and menopause
   (ii) The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorder, hypertension, diabetes and AIDS. Post-irradiated patients.

(14) Precancerous lesions and conditions

(15) Nerve and muscle diseases:
   (i) Nerves: (a) Neuropraxia (b) Neurotemesis (c) Neuritis (d) Facial nerve paralysis including Bell’s palsy, Hererfordt’s syndrome, Melkersson 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

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

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

Part – II BEHAVIOURAL SCIENCES AND ETHICS.

Part – III ORAL RADIOLOGY

(1) Scope of the subject and history of origin
(2) Physics of radiation: (a) Nature and types of radiations (b) Source of radiations (c) Production of X-rays (d) Properties of X-rays (e) Compton effect (f) Photoelectric effect (g) Radiation measuring units
(3) Biological effects of radiation
(4) Radiation safety and protection measures
(5) Principles of image production
(6) Radiographic techniques:
   (i) Intra-Oral: (a) Periapical radiographs (Bisecting and parallel technics) (b) Bite wing radiographs (c) Occlusal radiographs
   (ii) Extra-Oral: (a) Lateral projections of skull and jaw bones and paranasal sinuses (c) Cephalograms (d) Orthopantomograph (e) Projections for temporomandibular joint and condyle of mandible (f) Projections for Zygomatic arches
   (iii) Specialized techniques: (a) Sialography (b) Xeroradiography (c) Tomography
(7) Factors in production of good radiographs:
   (a) K.V.P. and mA. Of X-ray machine (b) Filters (c) Collimations (b) Intensifying screens (e) Grids (f) X-ray film (g) Exposure time (h) Techniques (j) Dark room (j) Developer and fixer solutions (k) Film processing
(8) Radiographic normal anatomical landmarks
(9) Faculty radiographs and artefacts in radiographs
(10) Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissues
(11) Principles of radiotherapy of orofacial malignancies and complications of radiotherapy
(12) Contrast radiography and basic knowledge of radio-active isotopes
(13) Radiography in Forensic Odontology – Radiographic age estimation and post-mortem radiographic methods

PRACTICALS / CLINICALS:
1. Student is trained to arrive at proper diagnosis by following a scientific and systematic procedure of history taking and examination of the orofacial region. Training is also imparted in management wherever possible. Training also shall be imparted on saliva diagnostic procedures. Training also shall be imparted in various radiographic procedures and interpretation of radiographs.
2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination.
3. The following is the minimum of prescribed work for recording
   (a) Recording of detailed case histories of interesting cases.........10
   (b) Intra-oral radiographs (Periapical, bitewing, occlusal).........25
   (c) Saliva diagnostic check as routine procedure

Books Recommended:
(a) Oral Diagnosis, Oral Medicine & Oral Pathology
  1. Burkitt’s – Oral Medicine – J.B. Lippincott Company
  2. Coleman – Principles of Oral Diagnosis – Mosby Year Book
  5. Kerr – Oral Diagnosis
  6. Miller – Oral Diagnosis & Treatment
  7. Hutchinson – clinical Methods
  8. Oral Pathology – Shafer’s
(b) Oral Radiology
  1. White & Goaz – Oral Radiology – Mosby Year Book
  2. Weatherman – Dental Radiology – C.V. Mosby Company
(c) Forensic Odontology
  1. Derek H. Clark – Practical Forensic Odontology – Butterworth-Heinemann
  2. C Michael Bowers, Gary Bell – Manual of Forensic Odontology – Forensic Pr
Department Of Orthodontics and Dentofacial Orthopaedics

- Annual Out Patients: 12980
- Annual Publications: 10
- Annual Research Projects: 3
- Patents Filed: 3

Prof. & Head Dr. Pradeep Tandon received Prestigious Dr. B.C. Roy award from Hon'ble President of India

Post-Graduate Clinic

Under Graduate Clinic
Orthodontics & Dental Orthopaedics

COURSE OBJECTIVE:
Undergraduate programme in Orthodontics is designed to enable the qualifying dental surgeon to diagnose, analyse and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures. The following basic instructional procedures will be adapted to achieve the above objectives.
1. Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care.
2. Growth and Development: In General
   a. Definition
   b. Growth spurts and Differential growth
   c. Factors influencing growth and Development
   d. Methods of measuring growth
   e. Growth theories (Genetic, Sichler’s, Scott’s, Moss’s, Petrovic, Multifactorial)
   f. Genetic and epigenetic factors in growth
   g. Cephalocaudal gradient in growth.
3. Morphologic Development of Craniofacial Structures
   a. Methods of bone growth
   b. Prenatal growth of craniofacial structures
   c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion
4. Functional Development of Dental Arches and Occlusion.
   b. Forces of occlusion
   c. Wolfe’s law of transformation of bone
   d. Trajectories of forces
5. Clinical Application of Growth and Development
6. Malocclusion – In General
   a. Concept of normal occlusion
   b. Definition of malocclusion
   c. Description of different types of dental, skeletal and functional malocclusion.
7. Classification of Malocclusion
   Principle, description, advantages and disadvantages of classification of malocclusion by Angle, Simon, Lischer and Ackerman and Profitt.
8. Normal and Abnormal Function of Stomatognathic System
9. Aetiology of Malocclusion
   a. Definition, importance, classification, local and general aetiological factors.
   b. Etiology of following different types of malocclusion:
      1) Midline diastema
      2) Spacing
      3) Crowding
      4) Cross-Bite: Anterior/Posterior
      5) Class III Malocclusion
      6) Class II Malocclusion
      7) Deep Bite
8) Open bite
10. Diagnosis And Diagnostic Aids
   a. Definition, Importance and classification of diagnostic aids
   b. Importance of case history and clinical examination in orthodontics
   c. Study Model: - Importance and uses – Preparation and preservation of study models
   d. Importance of intraoral X-rays in orthodontics
   e. Panoramic radiograph: - Principles, Advantages, disadvantages and uses
   f. Cephalometrics: Its advantages, disadvantages
1. Definition
2. Description and use of cephalostat
3. Description and uses of anatomical landmarks lines and angles used in cephalometric analysis
4. Analysis – Steiner's, Down's, Tweed's, Ricket's E-line
5. Electromyography and its use in orthodontics
6. Wrist X-rays and its importance in orthodontics
11. General Principles in Orthodontic Treatment Planning of Dental And Skeletal Malocclusions
12. Anchorage in Orthodontics – Definition, Classification, Types and Stability of Anchorage
13. Biomechanical Principles In Orthodontic Tooth Movement
   a. Different types of tooth movements
   b. Tissue response to orthodontic force application
   c. Age factor in orthodontic tooth movement
14. Preventive Orthodontics
   a. Definition
   b. Different procedures undertaken in preventive orthodontics and their limitations.
15. Interceptive Orthodontics
   a. Definition
   b. Different procedures undertaken in interceptive orthodontics
   c. Serial extractions: Definition, indications, contra – indication, technique, advantages and disadvantages.
   d. Role of muscle exercises as an interceptive procedure
16. Corrective Orthodontics
   a. Definition, factors to be considered during treatment planning.
   b. Model analysis: Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis
   c. Methods of gaining space in the arch:- Indications, relative merits and demerits of proximal stripping, arch expansion and extractions
   d. Extractions in Orthodontics – indications and selection of teeth for extraction.
17. Orthodontic Appliances: General
   a. Requisites for orthodontic appliances
   b. Classification, indications of Removable and Fictional Appliances
   c. Methods of force application.
   d. Materials used in construction of various orthodontic appliances – use of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antifluxes.
   e. Preliminary knowledge of acid etching and direct bonding.
18. Ethics
REMOVABLE ORTHODONTIC APPLIANCES
1) Components of removable appliances
2) Different types of clasps and their use
3) Different types of labial bows and their use
4) Different types of springs and their use
5) Expansion appliances in orthodontics:
   (i) Principles
   (ii) Indications for arch expansion
   (iii) Description of expansion appliances and different types of expansion devices and their uses.
   (iv) Rapid maxillary expansion

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

EXTRAORAL APPLIANCES
1. Headgears
2. Chin cap
3. Reverse pull headgears

MYOFUNCTIONAL APPLIANCES
1. Definition and principles
2. Muscle exercises and their uses in orthodontics
3. Functional appliances:
   I. Activator, Oral screens, Frankel’s function regulator,
      Bionator twin blocks, lip bumper
   II. Inclined planes – upper and lower
18. Orthodontic Management of Cleft Lip And Palate
19. Principles of Surgical Orthodontics
    Brief knowledge of correction of:
    a. Mandibular Prognathism and Retrusion
    b. Maxillary Prognathism and Retrusion
    c. Anterior open bite and deep bite
    d. Cross bite
20. Principle, Differential Diagnosis & Methods of Treatment of:
    1. Midline diastema
    2. Cross bite
    3. Open bite
    4. Deep bite
    5. Spacing
    6. Crowding
    7. Class II – Division 1, Division 2
8. Class III Malocclusion – True and Pseudo Class III
21. Retention and Relapse
Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention.

CLINICALS AND PRACTICALS IN ORTHODONTICS
PRACTICAL TRAINING DURING II YEAR B.D.S
I. Basic wire bending exercises Gauge 22 or 0.7mm
   1. Straightening of wires (4 Nos.)
   2. Bending of an equilateral triangle
   3. Bending of a rectangle
   4. Bending of a square
   5. Bending of a circle
   6. Bending of U.V.
II. Construction of Clasps (Both sides upper/lower) Gauge 22 or 0.7mm
    1. 3/4 Clasp (C-Clasp)
    2. Full Clasp (Jackson’s Crib)
    3. Adam’s Clasp
    4. Triangular Clasp
III. Construction of Springs (on upper both sides) Gauge 24 or 0.5mm
     1. Finger Spring
     2. Single Cantilever Spring
     3. Double Cantilever Spring (Z-Spring)
     4. T-Springs on premolars
IV. Construction of Canine retractors Gauge 23 or 0.6mm
    1. U – Loop canine retractor
       (Both sides on upper & lower)
    2. Helical canine retractor
       (Both sides on upper & lower)
    3. Buccal canine retractor:
       - Self supported buccal canine retractorWith
       a) Sleeve – 5mm wire or 24 gauge
       b) Sleeve – 19 gauge needle on any one side.
    4. Palatal canine retractor on upper both sides
       Gauge 23 or 0.7mm
V. Labial Bow
   Gauge 22 or 0.7mm
   One on both upper and lower

CLINICAL TRAINING DURING III YEAR B.D.S
01. Making upper Alginate impression
02. Making lower Alginate impression
03. Study Model preparation
04. Model Analysis
a. Pont's Analysis  
b. Ashley Howe's Analysis  
c. Carey's Analysis  
d. Bolton's Analysis  
e. Moyer's Mixed Dentition Analysis

CLINICAL TRAINING DURING FINAL YEAR B.D.S  
01. Case History taking  
02. Case discussion  
03. Discussion on the given topic  
04. Cephalometric tracings  
a. Down's Analysis  
b. Steiner's Analysis  
c. Tweed's Analysis

PRACTICAL TRAINING DURING FINAL YEAR B.D.S  
1. Adam's Clasp on Anterior teeth Gauge 0.7mm  
2. Modified Adam's Clasp on upper arch Gauge 0.7mm  
3. High Labial bow with Apron spring on upper arch  
(Gauge of Labial bow - 0.9mm Apron spring - 0.3mm)  
4. Coffin spring on upper arch Gauge 1mm  
Appliance Construction in Acrylic  
1. Upper & Lower Hawley's Appliance  
2. Upper Hawley's with Anterior bite plane  
3. Upper Habit breaking Appliance  
4. Upper Hawley's with Posterior bite plane with 'Z' Spring  
5. Construction & Activator  
6. Lower inclined plane/Catalan's Appliance  
7. Upper Expansion plate with Expansion screw

Recommended And Reference Books  
1. Contemporary Orthodontics  
2. Orthodontics For Dental Students-  
3. Handbook Of Orthodontics  
4. Orthodontics – Principles And Practice-  
5. Design, Construction And Use Of Removable Orthodontic Appliances - C. Philip Adams  
6. Clinical Orthodontics: Vol1 & 2

-William R. Proffit  
White And Gardiner  
-Moyer Graber
Department of Paediatric and Preventive Dentistry

Annual Department statistics

- Total patients attended in department: approximately 18000 patients annually, 1600 per month.
- New patients: approximately 5000 annually
- Patients for Post graduate training: approximately 13,000 annually
- Procedures undertaken: Paediatric restorative procedure, endodontic procedures, minor surgical procedures, orthodontic procedures special child dentistry, oral health awareness programmes, preventive dentistry procedures and many more.
- Publications: Average 1 to 2 per year per faculty

Learning environment

Outreach
Paediatric & Preventive Dentistry

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

10. BEHAVIOUR MANAGEMENT:
- Definitions.
- Types of behavior encountered in the dental clinic.
- Non-pharmacological & pharmacological methods of Behavior Management.

11. PAEDIATRIC OPERATIVE DENTISTRY:
- Principles of Paediatric Operative Dentistry.
- Modifications required for cavity preparation in primary and young permanent teeth.
- Various Isolation Techniques.
- Restorations of decayed primary, young permanent and permanent teeth in children using various restorative materials like Glass Ionomer, Composites & Silver Amalgam. Stainless steel, Polycarbonate & Resin Crowns.

12. PAEDIATRIC ENDODONTICS
- Principles & Diagnosis.
- Classification of Pulpal Pathology in primary, young permanent & permanent teeth.
- Management of Pulpally involved primary, young permanent & permanent teeth.
  - Pulp capping – direct & indirect.
  - Pulpotomy
  - Pulpectomy
  - Apexogenesis
  - Apexification
- Obturation Techniques & material used for primary, young permanent & Permanent teeth in children.

13. TRAUMATIC INJURIES IN CHILDREN:
- Classification & Importance.
- Sequelae & reaction of teeth to trauma.
- Management of Traumatised teeth.

14. PREVENTIVE & INTERCEPTIVE ORTHODONTICS:
- Definitions.
- Problems encountered during primary and mixed dentition phases & their management.
- Serial extractions.
- Space management.

15. ORAL HABITS IN CHILDREN:
- Definition, Aetiology & Classification.
- Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
- Management of oral habits in children.

16. DENTAL CARE OF CHILDREN WITH SPECIAL NEEDS:
- Definition, Aetiology & Classification, Behavioural and Clinical features & Management of children with:
  - Physically handicapping conditions.
  - Mentally compromising conditions.
  - Medically compromising conditions.
  - Genetic disorders
17. CONGENITAL ABNORMALITIES IN CHILDREN:
   - Definition, Classification, Clinical features & Management.
18. Dental Emergencies In Children & Their Management.
19. Dental Materials Used In Paediatric Dentistry
20. PREVENTIVE DENTISTRY
   - Definition
   - Principles & Scope.
   - Types of preventive measures used in Paediatric Dentistry including pit and fissure sealants and caries vaccine.
21. Dental Health Education & School Dental Health Programmes
22. Fluorides:
   - Historical background.
   - Systemic & Topical fluorides.
   - Mechanism of action.
   - Toxicity & Management.
   - Defluoridation techniques
23. Case History Recording:
   - Outline Of Principles Of Examination, Diagnosis & Treatment Planning.
25. Ethics.

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

Books Recommended & References:
1. Paediatric Dentistry (Infancy through Adolesences) – Pinkham.
7. Understanding of Dental Caries – Niki Foruk.
11. Primary Preventive Dentistry – Norman O. Harris.
16. Pediatric Dentistry – Damle S.G.
17. Behaviour Management – Wright
19. Traumatic Injuries – Andreason
21. Pediatric Drug Therapy – Tomare
24. Metabolism & Toxicity of Fluoride – Whiteford G.M
27. Endodontics – Ingle.
GOAL:
To prevent and control oral diseases and promote oral health through organized community efforts

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

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

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

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

DENTAL PUBLIC HEALTH:
1. Definition and difference between community and clinical health.
2. Epidemiology of dental diseases-dental caries, periodontal diseases, malocclusion, dental fluorosis and oral cancer.
4. Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and
comprehensive health care, school dental health.
5. Payments of dental care: Methods of payments and dental insurance, government plans
6. Preventive Dentistry – definition, Levels, role of individual, community and profession, fluorides in
dentistry, plaque control program.

RESEARCH METHODOLOGY AND DENTAL STATISTICS
1. Health Information: Basic knowledge of Computers, MS Office, Window 2000, Statistical Program
2. Research Methodology: Definition, types of research, designing a written protocol
   significance, Sampling and sampling techniques-types, errors, bias, blind trials and calibration.

PRACTICE MANAGEMENT
1. Place and locality
2. Premises & layout
3. Selection of equipment
   Dentist Act 1948 with amendment.
   Dental Council of India and State Dental Councils
   Composition and responsibilities.
   Indian Dental Association
   Head Office, State, local and branches.

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

I. AT THE COLLEGE:
   Students are posted to the department to get training in dental practice management.
   a) Total oral health care approach in order to prepare the new graduates in their approach to diagnosis, treatment
      planning, cost of treatment, prevention of treatment on schedule, recall maintenance of records etc. at least 10
      patients (both children and adults of all types posting for at least one month).
   b) The practice of chair side preventive dentistry including oral health education

II. AT THE COMMUNITY ORAL HEALTH CARE CENTRE (ADOPTED BY THE DENTAL COLLEGE IN
    RURAL AREAS)
Graduates posted for at least one month to familiarize in:
   a) Survey methods, analysis and presentation of oral health assessment of school children and community
      independently using WHO basic oral health survey methods.
   b) Participation in rural oral health education program
   c) Stay in the village to understand the problems and life in rural areas

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

Examination Pattern
1. Index: Case History
   a) Oral hygiene indices simplified – Green and Vermilion
   b)Silness and Loe index for Plaque
   c) Loe and Silness index for gingiva
   d) CPI
   e) DMFT and DMFS
   f) Deans fluoride index

I. Health Education
   1. Pit and fissure sealant
   2. Topical fluoride application

Books Recommended & Reference:
1. Dentistry Dental Practice and Community by David F. Striffler and Brian A. Burt, Edn. – 1983, W. B. Saunders
   Company
3. Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby
   Company 1981
4. Community Oral Health - A system approach by Patricia P. Cormier and Joyee I. Levy published by Appleton
   Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton
   Massachusetts, 1980.
6. Dental Public Health- An introduction to Community Dentistry. Edited by Geoffery L. Slack and Brian Burt,
   Published by John Wright and sons Bristol, 1980.
   office New Delhi.
12. Community Dentistry by Dr. Soben Peter.
13. Introduction to Bio-statistics by B.K. Mahajan
14. Research methodology and Bio-statistics
15. Introduction to Statistical Methods by Grewal
Department Of Periodontology Faculty of Dental Sciences

- **Annual Patients**: 19747
- **Annual Major Surgeries**: 1331
- **Annual Minor Surgeries**: 283622
- **Annual Oral Prophylaxis**: 10631
- **Annual Poor Patients Treated**: 200
- **Annual Publications**: 15
- **Annual Research Projects**: 03
OBJECTIVES:
The student shall acquire the skill to perform dental scaling, diagnostic tests of periodontal diseases; to use the instruments for periodontal therapy and maintenance of the same.
The student shall develop attitude to impart the preventive measures namely, the prevention of periodontal diseases and prevention of the progress of the disease. The student shall also develop an attitude to perform the treatment with full aseptic precautions; shall develop an attitude to prevent iatrogenic diseases; to conserve the tooth to the maximum possible time by maintaining periodontal health and to refer the patients who require specialist's care.
1. Introduction: Definition of Periodontology, Periodontics, Periodontia Brief historical background, Scope of Periodontics
2. Development of periodontal tissues, micro-structural anatomy and biology of periodontal tissues in detail
3. Defensive mechanisms in the oral cavity: Role of Epithelium, Gingival fluid, Saliva and other defensive mechanisms in the oral environment.
4. Age changes in teeth and periodontal structures & their Periodontal structures association with periodontal diseases And their significance In Geriatric dentistry
5. Classification of Need for classification, Scientific basic of classification Periodontal diseases Classification of gingival and periodontal diseases as described in world Workshop 1989 Gingivitis: Plaque associated, ANUG, steroid hormone influence, Medication influenced, Desquamative gingivitis, other form of gingivitis as in nutritional deficiency, bacterial and viral infections etc.

Periodontitis:
   Adult periodontitis, Rapidly progressive periodontitis A&B, Juvenile periodontitis (localized, generalized, and post-juvenile), Prepubertal periodontitis =
6. Gingival diseases Localised and generalized gingivitis, Papillary, marginal and diffuse gingivitis
   Aetiology, pathogenesis, clinical signs, symptoms and management of
   i) Plaque associated gingivitis
   ii) Systemically aggravated gingivitis (sex hormones, drugs and systemic diseases)
   iii) ANUG
   iv) Desquamative gingivitis-Gingivitis associated with lichen planus, pemphigoid, pemphigus, and other vesiculobullous lesions
   v) Allergic gingivitis
   vi) Infective gingivitis-Herpetic, bacterial and candidal
   vii) Pericoronitis
   viii) Gingival enlargement (classification and differential diagnosis)
7. Epidemiology of Periodontal diseases
   Definition of index, incidence, prevalence, epidemiology, endemic, epidemic, and pandemic
   Classification of indices (Irreversible and reversible)
   Deficiencies of earlier indices used in Periodontics
   Detailed understanding of Silness & Loe Plaque Index, Loe & Silness Gingival index, CPI
   - Prevalence of periodontal diseases in India and other countries.
- Public health significance. All these topics are covered at length under community dentistry. Hence, the topics maybe discussed briefly. However, questions may be asked from the topics for examination

8. Extension of inflammation from gingiva
   Mechanism of spread of inflammation from gingival area to inflammation from deeper periodontal structures gingiva factors that modify the spread

9. Pocket
   Definition, signs and symptoms, classification, pathogenesis, histopathology, root surface changes and contents of the pocket

10. Etiology
   Dental Plaque (Biofilm)
   - Definition, New concept of biofilm
   Types, composition, bacterial colonization, growth, maturation
   & disclosing agents
   - Role of dental plaque in periodontal diseases
   - Plaque microorganisms in detail and bacteria associated with periodontal diseases
   - Plaque retentive factors
   - Materia alba
   - Food debris
   - Calculus
   - Definition
   - Types, composition, attachment, theories of formation
   - Role of calculus in disease
   Food Impaction
   - Definition
   - Types, Aetiology
   - Hirschfeld's classification
   - Signs & symptoms & sequelae of treatment
   Trauma from occlusion
   - Definition, Types
   - Histopathological changes
   - Role in periodontal disease Habits
   - Their periodontal significance
   - Bruxism & parafunctional habit, tongue thrusting, lip biting, occupational habits latrogenic Factors
   - Restorations
   - Contact point, marginal ridge, surface roughness, overhanging Restoration, interface between restoration and teeth
   - Prosthodontics
   - Interrelationship
   - Bridges and other prosthesis, pontics (types), surface
     Contour, relationships of margins to the periodontium, Gingival protection theory, muscle action theory & theory of access to oral hygiene. Orthodontics
- Interrelationship, removable appliances & fixed appliance
- Retention of plaque, bacterial changes

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

11. Risk factors
Definition. Risk factors for periodontal diseases

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

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

14. Diagnosis
- Routine procedures, methods of probing, types of probes (According to case history)
- Halitosis: Aetiology and treatment. Mention advanced diagnostic aids and their role in brief.

15. Prognosis
- Definition, types, purpose and factors to be taken into consideration

16. Treatment of pain
- Factors to be considered

17. Periodontal therapy
A. General principles of periodontal therapy. Phase I, II, III, IV therapy. Definition of periodontal regeneration, repair, new attachment and reattachment.

B. Plaque control
   i. Mechanical tooth brushes, interdental cleaning aids, dentifrices
   ii. Chemical; classification and mechanism of action of each & pocket irrigation

18. Pocket eradication
   Procedures
- Indications
- Aims & objectives
- Healing following root planning
- Hand instruments, sonic, ultrasonic & piezo-electric scalers
- Curettages & present concepts
- Definition
- Indications
- Aims & objectives
- Procedures & healing response
- Flap surgery
- Definition
- Types of flaps, Design of flaps, papilla preservation
- Indications & contraindications
- Armamentarium
- Surgical procedure & healing response

19. Osseous Surgery
- Definition
- Classification
- Surgery: resective, additive osseous surgery
  (osseous grafts with classification of grafts)
- Healing responses
- Other regenerative procedures; root conditioning
- Guided tissue regeneration

20. Mucogingival surgery & periodontal plastic Surgeries

Definition
Mucogingival problems: etiology, classification of gingival recession (F.D. Miller Jr and Sullivan and Atkins)
Indications & objectives

Gingival extension procedures: lateral pedicle graft. Frenectomy, Crown lengthening procedures
Periodontal microsurgery in brief

21. Splints
- Purpose & classification
- Principles of splinting

22. Hypersensitivity

Causes, Theories & management

23. Implants
Definition, types, scope & biomaterials uses.
Periodontal considerations: such as implant-bone interface, implant-gingiva interface, implant failure, peri-implantitis Management

24. Maintenance phase (SPT)
- Aims, objectives, and principles
- Importance
- Procedures
- Maintenance of implants

25. Pharmoco-therapy
- Antibiotics & anti-inflammatory drugs
- Local drug delivery systems

26. Periodontal
Topics concerning periodontal management of medically
Management of medically compromised patients
27. Inter-disciplinary care - Pulpo-periodontal involvement - Routes of spread of infection
- Simons' classification
28. Systemic effects of Periodontal diseases In brief
29. Infection control Cardiovascular diseases, Low birth weight babies etc.
30. Ethics Sterilization and various aseptic procedures Protocol

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

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

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

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

Prescribed Book:
1. GLICKMEN’S Clinical Periodontology – Carranza

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

Annual Outdoor Patients- 10904
Annually Patient treated- 5821
Annual Implant rehabilitation cases- 1435
Annual Maxillofacial Prosthesis case- 325
Annual Publication- 56
Ongoing Research Projects- 12
PatentsFiled-10
Complete Dentures
A. Applied Anatomy and Physiology.
   1. Introduction
   2. Biomechanics of the edentulous state.
   3. Residual ridge resorption
B. Communicating with the patient Understanding the patients
   1. Mental attitude.
   2. Instructing the patient.
C. Diagnosis and treatment planning for patients-
   1. With some teeth remaining.
   2. With no teeth remaining.
      a) Systemic status.
      b) Local factor.
      c) The geriatric patient
      d) Diagnostic Procedures
D. Articulators- discussion
E. Improving the patient's denture foundation and ridge relation – an overview.
   a) Pre-operative examination.
   b) Initial hard tissue & soft tissue procedure
   c) Secondary hard & soft tissue procedure
   d) Implant procedure
   e) Congenital deformities
   f) Postoperative procedure
F. Principles of Retention, Support and Stability
G. Impressions - details
   a) Muscles of facial expression.
   b) Biologic considerations for maxillary and mandibular impression including anatomy landmark and their interpretation.
   c) Impression objectives.
   d) Impression materials
   e) Impression techniques
   f) Maxillary and mandibular impression procedures
      i. Preliminary impressions.
      ii. Final impressions
   g) Laboratory procedures involved with impression making (Beading & Boxing, and cast preparation)
H. Record bases and occlusion rims- in detail.
   a) Materials & techniques.
   b) Useful guidelines and ideal parameter.
   c) Recording and transferring bases and occlusal rims.
I. Biological consideration in jaw relation & jaw movements – craniomandibular relation.
   a) Mandibular movements
b) Maxillo-mandibular relation including vertical and horizontal jaw relations.
c) Concept of occlusion – discuss in brief.

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

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

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

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

N. Trial dentures.

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

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

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

R. Treating abused tissues – discuss in brief.

S. Relining and rebasing of dentures – discuss in brief.

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

U. The single complete denture – discuss in brief

V. Overdentures – discuss in brief

W. Dental implants in complete denture – discuss in brief.

REMOVABLE PARTIAL DENTURES

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

FIXED PARTIAL DENTURES
Topics To Be Covered in Detail –
1. Introduction
3. Articulators – in brief
4. Treatment planning for single tooth restorations.
5. Treatment planning the replacement of missing teeth including selection and choice of abutment teeth.
6. Fixed partial denture configurations.
7. Principles of tooth preparations
8. Preparations for full veneer crowns – in detail.
10. Provisional Restorations
11. Fluid Control and Soft Tissue Management
12. Impressions
13. Working Casts and Dies
14. Wax Patterns
15. Pontic and Edentulous Ridges
16. Aesthetic Considerations
17. Finishing and Cementation

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

The above mentioned topics should be dealt with in the following order so as to cover –
1. Definition
2. Diagnosis (of the particular situation/patient selection /treatment planning)
3. Types / Classification
4. Materials
5. Methodology – Lab / Clinical
6. Advantages & disadvantages
7. Indications, contraindications
8. Maintenance Phase

Recommended Books:
2. Boucher’s “Prosthodontic treatment for edentulous patients”
3. Essentials of complete denture prosthodontics by – Sheldon Winkler.
5. McCraken’s Removable partial prosthodontics
Aesthetic Dentistry

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

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

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

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Forensic Odontology (30 hrs of instruction)

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

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

Curriculum
1. Introduction to forensic dentistry
   • Definition and history
   • Recent developments and future trends
2. Overview of forensic medicine and toxicology
   • Cause of death and postmortem changes
   • Toxicological manifestations in teeth and oral tissues
3. Dental identification
   • Definition
   • Basis for dental identification
   • Postmortem procedures
   • Dental record compilation and interpretation
   • Comparison of data, and principles of report writing
   • Identification in disasters and handling incinerated remains
   • Postmortem changes to oral structures
4. Maintaining dental records
   • Basic aspects of good record-keeping
   • Different types of dental records
     ➢ Dental charts
     ➢ Dental radiographs
     ➢ Study casts
     ➢ Denture marking
     ➢ Photographs
   • Dental Notations
   • Relevance of dental records in forensic investigation
5. Age estimation
   • Age estimation in children and adolescents
     ➢ Advantages of tooth calcification over 'eruption' in estimating age
     ➢ Radiographic methods of Schour & Massler, Demirjian et al
• Age estimation in adults
  - Histological methods – Gustafson’s six variables and Johanson’s modification, Bang & Ramm’s dentine trans-lucency
  - Radiographic method of Kvaal et al
  - Principles of report writing
6. Sex differentiation
  - Sexual dimorphism in tooth dimensions (Odontometrics)
7. Ethnic variations (‘racial’ differences) in tooth morphology
  - Description of human population groups
  - Genetic and environmental influences on tooth morphology
  - Description of metric and non-metric dental features used in ethnic differentiation
8. Bite mark procedures
  - Definition and classification
  - Basis for bite mark investigation
  - Bite mark appearance
  - Macroscopic and microscopic ageing of bite marks
  - Evidence collection from the victim and suspect of bite mark
  - Analysis and comparison
  - Principles of report writing
  - Animal bite investigation
9. Dental DNA methods
  - Importance of dental DNA evidence in forensic investigations
  - Types of DNA and dental DNA isolation procedures
  - DNA analysis in personal identification
  - Gene-linked sex dimorphism
  - Population genetics
10. Jurisprudence and ethics
    - Fundamentals of law and the constitution
    - Medical Legislation and statutes (Dental and Medical Council Acts)
    - Basics of civil law (torts, contracts and consumer protection act)
    - Criminal and civil procedure code (expert witness requirement)
    - Assessment and quantification of dental injuries in courts of law
    - Medical negligence and liability
    - Informed consent and confidentiality
    - Rights and duties of doctors and patients
    - Medical and dental ethics (as per Dentists’ Act)
Theory sessions and practical exercises
Total hours for the course
• Didactic – 10-12 hours
• Practical – 20-25 hours
Detailed didactic sessions for the above components, either in the form of lectures or as structured student-teacher interactions, is essential. Specialists from multiple disciplines, particularly from legal and forensic sciences, can be encouraged to undertake teaching in their area of expertise. An interactive, navigable and non-linear (INN) model
may also be utilized for education.

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

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

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

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

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

It would be suitable to undertake these topics in the IV or V year as part of Oral Medicine and Radiology, since students require reasonable clinical exposure and acumen to interpret dental records, perform dental post-mortem and analyse dental radiographs for age estimation.
Oral Implantology (30 hrs of instruction)

Introduction To Oral Implantology

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

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

Suggested Books For Reading

1. Contemporary Implant Dentistry - Carl. E. Misch
GOAL:
The aim of teaching behavioural sciences to undergraduate student is to impart such knowledge & skills that may enable him to apply principles of behaviour –
a) For all round development of his personality
b) In various therapeutic situations in dentistry.
The student should be able to develop skills of assessing psychological factors in each patient, explaining stress, learning simple counselling techniques, and improving patients compliance behaviour.

OBJECTIVES:
A) KNOWLEDGE & UNDERSTANDING:
At the end of the course, the student shall be able to:
1) Comprehend different aspects of normal behavior like learning, memory, motivation, personality & intelligence.
2) Recognise difference between normal and abnormal behavior.
3) Classify, psychiatric disorders in dentistry.
5) Have understanding of stress in dentistry and knowledge of simple counselling techniques.
6) Have some background knowledge of interpersonal managerial and problem solving skills which are an integral part of modern dental practice.
7) Have knowledge of social context of dental care.
B) The student shall be able to:
1) Interview the patient and understand different methods of communication skills in dentist – patient relationship.
2) Improve patient compliance behavior
3) Develop better interpersonal, managerial and problem solving skills.
4) Diagnose and manage minor psychological problems while treating dental patients.

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

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

PSYCHOLOGY:
2. Sensor process & perception perceptual process – clinical applications
3. Attention - Definition – factors that determine attention. Clinical application.
4. Memory – Memory process – Types of memory, Forgetting; Methods to improve memory, Clinical assessment of memory & clinical application
5. Definition – Laws of learning, Type of learning. Classical conditioning, operant conditioning, cognitive learning, Insight learning, social learning, observational learning, principles of learning – Clinical application.
6. Intelligence – Definition: Nature of intelligence stability of intelligence
   Determinants of intelligence, clinical application
7. Thinking – Definition: Types of thinking, delusions, problem solving
8. Motivation – Definition: Motive, drive, needs classification of motives
9. Emotions – Definition differentiation from feelings – Role of hypothalamus, Cerebral cortex, adrenal glands
   AINS. Theories of emotion, Types of emotions.

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

Reference Books:
1. General psychology – S.K. Mangal
2. General psychology – Hans Raj, Bhatia
3. General psychology – Munn
4. Behavioural Sciences in Medical practice – Manju Mehta
5. Sciences basic to psychiatry – Basant Puri & Peter J Tyrer

Ethics (20 hrs. of instruction)

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

Course Content:
Introduction to ethics –
- What is ethics?
- What are values and norms?
- Hippocratic Oath.
Ethics of the individual –
   The patient as a person.
   Right to be respected
Truth and confidentiality
Autonomy of decision
Doctor Patient relationship
Profession Ethics –
   Code of conduct
   Contract and confidentiality
Charging of fees splitting
Prescription of drugs
Over-investigating the patient
Malpractice and negligence
Research Ethics –
  Animal and experimental research/humanness
  Human experimentation
  Human volunteer research-informed consent
  Drug trials
  Ethical workshop of cases
  Gathering all scientific factors
  Gathering all value factors
  Identifying areas of value – conflict, setting of priorities
  Working our criteria towards decisions

Recommended Reading:
Medical Ethics, Francis C.M. I Ed. 1993, Jaypee Brother, New Delhi p.189.

Recommended Books
1. **HUMAN Anatomy, Embryology, Histology & Medical Genetics**
   5. SADLER, LANGMAN’S, Medical Embryology, Ed. 6
   8. Emery, Medical Genetics.

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

**EXPERIMENTAL PHYSIOLOGY:**
   1. Rannade; Practical Physiology, 4th edition
   2. Ghai; a text book of practical physiology
   3. Hutchinson’s Clinical Methods, 20th edition

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

**REFERENCE BOOKS:**
      Basic and applied Dental Biochemistry, 197, R.A.D. Williams & J.C. Elliot

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

5. **General Pathology**
   1. Robbins – Pathologic Basis of Disease Cotran, Kumar, Robbins
   2. Anderson's Pathology Vol 1 & 2 Editors – Ivan Damjanov & James Linder
   3. Wintrobe's clinical Haematology Lee, Bithell, Foerster, Athens, Kukens
6. Microbiology
   7. Immunology and Introduction – Tizard
   8. Immunology 3rd edition – Ivan Roitt, et al

7. Dental Materials
   3. Notes on Dental Materials – E.C. Combe

8. General and dental pharmacology and therapeutics
      Prakashan Bombay 1993

9. General Medicine
   Textbook of Medicine Davidson
   Textbook of Medicine Hutchinson

10. General Surgery
    Short practice of Surgery Baily & Love

11. Oral Pathology & Oral Microbiology
    1. A Text Book or Oral Pathology Shafer, Hine & Levy
    3. Oral Pathology Soames & Southam
    4. Oral Pathology in the Tropics Prabhu, Wilson, Johnson & Daftary

12. Public Health Dentistry
    1. Dentistry Dental Practice and Community by David F. Striffler and Brian A. Burt, Edn. – 1983, W. B.
       Saunders Company
    3. Dental Public Health and Community Dentistry Ed by Anthony Jong Publication
       C.V. Mosby Company 1981
       Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton
       Massachusetts, 1980.
    5. Dental Public Health – An Introduction to Community Dentistry. Edition by Geoffrey L Slack and Brian
       Burt, Published by John Wright and sons Bristol
11. Community Dentistry by Soben Peter.
12. Introduction to Bio-statistics by B.K. Mahajan
13. Introduction to Statistical Methods by Grewal

13. Pediatric and Preventive Dentistry
1. Pediatric Dentistry (Infancy through Adolescences) – Pinkham
4. Handbook of Clinical Pedodontics – Kenneth D.
5. Dentistry for the Child and Adolescence – McDonald.
6. Pediatric Dentistry – Damle SG
7. Behaviour Management – Wright
8. Traumatic Injuries – Andreason.

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

2. Oral Radiology
   1. White & Goaz – Oral Radiology – Mosby year Book
   2. Weatherman – Dental Radiology – C.V. Mosby company

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

15. Orthodontics and Dentofacial Orthopedics
   1. Contemporary Orthodontics William R. Proffit
   2. Orthodontics For Dental Students White and Gardiner
   3. Handbook of Orthodontics Moyers
16. Oral and Maxillofacial Surgery
1. Impacted teeth; Alling John F & et al.
2. Principles of oral and Maxillofacial surgery; Vol. 1, 2 & 3 Peterson LJ & et al.
3. Handbook of medical emergencies in the dental office, Malamed SF.
4. Killey's Fractures of the mandible; Banks P.
5. Killey's fractures of the middle 3rd of the facial skeleton; Banks P.
6. Killey and Kays outline of oral surgery – Part 1; Seward GR & et al
7. Essentials of safe dentistry for the medically compromised patients; Mc Charthy
8. Extraction of teeth; Howe GL
9. Minor Oral Surgery; Howe GL

17. Prosthodontics, Crown & Bridge
2. Boucher’s “Prosthodontic treatment for edentulous patients”
5. Mc Craker's Removable partial prosthodontics
6. Removable partial prosthodontics – Ernest L. Miller and Joseph E. Grasso

18. Periodontology
1. Glickman's Clinical Periodontology – Carranza

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

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

20. Aesthetic Dentistry
1. Aesthetic guidelines for restorative dentistry; Scharer & others
2. Aesthetic of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3. Aesthetic & the treatment of facial form, Vol 28; Mc Namara (JA)
21. Forensic Odontology
   1. Practical Forensic odontology – Derek Clark

22. Oral Implantology
   2. Osseointegration and Occlusal Rehabilitation Hobo S., Ichida E and Garcia L.T.

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

24. Ethics
   Note: 1. Book titles will keep on adding in view of the latest advances in the Dental Sciences.
   2. Standard books from Indian authors are also recommended.
      Indian and Foreign are recommended for imparting research oriented education.

List of Journals:

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Department/Position</th>
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<tbody>
<tr>
<td>Prof. MLB Bhatt</td>
<td>Vice Chancellor</td>
</tr>
<tr>
<td>Prof. MM Goel</td>
<td>Pro Vice Chancellor</td>
</tr>
<tr>
<td>Mr. Rajesh Kumar Rai</td>
<td>Registrar</td>
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<tr>
<td>Dr. Anit Parihar</td>
<td>Deputy Registrar</td>
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<tr>
<td>Mohd. Zama</td>
<td>Finance Officer</td>
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<tr>
<td>Prof. RAS Kushwaha</td>
<td>Chief Proctor</td>
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### Deans

<table>
<thead>
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<th>Department/Position</th>
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<tbody>
<tr>
<td>Prof. Vinita Das</td>
<td>Department of Obst &amp; Gynaecology Dean, Faculty of Medicine</td>
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<tr>
<td>Prof. Anil Chandra</td>
<td>Department of Conservative Dentistry &amp; Endodontics Dean, Faculty of Dental Sciences</td>
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<tr>
<td>Prof. G.P. Singh</td>
<td>Department of Anaesthesiology Dean, Student Welfare</td>
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<tr>
<td>Prof. Divya Mehrotra</td>
<td>Department OMFS Dean, Quality Control and Planning</td>
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### Vice Deans

<table>
<thead>
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<th>Name</th>
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<tbody>
<tr>
<td>Prof. Sandeep Tiwari</td>
<td>Department of Surgery (Gen) Vice Dean, Student Welfare</td>
</tr>
<tr>
<td>Dr. Avinash Agarwal</td>
<td>Department of Medicine Vice Dean, Student Welfare</td>
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<td>Assistant Deans</td>
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<tr>
<td>Dr. Rameshwari Singhal</td>
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<td>Dr. Kumar Shantanu</td>
<td>Department of Orthopaedic Surgery</td>
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<tr>
<td>Prof. A.K. Singh</td>
<td>Department of Plastic Surgery</td>
<td>Controller of Examination</td>
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<td>Prof. Divya Mehrotra</td>
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<td>Additional Controller of Examination (Finance)</td>
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<td>Prof. S.N. Sankhwar</td>
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<tr>
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<td>Department of Hospital Administration</td>
<td>Chief Medical Superintendent, Trauma Centre</td>
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<td>Department of Neurosurgery</td>
<td>Medical Superintendent (Medical)</td>
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<td>Dr. Nitin Dutt Bharadwaj</td>
<td>Department of Hospital Administration</td>
<td>Deputy Medical Superintendent (Medical Faculty)</td>
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<td>Prof. Niraj Kumar Mishra</td>
<td>Department of Prosthodontics</td>
<td>Medical Superintendent (Dental Faculty)</td>
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<td>Dr. Anil Gupta</td>
<td>Department Physical Medicine &amp; Rehabilitation</td>
<td>Medical Superintendent for area comprising of RALC</td>
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<td>Department of Pediatric Surgery</td>
<td>Deputy Medical Superintendent, Urology, Plastic Surgery, Surgical Oncology, Anaesthesiology, Paediatric Surgery, ENT, Skin, Paraplegia and special wards.</td>
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<tr>
<td>Prof. Manish Bajpai</td>
<td>Department of Physiology</td>
<td>Deputy Medical Superintendent, New &amp; Old OPD Block, Radiotherapy main building, Radiodiagnosis, Ophthalmology Block &amp; OPD, Drug Distribution in OPDs and Pharmacovigilance in new &amp; old OPD Blocks.</td>
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<td><strong>Prof. Sandeep Tiwari</strong></td>
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<td>Deputy Medical Superintendent, (Oxygen Supply)</td>
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<td><strong>Dr. Sumit Rungta</strong></td>
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<td>College of Nursing</td>
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<td>Officer In-charge, Electricity Division</td>
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<td><strong>Prof. Santosh Kumar</strong></td>
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<td>Faculty In-charge Transport Committee</td>
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<td>Faculty In-charge, UGC Cell</td>
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<td><strong>Prof Divya Mehrotra</strong></td>
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<td>Co Faculty In-charge, UGC Cell</td>
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<tr>
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<td>Department of Orthopaedic Surgery</td>
<td>Faculty In-charge, MCI Cell</td>
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<td><strong>Prof. Anil Chandra</strong></td>
<td>Department of Operative Dentistry</td>
<td>Faculty In charge, DCI Cell</td>
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<tr>
<td><strong>Prof. Vineeta Sharma</strong></td>
<td>Department of Orthopaedic Surgery</td>
<td>Faculty In-charge, Recruitments</td>
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<tr>
<td><strong>Prof. Manish Bajpai</strong></td>
<td>Department of Physiology</td>
<td>Faculty In-charge, Memorandum of Understanding (MOU) Cell</td>
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<tr>
<td><strong>Prof. Sandeep Bhattacharya</strong></td>
<td>Department of Physiology</td>
<td>Faculty Incharge – IT Cell</td>
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## Proctor And Board Members

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Name</th>
<th>Designation/Department</th>
<th>Mobile Number</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dr. R.A.S. Kushwaha</td>
<td>Chief Proctor</td>
<td>09415004675</td>
</tr>
<tr>
<td>2.</td>
<td>Dr. Urmila Singh</td>
<td>Add. Proctor</td>
<td>09415107054</td>
</tr>
<tr>
<td>3.</td>
<td>Dr. Navnit Kumar</td>
<td>Add. Proctor</td>
<td>09415083580</td>
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<td>4.</td>
<td>Dr. Rakesh Kumar Chak</td>
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<td>09453904150</td>
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<tr>
<td>5.</td>
<td>Dr. Nand Lal</td>
<td>Add. Proctor</td>
<td>09415085653</td>
</tr>
<tr>
<td>6.</td>
<td>Dr. Manish Bajpai</td>
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<td>7.</td>
<td>Dr. Rajiv Garg (Dy Dean Nursing)</td>
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<td>Dr. Anoop Kumar Verma</td>
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<td>Smt. Mariya Sonia T</td>
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## Anti Ragging Squad

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<td>5.</td>
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<td>34.</td>
<td>Dr. Balendra Pratap</td>
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<td>35.</td>
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KGMU ANTI-RAGGING COMMITTEE

1. Chairman - Honorable Vice Chancellor, K.G.M.U. U.P., Lucknow
2. Convener - Chief Proctor, K.G.M.U. U.P., Lucknow
3. Dean, Students' Welfare, K.G.M.U. U.P., Lucknow
4. Registrar, K.G.M.U. U.P., Lucknow
5. Dean, Faculty of Medicine, K.G.M.U. U.P., Lucknow
6. Dean, Faculty of Dental Sciences, K.G.M.U. U.P., Lucknow
7. Chief Medical Superintendent, K.G.M.U. U.P., Lucknow
9. Prof. Sunita Tiwari, Dept. of Physiology, K.G.M.U. U.P., Lucknow
11. Prof. Abbas Mahdi Dept. of Biochemistry, K.G.M.U. U.P., Lucknow
15. Prof. Anoop Kumar Varma, Head Dept. of Forensic Medicine, K.G.M.U. U.P., Lucknow
16. All Provost (Buddha, SP, TG, CV old & New, VL old & New, PG Ladies, RH)
19. Student Representatives (Current Anatomy & Physiology Secretary)

Information on Anti-ragging cell in Faculty of Dental Sciences

Anti-ragging squad has been constituted comprising of members of Proctorial board of King George's Medical University, to keep a regular check on ragging on daily basis (http://kgmu.org/antiragging.php). The members of the squad are appointed on duty on a roster basis in morning and evening shifts to serve the purpose. The anti-ragging squad has carried out innumerable raids daily including surprise raids to serve the purpose, in addition to CCTV camera supervision. Posters, banners with helpline numbers for the students have been displayed at all prominent places for helping the students. Since the formation of the squad, no anti-ragging cases have been detected, thereby ruling out possibility of actions taken against found guilty. No F.I.R. has been lodged by the institution as no case has been detected.

The students are free to access any of the members of the committee for reporting any ragging issues. The contact numbers of the members are freely available on the following link: (http://kgmu.org/antiragging.php).

Seniors students and fresher students are counselled pertaining to anti-ragging rules and punishments. An orientation programme for the fresher students is organized every year for the same. An undertaking is received from all the Students before admission to abide by the rules of the institution for anti-ragging issues and information of punishments for those found guilty. Similar undertaking is also taken by from the parents/guardians of the students.
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