DPU

Dr. D.Y. Patil Vidyapeeth, Pune

(Deemed to be University)

(Re-accredited by NAAC with a **CGPA of 3.62** on a four point scale at **'A' Grade)**
20th rank in **Medical Category and 46th rank** in **University Category** in India **(NIRF-2019)**
(Declared as **Category- I University** by UGC Under Grade Autonomy Regulation, 2018 (An ISO 9001 : 2015 Certified University)

Dr. D.Y. Patil Medical College, Hospital & Research Centre

Pimpri, Pune – 411 018

First Year MBBS

STUDENT'S HANDBOOK

Academic Year 2019-2020

DPU

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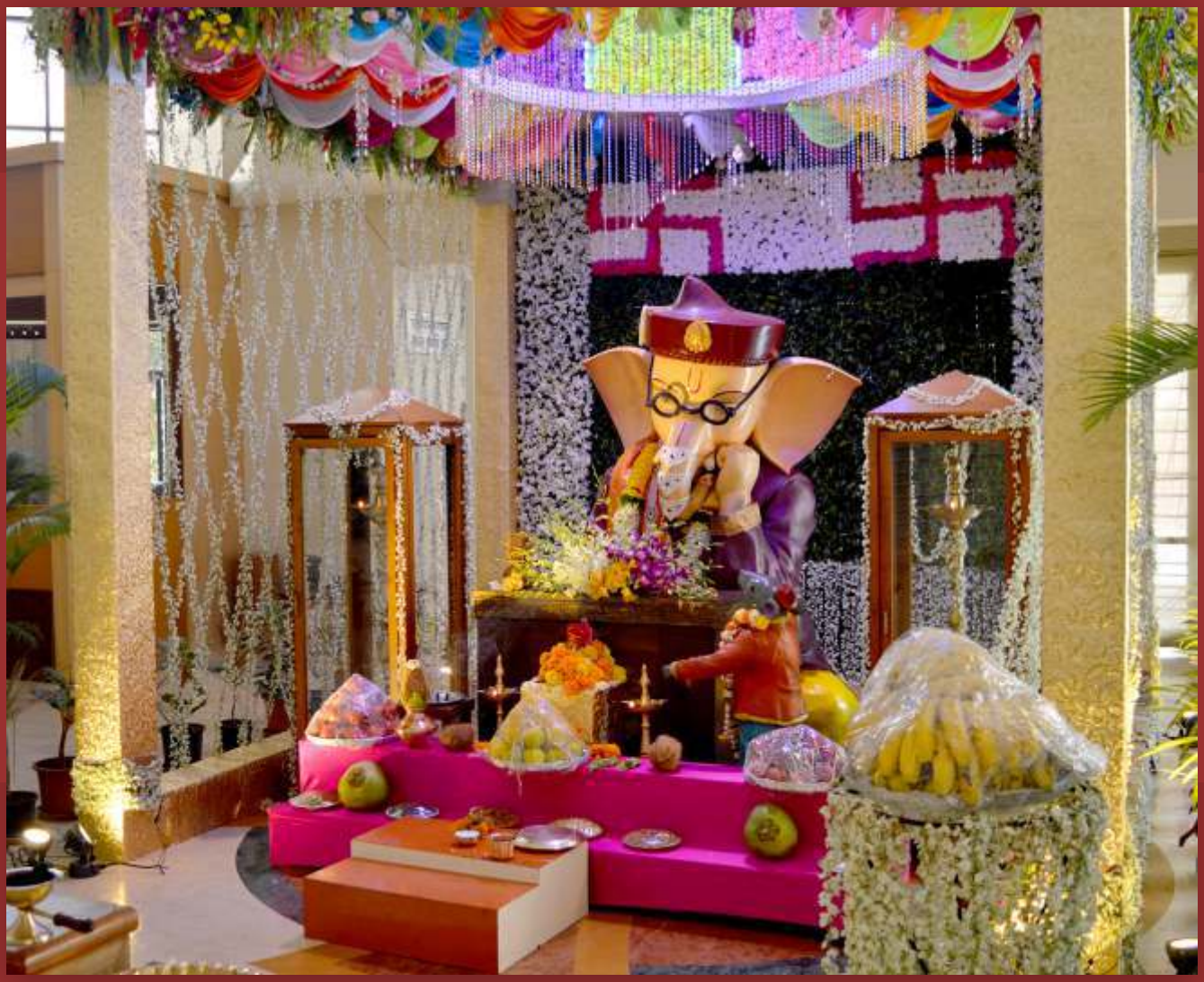
(Deemed to be University)

Dr. D. Y. Patil Medical College, Hospital & Research Centre

Pimpri, Pune-411018



Ganesh Puja 2019

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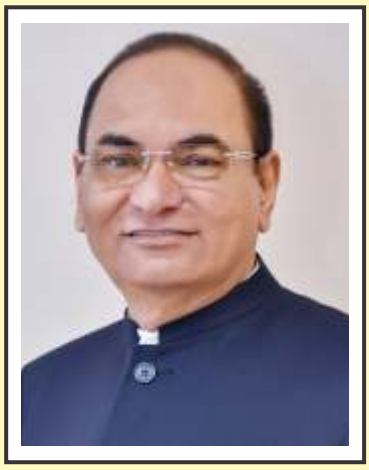
Chancellor's Message

Medical education is not a bed of roses. It involves a high level of commitment & regular & sustained work. I, therefore, exhort you to be committed towards this end right from today and remain so throughout your studies.



I welcome you into the precincts of Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune.

You are among the few fortunate students who have gained admission to such a prestigious College and I wish that you make full use of this opportunity to blossom into one of the best doctors from this College.

Please make use of the excellent infrastructure and highly qualified and committed faculty who spare no effort in classroom teaching as well as practical and clinical teaching.

Wish you best of luck.

Dr. P. D. Patil
Chancellor
Dr. D. Y. Patil Vidyapeeth, Pune

Vice Chairperson's Message

It is my privilege to share my views through this handbook, the best media to connect the young minds of the Nation. As aptly said by Robert Maynard Hutchins, "The objective of education is to prepare the young to educate themselves throughout their lives".

It gives me immense pleasure to pen a few lines of greetings and good wishes for the 'Hand Book' being published by the College.

In keeping with its mission of academic excellence,

Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pune is always continuing its developmental activities, in all fronts, in a bid to create world class Medical College. This is reflected by the consistent expansion of infrastructure, faculty, research contributions and national and international linkages and collaborative initiatives, signaling out globally that College is focused in its activities with its thrust being on developmental activities.

I hope this handbook will cover all aspects which would help students to nourish their knowledge.

I extend my good wishes for the continued growth and good luck in your future endeavour!

Dr. Bhagyashree Patil
Vice Chairperson
Dr. D. Y. Patil Vidyapeeth, Pune

Vice Chancellor's Message

Dear Students,

Since its inception in 2000, DPU has carved a niche amongst the education fraternity in general and health science education in particular in Maharashtra and across India! Built on a sprawling campus spread over 50 acres, DPU has excellent and state-of-the-art infrastructure facilities conducive to higher and professional teaching-learning environment, research and outreach programs.

The main aim of DPU is to impart quality with a vision of quest for excellence, which is at par with international standards. To make it possible the curriculum is designed with hi - professionaladroitness fulfilling specific goals of health sector. Moreover, teams of dedicated and experienced faculty are constantly engaged in the augmentation of student-centric learning environment through innovative pedagogy. They impart knowledge to the students that has been ingrained in the foundation of ethical and moral values and at the same time assist in boosting their leadership qualities, research culture and innovative skills.

Dr. D Y Patil Vidyapeeth has been re-accredited by National Assessment and Accreditation Council (NAAC), Bangalore with a CGPA of 3.62 on a four point scale at 'A' Grade. The Vidyapeeth has also achieved a higher position in the Institutional Ranking Framework (NIRF), conducted by Ministry of Human Resource Development (MHRD), New Delhi. It has achieved 18th rank in Medical Category, 52nd rank in University Category and 79th rank in Overall Category in India in NIRF 2018.

I welcome you all to this Institution of learning and assure you, that there is no one way to experience DPU as there will be many choices before you. You may want to start off with the familiar patterns in a new place, but, I want to remind you that your past does not define you. At DPU, you will write your own story, and in the process, you will help write the next chapter of DPU's story as well. Best of luck!

Dr. N. J. Pawar
Vice Chairperson
Dr. D. Y. Patil Vidyapeeth, Pune

Principal Director & CEO's Message

Dear Students,

Dr. D Y Patil Medical College, Hospital & Research Centre, Pimpri, Pune has been at the forefront of providing professional medical education in the country. Known for providing quality education, the institution has been consistently ranked among the top medical institutions in the country.

Our endeavour has always been to provide the best to the students and to prepare them to take up the challenges of tomorrow so that when they come out of the institutions they are competent to handle the responsibilities of the medical profession. The institution has been attracting numerous students from India and abroad. The dedicated and skilled faculty, excellent infrastructure, library facilities, museums, laboratories and skill labs, provide hands-on experience to the students. Moreover, the campus provides excellent opportunities for the student community to interact with students of other professional disciplines and gain knowledge about different cultures, facilitating their overall development. The Hospital has excellent patient care facilities and provides the students with good opportunities to learn bedside manners and clinical skills.

Students who have graduated from this institution have been successfully practicing medicine in various states of the country and across the world.

True to our mission, we are dedicated to training competent, compassionate and caring physicians through excellence in teaching, patient care and medical research.

Dr. Amarjit Singh
Principal Director& CEO
Dr. D. Y. Patil Vidyapeeth, Pune

Director Academics's Message

The student handbook is intended to provide a brief, concise and understandable overview of some of the most important opportunities and expectations that anchor on progress.

I extend a very warm welcome to you all! I am glad that you have taken the right decision of joining Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pune for your further studies. I am sure that it will prove to be an intense, challenging and rewarding learning experience for your professional and personal growth.

First year students, during the next few months you will be transitioning into this new journey in your lives socially, intellectually, emotionally, spiritually, and psychologically. We are here to support and encourage you.

I wish you good luck and success in your Career.

Dr. P. Vatsalaswamy
Director Academics

Dean's Message

It gives me immense pleasure to pen a few lines of greetings and good wishes for the 'Hand Book' being published by the College. I hope this publication will cover all aspects which would help students to nourish their knowledge. Yes, I firmly believe "Knowledge is Power".

You will be proud to know that this institution has made legendary strides since its inception in 1996. It has achieved phenomenal success in a very short time.

Academic excellence and professionalism displayed by the Graduates and Postgraduates from this College have won them accolades globally. The College strives hard to help you to achieve your goal of becoming dedicated and compassionate Doctor.

I wish you very happy times at this great temple of learning.

Dr. J. S. Bhawalkar
Dean

DPU

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THE VIDYAPEETH OFFERS FOLLOWING PROGRAMMES THROUGH ITS CONSTITUENT UNITS

Dr. P. D. Patil
Chancellor

The mission of the Vidyapeeth is to
Contribute to the socio-economic & ethical development of the nation, by providing high quality education through instructions that have dedicated faculty & state-of-the art infrastructure, and are capable of developing competent professionals & liberal-minded citizens.
DPU is endeavoring to groom competent professionals in diverse fields. With a focus
on experimental learning, our institutes enable students to apply & practice skills in real life situations, making them better Employable in the current global scenario

Salient Features:

- Dr. D. Y. Patil Vidyapeeth, Pune is vibrant academic institution providing of high quality education and training in health care, biotechnology and management.
- The overall ambience in the campus reflects visionary leadership and cordial and inclusive approach in the functioning of the Institution.
- Classroom teaching is supplemented by interactive learning through seminars, group discussions and encouraging e-learning and use of on-line resources.
- Medical College Hospital and Dental College clinical laboratories, OTs, ICUs etc. equipped with the state of hi-tech equipments and machines for advanced care and research and world class library.
- Centre of Excellence for clinical trials by SIDA, WHO, ICMR, DBT etc.
- Vidyapeeth promotes various outreach activities in areas ranging from health & hygiene to environmental consciousness, community orientation, gender sensitizations and women empowerment through NSS.
- Environment friendly — green policy adopted.
- State of art Dental Implant Center, Regenerative Lab. and Molecular Diagnostic Lab.
- Collaboration with eminent national & international universities, institutions & Organisations.
- Vision 2025: "To develop a knowledge centre which will be recognized for its academic pursue not only in India but also globally".
- Academic-industry linkage to develop indigenous technologies & promote skill-based training.

Name of the constituent unit	Programmes
Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pimpri, Pune	• **MBBS** • **M.D**. (In 15 specialties) • **M.S.** (In 5 specialties) • **M.Sc.** (In 5 specialties) • **M.Ch.** (Neurosurgery), (Urology), (CVTS), (Plastic Reconstructive Surgery) • **D.M.** (Nephrology), (Cardiology), (Neurology) • **M.P.H** (Master in Public Health)
Dr. D. Y. Patil Dental College, Hospital , Pimpri, Pune	• **BDS** • **MDS** (9 specialties) • **DIPLOMA** in Dental Mechanics
Dr. D. Y. Patil Biotechnology & Bioinformatics Institute, Tathawade, Pune	• **B.Tech** (Biotechnology) • **B.Tech** (Medical Biotechnology) • **M.Tech** (Biotechnology) (Integrated) • **M. Sc.** (Biotechnology)
Global Business School & Research Centre, Tathawade, Pune	• **B.B.A** • **M.B.A**
Dr. D. Y. Patil College of Nursing, Pimpri, Pune	• **B. Sc.** (Nursing) • **P.B.B.Sc** (Nursing) • **M.Sc** (Nursing) (in 4 specialties)
Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune	• **BPT** • **MPT** (in 8 specialties)
Institute of Optometry & Visual Sciences, Pimpri, Pune	• **B. Optom.** • **M. Optom.** (in 2 specialties)
Institute of Distance Learning, Pimpri, Pune	• **MBA (2 Years)**
Dr. D. Y. Patil College of Ayurved & Research Centre, Pimpri, Pune	• **BAMS** · **M.D.** (in 11 specialties) • **M.S.** (in 3 specialties)
Dr. D. Y. Patil Homoeopathic Medical College & Research Centre, Pimpri, Pune	• **BHMS** • **M.D (in 3 specialties)**
• **Ph.D. in all Faculties** (Medicine, Dentistry, Nursing, Physiotherapy, Biotechnology & Bioinformatics, Management, Ayurved and Homoeopathy)	

Vision 2025: "To develop a knowledge centre which will be recognized for its academic pursue not only in India but also globally".

DIPLOMA/ CERTIFICATE/ FELLOWSHIP PROGRAMMES IN THE CONSTITUENT COLLEGES / INSTITUTES

Faculty of Medicine

- Fellowship in Neonatology
- Post Doctoral Fellowship in Seizure Disorders
- Fellowship in Pediatrics Neurology
- Fellowship in Paediatric Critical Care
- Fellowship in Musculoskeletal Imaging
- Fellowship in sport Injuries
- Fellowship in Breast Imaging
- Fellowship in Clinical Psychology
- Fellowship in Minimal Access Surgery (Basic)
- Fellowship in Paediatric Anasthesia
- Fellowship in Neuro-Anaesthesia and Neuro-Critical Care
- Fellowship in Pain Management
- Fellowship in Cardiac Anaesthesia & Critical Care
- Fellowship in Programme in Gastro-Intestinal Tract Radiology
- Fellowship in Immunology
- Fellowship in Molecular Medicine
- Fellowship in Transfusion Medicine
- Fellowship in Rheumatology

Certificate Courses after MBBS/MD/DNB

- Certificate Course in Adolescent Health
- Certificate Course in Clinical Echocardiography
- Certificate Course in Karyotyping
- Certificate Course in Sport Injuries
- Certificate Course in Organ Transplant Coordinator
- Certificate Course in Mgt of High Risk New Borns

Certificate Courses after 10+2/ Graduation

- Certificate Course in EMG/NCS Technician
- Certificate Course in EEG Technician
- Certificate Course in Medical Record
- Certificate Course in Urology Technician OT Assistant
- Certificate Course in X-Ray Technician
- Certificate Course in Advance Microbiology Lab Technician
- Certificate Course in Paramedical Hospital Services
- Certificate Course in CT Scan Technician
- Certificate Course in MRI Technician
- Certificate Course in Medical Assistant
- Certificate Course in Plaster Technician
- Certificate Course in Central Sterile Services

Faculty of Dentistry

- Fellowship in Dental Implantology
- Certificate Course of Geriatric Dentistry
- Certificate Course in Basic Oral Implantology

Faculty of Nursing

- Certificate Course in Critical Care Nursing
- Short Term Course of Home Health Worker
- Short term Course of Diet Assistant

Faculty of Allied Medical Sciences

- Post Graduate Diploma in Manual Therapy
- Faculty of Biotechnology
- Certificate Course in Entrepreneurship Development

Faculty of Ayurved

- Diploma in Yoga
- Certificate Courses in (Garbhasanskar, Panchakarma Therapist).
- Basic Short Term Courses in (Vadatu Samskrutam Cha Samhitayaha Avbodhanan, Ayurveda, Marma Sharir, Ayurved Aahaar, Ayurveda Panchakarma)




www.medical.dpu.edu.in

Admission Procedure

The admissions to MBBS course is done on thebasis of the merit list as ascertained from the performance of thecandidates in National Eligibility cum Entrance Test 2019 – 20conducted by National Testing Agency (NTA), Delhi and CentralCounseling is done by **DGHS** New Delhi. (MCC)

NEET- UG is an eligibility-cum-ranking examination prescribedas the single entrance examination to MBBS course as per Section 10 (D) of the Indian Medical Council Act,1956. No other entrance examinationis valid for entry to MBBS Course.National Testing Agency(NTA) is notified by the Ministryof Health and Family Welfare, Government of India to conduct **NEET-UG** on an All-India basis.

NRI/PIO/FN Category : NRI - Non Resident Indian; **PIO** - Person of Indian Origin; **FN** - Foreign National

An NRI is a person who is 'not a resident' or who is 'not ordinarilyresident'. A person is treated as 'not ordinarily resident'

(i) If he / she has been resident in India for less than 182 days in the year preceding the date of application; or

(ii) (ii) If he / she has been inIndia for less than 365 days during the four years immediately preceding the date of application.

A PIO is a person having foreign citizenship (except Pakistan andBangladesh) within NRI status, but who holds a foreign passportat the time of application or at the time ofconsideration of admission and during the period of his / her studyand whose one / both parents or anyone / both grandparent(s) is /are (or was / were), citizen(s), of India by virtue of the provisionsof the Constitution of India or Section 2(b) of the Citizenship Act1955 (Act. No. 57 of 1955).

An FN is a person having citizenship of a foreign country (anycountry other than India) and not having the status 'NRI' and / or'PIO'

Eligibility : Indian Nationals, Non Resident Indians (NRI's), OverseasCitizen of Indian (OCI's), Persons of Indian Origin (PIO's) &Foreign Nationals are eligible for appearing in theNATIONAL ELIGIBILITY CUM ENTRANCE TEST(UG)

The Birth Certificate indicating name of the candidate,Secondary School Certificate i.e. SSC or equivalentexamination certificate or School Leaving Certificateendorsing the date of birth will constitute a valid proof.

The candidate must have passed the qualifying examinationi.e. Higher Secondary Certificate (HSC/12th Standard) orequivalent examination with English, Physics, Chemistryand Biology (Botany & Zoology).

A candidate belonging to Open Category must have obtainednot less than 50% (i.e. 150 out of 300) marks in Physics,Chemistry and Biology taken together at the HSC (orequivalent) Examination. A candidate belonging toconstitutional reservation and constitutional reservation withPerson with disability claim must have obtained not less than40% (i.e. 120 out of 300) marks in Physics, Chemistry andBiology taken together at the HSC (or equivalent)

Examination, Person with disability candidate in Generalcategory must secure not less than 45% marks (i.e. 135 out of300) in Physics, Chemistry & Biology (PCB) taken togetherat the HSC (or equivalent) Examination.

NEET eligible candidate on the basis of All India Rank andPercentile of Marks obtained in the NEET (UG)

OUR VISION

Single window delivery of health care services Total quality management in service & education Unique work culture in alleviating human sufferings to train general, specialized, allied & supportive professionals to meet regional&nationalhealthcareneedsWorkrelentlesslyto contribute to global health care, knowledge & skills Be efficient, effective, community acceptable, and Excel in service, education & research to impart knowledge & interact with organizations of similar interest to induce paradigm shift in Community attitude that many human diseases are Preventable, curable & affordable Foster global competencies, in culcating value System among learners Promote technology of relevance Reach the unreachable with awareness, education & service Serve the under served **Excellent health care education & service systems For community development**

Vision–2025

"To develop knowled gecenter this will
be recognized for its academic pursuit
not only in India but alsoglobally”

OUR MISSION

- Learner centered health care education
- Community oriented research
- Patient centeredservice
- Strong community relationship
- Community oriented extension services
- Referral service center
- Serve the underserved
- Professionalism in education, service and
- Management to meet regional and national needs
- Strategic future oriented planning
- Inter organizational linkage
- Unique organizational culture
- Excellent health care education & service systems for community development

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GRADUATE ATTRIBUTES

- Communication skills
- Enthusiasm for research
- Problem solving skills
- Critical thinking
- Exemplary leadership
- ICT awareness
- Social commitment
- Respect for cultural differences
- Global competencies

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MBBS PROGRAMME OUTCOMES

No.	By the end of the programme , the MBBS Graduate will have / be:
PO 1	Knowledge and Skills
PO 2	Planning and problem solving abilities
PO 3	Communication
PO 4	Research Aptitude
PO 5	Professionalism and Ethics
PO 6	Leadership
PO 7	Social Responsibilities
PO 8	Environment and Sustainability
PO 9	Lifelong Learner

Dr. D. Y. Patil Vidyapeeth, Pune
Goals and Objectives

- To create institutions for higher education at undergraduate, postgraduate and research degree levels as per the need of the society, in the areas of health, engineering and technology; arts; fine, performing- and applied arts, science, commerce, education, architecture, pharmacy, management, hotel management and catering technology, travel and tourism, finance, law, agriculture, co-operation, rural development, and such other branches or specializations of learning, as may be considered appropriate from time to time, fully confirming to the concept of the University, namely, University Education Report (1948) and the Report of the Committee on Renovation and Rejuvenation of Higher Education in India (2009) and the Report of the Review Committee for Deemed to be Universities (2009).
- To carry out instruction and training, distinguish able from programmes of ordinary nature, for making distinctive contributions in the areas of specializations as may be determined from time to time.
- To create or establish institutions for high quality teaching and research; for advancement of knowledge and its dissemination through various research programmes under taken in-houseby substantial number of full time faculty/ research scholars in diverse disciplines.
- To conduct all the activities, programmes, courses of studies, research, development, examinations, evaluations and those related to smooth functioning of the Institute
- To create, conduct and carry out instructions and training in any of the above-mentioned areas, as may be determined from time to time by formal, non-formal,distance, correspondence, open and/ or any other mode of learning or instruction.
- To provide for field research, extension programmes and extra-curricular and/ or extra-mural studies that contributes to the development of society.
- To establish and conduct the colleges and institutions of higher education and of specialized studies, in India or abroad, independent lyorin collaboration with other organization or organizations.
- To promote curricular, co-curricular activities, sports activities, etc. for the over all personality development of the students.
- To extend the benefit of knowledge and skills for the development of individuals and society by associating it self with local and regional problems and development.
- To establish and conduct centres of social changes and extension, provide for health care, promote awareness about personal, community and social health, hygiene and well-beingparticularly amongst villagers and industrial workers.
- To make special efforts to promote national integration and preserve cultural heritage, in general, and of Indiain particular.
- To generate, promote and preserve a sense of self-respect and dignity among citizens in general, and among weaker sections of society and women in particular.
- To promote freedom, equality, social justice and secularism as advocated and enshrined in the Constitution of India, and to promote the spirit of intellectual inquiry, pursuit of sustained excellence, tolerance and mutual understanding.

- To be a catalytic agent in socio-economic transformation by promoting basic attitudes and values of essence for national development.
- To provide for administrative and financial support, infrastructure and other services for effective and efficient management of the activities of the educational institutions.
- To modify, amend, amplify, extend, expand or abridge, delete any of these provisions in order to improve, encompass any of the aims and objects in order to serve the Nation and the society better.
- To undertake such other actions and do such other things as may be necessary or desirable for the further ance of the aims and objectives enumerated in these at presentor as may be expedient in future.

Membership – National and International bodies

- Association of Indian Universities (AIU), New Delhi
- Association of Commonwealth University (ACU), UK
- International Association of University Presidents (IAUP), US

Recognitions

- Re-Accredited by National Assessment and Accreditation Council (NAAC) with a CGPA of 3.62 on a four point scale at "A" Grade.
- ISO 9001:2015 certified
- NIRF - 18th All India Rank 2018

International Research Collaborations:

- International assignments for Teaching, Research & Consultancy and for exploring possible exchanges are a regular feature at DPU. In order to expand students' horizons and generate job opportunities, DPU has collaborated with many reputed institutions worldwide. The International linkages of DPU have help edit in drawing upon the wisdom built up at the partner institutions of repute.
- The Department of Global Health Education, Johns Hopkins University has sent their students in batches to the medical and nursing institutes of DPU to provide global health training to their students at DPU by fostering a collaborative learning environment under their Global Heath leadership programme. Last year a group of engineering and medical students from John Hopkins University were with us to discuss the development of innovative and low cost patented medical devices for developing countries.
- DPU is starting an inter-disciplinary collaborative research project with Johns Hopkins University on "Bacterial and antimicrobial resistance pattern in Pune, India in febrile illness" which will involve the Departments of Microbiology along with the Department of Medicine & Department of Paediatrics of our Medical College.
- Harward Medical School Centre for Global Health Diversity Dubai "Assesing Pathways to care among tuberculosis (TB) and drug-resistant tuberculosis (DR-TB) patients in
- Pune City, India; a Biosocial inquiry" and TB-
- DM international collaboration.
- Survindra Rajabhat University Thailand has been assigned fo r Research and collaboration with DPU
- Four students from Biotechnology Institute of DPU will be going to University of Skovde for the autumn/spring semester commencing2017-18 to perform research project under the bilateral agreement signed between DPU and University of Skovde Sweden.

- Linnaeus–Palmeteachersexchange program between DPU and University of Skovde, has been granted by the Swedish Council of Higher Educations, under which two faculty members from DPU will be going to University of Skovde, for teaching for a period of one month and similarly two faculty members from University of Skovde, Sweden will be involved for teaching in DPU in the autumn semester commencing in August2016
- The Department of Physiology in collaboration with Diabetes & Islet Biology Group of University of Sydney. Australia is performing collaborative research under nutrition & Pancreaticre generation.
- The Dental College of DPU has initiated number of aninter-disciplinary collaborative research projects with Biochorizon, USA on use Bio active Glass & Freeze Dried Bone Allograft in different periodontal pathologies and surgeries.
- The Dental College of DPU under aMoU with University of Hong kong, faculty of Density, is pursuing a joint collaborative research project on“Microbial & Host Derived bio markers in PeriIm plant mucos it is in relation to periodontal status.”

Highlights of the University

- Highly qualified, experienced and competent senior faculty as per regulations of the statutory bodies over and above the prescribed strength to lead the departments and institutions.
- Regular up - gradation of Curriculum.
- Encouragement for research activities with emphasis on development of a scientific temper among undergraduates as well.
- Well-stocked Central Learning Resource Centre with latest reference Books & Journals both in print and electronic form.
- State-of-the-art infrastructure.
- Continuing Education Programmes.
- Latest teaching-learning facilities including Tele-conferencing facility and other modes of e-learning.
- Alumni Association.
- All-roundprofessionaldevelopment.
- Extra-Curricularactivities.
- Transportation facility.

Information about the College and Hospital

Dr. D. Y. Patil Medical College, Hospital and Research Centre Pimpri, Pune-18 established in 1996, received recognition of the Medical Council of India(MCI) for the award of MBBS degree from its very first batch. Dr. D. Y. Patil Vidyapeeth, Pune has been accorded the status of University under section 3of the UGC Act, 1956,vide notification No.F.9-39/2001-U.3 dated

11th Jan.2003 of the Government of India. This College is the first one in the state of Maharashtra to have250 seats for the MBBS Course.

Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pimpri, Pune – 411018

Dr. D. Y. Patil Vidyapeeth Pune is ranked among top 10 Medical Universities in the Country: survey conducted by: India Today (July11, 2016) &Top 2nd Private University & again in top5 medical Universities in2017.

DPU Pune is Re-Accredited by NAAC in 2015

'A'Grade: withCGPA of3.62onafourpoint scale, ISO 9001:2015 Certified Vidyapeeth in 2015

National Institutional Ranking Framework

(NIRF) 2019, Conducted by MHRD

- 70th in Overall Category in India
- 46th University in the Country
- Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pimpri, Pune is 20th in Medical Category in India

In 2003,the college was permitted to teach post-graduate courses in a couple of subjects. In June 2005,the college was sanctioned an intake of 81 students in postgraduate degree and diploma courses and presently there are 457 PG and27 Super speciality Students in the following 25 subjects: General Surgery, Obstetrics &Gynecology, Orthopedics, Ophthalmology, E.N.T. (OtoRhino Laryngology) General Medicine, Pediatrics, Anesthesiology, Psychiatry, Radio-diagnosis, Respiratory Medicine, Dermatology, Venereology and leprosy, Pathology, Community Medicine, Pharmacology, Microbiology, Anatomy, Physiology, Biochemistry and Emergency Medicine, Neurosurgery, Urology and Nephrology, Cardiology and Neurology, Plastic Re-constructive Surgery.

All the courses conducted at this College have been recognized by Medical Council of India.

The recognitions and expansions granted by the MCI,UGC, MHRD andby the Ministryof Health &Family Welfare, Government of India are the result of visionary guidance and whole hearted support of our Chancellor the efforts put in by the faculty and the excellent facilities like spacious buildings, measuring 4,50,000 sq.ft. fully air conditioned lecture halls with modern amenities, well-equipped laboratories, well-stockedlibrary,a hospital with super-specialty facilities such as Dialysis, MRI, whole body CTS can, DSA, Color Doppler, ICUs and equipment required for Neurosurgery, cath Lab, Cardio thoracic surgery etc.

Besides regular lectures and practical, the college gives due importance to research. Several research proposals of post-graduate students and of the faculty members are approved and funded by National funding agencies, such as Indian Council of Medical Research(ICMR),DSTas well as Dr D. Y. Patil Vidyapeeth, Pune. The involvement of the undergraduate in research activities is note worthy. The college boasts of a significant number of ICMR short term student projects every year. In fact, more than100 projects have been completed in last 5 years by our undergraduates.

The Campus

Lecture Halls – Empowering with knowledge : The college has eight well laid-out air conditioned lecture halls; five with seating capacity of 300 each. The desks are well spaced out and halls are air conditioned, well-lit and have fine acoustics. Each hall has the latest audio-visual teaching aids, including e-learning facilities.

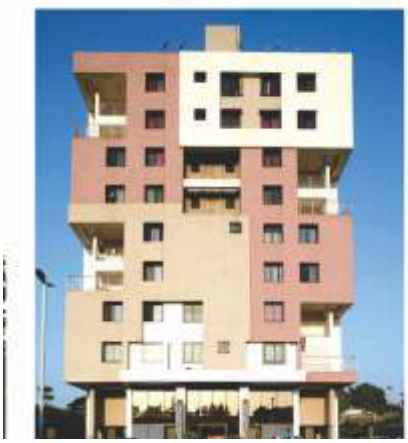
College Campus - Learning with Spirit : Dr. D. Y. Patil Vidyapeeth and Dr. D. Y. Patil Medical College, Hospital and Research Centre are located in the same sprawling campus at Pimpri, Pune. The college building is a masterpiece of architecture and has state-of-the-art facilities that are in tune with the best in the world. The college building basks in fine aesthetics and is impressive. It has a mural of Lord Dhanvantari on its façade and the magnificent fibre glass dome that can be seen from miles around.

The facilities

Auditorium – Inculcating Versatility : The Auditorium is centrally air-conditioned and is fully equipped with audio-visual facilities. It has a seating capacity of 250 and is being extensively used for seminars, symposia, guest lectures, etc.

Learning –Resource Centre : The college has an excellent world class central library facility. It has a total floor area of 5000 sq.m with a provision for a separate reading room for the teaching staff & spacious reading halls to accommodate over 750 students. The total collection of the library is more than 27872 books. The Library subscribes to most of the National & International Journals required for the undergraduate and post-graduate students and faculty apart from 2047 online journal. Library is equipped with 52 computer terminals with IT facilities, so that students can access more than 2047 online journals,218 physical hard copy journals are available of 106 are national and 112 are international. 14 magazines & 1244 digitized collections are also available in Central library. In addition to the central library facility, each Department has its own Departmental Library. The reading Room of the central library is kept open for 16 hours a day. The central library has been provided with Wi-Fi internet facility & students & the faculty have open access to this facility. As the College & Hostels are 'Wi-Fi' enabled, the students can access information from any point any where.

Hostels - Home Away from Home : The College has well-furnished boys and girls hostels in the campus. The hostel rooms are well furnished. Round the clock security is provided. There is a cafeteria attached to each hostel. The hostels have mess facility, reading rooms, recreational areas with T. V. and indoor game facilities like those of carom, table tennis, etc. These hostels are managed by wardens and rectors. The hostels have a well- equipped gym under the super vision of a physical trainer.



The International student experience

Ever since its inception, International students have been apart of Dr D. Y. Patil Vidyapeeth, Pune drawn from countries all over the globe. Students have found the University a home away from home. Separate comfortable housing is available for International students. Broad band connectivity ensures that the students are in touch with only a click. An International student counsel or provides individualized attention to the need of international students of the mouse.

Student Counselling – Parental Care

Students admitted to the first year MBBS are from 10+2 stream and there is a structural difference between the school and college education. There fore, for smooth integration, group of students are allotted to a faculty member who acts as their Mentor during the course. Regular counselling sessions are arranged for the fresh students. Senior members of the faculty look after this activity. Every attempt is made to ensure that students feel confident and fully secure and the change over is smooth.

Student Personality Development

Along with the academics the students' also participate in Social events, Annual Cultural, Literary, Art events and Sports, research activities, Conferences, personality Development sessions etc.

Parent Teacher Organization-Teaming Up

Parent Teacher Organization is a unique feature of our College. Parents and teachers interact with each other regularly to ensure the well being of their wards. College maintains regular communication with parents informing about the progress of their wards. This is another step to wards helping the student adjust to a new environment. Parents, being one of the importants take holders provide us with valuable in puts from time to time.

Departments of the College

The College has a comprehensive set of departments made for complete learning.

The departments have:

1. Highly qualified and experienced staff as per the norms laid down by the Medical Council of India(MCI).
2. Museums with multitude of specimens for student study and reference.
3. Well-stockeddepartmental libraries with latest reference books and journals.
4. OHP, LCD projectors,35 mm Slide projector, Computers and CD-ROMs.
5. Well planned laboratories with all modern equipments.
6. Skills Lab.
7. Research Laboratories.

Institute Journal

Institute is publishing peer reviewed journal namely Medical Journal of Dr. D. Y. Patil University [MJDRDYPU] with print ISSN:0975-2870;E-ISSN 2278-7118 which is indexed with or included in DOAJ, Index Copernicus, Indian Science Abstracts.

The Faculty

The college has a team of dedicated and highly qualified faculty in all specialties with vast teaching experience both at undergraduate and postgraduate levels. The faculty is involved in continuous, relevant and innovative research programmes. Innovative teaching learning modules are introduced to enhance performance of the student. They are also invited as guest speakers at many well known institutions in the country. Senior members of

the teaching staff are invited as paper setters, examiners and moderators by various universities allover India. The college deputes its faculty to attend workshops, seminars, conferences, symposia, CME etc., frequently. The quality of teaching is evident from the excellent results of the college.

Feedback DPU

DPU has fine tuned its 360° feedback mechanism on curriculum aspects that involves students, peers and alumni. Such feedback from stake holders and its analysis, both manual and on line has given tremendous impact on the revision of curriculum design. The corrective measures and appropriate actions have been taken to up grade the curriculum and reconstructing of syllabi, resulting in expected learning outcome.

The Hospital

A good hospital gives any medical College a fine learning reputation. The hospital provides ample and varied clinical material to the students, enabling them to be conversant with multitudes of ailments, infirmities and diseases and treatment there on.

Dr. D. Y. Patil Medical College, Hospital and Research Centre, Pimpri, Punecatersto clinical services through ambulatory, indoor and outreach components.

The Hospital runs ambulatory services through OPDs dedicated to21 branches, of which 5 are Medicine & allied,5 are Surgery & allied and 11 are Super specialty subjects including Anesthesiology, Radiology & Emergency Medicine.

All OPDs are specious with examination rooms and equipped with relevant diagnostic equipments of latest and global standards, upgraded from time to time.

The indoor facility of hospital has 61 Modern General Wards with special services and Unique designs and décorin strict adherence to MCI specification. A special toilet for physically disabled patients in every ward as per Supreme Court of India directives and 1510 beds dedicated to different specialities in proportion to the number of under graduation, post-graduation and super speciality students studying for MBBS, MD,MS,M.Ch. and DM. The number of students is 250 admissions per year for MBBS, 171for Post-graduationand18for Super specialization. There arefacilities for PhD in all subjects.

For critical care services, we have Intensive Care Units (ICUs) equipped with monitors, ventilators and the modern medical equipment as the services demand.

The Medical ICU with 15 bed scapacity (10ICU and 5 ICCU), Surgical (10ICU) with (5 Neurosurgery and 5O BGY), 35 beds capacity for Pediatrics (15 PICU & 20 NICU), 7 [RICU] with all sophisticated and modern facilities are available under the charge of highly qualified and experienced Doctors. Apartfromit,66ICU beds for various specialties are available. Hospital has 18 Modular operation theaters including MAQUET and DRAGGER operation theatre systems. **The latesta ddition is DAVINCI 4th generation Robot for Robotic Surgery.** The modular operation theatre system is supported by state of art CSSD besides 7 operation theatres and one in Emergency Medicine department in the old building with CSSD. More than 20ICU beds are ready to care for the increasing demand of sophisticated ICU facilities for coronary interventions and 8 for recovery of cardio vascular Surgery and Thoracic Surgery patients. Two Cardiac Cath labs are there for Cardiac intervention with state of art infrastructure.

The ultra modern ventilators and multi parametric monitors with central monitoring system are available. Highly trained and experienced staff and nurses are available.

The Department of Radio-diagnosis and Imaging is very well equipped and is one of the best Centers in Pune. Inabid to provide better health care facilities to the patients and society, the hospital has Siemens Avanto1.5 Tesla Magnetic Resonance Imaging (MRI) machine with matrix and has state-of-the-artlatest model of Siemens3Tesla Veda MRI that has been installed recently.

The Department of Radio-diagnosis, incorporating the newer ideas and mostup-to-date features, has facilities, DSA and two CT Scanners. A digital Mammography unit helps in early diagnosis and management of breast disease. The Department also has High Resolution Colour Doppler and Ultrasonography units with all the latest probes. Digital Radiography, Convention a lX- ray units and image intensifier provide the ultra modern radiography setup.

For emergency care, the Department of Emergency Medicine is highly equipped with 30 beds running 24x7 manned by specialists, assisted by 10 doctors and support staff.

There is a haemodialysis unit with 20 dialysis machines running round the clock.

Latest Addition–3 Tesla Vida MRI Scanner,

Other Facilities

- Well-equippedclinicaland non-clinical departments, The following have 24 X 7 services:

I) Radio Diagnostics

ii) Highly equipped CCL Lab

iii) Blood Bank

iv) Human Milk Bank

v) Well Stocked Pharmacy

vi) Ambulance Services

- Modern and supportive diagnostic services
- Two CSSD's
- Emergency and trauma care.
- Geriatric Centre
- Endoscopy procedure slike gastroscopy, colonoscopy, cystoscopy, bronchoscopy, thoracoscopy, etc. are performed regularly for persuasion of research.
- Organ Transplant Programme
- MIS
- Laundry, Food & Beverages Services

Expansion projects in progress

- Developing super specialty medical services in 6 disciplines every year to achieve a target of 50 such services in 10 years, kidneys transplants and start liver transplant.
- Expansionofhaemodialysisserviceswith25 machines with an objective to serve100 dialysis per day.
- IVF centre
- Day care surgery services
- Bone marrow transplantation services
- Epilepsy surgery centre
- Multi-disciplinarytumorclinicwithspecial attention to breast disease
- Simulator/skill laboratory

Museums

Anatomy Museum

Pathology Museum

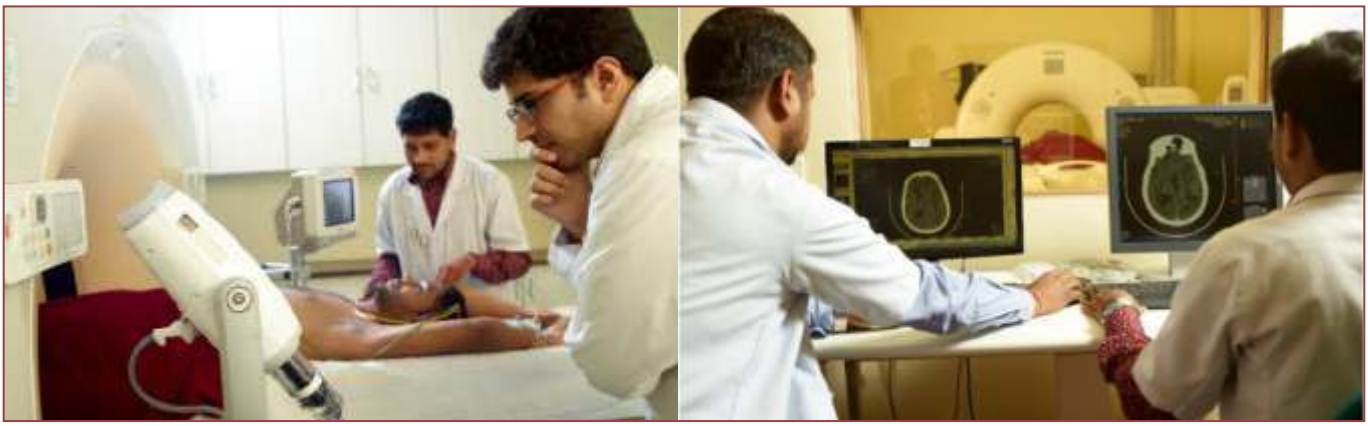
Community Medicine Museum

HI-Tech Hospital

OPD, ICU'S, MRI, Operation Theatres

O. P. D.

ICU's



MRI

Operation Theatres

Infrastructure

Students' Lounges

MICU

Spacious Corridors

College Canteen

College Canteen

Learning Resource Centre or Central Library

Discipline and conduct of the student

1.1 Obligations of the Student

1.1.1 Conduct himself / herself properly

1.1.2 Maintain proper behavior.

1.1.3 Observe strict discipline both with in the campus &outside of the Institution, and also in Hostel.

1.1.4 Ensure that no act of this consciously or unconsciously brings the Institution or any establish mentor authority connected with it into disrespect.

1.2 Anyact /soft he student which is contrary to the clause(1), shall constitute misconduct and /or indiscipline, which include any one or more of the acts jointly or severally, mentioned here in after;

1.2.1 Any act of the student which directly or indirectly causes or attempts to cause disturbance in the lawful functioning of the Institution.

1.2.2 The student who is repeatedly absent from the class, lectures, tutorials, practicals and other courses.

1.2.3 The student not abiding by the instructions of the Faculty members and not interacting with them with due respect.

1.2.4 Any student found misbehaving in the campus / class or behaving arrogantly, violently towards the faculty, staff or fellow student.

1.2.5 The Students who is not present for all the class tests, mid term tests, terminal and preliminary examinations.

1.2.6 Permitting or conniving with any person /parent /guardian, which is not authorized to occupy hostel room, residential quarter, or any other accommodation or any part thereof of the Institution.

1.2.7 Obstruction to any student or group of students in any legitimate activities, in classrooms / laboratories/field or places of social and cultural activities with in the campus of the Institute.

1.2.8 Possessing or using any fire arms, lethal weapon, explosives, or dangerous substances in the premises of the Institution.

1.2.9 Indulging in any act which would cause embarrass mentor annoyance to any student / authority / staff for any member of the staff.

1.2.10 Stealing or damaging any farm produce or any property belonging to the Institution, staff member or student.

1.2.11 Securing admission in the Institution, to any undergraduate or post graduate programme or any other course by fabrication or suppression of facts or information.

1.2.12 If the student fails to complete the assignments regularly and has poor academic performance as assessed by the regular class teachers and internal assessment, he/ she will not be allowed to appear for the Vidyapeeth examination.

1.2.13 If a student remains absent for lectures, practical or class test and examinations without prior permission of the Principal or the head of the departments, she / he will not be compensated for extra class.

1.2.14 Students should read the notices regularly on notice boards in the academic complex, library and the department notice boards.

1.2.15 Damage of property of the college and its sister institutes like tampering with fixtures, fittings, equipments, instruments, furniture, books, periodicals, walls, windows panels, vehicles etc., will be viewed very seriously.

1.2.16 Recording of any electronic images in the form of photographs, audio or video recording of any person without the person's knowledge; when such recording is likely to cause injury, distress, or damage the reputation of such person; is prohibited in any part of the College and hostel premises. The storing, sharing or distributing of such unauthorized records by any means is also prohibited.

1.2.17 Use of mobile phones and head phones during college hours is prohibited.

1.2.18 As per the rules and regulations of the Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune,75% attendance in a subject for appearing in the examination is compulsory inclusive of attendance in non-lecture teaching i.e. seminars, group discussion, tutorials, demonstrations, practical's, hospital (tertiary, secondary, primary) posting and bed side clinics etc.

1.2.19 The Students must present in proper dress code with apron/lab coat, name badge and identity card on all week days /working days and during clinical duties.

1.2.20 Admission of the student will be cancelled at any point of time in case of;

1.2.20.1 Not submitting the required documents in time.

1.2.20.2 Failing to fulfill required eligibility criteria of the programme.

1.2.20.3 Submission of fake or incorrect documents.

1.2.20.4 Admission gained by resorting to fraudulent means, illegal gratification or any unfair practice detected at any stage during the entire programme.

1.2.20.5 Not paying the stipulated fees on time.

1.3 Prohibition of Ragging:

1.3.1 Ragging in any form is strictly prohibited in the campus and outside. The UGC Regulations on "Curbing the Menace of Ragging in Higher Educational Institutions, 2009" (as amended) & the MCI (Prevention & Prohibiting Ragging in Medical Colleges/ Institutions) Regulations 2009,and DCI Regulations on Curbing the Menace of Ragging in Dental Colleges,2009 shall be applicable to all students of the Vidyapeeth.

1.3.2 It is mandatory to fill the online Anti Ragging undertaking, by every student at the time of the admission and on commencement of every academic year.

1.3.3 Smoking or consumption of alcoholic beverages, or use of banned materials inside the College, Hostel and Campus is strictly prohibited. Any violation on the part of the students will be viewed very seriously and they will be suspended from the college immediately pending enquiry and in the case of hostellers, they will be expelled from the hostels immediately. Such students will not be permitted to attend classes /sit for examinations and enter the campus without the written permission of the competent Authority.

1.4 Attendance & Progress :

Each student shall always maintain decency, decorum and good conduct, besides keeping steady progress and required attendance. The conduct /academic performance /attendance of each student shall be reviewed periodically and appropriate action, including detaining from appearing for the Vidyapeeth Exam/ expelling from the Hostel or College, as the case may be, will be taken against the erring student. The students shall abide by such decision of the authorities of the Institution / Vidyapeeth.

1.5 Payment of Tuition and Other Fees

1.5.1 On admission of candidates to the first year of the course of study, all the fees mentioned in the letter of admission, viz., annual tuition fee, registration and eligibility fee, health insurance, caution deposit, hostel and mess fee, etc., as applicable, should be paid on or before the prescribed date without fail. Any delay will attract payment of penalty as specified. If any candidate fails to remit tuition fee and other fees with in the last date as notified, he / she will forfeit his / her admission to the course concerned.

1.5.2 In respect of subsequent year(s) of study, tuition fee and other specified fees shall be paid on or be fore the date as notified to the parents/studentsand on the Notice Board of the Institution /College concerned. Late payment, if any, will attract penalty as specified.

1.5.3 Similarly, examination fee, as prescribed and notified from time to time, shall be paid on or before the due date. If there is any delay, it will attract penalty as specified. If

any student fails to remit the examination fee even after lapse of the period specified for payment with penalty, such student will not be issued Hall Ticket for the Vidyapeeth examination(s)/ debarred from appearing for the Vidyapeeth examination(s).

1.5.4 All fees, once paid to the Vidyapeeth account, will not bere funded or adjusted for any other purpose under any circumstance.

1.6 Rules relating to Vidyapeeth Examinations

1.6.1 The candidates appearing for the Vidyapeeth theory examinations shall be under the direct disciplinary control of the Centre Incharge. Possession of cell phone or any electronic device or in criminatory materia ls by a candidate or found copying from any device in the examination hall, is strictly prohibited.

1.6.2 Disciplinary action will be initiated if any candidate indulges in any malpractice (unfair means) as enumerated in the Vidyapeeth Examination Manual.

1.7 Rules for Hostel Students

All inmates of the Hostel shall observe the following rules for the smooth and efficient running of the hostel and for their comfortable stay:-

1.7.1 Only bonafide students of Vidyapeeth are eligible for admission to the hostels.

1.7.2 Students, who fail to remit the Hostel fee when they fall due, even after a reminder in writing, shall vacate the hostel room allotted to them, forthwith.

1.7.3 No posters or pictures should be stuck inside and outside the room or any where around the premises of the hostel or College. Hostlers should avoid sticking bills and posters on the windows, doors and walls (except name strips on the room door). In case the room is found not in order, fine will be levied on the erring student.

1.7.4 Inmates should switch off fans and lights before leaving their rooms.

1.7.5 The inmates are advised to close the taps after use in order to avoid wastage of water.

1.7.6 Dining services will be provided only in the mess and there will be no room service.

1.7.7 Whenever any hosteller falls sick the same should be reported by his/her to the warden who will provide all necessary assistance to get appropriate treatment or medicines.

1.7.8 While going out of hostel the students should enter their name in the register & sign the same by mentioning proper reason.

1.7.9 To leave the hostel premises, permission of the Chief Warden is absolutely necessary. Students who want to stay over night to visit their parents or guardians should approach the Chief Warden for permission. Permission will be granted only after obtaining written request from the parent /

guardian duly signed by them, which will be duly entered in a register maintained in each block by the Warden.

1.7.10 All rooms, corridors, toilets etc. must be kept clean and any student who violates the rule shall be expelled from the hostel.

1.7.11 Hostel facility is provided with a view to help the student to pursue his / her studies in good environment and to facilitate/ promote his/her academic progress. A student who fails to keep up the congenial atmosphere and environment in the Hostel or to perform well and maintain academic progress shall not be allowed to use the hostel facility and shall vacate his/her room immediately on intimation from the Chief Warden/ Dean /Principal /Director of Faculties.

All students will be governed by the rules stated above and by those that will be framed from time to time during the academic year.

Failure on the part of the students to abide by the disciplinary rules will result in such punishment including expulsion from the College/Hostel as maybe imposed by the Institution/Vidyapeeth/Head of the Institution.

The decision of the Institution / Vidyapeeth/ Head of the Institution with regard to disciplinary cases shall be final and all the students shall abide by such decisions.

1.8 Powers of Competent Authority (Dean/ Principal / Director / Registrar at the Institute level)

The Competent authority may impose any one or more of the following punishment /s on the student found guilty of misconduct, indiscipline, in proportion there of:

1.8.1 Warning/reprimand

1.8.2 Fine

1.8.3 Cancellation / withheld scholarship / award / prize /medal.

1.8.4 Expulsion from the Hostel.

1.8.5 Expulsion from the institution

1.8.6 Cancellation of the result of the student concerned in the examination of the Institution.

1.8.7 Temporary annul ment from the Hostel / Institution.

1.8.8 Rustication from the Institution.

1.9 Procedure for Inquiry

If the competent authority is satisfied that there is a prima facie case inflicting penalties, mentioned in clause No.8, the authority shall make inquiry, in following manner:

1.9.1 Due notice in writing shall be given to the student concerned about his alleged act of misconduct / in discipline.

1.9.2 Student charged shall be required with in 15 days of the notice to submit his/her written representation about such charge/s.

1.9.3 If the student fails to submit written representation with in specified time limit, the inquiry may be held exparte.

1.9.4 If the student charged desired to see the relevant documents, such of the documents, as are being taken into consideration for the purpose of proving the charge/s,may at the discretion of the inquiry authority, be shown to the student.

1.9.5 The student charged shall be required to produce documents, if any in support of his defense. The inquiry authority may admit relevant evidence/documents.

1.9.6 Inquiry Authority shall record findings on each implication of mis conductor indiscipline, and there a son for such finding and submit there port along with proceedings to the competent Authority

1.9.7 The competent Authority on the basis of findings, shall pass such orders as it deems fit.

Provided: Procedure prescribed above need not be followed, when the student charged admits the charges in writing.

1.10 Appeal If the punishment / fine /rustication is imposed on a student by Dean/ Principal/ Director, such student shall be entitled to prefer an appeal be fore the Vice-Chancellor with in thirty (30) days of the receipt of the order.

Special Instructions Regarding Ragging

The students of the University are hereby informed that "Ragging"in the any form is strictly prohibited. The University strictly enforces anti-ragging measures. It is need less to explain about the harassment, humiliation and sufferings to which the new entrants would be subjected to in the name of "Ragging"which is in human and in tolerable. The Management will enforce strict discipline among the students of the University and ensure that the University is a model institution free from ragging. The students are therefore strictly warned to refrain from involving in any ragging activities. Those who indulge in ragging in any form shall be expelled immediately from the College and Hostel and are liable for punishment under the Medical Council of India / University Grant Commission/ Maharashtra State prohibition of ragging act and as per directives of the Supreme Court of India issued from time to time.

The "UGC Regulations on curbing the menace of ragging in higher education institutions, 2009 & The Medical Council of India (Prevention and prohibition of ragging in Medical Colleges /Institutions)regulations 2009"have been adopted by the University and are applicable to the students of the University. The full text of the regulations is reproduced below for information and strict adherence by the students.

Important Note

Every student who joins a course of study and who is already under going a course of study should submit the following declaration (and any other declaration as may be prescribed from time to time, in accordance with the above rules) duly signed at the time of admission and also as and when required during the course of his / her study in the University.

Each student and parent/guardian is required to submit an affidavit on paper separately in the form prescribed in Annexure I and Annexure II regarding curbing the menace of ragging (specimen copy enclosed.)

DPU

Dr. D. Y. PATIL VIDYAPEETH, PUNE
Deemed to be University
Pimpri, Pune – 411 018

Curbing The Menace of Ragging In Higher Educational Institutions Regulations 2009.

(Under Section 26 (1) (g) of the University Grants Commission Act, 1956)

(To Be Published In The Gazette of India Part III, Section- 4)

F.1-16 / 2007 (CPP-II) Dated 17th June, 2009.

PREAMBLE

In view of the direction of the Hon'ble Supreme Court in the matter of "University of Kerala v/s. Council, Principals, Colleges and others" in SLP no. 24295 of 2006 dated 16.05.2007 and the dated 08.05.2009 in Civil Appeal number 887 of 2009, and in consideration of the determination of the Central Government and the University Grants Commission to prohibit, prevent and eliminate the scourge of ragging including any conduct by any student or student whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other student, or including in rowdy or in-disciplined activities by any student or students which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in any fresher or any other student or asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student, with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any student, in all higher education institutions in the country, and thereby, to provide for the healthy development, physically and psychologically, of all students, the University Grant Commission, in consultation with the Councils, brings forth this Regulation.

In exercise of the powers conferred by Clause (g) of sub-section (1) of Section 26 of the University Grants Commission Act, 1956, the University Grant Commission hereby makes the following Regulations, namely;

**** As amended vide Notification dated 08.10.2012 published in the Gazette of India dated 10.11.2012**

1. Title, commencement and applicability:

1.1 These regulations shall be called the "UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009".

1.2 They shall come into force from the date of their publication in the Official Gazette.

1.3 They shall apply to all the institution coming within the definition of an University under sub-section (f) of section (2) of the University Grants Commission Act, 1956, to all other higher educational institutions, or elements of such universities or institutions, including its department, constituent units & all the premises, whether being academic, residential, playgrounds, canteen, or other such premises of such universities, deemed university and higher educational institutions, whether located within the campus or outside, and to all means of transportations of students, whether public or private, accessed by students for the pursuit of studies in such universities, deemed university and higher educational institutions.

2. Objective:

To prohibit any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other students, or indulging in rowdy or in-disciplined activities by any student or students which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in any fresher or any other student or asking ant student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student, with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any student; and thereby, to eliminate ragging in all its forms from universities, deemed universities and other higher educational institutions in the country by prohibiting it under these Regulations, preventing its occurrence and punishing those who indulge in ragging as provided for in these Regulations and the appropriate law in force.

3. What constitutes Ragging: - Ragging constitutes one or more of any the following acts:

a) any conduct by any student or students whether by words spoken or written or by an act which has the effect of treating or handling with rudeness a fresher or any other student;

b) including in rowdy or in-disciplined activities by any student or students which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in any fresher or any other student;

c) asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student;

d) any act by the senior student that prevent, disrupts or disturbs the regular academic activity of any other student or a fresher;

e) exploiting the service of a fresher or any other student for completing the academic tasks assigned to an individual or a group of students;

f) any act of financial extortion or forceful expenditure burden put on a fresher or any other student by students;

g) any act of physical abuse including all variants of it: sexual abuse, homosexual assaults, stripping, forcing obscene and lewd acts, gestures, causing bodily harm or any other danger to health person.

h) any act or abuse by spoken words, e-mails, post, public insults which would also include deriving perverted pleasure, vicarious or sadistic thrill from actively or passively participating in the discomfiture to fresher or any other students;

i) any act that affects the mental health and self-confidence of a fresher or any other student with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other students.

4. Definitions:-

1. In these regulations unless the context otherwise requires,-

(a) "Act" means, the university Grant Commission Act, 1956 (3 of 1956);

(b) "Academic year" means the period from commencement of admission of students in any course of study in the institution up to the completion of academic requirements for that particular year;

(c) "Anti-Ragging Helpline" means the Helpline established under clause (a) of Regulation 8.1 of these Regulation.

(d) "Commission" means the University Grant Commission;

(e) "Council" means a body so constituted by an Act of Parliament or an Act of any State Legislature for setting, or co0ordinating or maintaining standards in the relevant areas of higher education, such as the All India Council for Technical Education (AICTE), the Bar Council of India (BCI), the Dental Council of India (DCI), the Distance Education Council (DEC), the Indian Council of Agricultural Research (ICAR), the Indian Nursing Council (INC), the Medical Council of India (MCI), the National Council for Teacher Education (NCTE), the Pharmacy Council of India (PCI), etc. and the state Higher Education Councils.

(f) "District Level Anti-Ragging Committee" means the Committee, headed by the district Magistrate, constituted by the State Government, for the control and elimination of ragging in institutions with the jurisdiction of the district.

(g) "Head of the institution" means the Vice-Chancellor in case of university or a deemed to be university, the Principal or the Director or such other designation as the executive head of the institution or the college is referred.

(h) "Fresher" means a student who has been admitted to an institution and who is undergoing his/her first year of study in such institution.

(i) "Institution" means a higher educational institution including, but not limited to an university, a deemed to be university, a college, an institute, an institution of national importance set up by an Act of Parliament or a constitute unit of such institution, imparting higher education beyond 12 years of schooling leading to, but not necessarily culminating in, a degree (graduate, postgraduate and/or higher level) and/or to a university diploma.

(j) "NAAC" means the National Academic and Accreditation Council established by Commission under section 12(ccc) of the Act;

(k) "State Level Monitoring Cell" means the body constituted by the State Government for the control and elimination of ragging in institution within the jurisdiction of the State, established under a State Law or on the advice of the Central Government, as the case may be.

2. Words and expression used and not defined herein but defined in the Act or in the General Clauses Act, 1897, shall have the meanings respectively assigned to them in the Act in the General Clauses Act, 1897, as the case may be.

5. Measures for prohibition of ragging at the institution level:-

(a) No institution or any part of it thereof, including its elements, including, but not

limited to, the departments, constituent units, colleges, centers of studies and all its premises, whether academic, residential, playgrounds, or canteen, whether located within the campus or outside, and all means of transportation of students, whether public or private, accessed by students for the pursuit of studies in such institution, shall permit or condone any reported incident of ragging in any form; and all institution shall take all necessary and required measures, including but not limited to the provision of these Regulation, to achieve the objective of eliminating ragging, with the institution or outside;

(b) All institutions shall take action in according with these Regulations against those found guilty of ragging and/or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.

6. Measures for prevention of ragging at the institution level:-

6.1 An institution shall take the following steps in regards to admission or registration of students; namely;

(a) Every public declaration of intent by any institution, in any electronic, audio-visual or print or any media, for admission of students to any course of study shall expressly provide that ragging is totally prohibited in the institution, and anyone found guilty of ragging and/or abetting ragging, whether actively or passively, or being a part of a conspiracy to promote ragging, is liable to be punished in accordance with these Regulations as well as under the provision of any penal law for the time being in force.

(b) The brochure of admission/instruction booklet or the prospectus, whether in print or electronic format, shall prominently print these Regulations in full.

Provided that the institution shall also draw attention to any law concerning ragging and its consequences, as may be applicable to the institution publishing such brochure of admission/instruction booklet or the prospectus.

Provided further that the telephone numbers of the Anti-Ragging Helpline and all the important functionaries in the institution, including but not limited to the Head of the institution, faculty members, members of the Anti-Ragging Committees and Anti-Ragging Squads, District and Sub-Divisional authorities, Warden of hostels, and other functionaries or authorities where relevant, shall be published in brochure of admission/instruction booklet or the prospectus.

(c) Where an institution is affiliated to a University and publishes brochure of admission/instruction booklet or a prospectus, the affiliating university shall ensure that the affiliated institution shall comply with the provisions of clause (a) and clause (b) of Regulation 6.1 of these Regulations.

(d) The application from for admission, enrolment or registration shall contain an affidavit, mandatorily in English and Hindi and/or one of the regional languages known to the applicant, as provided in the English language in Annexure I to these Regulation, to be filled up and signed by the applicant to the effect that he/she has read and understood the provision of these Regulations as well as the provisions of any other law for the time being in force, and is aware of the prohibition of ragging and the

punishment prescribed, both under penal laws as well as under these Regulation and also affirm to the further aver that he/she would not indulge, actively or passively, in the act or abet the act of ragging and if found guilty of ragging and/or abetting ragging, is liable to be proceeded against under these Regulations or under any penal law or any other law for the time being in force and such action would include but is not limited to debarment or expulsion of such student.

(e) The application form for admission, enrolment or registration shall contain an affidavit, mandatorily known to the parents/guardians of the applicant, as provided in the English language in Annexure I to these Regulations, to be filled up and signed by the parents/guardians of these applicant to the effect that he/she has read and understood the provision of these Regulation as well as the provisions of any other law for the time being in force, and is aware of the prohibition of ragging and the punishment prescribed, both under penal laws as well as under these Regulations and also affirm to the effect that his/her ward has not been expelled and/or debarred by any institution and further aver that his/her ward would not indulge, actively or passively, in the act or abet the act or ragging and if found guilty of ragging and/or abetting ragging, his/her ward is liable to be proceeded against under these Regulation or under any penal law or any other law for the time being in force and such action would include but is not limited to debarment or expulsion of his/her ward.

(f) The application for admission shall be accompanied by a document in the form of, or annexed to, the School Leaving Certificate/Transfer Certificate/ Migration Certificate/ Character Certificate reporting on the inter-personal/ social behavioral pattern of the applicant, to be issued by the school or institution last attended by the applicant, so that the institution can thereafter keep watch on the applicant, if admitted, whose behavior has been commented in such document.

(g) A student seeking admission to a hostel forming part of the institution, or seeking to reside in any temporary premises not forming part of the institution, including a private commercially managed lodge or hostel, shall have to submit additional affidavits countersigned by his/her parents/guardians in the form prescribed in Annexure I and Annexure II to these Regulation respectively along with his/her application.

(h) Before the commencement of the academic session in any institution, the Head of the institution shall convene and address a meeting of various functionaries/agencies, such as Hostel Wardens, representatives of students, parents/ guardians, faculty, district administration including the police, to discuss the measures to be taken prevent ragging in the institution and steps to be taken to identify those indulging in or abetting ragging and punish them.

(i) The institution shall, to make the community at large and the students in particular aware of the dehumanizing effect of ragging, and the approach of the institution towards those indulging in ragging, prominently display posters depicting the provisions of penal law applicable to incidents of ragging and the provisions of these Regulations and also any other law for the time being in force, and the punishment thereof, shall be prominently

displayed on Notice Boards of all departments, hostel and other buildings as well as at places, where students normally gather and at places, known to be vulnerable to occurrences of ragging incidents.

(j) The institution shall request the media to give adequate publicity to the law prohibiting ragging and the negative aspects of ragging and the institution's resolve to ban ragging and punish those found guilty without fear or favour.

(K) The institution shall identify, properly illuminate and keep a close watch on all locations known to be vulnerable to occurrences of ragging incidents.

(l) The institution shall tighten security in its premises, especially at vulnerable places and intense policing by Anti-Ragging Squad, referred to in these Regulations and volunteers, if any, shall be resorted to at such points at odd hours during the first few months of the academic session.

(m) The institution shall utilize the vacation period before the start of the new academic year to launch a publicity campaign against ragging through posters, leaflets and such other means, as may be desirable or required, to promote the objectives of these Regulations.

(n) The faculties/departments/units of the institution shall have induction arrangements, including those which anticipate, identify and plan to meet any special needs of any specific section of students, in place well in advance of the beginning of the academic year with an aim to promote objectives of this Regulation.

(o) Every institution shall engage or seek the assistance of professional counselor before the commencement of the academic session, to be available when required by the institution for the purpose of offering counseling to freshers and to other students after the commencement of the academic year.

(p) The head of the institution shall provide information to the local police and local authorities, the details of every privately commercially managed hostels or lodges used for residential purposes by students enrolled in the institution and the head of the institution shall also ensure that the Anti-Ragging Squad shall ensure vigil in such locations to prevent the occurrence of ragging therein.

6.2 An institution shall, on admission or enrolment or registration of students, take the following steps, namely;

(a) Every fresh students admitted to the institution shall be given a printed leaflet detailing to whom he/she has to turn to for help and guidance for various purpose including address and telephone numbers, so as to enable the student to contact the concerned person at any time, if and when required, of the Anti-Ragging Helpline referred to in these Regulations, Wardens, Head of the institution, all members of the anti-ragging squads and committees, relevant district and police authorities.

(b) The institution, through the leaflet specified in clause (a) of Regulation 6.2 of these Regulations shall explain to the freshers, the arrangements made for their induction and orientation which promote efficient and effective means of integrating them fully as students with those already admitted to the institution in earlier years.

(c) The leaflet specified in clause (a) of

Regulation 6.2 of these regulations shall inform the fresher about their rights as bona fide students of the institution and clearly instructing them that they should desist from doing anything, with or against their will, even if ordered to by the seniors students, and that any attempt of ragging shall be promptly reported to the Anti-Ragging Squad or to the Warden or to the Head of the institution, as the case may be.

(d) The leaflet specified in clause (a) of Regulation 6.2 of these Regulations shall contain a calendar of events and activities laid down by the institution to facilitate and complement familiarization of fresher with the academic environment of the institution.

(e) The institution shall, on the arrival of senior students after the first week or after the second week, as the case may be, schedule orientation programmes as follows, namely; (i) joint sensitization programme and counseling of both freshers and senior students by a professional counselor, referred to in clause (o) of Regulations 6.1 of these Regulations; (ii) joint orientation programme of freshers and senior to be addressed by the Head of the institution and the anti-ragging committee; (iii) organization on a large scale of cultural, sports and other activities to provide a platform for the freshers and senior to interact in the presence of faculty members; (iv) in the hostel, the warden should address all students; and may request two junior colleagues from the college faculty to assist the warden by becoming resident tutors for a temporary duration. (v) as far as possible faculty members should dine with the hostel residents in their respective hostels to instill a feeling confidence among the freshers.

(f) The institution shall set up appropriate committees, including the course-un-charge, student advisor, Wardens and some senior students as its members, to actively monitor, promote and regulate healthy interaction between the freshers, junior students and senior students.

(g) Freshers or any other student(s), whether being victims, or witnesses, in any incident of ragging, shall be encouraged to report such occurrence, and the identity of such informants shall be protected and shall not be subject to any adverse consequence only for the reason for having reported such incidents.

(h) Each batch of freshers, on arrival at the institution, shall be divided into small groups and each groups shall be assigned to a member of the faculty, who shall interact individually with each member of the group every day for ascertaining the problems or difficulties, if any, faced by the fresher in the institution and shall extend necessary help to the fresher on overcoming the same.

(i) It shall be the responsibility to the member of the faculty assigned to the group of fresher, to coordinate with the wardens of the hostels and to make surprise visit to the room in such hostel, where a member or members of the group are lodged; and such member of faculty shall maintain a dairy of his/her interaction with the freshers under his/her charge.

(j) Freshers shall be lodged, as far as may be, in a separate hostel block, and where such facilities are not available, the institution shall ensure that access of seniors to accommodation allotted to freshers is strictly monitored by wardens, security guards and other staff of the institution.

(k) A round the clock vigil against in the hostel premises, in order to prevent ragging in the hostel after the classes are over, shall be ensured by the institution.

(l) It shall be the responsibility of the parents/guardians of freshers to promptly bring any instance of ragging to the notice of the head of the Institution.

(m) Every student studying in the institution and his/her parents/guardians shall provide the specific affidavits required under clauses (d), (e) and (g) of Regulation 6.1 of these Regulation, as the case may be, during each academic year.

(n) Every institution shall obtain the affidavit form every student as referred to above in clause (m) of Regulation 6.2 and maintain a proper record of the same and to ensure its safe upkeep thereof, including maintaining the copies of the affidavit in an electronic form, to be accessed easily when required either by the Commission or any of the Councils or by the affiliating University or by any other person or organization authorized to do so.

(o) Every student at the time of his/her registration shall inform the institution about his/her place of residence while pursuing the course of study, and In case the student has not decided his/her place of residence or intends to change the same, the details of his place of residence shall be provided immediately on deciding the same; and specifically in regard to a private commercially managed lodge or hostel where he/she has taken up residence.

(p) The Head of institution shall, on the basis of the information provided by the student under clause (o) of Regulation 6.2, apportion sectors to be assigned to members of the faculty, so that such members of faculty can maintain vigil and report any incident of ragging outside the campus or en route while commuting to the institution using any means of transportation of students, whether public or private.

(q) The Head of the institution shall, at the end of each academic year, send a letter to the parents/guardians of the students who are completing their first year in the institution, informing them about these Regulations and any law for the time being in force prohibiting ragging and the punishment thereof as well as punishment prescribed under the penal law, and appealing to them to impress upon their wards to desist from indulging in ragging on their return to the institution at the beginning of the academic session next.

6.3 Every institution shall constitute the following bodies; namely,

(a) Every institution shall constitute a Committee to be known as the Anti-Ragging Committee to be nominated and headed by the Head of the institution, and consisting of representatives of civil and police administration, local media, Non Government Organization involved in youth activities, representatives of faculty members, representatives of parents, representatives of students belonging to the freshers' category as well as senior students, non-teaching staff; and shall have a diverse mix of membership in terms of level as well as gender.

(b) It shall be the duty of the Anti-Ragging Committee to ensure compliance with the provision of these Regulations as well as the provision of any law for the time being in

force concerning ragging; and also to monitor and oversee the performance of the Anti-Ragging Squad in prevention of ragging in the institution.

(c) Every institution shall also constitute a smaller body to be known as the Anti-Ragging Squad to be nominated by the Head of the Institution with such representation as may be considered necessary for maintaining vigil, oversight and patrolling function and shall remain mobile, alert and active at all times.

Provided that the Anti-Ragging Squad shall have representation of various members of the campus community and shall have no outside representation.

(d) It shall be the duty of the Anti-Ragging Squad to be called upon to make surprise raids on hostels, and other places vulnerable to incidents of, and having the potential of, ragging and shall be empowered to inspect such places.

(e) It shall also be the duty of Anti-Ragging Squad to conduct an on0the-spot enquiry into any incidents of ragging referred to it by the Head of the institution or any member of the faculty or any member of the staff or any student or any parent or guardian or any employee of a service provider or by any other person, as the case may be; and the enquiry report along with recommendations shall be submitted to the Anti-Ragging Committee for action under clause (a) of Regulation 9.1.

Provided that the Anti-Ragging Squad shall conduct such enquiry observing a fair transparent procedure and the principles of natural justice and after giving adequate opportunity to the student or students accused of ragging and other witnesses to place before it the facts, documents and views concerning the incident of ragging, and considering such other relevant information as may be required.

(f) Every institution shall, at the end of each academic year, in order to promote the objectives of these Regulations, constitute a Mentoring Cell consisting of students volunteering to be Mentor for freshers, in the succeeding academic year; and there shall be as many levels or tiers of Mentors as the number of batches in the institution, at the rate of one Mentor of six freshers and one Mentor of a higher level for six Mentors of the lower level.

(g) Every institution shall, constitute a body to be known as Monitoring Cell on Ragging, which shall coordinating with the affiliated colleges and institution under the domain of the University to achieve the objectives of these Regulations; and the Monitoring Cell shall call for reports from the Head of institution in regard to the activities of the Anti-Ragging Committees, Anti-Ragging Squads, and the Mentoring Cells at the institution, and it shall also keep itself abreast of the decisions of the District level Anti-Ragging Committee headed by the District Magistrate.

(h) The Monitoring Cell shall also review the efforts made by institution to publicize anti-ragging measures, soliciting of affidavits from parents/guardians and from students, each academic year, to abstain from ragging activities or willingness to be penalized for violations; and shall function as the prime mover for initiating action on the part of the appropriate authorities of the university for amending the Statutes or Ordinances or By-laws to facilitate the implementation of anti-ragging measures at the level of the institution.

6.4 Every institution shall take the following other measures, namely,

(a) Each hostel or a place where groups of students reside, forming part of the institution, shall have a full-time Warden, to be appointed by the institution as per the eligibility criteria laid down for the post reflecting both the command and control aspects of maintaining discipline and preventing incidents of ragging within the hostel, as well as the softer skills of counseling and communicating with the youth outside the class-room situation; and who shall reside within the hostel, or at the very least, in the close vicinity thereof.

(b) The Warden shall be accessible at all hours and be available on telephone and other modes of communication, and for the purpose the Warden shall be provided with a mobile phone by the institution, the number of which shall be publicized among all students residing in the hostel.

(c) The institution shall review and suitably enhance the powers of Wardens; and the security personnel posted in hostels shall be under the direct control of the Warden and their performance shall be assessed by them.

(d) The professional counselor referred to under clause (o) of Regulation 6.1 of these Regulation shall, at the time of admission, counsel freshers and/or any other students(s) desiring counseling, in order to prepare them for the life ahead, particularly in regard to the life in hostels and to extent possible, also involve parents and teachers in the counseling sessions.

(e) The institution shall undertake measures for extensive publicity against ragging by means of audio-visual aids, counseling sessions, workshop, painting and design competitions among students and such other measures, as it may deem fit.

(f) In order to enable a student or any person to communicate with the Anti-Ragging Helpline, every institution shall permit unrestricted access to mobile phones and public phones in hostels and campuses, other than in class-rooms, seminar halls, library, and in such other places that the institution may deem it necessary to restrict the use of phones.

(g) The faculty of the institution and its non-teaching staff, which includes but is not limited to the administrative staff, contract employees, security guards and employees of service providers providing services within the institution, shall be sensitizes towards the ills of ragging, its prevention and the consequences thereof.

(h) The institution shall obtain an undertaking from every employee of the institution including all teaching and non-teaching members of staff, contract labour employed in the premises either for running canteen or as watch and ward staff or for cleaning or maintenance of the buildings/lawns and employees of service provider providing services within the institution, that he/she would report promptly any case of ragging which comes to his/her notice.

(i) The institution shall make a provision in the service rules of its employees for issuing certificates of appreciation to such members of the staff who report incidents of ragging, which will from part of their service record.

(j) The institution shall make give necessary instruction to the employees of the canteen and messing, whether that the institution or

that of a service provider providing this service, or their employers, as the case may be, to keep a strict vigil in the area of their work and to report the incidents of ragging to the Head of the institution or members of the Anti-Ragging Squad or members of the Anti-Ragging Committee or the Wardens, as may be required.

(k) All University awarding a degree in education at any level, shall be required to ensure that institution imparting instruction in such courses or conducting training programme for teachers include inputs relating to anti-ragging and the appreciation of the relevant human rights, as well as inputs on topic regarding sensitization against corporal punishment and checking of bullying amongst student, so that every teacher is equipped to handle at least the rudiments of the counseling approach.

(l) Discreet random survey shall be conducted amongst the freshers every fortnight during the first three months of the academic year to verify and cross-check whether the institution is indeed free of ragging or not and for the purpose the institution may design its own methodology of conducting such surveys.

(m) The institution shall cause to have an entry, apart from those relating to general conduct and behavior, made in the Migration/Transfer Certificate issued to the student while leaving institution, as to whether the student has been punished for committing or abetting an act of ragging, as also whether the student has displayed persistent violent or aggressive behavior or any inclination to harm others, during his course of study in the institution.

(n) Notwithstanding anything contained in these Regulations with regard to obligations and responsibilities pertaining to the authorities or members of bodies prescribed above, it shall be the general collective responsibility of all levels and sections of authorities or functionaries including members of the faculty and employees of the institution, whether regular or temporary, and employees of service providers providing service within the institution, the prevent or to act promptly against the occurrence of ragging or any incident of ragging which comes to their notice.

(o) The Heads of institution affiliated to a University or a constituent of the University, as the case may be, shall, during the first three months of an academic year, submit a weekly report on the status of compliance with Anti-Ragging measures under these Regulations, and a monthly report on such status thereafter, to the Vice-Chancellor of the University to which the institution is affiliated to or recognized by.

(p) The vice Chancellor of each University shall submit fortnight reports of the University, including those of the Monitoring Cell on Ragging in case of an affiliating university, to the State Level Monitoring Cell.

7. Action to be taken by the Head of the institution:

On receipt of the recommendation of the Anti-Ragging Squad or on receipt of any information Concerning any reported incident of ragging, the Head of institution shall immediately determine If a case under the penal law is made out and if so, either on his own or through a member of the Anti-Ragging Committee authorized by him in this behalf, proceed to file a First

Information Report (FIR), within twenty four hours of receipt of such information or recommendation, with the police and local authorities, under the appropriate penal provisions relating to one or more of the following, namely;

i. Abetment to ragging,

ii. Criminal conspiracy to rag,

iii. Unlawful assembly and rioting while ragging,

iv. Public nuisance created during ragging,

v. Violation of decency and morals through ragging,

vi. Injury to body, causing hurt or grievous hurt,

vii. Wrongful restraint,

viii. Wrongful confinement,

ix. Use of criminal force,

x. Assault as well as sexual offence or unnatural offences,

xi. Extortion,

xii. Criminal trespass,

xiii. Offences against property,

xiv. Criminal intimidation,

xv. Attempts to commit any or all of the above mentioned offences against the victim(s),

xvi. Threat to commit any or all of the above mentioned offences against the victim(s),

xvii. Physical or psychological humiliation,

xviii. All other offences following from the definition of "Ragging".

Provided that the Head of the institution shall forthwith report the occurrence of the incident of ragging to the District Level Anti-Ragging Committee and the Nodal officer of the affiliating University, if the institution is an affiliated institution.

Provided that the Head of the institution shall also continue with its own enquiry initiated under clause 9 of these Regulation and other measure without waiting for action on the part of the police/local authorities and such remedial action shall be initiated and completed immediately and in no case later than a period of seven days of the reported occurrence of the incident ragging.

8. Duties and Responsibility of the Commission and the Councils:

8.1 The Commission shall, with regard to providing facilitating communicating of information regarding incidents of ragging in any institution, take the following steps, namely;

(a) The Commission shall establish, fund and operate, a toll-free Anti-Ragging Helpline, operational round the clock, which could be accessed by students in distress owing to ragging related incidents.

(b) Any distress message received at the Anti-Ragging Helpline shall be simultaneously relayed to the Head of the Institution, the Warden of the Hostels, the Nodal Officer of the affiliating University, if the incident reported has taken place in an institution affiliated to a University, the concerned District authorities and if so required, the District Magistrate, and the Superintendent of Police, and shall also be web enabled so as to be in the public domain simultaneously for the media and citizens to access it.

(c) The Head of the institution shall be obliged to act immediately in response to the information received from the Anti-Ragging Helpline as at sub-clause (b) of this clause.

(d) The telephone numbers of the Anti-Ragging Helpline and all the important functionaries in every institution Heads of institution, faculty members, members of the Anti-Ragging committees and anti-ragging squads, district and sub-divisional authorities and state authorities where relevant, shall be widely disseminated for access or to seek help in emergencies.

(e) The Commission shall maintain an appropriate data base to be created out of affidavits, affirmed by each student and his/her parents/guardians and stored electronically by the institution, either on its or through an agency to be designated by it; and such database shall also function as a record of ragging complaints received, and the status of the action taken thereon.

(f) The Commission shall make available the database to a non-governmental agency to be nominated by the University Grants Commission, to build confidence in the public and also to provide information of non compliance with these Regulations to the Councils and to such bodies as may be authorized by the Commission or by the University Grants Commission.

8.2 The Commission shall take the following regulatory steps, namely;

(a) The Commission shall make it mandatory for the institution to incorporate in their prospectus, the directions of the Central Government or the State Level Monitoring Committee with regard to prohibition and consequences of ragging, and that non-compliance with these Regulations and directions so provided, shall be considered as lowering of academic standards by the institution, therefore making considered it liable for appropriate action.

(b) The Commission shall verify that the institution strictly comply with the requirement of getting the affidavits from the students and their parents/guardians as envisaged under these Regulations.

(c) The Commission shall include a specific condition in the Utilization Certificate, in respect of any financial assistance or grants-in-aid to any institution under any of the general or special schemes of the Commission, that the institution has complied with the anti-ragging measures.

(d) Anti incident of ragging in an institution shall adversely affect its accreditation, ranking or grading by NAAC or by ant other authorized accreditation agencies while assessing the institution for accreditation, ranking or grading purpose.

(e) The Commission may accord priority in financial grants-in-aid to those institutions, otherwise eligible to receive grants under section 12B of the Act, which report a blemish -less record in terms of there being no reported incident of ragging.

(f) The Commission shall constitute an Inter-Council Committee, consisting of representatives of the various Council, the Non-Governmental agency responsible for monitoring the database maintained by the Commission under clause (f) of Regulation 801 and such other bodies in higher education, to coordinate and monitor the anti-ragging measures in institutions across the country and to make recommendations from time to time; and shall meet at least once in six months each year.

(g) The Commission shall institute an Anti-Ragging Cell within the Commission as an institution

Mechanism to provide secretarial support

for collection of information and monitoring, and to coordinate with the State Level Monitoring Cell and University levels Committees for effective implementation of anti-ragging measures, and the Cell shall also coordinate with the Non-Governmental agency responsible for monitoring the database maintained by the Commission appointed under clause (g) of Regulation 8.1.

9. Administrative action in the event of ragging:

9.1 The institution shall punish a student found guilty of ragging after following the procedure and in the manner prescribed herein under:

(a) The Anti-Ragging Committee of the institution shall take an appropriate decision, in regard to punishment or otherwise, depending on the facts if each incidents of ragging and nature and gravity of the incident of ragging established in the recommendations of the Anti-Ragging Squad.

(b) The Anti-Ragging Committee may, depending on the nature and gravity of the guilt

established by the Anti-Ragging Squad, award, to those found guilty, one or more of

the following punishments, namely.

i. Suspension from attending classes and academic privileges.

ii. Withholding/ withdrawing scholarship/ fellowship and other benefits.

iii. Debarring from appearing in any test/ examination or other evaluation process.

iv. Withholding results.

v. Debarring from representing the institution in any regional, national or international meet, tournament, youth festival, etc.

vi. Suspension/ expulsion from the hostel.

vii. Cancellation of admission.

viii. Rustication from the institution and consequent debarring from admission to any other institution for a specified period.

ix. Expulsion from the institution and consequent debarring from admission to ant other institution for a specified period.

Provided that where the persons committing or abetting the act of ragging are not indentified, the institution shall resort to collective punishment.

(c) An appeal against the order of punishment by Anti-Ragging Committee shall lie,

i. In case of an order of an institution, affiliated to or constituent part, of a University, to the Vice-Chancellor of the University.

ii. In case of an order of a University, to its Chancellor.

iii. In case of an institution of national importance created by an Act of Parliament, to the Chairman or Chancellor of the institution, as the case may be.

9.2 Where an institution, being constituent of, affiliated to or reorganization by a University, fails to comply with any of the provisions of these Regulations or fails to curb ragging, effectively, such University may take any one or more of the following actions, namely;

i. Withdrawal of affiliation/recognition or other privileges conferred.

ii. Prohibiting such institution from presenting ant student or students then undergoing any programme of study therein for the

award of any degree/diploma of the university.

a. Provided that where an institution is prohibited from presenting its student(s), the

b. Commission shall make suitable arrangements for the others students so as to ensure that such students are able to pursue their academic studies.

iii. Withholding grants allocated to it by the university, if any

iv. Withholding any grants chanellised through the university to the institution.

v. Any other appropriate penalty with the powers of the university.

9.3 Where in the opinion of the appointing authority, a lapse is attributable to any member of the faculty staff of the institution, in the matter of reporting or taking prompt action to prevent an incident of ragging or who display an apathetic or insensitive attitude towards complaints of ragging, or who fail to take timely steps, whether required under these Regulation or otherwise, to prevent an incident or incident of ragging, then such authority shall initiate departmental disciplinary action, in accordance with the prescribed procedure of the institution, against such member of the faculty or staff.

Provided that where such lapse is attributable to the Head of the institution, the authority designated to appoint such Head shall take such departmental disciplinary action; and such action shall be without prejudice to any action that may be taken under the penal laws for abetment of ragging for failure to take timely steps in the prevention of ragging or punishing any student found guilty of ragging.

9.4 The Commission shall, in respect of any institution that fails to take adequate steps to prevent ragging or fails to act in accordance with these Regulation or fails to punish perpetrator or incidents of ragging suitably, take one of more of the following measures, namely;

i. Withdrawal of declaration of fitness to receive grants under section 12B of the Act.

ii. Withholding any grant allocated.

iii. Declaring the institution ineligible for consideration for any assistance under any of the general or special assistance programmes of the Commission.

iv. Informing the general public, including potential candidates for admission, through a notice displayed prominently in the newspaper or other suitable media and posted on the website of the Commission, declaring that the institution does not possess the minimum academic standards.

v. Taking such other action within its power as it may deem fit and impose such other penalties as may be provided in the Act for such duration of time as the institution complies with the provision of these Regulations.

Provided that the action taken under this clause by the Commission against any institution shall be shared with all Councils.

ANNEXURE I
AFFIDAVIT BY THE STUDENT

1. I _____(Fulll name of student with admission/registration/enrolment number) s/o/ d/o Mr./Mrs./Ms. _____, having been admitted to Dr D. Y. Patil Medical College Hospital and Research Centre, Pimpri, Pune have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations") carefully read and fully understood the provisions contained in the said Regulations.
2. I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
3. I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
4. I hereby solemnly aver and undertake that

a) I will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations.

b) I will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause of the Regulations.

5. I hereby affirm that, if found guilty of ragging, I am liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against me under any penal law or any law for the time being in force.
6. I hereby declare that I have not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, I am aware that my admission is liable to be cancelled.

Declared this _____ day of _____ month of _____year.

Signature of deponent

Name:

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at _____(place) on this the_____ (day) of_____ (month)_____ (year) .

_____

Signature of Student

ANNEXURE II
AFFIDAVIT BY PARENT/GUARDIAN

I, Mr./Mrs./Ms. _____ (full name of parent/guardian) father/mother/guardian of _____ (full name of student with admission/registration/enrolment number) , having been admitted to Dr D. Y. Patil Medical College Hospital and Research Centre, Pimpri, Pune, have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009,(hereinafter called the "Regulations"), carefully read and fully understood the provisions contained in the said Regulations.

2. I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
3. I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my ward in case he/she is found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
4. I hereby solemnly aver and undertake that
   a) My ward will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations.
   b) My ward will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
5. I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against my ward under any penal law or any law for the time being in force.
6. I hereby declare that my ward has not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, the admission of my ward is liable to be cancelled.

   Declared this _____day of _____ month of _____year.

   Signature of Parent/Guardian

   Name:

   Address:

   Telephone/ Mobile No.:

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at _____(place) on this the_____ (day) of_____ (month)_____ (year) .

_____

Signature of Parent/Guardian

RAGGING : Ragging in any form is a punishable offence in accordance with the "UGC REGULATION ON CURBING THE MENACE OF RAGGING IN HIGHER EDUCATIONAL INSTITUTIONS 2009 and committing this act of indiscipline shall result in – PUNISHMENT UNDER THE PROVISION OF ANY PENAL LAW FOR THE TIME BEING IN FORCE.

Anti Ragging Committee (2019-2020)

SrNo	Member Name	Post	Phone No	Email ID	
1	To benominatedand headed bytheHead of theInstitution	Dr.J.S. Bhawalkar	Dean and Chairman	9766545431	dean.medical@dpu.edu.in
2	Consistingof representative	Mr. Vivek Muglikar	Senior P.I. , P.S (Pimpri)	9823029739	vkinkoll91@gmail.com
	a.PoliceAdministration	Mr. RangnathBapuUnde	P.I. , P.S. (Crime) Pimpri	9923353452	rangnath unde67@gmail.com
	b.CivilAdministration	Mr. Shivajirao Kamble	Ex M.P.	9422647579	svkamble9999@gmail.com
	c.Representative ofLocal Media	Mr. Mayur Kemse	Manager, Distributor, LokmatPimpri, Pune	9850304097	mayurkemse2010@gmail.com
3	Representatives ofNon GovernmentOrgnization involved inyouth activities	Adv.Dr. Ruby Pritipal Chhatwal	Socialactivist	9422526508	rpchhatwal@gmail.com ppchhatwal@gmail.com
4	ZonalOfficer 'C'Zone office P.C.M.C. Muncipal CorporationBhosari Pune	Shri.Anna Bodade	ZonalOfficer	9922501942	a.bodade@pcmcindia.gov.in pro@pcmcindia.gov.in
5	Representatives ofFaculty Members	Dr.P. Vatsalaswamy	Director Academics	9850116519	puranamv@gmail.com
		Dr.H.G. Deshpande	ChiefWardenHostels	9422033660	drhemantdeshpande@gmail.com
		Dr.Atul Desale	Warden Boys' Hostels	8888309351	dr.a.v.desale@gmail.com
		Dr.(Col)Suri Tripta	Wardem Girls'Hostels	7249683872	triptaasuri@gmail.com
		Dr. Vaishali Dhat	Warden Girls'Hostels	9922737501	vaishdhat@yahoo.com
		Dr.A.B. Sapate	**Member secretary**	9225632392	fmtabsapate@gmail.com
6	Representativesof Parents UG Students	Mr. Sambhaji D. Pote	Parent ofUGstudent	9922693131	truptipote1410@gmail.com
		Mr. Vilasrao Patil	Parent ofUGstudent	9923 159995	prashantbajiraopatil@gmail.com
7	Representativesof students belonging to fresherscategory	Mr. Dhruv Qureshi	1styr19-20 UGstudent	9518363473	dhruv.qureshi@gmail.com
		Mr. Ellora Pandey	1styr19-20 UGstudent	9696579930	ellorapandey10@gmail.com
		Mr. Harsh Tyagi	UGstudent	9561886528	harshtyagi10@gmail.com
		Ms. Srishti Mohapatra	UGstudent	9922960064	shrishti191@gmail.com
8	Representatives ofSenior Students(PostGraduate)	Dr. Nimish Narkar	PGStudent	9767870637	dr.nimishnarkar@gmail.com
		Dr. Revati Kothari	PGStudent	9158143884	dineshkothari@gmail.com
9	Representatives ofnon - teaching staff andshall havea diverse mix of membership intermsof levels aswell asgender	Mr. Uday Shende	Registrar	9833326464	registrar.medical@dpu.edu.in
		Mrs.Shilpa Arunkumar B.	Manager HR & Admin	9096301326	drwaraleshilpa@gmail.com
		Mrs. S. A. Palekar	Incharge Student section	9657966228	ugsection.medical@dpu.edu.in
		Mr. Nitesh Sangle	Student section	9764175767	nitesh.nitesh0805@gmail.com
		Mr. SwapnilSonje	HostelCo -ordinator	9226539196	swapnil.sonje@dpu.edu.in
		Mrs.Deshpande	HostelCo -ordinator	8530208875	drhemantdeshpande@gmail.com
		Mrs.Vijaya Darekar	Girls'Hos.Rector	9860961671	darekarvijay@gmail.com
		Mr.N.P. Choudhari	Boys' Hos.Rector	9960463974	namdeochoudhari951@gmail.com

Anti Ragging Squad

Sr. No.	Name	Designation	Phone No.	Email ID
1.	**Dr. A. B. Sapate (Professor, Forensic Medicine)**	Officer Incharge	9225632392	fmtabsapate@gmail.com
2.	Dr. Umesh More (Professor, Biochemistry)	Member	9422314399	Praveen.arora@dpu.edu.in
3.	Dr. Vaishali V. Dhat (Professor, Biochemistry)	Member	9922737501	vaishdhat@yahoo.com
4.	Dr. Prashant Khuje (Professor, Physiology)	Member	8390360859	drtdkhuje@ymail.com
5.	Mr.N.P.Choudhari (Boys' Hostel)	Member	9960463974 020-27805162	namdeochoudhari951@gmail.com
6.	Mrs.Vijaya Darekar (Girls' Hostel)	Member	9860961671 020-27805646	darekarvijay@gmail.com

Hostel Committee

Sr. No.	Representative of Faculty Member		Phone No	Email Id
1.	Dr H.G. Deshpande	Warden Boys Hostel	9422033660	drhemantdeshpande@gmail.com
2.	Dr. Atul Desale	Warden Boys' Hostels	8888309351	dr.a.v.desale@gmail.com
3.	Dr. Vaishali V. Dhat	Warden Girls' Hostels	9922737501	vaishdhat@yahoo.com
4.	Mrs Vijaya Darekar	Girls Hostel Rector	9860961671	darekarvijay@gmail.com
5.	Mr N. P. Choudhari	Boys Hostel Rector	9960463974	namdeochoudhari951@gmail.com

Hostel Authorities

Name	Designation	Mobile No
Dr H. G. Deshpande	Chief Warden	9422033660
Dr.(Col) Suri Tripta	Warden Girls' Hostels	7249683872
Dr. Atul Desale	Warden Boys' Hostels	8888309351
Dr. Pradeep Shetty	Warden Boys' Hostels	9422340343
Dr. Vaishali Dhat	Warden Girls' Hostels	9922737501
Dr. Sumit Khupse	Assistant Warden (Male)	9130338154
Dr. Rajashri Kharat	Assistant Warden (Female)	9420497513

Vigilance Team (Boys' Hostel)

- Dr Umesh More (Biochemistry Deptt.) - 9422314399
- Dr Shailesh Meshram (Pulmanary Medicine) - 9823096022
- Dr Prashant Khuje (Physiology Deptt.) - 8390360859
-

Vigilance Team (Girls' Hostel)

- Dr Mrs Diggikar Pradnya (Medicine Deptt.) - 9420169778
- Dr Mrs Vaishali V. Dhat (Biochemistry Deptt.) - 9922737501
- Dr Mrs Shilaja Mane (Peadiatrics Deptt.) - 9822595553
- Dr Geetanjali Unawane (Radiology Deptt.) - 9422607183

Activities of the Students Council

The College has vibrant Student Council which comprises of General Secretary, Vice Secretary, Sectional Secretaries and Class Representatives

1. The College Annual Social Function- SYNAPSE is organized in the month of February
2. Various competitions for display of talent in the field of Music, Drama, Debates, Sports, Dance and Arts are organized. Students also participate in various intercollegiate events.
3. The Intercollegiate cultural festival of the University- DPU NITE is organized in the month of March every year. This event fosters a sense of camaraderie amongst students of all the constituent colleges of the University

ERP and Biometric System for students

Dr. D. Y. Patil Vidyapeeth and Dr. D. Y. Patil Medical College, Pune feel proud to announce that ERP and Biometric System are implemented. Details are as under:-

ERP System :

Login for following facilities:

1) View your time-tableonline
2) Check out attendance
3) Read notes up loaded by faculty
4) View the notices and circulars
5) Checkout the allotted mentor
6) View your Academic calendar
7) Check your Internal Assessment Evaluation pattern
8) Submit online application regarding bonafide and other certificates
9) Browse the libraries of all Institutes under Dr. D. Y. Patil Vidyapeeth
10) Students can give online feedback

Biometric System

1. Student's attendance is taken by Biometric System during the Lectures / Practicals / Dissections and tutorial.
2. The student section will send the absent report of your ward through SMS at your registered mobile number in our office at the time of admission (SMSNo.BZ- DPU MED)
3. Classroom attendance will not be considered if the student is late in class or misbehaves

Commencement of the Course

The First year MBBS course shall begin on 1st August of every academic year

Duration of the Course & distribution of Subjects by Professional Phase

Phase & Year of MBBS training	Subjects & New Teaching Elements	Duration	University Examination
First Professional MBBS	• Foundation Course (1 month) • Human Anatomy, Physiology & Biochemistry introduction to Community Medicine, Humanities • Early Clinical Exposure • Attitude, Ethics, and Communication Module (AETCOM)	**1+13 months**	**I Professional**
Second Professional MBBS	• Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology, • Introduction to clinical subjects including Community Medicine • Clinical Postings • Attitude, Ethics & Communication Module (AETCOM)	**12 months**	**II Professional**
Third Professional MBBS Part I	• General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radio diagnosis & Radiotherapy, Anesthesiology • Clinical subjects / postings • Attitude, Ethics & Communication Module (AETCOM)	**13 months**	**III Professional (Part I)**
Electives	• Electives, Skills and assessment	**2 months**	
Third Professional MBBS Part II	• General Medicine, Pediatrics , General Surgery, Orthopedics, Obstetrics & Gynecology including Family welfare and allied specialties • Clinical postings/subjects • Attitude, Ethics & Communication Module (AETCOM)	**13 months**	**III Professional (Part II)**

Time distribution of MBBS Programme& Examination Schedule

<table>
<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></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Foundation Course</td><td colspan="4">I MBBS</td></tr>
<tr><td colspan="8">I MBBS</td><td>ExamI MBBS</td><td colspan="3">II MBBS</td></tr>
<tr><td colspan="8">II MBBS</td><td>Exam II MBBS</td><td colspan="3">III MBBS</td></tr>
<tr><td colspan="9">III MBBS Part I</td><td>Exam III MBBS Part I</td><td colspan="2">Electives & Skills</td></tr>
<tr><td colspan="12">III MBBS Part II</td></tr>
<tr><td>Exam III MBBS Part II</td><td colspan="11">Internship</td></tr>
<tr><td colspan="2">Internship</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Distribution of marks for University Examination of Each Subject

Phase of Course	Written Theory Total	Practical / Orals/ Clinicals	Pass Criteria
First Professional			**Internal Assessment :** 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations
Human Anatomy- 2 Papers	200	100	
Physiology - 2 Papers	200	100	
Biochemistry- 2 Papers	200	100	
Second Professional			
Pharmacology- 2 Papers	200	100	
Pathology- 2 Papers	200	100	
Microbiology - 2 Papers	200	100	**University Examinations** Mandatory 50% marks in theory and practical (practical =practical/viva) [theory=theory paper(s) only]
Third Professional Part - I			
Forensic Medicine & Toxicology – 1 Paper	100	100	
Opthalmology- 1 Paper	100	100	
Otorhinolaryngology- 1 Paper	100	100	
Community Medicine – 2 Papers	200	100	
Third Professional Part - II			Internal Assessment marks are not to be added to marks of the University examinations and should be shown separately in the grade card.
General Medicine- 2 Papers	200	200	
General Surgery- 2 Papers	200	200	
Pediatrics- 1 Paper	100	100	
Obstetrics & Gynaecology - 2 Papers	200	200	

Examination Pattern (Internal Assessment and University)

1. There will be 3 internal assessment examinations in the academic year out of which one will be Preliminary examination.
2. There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee.
3. Students having less than 75% attendance in lectures, tutorials, demonstrations, practicals etc will not be allowed to appear for theory, practical and other examinations
4. Students must have completed the required certifiable competencies for each phase of training and completed the log book appropriate for each phase of training to be eligible for appearing at the final University examination of that subject.
5. There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.
6. A student shall not be entitled to graduate after 10 years of his/her joining of the first part of the MBBS course. A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt

*to be approval by university

Examination Pattern for First Year MBBS

Pattern of Internal Assessment Evaluation

	Theory	Journal/Logbook	Practical
1st Internal Assessment	50	5	45
2nd Internal Assessment	50	5	45
3rd Internal Assessment -Prelims	200	5	95

Pattern of University Theory Question Paper

Anatomy, Physiology, Biochemistry – 2 Papers each
Each Paper will be of 100 Marks
(Section A – 50 Marks, Section B – 50 Marks)

Type of Question	Marks/Question	No. of Questions	Total marks
One liners	1	5 out of 6	5
LAQs	10	1 out of 2	10
PBL	10	1	10
Short Notes	5	5 out of 6	25
	Total	**12**	**50**

Pattern of University Practical Examination

1. ANATOMY :

Practical- 70 marks **Viva- 30 marks** **Total= 100**

A) Practical Examination 70 marks
1. Histology spotting - 10 marks
2. Slide viva - 05 marks
3. Journal - 05 marks
4. Surface marking - 05 marks

Soft Part
5. Soft Part Above Diaphragm - 20 marks
6. Soft Part Below Diaphragm - 20 marks
7. Clinical Anatomy - 05 marks

B) Viva **30 marks**

1. Osteo-appendicular - 10 marks
2. Osteo-Axial - 10 marks
3. Embryology - 05 marks
4. Radiology - 05 marks

2. BIOCHEMISTRY :

Practical- 70 marks **Viva- 30 marks** **Total= 100**

Quantitative estimation A	Urine report B	Quality control C	Spots D	Journal E	Practical total	Paper I Viva+ Case	Paper II Viva+ Case	Viva Total
(25)	(20)	(10)	(10)	(05)	(70)	(10+05)	(10+05)	(30)

3. PHYSIOLOGY :

Total marks100
5Exercises:

a) Theory viva- 30 marks
b) Hematology practical- 15 marks
c) Clinical Examination- 40 marks

Two Stations

· Clinical I (CVS & RS) 20 Marks

· Clinical II (CNS, Abdomen & Special senses) 20 marks

d) Short exercises – 10 marks (5 exercises each student)

e) Journal / Logbook – 5 marks

Dr. D. Y. Patil Vidyapeeth
Dr. D. Y. Patil Medical College, Hospital & Research Centre
Pimpri, Pune – 411 018
Proposed Academic Calendar for I MBBS 2019-20

		Working Days	Exam Days	Sundays	Festivals	Vacation
1st Phase Starts	01/09/2019	Sept.= 22		5	3	
Diwali Vacation	24/10/2019 to 31/10/2019	Oct.= 18		4	4	5
		Nov. = 25		4	1	
I Internal Assessment	16/12/2019 to 24/12/2019	Dec.= 12	8	5	1	5
Winter Vacation	25/12/2019 to 31/12/2019					
		Jan. = 27		4		
		Feb. = 23		4	2	
II Internal Assessment	02/03/2020 to 10/03/2020	March = 18	8	5		
		April = 23		4	3	
		May = 24		5	2	
		June = 26		4		
		July = 20	7	4		
Last date of Classes	23/07/2020					
Prelim Examination	24/07/2020 to 12/08/2020	August = 14	10	5	2	
Preparatory Leave	13/08/2020 to 31/08/2020					
Total Days		**252**	**33**	**53**	**18**	**10**
University Examination	01/09/2020 onwards					
Proposed						
Working Days	**252**					
Sunday	**53**					
Holiday	**18**					
Vacation	**10**					
College Examination	**33**					
Total	**366**					
Parent Meeting	**24 March, 2020**					
2nd Year will commence from 01/10/2020						

Dr. D. Y. Patil Medical College, Hospital & Research Centre
Pimpri, Pune - 411 018

Dr. D. Y. Patil Vidyapeeth Campus, Sant Tukaram Nagar, Pimpri, Pune 411018.

Block Training Programme for
1st MBBS Academic Year 2019-20

Time	Particular	Monday	Tuesday	Wednesday	Thursday	Friday	Sat (1st,3rd, &5th)	Sat (2nd&4th)
08.30 to 9.25 am	Lecture	Anatomy	Physiology	Bio chemistry	Anatomy	Anatomy	Physiology	Bio chemistry
09.25 to 10.20 am	Lecture	Anatomy	Physiology	Physiology	Anatomy	Anatomy	Bio chemistry	Anatomy
10.20 to 11.15 am	Lecture	Physiology	Anatomy	Anatomy	Physiology	Bio chemistry	Anatomy	Physiology
11.15 to 11.30 am	**Break**	**Break**	**Break**	**Break**	**Break**	**Break**	**Break**	**Break**
11.30 to 1.30 pm	Practical /LDVisit	Physio., Bio.or Comm. Medicine Visit	Physio., Bio.or Comm. Medicine Visit	Physio., Bio.or Comm. Medicine Visit	Physio., Bio.or Comm. Medicine Visit	Physio., Bio.or Comm. Medicine Visit	Physio., Bio.or Comm. Medicine Visit	Physio., Bio.or Comm. Medicine Visit
1.30 to 2.30 pm	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Lunch**
2.30 to 5.00 am	Dissection	Dissection	Dissection	Dissection	Dissection	Dissection	Dissection	Dissection

VENUE:-Lecture Hall No-1

Recommended books for First Year MBBS (2019-2020 Batch)

ANATOMY

1. TextbookofGeneralAnatomy:VShubhadraDevi
2. TextbookofHumanAnatomyVol.1,2&3:VishramSingh
3. ThiemeDissectorVol1,2and3VishramSingh,GPPal andSDGangane
4. Grant'sAtlas ofAnatomy(SouthAsianEdition)
5. I.B Singh Human Histology / Human Histology – G.P.Pal/Human Histology –Brijesh Kumar
6. Embryology – Vishram Singh
7. Text book of Neuro anatomy : Vishram Singh /Text book of Neuro anatomy- G.P Pal
8. Medical Genetics – G.P Pal / Medical Genetics – S.D Gangane

Books Preferable:

1. Grant Dissector
2. Krishna Garg – Text book and Work book of Histology
3. Clinical Anatomy (Vol 1 & 2) – Neeta Kulkarni
4. Dissection Manual (Vol 1,2 & 3) – Mercy Navi's
5. Inderbir Singh's Text book of Anatomy Vol 1,2 & 3

Reference Books : (AVAILABLE IN CENTRAL LIBRARY)

1. Gray's Anatomy for students : Standring Susan
2. Mc Minn's Color Atlas of Human Anatomy : Abrahms PH
3. Langman's Medical Embryology : Sadlar
4. Netter Atlas of Human Anatomy
5. Atlas of Histology : Brijesh Kumar
6. Snell's – Clinical Anatomy
7. Synopsis of Surgical Anatomy : Mc Gregor
8. Clinical Anatomy : Keith and Moore
9. Last's anatomy : regional and applied Sinnathamby C

PHYSIOLOGY

Text book	1) Textbook of Medical Physiology – Guyton & Hall
	2) Text book of Medical Physiology- D Venkatesh, H. H. Sudhakar
	3) Text book of Medical Physiology – G. K. Pal
Practical Book:	1) Manual of Practical Physiology for MBBS – Jain A. K.
	2) A textbook of practical Physiology- Ghai C. L.

BIOCHEMISTRY

(Students should purchase any one of the recommended books)

1. Biochemistry 5th edition – Pankaja Naik
2. Textbook of Biochemistry 9th edition – D. M. Vasudevan & Shree Kumari
3. Textbook of Medical Biochemistry 2nd edition – Dr. S. K. Gupta

Reference Books:

(Not to be purchased. Available in central library)

1. Harper's Biochemistry
2. Lippincott's Illustrated Reviews Biochemistry
3. Biochemistry by L. Stryer.
4. Lehninger's Principles of Biochemistry

Dr. D. Y. PATIL UNIVERSITY
I-Human Anatomy Syllabus– IMBBS

Goal :

The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross and microscopic structure and development of human body so also basic knowledge of genetics to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical embryo logical & genetic basis for the disease presentations

Objectives :

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

1) Comprehend the normal disposition, clinically relevant interrelationships functional and cross sectional anatomy of the various structures in the body
2) Identify the microscopic structure and correlate elementary ultra structure of various organs and tissues and correlate the structure with the functions as a pre-requisite for understanding the altered state in various disease processes
3) Comprehend the basic structure and connections of the central nervous system to analyse the integrative and regulative functions of the organs and systems. He/she shall be able to locate the site of gross lesions according to the deficits encountered
4) Demonstrate Knowledge of the basic principles and sequential development of the organs and systems, recognize the critical stages of development and the effects of common teratogens , genetic mutations and environmental hazards. He /she shall be able to explain the developmental basis of the major variations and abnormalities & genetic basis of different inherited conditions. explain the developmental basis of the major variations and abnormalities & genetic basis of different inherited condition

Skills :

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

1. Identify and locate all the structures of the body and mark the topography of the living anatomy
2. Identify the organs and tissues under the microscope.
3. Understand the principles of Karyotyping, genetic mutation and identify the gross congenital anomalies.
4. Understand principles of newer imaging techniques and interpretation of CT scan, sonogram etc.
5. Understand clinical basis of some common clinical procedures i.e. intramuscular and intravenous injection, lumbar puncture and kidney biopsy, liver biopsy etc

Integration : From the integrated teaching with other basic sciences, student shall be able to comprehend the functions of the organs and systems in the body, with their structures so as to understand the correlation & interpret the anatomical basis of disease process.

Detailed study of Human anatomy is given under following heads.

1) Generalanatomy
2) RegionalAnatomy

I. Upper Limb
II. Lower Limb
III. Abdomen with pelvis & perineum

IV. Thorax

V. Head, Face, Neck

VI. Spinal cord & Brain

3) Micro-Anatomy

I. General Histology

II. Systemic Histology

2) Developmental Anatomy

I. General Embryology

II. Systemic Embryology

3) Genetics

4) Radiological Anatomy, USG, CT, MRI

5) Surface Anatomy, Living Surface

E. Internal assessment & University Exam pattern, Theory & Practical Books recommended

Detailed syllabus of Human Anatomy

A. GENERAL ANATOMY

I DESCRIPTIVE TERMS

Terms used for describing the position of the body, Anatomical planes, commonly used terms in Gross Anatomy, Terms used in Embryology, terms related to limbs, for hollow organs, for solid organs to indicate the side, for describing muscle , for describing movements.

II Connective tissue

i. Loose areolar tissue – definition function, sites w here present.

ii. Dense connective tissue- regular & irregular types. Definition, functions & sites where present

iii. Ligaments, types & function , applied anatomy

iv. Retinacula &Aponeuroses -,

v. Cartilage – Definition, Types, Structure, Distribution, Nutrition, histogenesis, growth of Cartilage, Cartilage Grafts,

vi. Bone – Definition Nutrition & Morphological classification, distribution and functions of bone. Appendicular & Axial skeleton.

Diaphysis, Metaphysis, Epiphysis, Types of epiphyses Primary centres, Law of ossification. Mechanical properties of bones.

Effect of hormones on bony growth, Wolff's law, Surface topology of articular surfaces, Spin, Swing, shunt movements

III GENERAL ARTHROLOGY

I. Classification, Synarthrosis Amphiarthrosis, Diarthrosis Fibrous- Sutures, Syndesmosis, Gomphosis Cartilagenous- Primary, Secondary

Synovial – Axis of movement, structure of typical synovial joints.

Classification of synovial joints, according to the shape axes of movements and morphology Simple, Compound, Complex joints, Blood supply and nerve supply. Factors limiting range of movement,

Kinesiologically: Sellar, Ovoid, Joint position: Loose-packed, Close-packed , Kinesiology, Body lever system

ii. BURSA, Structure , Functions , types:

Adventitious bursae - Housemaid's knee, Clergyman's knee, Student's elbow, Weaver's bottom, Porter's shoulder, Bursitis

III. GENERAL MYOLOGY

Definition, types: Origin, insertion, Morphological classification Actions of muscles, nerve supply

Functional classification , Prime movers, Fixators, Antagonists, Synergists, Number and diameter of fibres, Range of contraction, Active insufficiency, Passive insufficiency

V. INTEGUMENT

a) Skin – Introduction:

Types : Thick,& Thin hairy skin, functions, innervation Surface area. Structure : Epidermis, Dermis, Clinical correlation, significance of Langer's lines, Tension lines, flexure lines, Appendages, Special sensory organs Skin grafts,

b) SUPERFICIAL FASCIA

Distribution of fat, functions

c) DEEP FASCIA

Features, Modifications, Functions

VII. GENERAL ANGIOLOGY

i. Arteries- Muscular, Elastic; Arterioles; Capillaries. Sinusoids. Veins- Anatomosis: End arteries; Vasa vasorum, nerve supply of blood vessels, Ischaemia, Infarct Collateral circulation, Functional end arteries, Arteriosclerosis

ii. Lymphatic system Lymph vessels, Central lymphoid tissue, Peripheral lymphoid organs, Circulating lymphocytes - T & B lymphocytes, functions. Tissue transplantation – role of lymphoid tissue

VIII. GENERAL NEUROLOGY

Structure of nervous tissue, Neurons: Synapses: structural types, functional types Classification of neurons- According to polarity and According to relative lengths of axons and dendrites. Neuroglia: Nerves- Cranial – Spinal, structure of typical spinal nerve Autonomic nervous system: Sympathetic ganglia, postganglionic fibres Sympathetic: Parasympathetic: Cranial outflow, sacral outflow

B. REGIONAL ANATOMY

I. UPPER LIMB

REGIONS: Mammary gland, Axilla, Cubital fossa, Arm, Forearam, fascial spaces of the hand, relations and functional importance of individual structures, Dupuytren's contracture. Hand as a functional unit- grips, Nerve injury, carpal tunnel syndrome, Clavipectoral fascia; Salient features about carpals;

ARTHOLOGY

Shoulder girdle; Shoulder joint; Elbow: Radioulnar joints: Wrist; Carpometacarpal joint of thumb; Bones taking part Classification of joints, Movements with muscles causing movements, midcarpal joint, metacarpophalangeal joints, Interphalangeal joints Fall on the outstretched hand

Axilla: Collaterals Lymph nodes (breast) axillary sheath cervico-axillary canal, Abscess drainage, **Palm:** comparative anatomy (thumb, pamarisbrevis), position of rest and of function, fascial spaces: Surgical significance

OSTEOLOGY

Identification; anatomical postion; Parts of bones of upper limb, Joints formed; Development; identification of individual carpals in an articulated hand, muscle& ligament attachments. Clavicle: Line of weight transmission, commonest site of fracture Humerus: fractures-lles fracture, Smith's fractureCarpals, Metacarpals, Phalanges: Carpal tunnel syndrome, fracture scaphoid

Surgical approaches, Subluxation of head of radius, carrying angle

MYOLOGY

Muscles of upper limb, attachment , Nerve

supply, Actions Applied aspects: Volkmann's ischaemic contracture Quadrangular and triangular spaces, triange of auscultation

ANGIOLOGY

Axillary, Brachial, Raidal, Ulnar Arteries, veins, lymphatics Commencement, Termination, Main area of distribution and drainage, Anastomosis-Applied aspects, artery : Damage to vessels, Raynaud's disease, Veins: thromobosis, Lymphatics: Lymphangitis (red streaks), lymphadenitis

NEUROLOGY

A. Nerves in details

Axillary, median, ulnar, musculocutaneous, radial Origin, course, distribution, Root value, Applied anatomy.

B. Plexus: Brachial

Applied aspects: nerve injuries at various sites-Tendon reflexes- Winging of scapula, Erb's palsy, Klumpke' s palsy, Crutch palsy, Saturday night palsy , ulnar paradox

II. LOWER LIMB

REGION: boundaries, major contents; Gluteal region femoral triangle; Adductor canal, compartments of thigh, leg; Popliteal fossa, sole Arches of foot, gluteal IM injections, Femoral hernia Blood supply of head of femur; Fracture neck of femur, mechanics of movements of joints; hip and knee, trendelenberg's test; Knee jont; derangement, injuries to cruciate ligaments, menisci; (tear-bucket handle type); Ankle: Sprain Mechanism of venous return, varicose veins Applied aspects of Adductor canal, Popliteal aneurysms

OSTEOLOGY : Identification, regional bones, anatomical position ; parts, joints formed , for tarsals – Identification of individual tarsals in an articulated foot & separately Applied aspects: Bony specialization for bipeds, walking and transmission of weight, Fracture, femoral torsion, neck shaft angle, bone grafts

ARTHROLOGY

Hip, knee, ankle, subtalar, Tibiofibular

Hip joint: dislocation, congentital, traumatic, surgical approaches of joints (anatomical basis) : traumatic effusion, bursitis

MYOLOGY

Attachments, nerve supply, actions of Muscles of lower limb, Calf pump, antigravity muscles

ANGIOLOGY

Artery : femoral, Profunda femoris, popliteal, dorsalispedis, plantar arteries, commencement, termination, main area of supply, course, relations & applied

Veins: Venous drainage of lower limb, long and short Saphenous veins, Communication and valves. Varicose veins

Lymphatics : Inguinal & Popliteal group of lymph nodes

Intermittent claudication, clinical significance of **anastomosis:** around knee, venous thrombosis

NEUROLOGY

a. Plexus: Lumbar and sacral, Location, Formation, Distribution

b. Nerves : Root value of sciatic, femoral, Obturator, tibial, common peroneal nerves; Origin, course, distribution; sciatica, foot drop sciatica.

III. ABDOMEN

1. ANTERIOR ABDOMINAL WALL

Rectus sheath, quadrants and regions, Testes, epididymis, spermatic cord, scrotum

Surgical incisions of abdomen, types of inguinal herniae Peritoneum, Omentum, Omental Bursa, Epiploic Foramen, Testes: Morphology, blood supply, lymphatic drainage

SPERMATIC CORD

Definition, beginning, end, course and contents, coverings, Applied.

2. ABDOMINAL ORGANS

Morphology, relations Blood supply, lymphatics, nerve supply and applied anatomy of following organs

Stomach, Spleen, Liver; Biliary Apparatus, Pancreas, Small Intestine, Large Intestine, Caecum and Vermiform Appendix, Kidneys, Ureters, Suprarenal Glands Peptic ulcer, Splenic circulation, splenic vascular segments, liver biopsy, Support of liver, Gall stones, duct system of pancreas, Surgical approach to kidney, stones (Renal), Ureter, Sites of constrictions, Hydronephrosis, pheochromocytoma Gastroscopy, Achlorhydria, Splenectomy, Liver transplant, Pancreatitis, diabetes, renal transplant, Stones in Ureter, Cushing's disease

3. PELVIC VISCERA : Morphology, relations, Blood supplynerve supply & applied anatomy of

URINARY BLADDER & URETHRA, UTERUS, OVARIES AND UTERINE TUBES, PROSTATE, RECTUM AND ANAL CANAL, UROGENITAL DIAPHRAGM (UGD)

Supports, micturition, stones in bladder, Ovarian cyst, enlargement, complications, fistula, Fissure, piles Cystoscopy, Tubectomy, Hysterectomy, cancer, supports of rectum

4. PERINEUM

Ischiorectal fossa, pudendal canal, perineal spacesUrogenital diaphragm, Testis, Vasdeferences male urethra, penis, perineal pouches, Ischiorectal hernia, extra vasation of urine Vasectomy

5. MYOLOGY

Anterior abdominal wall , Rectus sheath, Psoas major, Quadratuslumborum, Thoracoabdomoinal diaphragm, pelvic diaphragm, Thoracolumbar fascia, perineal spaces & muscles Psoas abscess

6. OSTEOLOGY

Pelvis, Lumbar vertebrae, Sacrum, curvatures of vertebral column

Pelvis - types

Various diameters, identification of different lumbar vertebrae, anatomical basis of disc prolapse, nerve compression

Sacralization, Lumbarization

7. ARTHOLOGY

Movements of lumbar vertebrae, lumbosacral, sacroiliac, sacrococcgeal joints

8. ANGIOLOGY

Origin, course, termination, relations, branches & Applied anatomy of Portal vein

Portosystemic communications in detail.

Development Inferior Vena cava, Abdominal aorta, Internal iliac artery

9. NEUROLOGY, LUMBAR PLEXUS, SACRAL PLEXUS

IV. THORAX

1. THORACIC WALL, THORACIC INLET

Boundaries & contents

Thoracic Outlet, Boundaries & contents, muscles, Typical and Atypical intercostal space, Movements of respiration.

2. MEDIASTINUM

Divisions & major contents Mediastinitis, Mediastinoscopy

Superior & Posterior Mediastina. List of Structures Boundaries & contents:

Superior mediastinal syndrome, Course, relations and branches of aorta, area of drainage

Coarctation of aorta, aneurysm, developmental anomalies

3. PLEURA

Pleural reflections, recesses, innervation importance of recessespleural effusion

LUNGS

Gross description including lobes, fissures and bronchopulmonary segments relations, blood supply, nerve supply

Postural drainage, surgical importance, of bronchopulmonary segments, foreignbody inhalation

4. PERICARDIUM & HEART

Divisions of pericardium and sinuses referred pain Pericardial effusion

HEART

Anatomical position, location, surfaces and borders, interior of all chambers, conducting system of heart; vessels of heart

Relations, nerve supply - patent foramen ovale, IV septum, over-riding aorta, referred pain, functional end arteries - coronaries PDA, Fallot's tetralogy, etc.

5. OSTEOLOGY

Identification and parts of Vertebrae , Ribs – Sternum, Vertebral column and curvatures of vertebral columns. Identification of T1, T9, T10, T11, T12, vertebrae and atypical ribs - 1, 2, 11, 12.relations, attachments, ossification

Fracture ribs, flail chest, compression fracture of vertebra

V) HEAD-FACE NECK

1. REGIONS AND ORGANS, FASCIAE OF THE NECK TRIANGLES OF NECK Deep fascia of Neck Spaces and spread of infections, axillary sheath , Relations of contents, Damage to accessory nerve, sialogram, approach to Submandibular gland, bidigital palpation of submandibular gland ,Dangerous area of face, squint surgical neck incisions, external jugular vein - air embolism, LN biopsy, JVP, pulse, Frey's syndrome

GLANDS

Thyroid, Parathyroid, Parotid, Submandibular, sublingual, Pituitary Morphology, capsule, relations, nerve supply, blood supply, Applied anatomy &FACE Muscles, nerve supply - blood supply Scalp, Palate, Tongue, Larynx, Pharynx, Orbit, Infratemporal Fossa, Eyeball, Styloid Apparatus, Nasal Cavity, PTerygopalatine Fossa, Ear- Internal Ear, Middle, Ear, External Ear, Meninges

2. OSTEOLOGY

Identification, anatomical position, parts, foramina in the skull, structures passing through them, normabasalis, verticalis, frontalis, lateralis, occipitalis and interior of cranial cavity.Identification and side determination of separate bones with important features and foramina, cervical vertebrae and curvatures of vertebral column.Foetal skull; Mandible: Age changes Fontanellae, Dental formula

Fractures of the skull, Age of dentition, cervical rib, disc herniation

3. ARTHROLOGY

TM JOINT, Joints between cervical vertebrae Dislocation

4. MYOLOGY

Sternomastoid, Digastric, Mylohyoid, Hyoglossus, Suprahyoid, Infrahyoid muscles, Muscles of facial expression, mastication, larynx, pharynx, tongue, palate and, Extra-ocular muscles Relations, development, Nerve supply, actions Facial nerve palsy nerve injuries.

5. ANGIOLOGY ARTERIES

Origin, parts, course, relations, branches of: Subclavian, Internal carotid, External carotid, Vertebral, Lingual, Superior thyroid , Facial, Maxillary Superficial temporal Sub-branches, distributions Subclavian steal syndrome, Subclavian-axillary anastomosis

VEINS

External and internal Jugular veins, venous drainage of face

VENOUS SINUSES

Names, locations, drainage, classification Emissary Veins, Cavernous Sinus, Lymphatic Drainage of Head Face Neck

6. NEUROLOGY

Cranial nerves, Nuclei, course, relations, branches, distribution, reflex pathways & applied anatomy, PLEXUS: Cervical, Brachial, Parasympathetic Ganglia, Cervical Sympathetic Chain

VI)NEUROANATOMY

1. SPINAL CORD

Gross features: Extent (child / adult), enlargements, conusmedullaris, filumterminale, spinal meninges Tracts Ascending and Descending Spinal segments, vertebral correlation, significance of enlargements, nuclei of grey matter at upper & lower cervical, mid-thoracic, Lumbar & sacral levels Clinical correlation of lesions anomalies, lamination, syringomyelia, PID, tumours, TB, trauma, dislocation, myelography Transverse sections at the cervical, Thoracic, Lumbar, & Sacral levels.

2. MEDULLA OBLONGATA

Gross features: Motor decussation: Sensory decussation:Inferior olivary nucleus Cranial nerve nuclei, Tuber cinereum, pontobulbar body, Order of neurons, Details of nuclei and organization of white matter medullary syndromes-Bulbar palsy, increased ICT, Arnold-Chiari syndrome, malformations.Cross sections of Medulla at the level of motor decussation, sensory decussation, inferiorolivary muscles.

3. PONS

Cross sections at the level of :¨ Facial colliculus, Trigeminal nucleus

General features: Peduncles, Floor of the fourth ventricle Relations, Tumours, pontinehaemorrhage

4. CEREBELLUM

Gross features : Divisions, Lobes, relations, internal structure –connections of, cerebellar cortex and intracerebellar nuclei, white matter, Cerebellar Peduncles classification, Purkinje neuron, dysfunction,-dysequilibrium, ataxia, hypotonia Nuclei: Names of nuclei and important connections Peduncles : Important tracts in the peduncles

Functions : of archicerebellum, paleocerebellum & neocerebellum

5. MIDBRAIN

General features : relations, contents of interpeduncular cistern, connections of red nucleus

Weber's syndrome, Benedikt's syndrome

T.S. at inferior colliculus, TS at superior colliculus

6. CEREBRUM

Cortex, White Matter, Basal Nuclei, Limbic Lobe Surfaces, borders, major sulci, gyri, poles, lobes, major functional areas, interior - gray and white matterGray - cortex - granular / agranular, striate, Basal nuclei - names, White matter - classification with examples; Internal capsule & corpus callosum, Components of limbic lobe Handedness, Connections of limbic lobe

7. DIENCEPHALON

Dorsal thalamus EpithalamusMetathalamus Hypothalamus Subthalamus Boundaries, parts, relations (gross), cavity, major nuclei, gross connections

8. VENTRICULAR SYSTEM Lateral , IIIrd , IVth ventricles

Parts, boundaries, foramina, correlation with parts of brain Choroid fissure, recesses, Queckenstedt's test Hydrocephalus, VV shunt

9. BLOOD SUPPLY OF BRAIN

Circle of Willis, arteries, veins blood brain barrier, Hemiplegia End arteries, CSF formation , subarachnoid space,

10. MENINGES

Cerebral and spinal meninges, folds of dura, contents of subarachnoid spaces, arachnoid villi and granulations, direction of flow of CSF, lumbar puncture Cisterns, Definition, terminology, cisterna magna cisternal puncture, Queckensted's test, vertebral venous plexus, choroid plexus. Extracerebral and intracerebral communication, CSF block, Epidural space

C) MICROANATOMY

I) GENERAL HISTOLOGY

1. MICROSCOPE

Light microscope: parts, magnification, resolution, Basics of Electron microscope Basics of Micro techniques, H and E staining

2. CYTOLOGY

Cell, Cytoplasm and nucleus, Cytomembranes, Unit membrane, Cell organelles. Golgi apparatus, Endoplasmic reticulum, Protein synthesis Mitochondrial DNA, mitochondrial myopathy Specialisations of cell surface, Sarcoplasmic reticulum of muscle, Primary and secondary lysosomes, residual bodies, Effect of colchicine and anticytotic drugs on spindles preventing mitosis, Endocytosis, exocytosis, movement of microvilli; Cell mitotic activity Lysosomal storage disease

NUCLEUS - Structure, nuclear envelope, chromatin, Barr body, nucleolus

3. Epithelium

Definition, Classification, Structure of various types & subtypes of epithelia Nutrition, Renewal, Innervation

Metaplasia;

Surface modifications,Cilia; Microvilli; Stereocilia; Cell junction andjunctional complexes; Glands, Classification; Unicellular and Multicellular; Exocrine, Endocrine, Amphicrine. Exocrine: Simple, Compound; Apocrine, Merocrine, Holocrine, Paracrine; Tubular, alveolar, tubuloalveolar; Serous; Mucous; Mixed Connective tissue, classification, structure, fibres, ground substance, loose areolar tissue, adipose tissue GlycosaminoglycansScurvy, oedema, inflammation

4. Bone & Cartilage

Bone, Compact, Cancellous, Developing bone; ossification, Woven, lamellar bone Cartilage, Classification, types, Perichondrium, functions Growth: Interstitial, Appositional; Bone callus, Osteomalacia , Osteoporosis, Osteoma Chondroma

J) Muscle

Skeletal muscle smooth muscle Cardiac muscle Intercalated disc, syncitium; Sarcomere,I and A bands, myofibrils, myofilaments,; Srcoplasmic reticulum Innervation, Red fibres, white fibresHypertrophy, Hyperplasia, Rigor mortis, Myasthenia gravis

K) Nervous tissue

Neurons, types; Neuroglia, types; Myelinated nerve fibreLS; T.S. Non-myelinated nerve fibre; Peripheral nerve; Nodes of Ranvier; Synapses;

L) Vessels

Large sized artery Medium sized artery, Arteriole; Capillary, Sinusoid;

Medium sized vein; Atherosclerosis, Aneurysm, Infarcts, clotting

Lymphoid tissue

T cells, B cells; Mucosa Associated Lymphoid Tissue; Humoral immunity, Cell mediated immunity; Lymph node section; Thymus, Spleen, Tonsil,Appendix

Blood-thymus barrier, Open and closed circulation in the spleen Organ transplantation, Graft rejection, Autoimmune disease

II) SYSTEMIC HISTOLOGY

Basic organization, salient features, Identification Structure and function correlation, individual features

1. Integumentary system

Skin – Types; Epidermis and dermis; various cells, Appendages of skin, Sensory organs of skin

Renewal of epidermis, Albinism, melanoma, Acne

2. Alimentary system

a) Oral tissues

Lip, Tongue, taste buds, Papillae; Tooth, Salivary glands Striated duct, ion transport

b) GI Tract

Basic organization - 4 layers; Oesophagus with glands Stomach - Fundus, Chief cells, Parietal cells, intrinsic factor; Stomach – Pylorus. Duodenum Brunner's glands; Small intestine - with Peyer's patch, Appendix, Large intestine

Pernicious anaemia, ulcer, gastritis, Hirschsprung's disease or megacolon

c) Glands

Pancreas : Exocrine, islets of Langerhans; Liver, Hepatic lobule, portal lobule,; portal acinus; Gall bladder

Liver as an endocrine gland

Diabetes mellitus, Cirrhosis of liver, liver regeneration, Chalones

3. Respiratory system

Epiglottis; Trachea, Lung, Bronchus, bronchiole, alveolar duct, sac, alveoli, pulmonary type I and II cells spirally arranged bronchial smooth muscle Bronchial asthma, Hyaline membrane disease, Heart failure cells

4. Urinary system

Basic organization; Nephron - Parts, podocytes, Collecting system; Kidney - Cortex, Medulla Ureter; Urinary bladder, Spongy UrethraJuxtaglomerular apparatus

5. Male reproductive system

Basic organization; Gonads, Ducts, Accessory glands; Testis; Epididymis; Vas deferens; Prostate; Penis Stages of spermatogenesis Immotile sperm

6. Female reproductive system

Basic organization; Gonads, ducts, Accessory glands; Ovary - with corpus luteum;Fallopian tube; Uterus; Mammary gland Active, Passive, Placenta, umbilical cord ,Stages of maturation of ovarian follicle , Phases of menstruation Colostrum, IgA, Placenta : Maternal unit, Foetal unit, Umbilical cord: Wharton's Jelly

7. Endocrine system: Pituitary; Adenohypophysis;

Neurohypophysis; Thyroid; Follicular, parafollicular cells; Parathyroid; Chief cells, oxyphil cells; Adrenal; Pancreas; Testis; Ovary, Hypothalamo-pituitary Portal system Pheochromocytoma

8. Nervous system

A. Central

Basic organization; Cerebrum; Cerebellum; Spinal cord; Cervical, Thoracic, Lumbar, Sacral,

B. Peripheral

Sensory ganglia; Autonomic ganglia (sympathetic ganglion); Peripheral nerve TS, LS

Special senses

1. Visual: Three coats of Eyeball Cornea ; Sclerocornealjunction ; Canal of Schlemmn Lens; Retina;Optic nerve, Eyelid, Keratoplasty, eye donation, glaucoma, retinal detachment

2. Auditory :

Demonstration of Internal ear; Cochlea; Semicircular canals; Vestibule;

3. Olfactory

Demonstration of olfactory mucosa

4. Gustatory

Tongue with taste buds

D) DEVELOPMENTAL ANATOMY

I) GENERAL EMBRYOLOGY

1. Introduction: Stages of human development, phylogeny Ontogeny, Viability,

Terms of reference : e.g. Cranial, Rostral, Caudal, Dorsal, Ventral, Lateral, Medial, Median, Planes of section

The law of recapitulation, "Critical period", malformations, USG, Amniocentesis Chorionic Villus Biopsy, Fetoscopy, etc Teratology History of Embryology

2. Gametogenesis : Cell division, Mitosis, Meiosis, Menstrualcycle other reproductive cycles, Spermatogenesis, Oogenesis , Germ cell Transport and Fertilisation, Sperm capacitation, Methods of contraception, Sex determination

Teratogenic influences; Fertility and Sterility, Surrogate motherhood; Social significance of "Sex-ratio",

3. Cleavage, Blastocyst, Cytotrophoblast, SyncytiotrophoblastImplantation: Normal sites, Abnormal sites,; Placenta praevia, Extra-embryonic Mesoderm and Coelom; Bilaminar disc - Prochordal plate "abortion"; Decidual reaction, Chorionic Gonadotrop ins - Pregnancy test

4. Primitive streak Notochord, Trilaminar embryo, Neural tube and its fate Neural crest cells- their fate, Development of somites, Intra-embryonic coelom, Foetal membranes :Chorionic villi, Amnion, Yolk sac, Allantois Umbilical cordCongenital malformations, Nucleus pulposus, Sacrococcygealteratomas, Neural tube defects, AnencephalySigns of pregnancy in the first trimester, Role of teratogens, Alphafetoprotein Levels

5. Folding of the embryo : Derivatives of germ layers, Thalidomide baby, Estimation of Embryonic Age - Superfoetation & Superfoecundation

6. Fetal membranes: Formation, Functions, fate of: Chorion ;Amnion; Yolk sac; Allantois; Decidua; Umbilical cord; Placenta - Physiological functions; Foetomaternal circulation, Placental barrier, Twinning: monozygotic, dizygotic

Placental hormones, Uterine growth, Parturition, Estimation of fetal age Types of cord attachments, Chorion villus biopsy and Amniocentesis; Uses of amniotic membranes, Trophoblastic tumours - Rh incompatibility, Haemolytic disease of newborn

II) Systemic Embryology

i) Cardiovascular System - Venous System; Heart - Chambers -Septa - Truncus - Aortic arches, Venous system, Inferior vena cava, Portal vein- Fetal circulation - Changes at birth, ASDs, VSDs, PDA, Fallot's Tetralogy. Veins, abnormalities, Surgical corrections

ii) The Respiratory System: Development of Larynx, Trachea,Bronchi, Lungs; Tracheo-oesophageal Fistula Malformations Respiratory Distress Syndrome; Premature births

iii) The Alimentary System: Foregut: Oesophagus, Stomach,(Lesser sac); Duodenum - Hepatobiliary apparatus, Pancreas, Spleen, Portal vein; Midgut : Rotation and Fixation, Caecum and Appendix, Meckel's diverticulum; Hindgut : Cloaca; Rectum and Anal Canal

Malformation - Tracheo-oesophageal fistulae; Congenital Hypertrophic Pyloric Stenosis; Atresia; Omphalocele, Hernia; Malformations - Fistulae, Situsinversus; Nonrotation; Mixed rotation of gut

iv) The Urogenital System, Development of Kidneys and Ureters; Cloaca – Urinary Bladder and Urethra; Suprarenal gl and; Genital System - Testis and Ovary; Ducts and associated glands; External genital organs, Mesonephric and paramesonephric ducts, Uterine tube, Uterus and vagina Congenital malformations; Ambiguous genitalia and Hermaphroditism; Remnants and Vestiges of Ducts and Tubules

v) **Integument:** Development of mammary gland, skin &appendages Pharyngeal arches, nerves, muscles, cartilage, development of face, palate, Pharyngeal pouches

vi) **Endocrine :** Glands, Adrenal, Thyroid, Parathyroid, Pituitary

vii) **The Nervous System :** Neural Tube: Spinal Cord and Braini.e., Forebrain,Midbrain and Hindbrain, Hypophysiscerebri; Neural Crest:

Peripheral NervousSystem, Correlation Spina bifida; Anencephaly, Hydrocephalus, glaucoma; Colobomairidis, Myelination of tracts shortening of spinal cord, Neural Tube,Defects

Organs of the special senses - Eye and Ear

Eye - Eye ball, optic nerve , cornea, lens, retina, Retinal detachment; Ear - Internal ear -; External and middle ear - anomalies of the Ear

E) GENETICS

i) **Introduction –** Mendelism, Laws Genetic code Evolution, Eugenics and Polygenic inheritance, Radiation and mutation,Sex chromatin, Population genetics

ii) **Cytogenetics**

Structure and function of chromosomes, Cell cycle, Cell divisions,

iii) **Molecular genetics (Normal)**

Gene, Genetic code, Structure and types of DNA, Structure of RNA

iv) **Inheritance:** Single gene inheritance, Multifactorial inheritance,Polygenic inheritance, Mitochondrial inheritance, Pedigree charts with symbols Autosomal & sex linked inheritance

Genetic basis of variation

Mutation, Polymorphism, Multiple allelism, Types, Factors influencing mutational load

Developmental genetics

chromosomes; Lyon's hypothesis; Hermaphroditism and pseudohermaphroditism; teratogenesis Gonadal dysgenesis, Adrenogenital syndrome Androgen insensitivity, Genetic Counselling, Pedigree charting

Chromosomal basis of disease: Numerical, Structural abnormalities Down's, Cridu-chat, Turner's, Klinefelter's syndromes

Dermatogly phics Genetic Counselling

Concept of Prenatal diagnosis

Maternal Serum Sampling; Fetal USG; Fetal Amniocentesis; Fetal Chorion Villus Sampling (cordocentesis); Foetoscopy Eugenics

F) Radiological Anatomy

I) Introduction

Principles of plain radiograms and CT scan.

Identification of gross anatomical features in plain and contrast radiographs.

Identification of gross anatomical features in normal CT scan especially of the Thorax,

Abdomen and Head-Face-Neck-Brain regions.

Diagnostic procedures. Technical details (e.g. dye) are not necessary.

I) UPPER LIMB – X-Ray of

II) LOWER LIMB

Shoulder region
Hip region
Arm
Thigh
Elbow region
Knee region
Fore arm
Leg
Wrist and hand
Ankle region

III) ABDOMEN

IV) THORAX
Plain X-ray
Plain X-ray
Ba meal
Ba swallow
Ba meal follow through
Bronchogram
Ba enema
mediastinum
Oral cholecystogram
lung
Intravenous pylogram
Heart
Cystogram Pleural recesses
Ascending pyelogram
Abdominal Aortogram
Hystero-salpingogram
Myelogram

V) HEAD-FACE
X-ray skull plain
Carotid angiogram
Vertebral arteriogram
Ventriculogram

VI) NECK
Plain X-ray cervical region
CT, MRI OF WHOLE BODY

G) SURFACE ANATOMY

I) SURFACE ANATOMY:

1. Upper Limb

(BONY) LANDMARKS(PALPATION OF):

Clavicle, Spine of scapula, Inferior angle, Coracoid process, Epicondyles of humerus, olecranon process of ulna; Head and styloid processes of radius and ulna, Heads of metacarpals knuckles), Pisiform, Hook of Hammate, scaphoid, Anatomical snuff box

NERVES: Mark, Ulnar nerve

Ulnar nerve thickening in Leprosy

VESSELS : Mark Axillary artery, Brachial artery, Radialartery

2. Lower Limb

(BONY) LANDMARKS (PALPATION OF): Anterior superior iliac spine, Iliac crest, Tubercle of the iliac crest, Ischial tuberosity, Greater trochanter, Adductor tubercle, Head and neck of fibula, Lateral and medial malleoli, Tibial tuberosity, Subcutaneous surface of tibia, Patella

NERVES: Mark Sciatic, Tibial, Common peroneal, Femoral, Obturator Thickening of common peroneal nerve in Leprosy

VESSELS : Mark Femoral, Popliteal, Dorsalispedis, Posterior tibial anterior tibial

- Femoral artery
- Femoral vein
- Femoral nerve
- Popliteal artery
- Posterior tibial artery
- Anterior tibial artery
- Dorsalispedis artery
- Great saphenous vein

3. ABDOMEN

(BONY) LANDMARKS (PALPATION OF) : Anterior superior iliac spine, PubicTubercle, iliac crest

OTHERS : Enlarged liver, spleen, kidneys, Abdominal quadrants andregions; Position of superficial and deep inguinal rings; Renal angle; McBurney's point;

- Marking of Plane and Quadrants
- Marking of cocaum
- Marking of appendix
- Marking of Abdominal Aorta
- Marking of Kidney
- Marking of inguinal ligament
- Saphenous opening
- Adductor tubercle
- Sciatic nerve
- Safe area for I.M injection
- Head, neck of fibula
- All bony prominences

4. THORAX (BONY) LANDMARKS(PALPATION OF) : Sternalangle, Counting of rib spaces, locating thoracic spine

OTHERS: Apex beat, Apices of the lungs, Triangle of auscultation Heart valves

- Reflections of pleura with tracing
- Margins of lings with borders
- Margins of pericardium
- Borders of heart
- Apex of lung
- Arch of Aorta
- Valve of heart –Tricuspid
  Bicuspid
  Semilunar

5. HEAD FACE NECK - (BONY) LANDMARKS (PALPATION OF) : Nasion, Glabella, superciliary arches, Inion, Mastoid process, Suprameatal triangle, Zygoma, Zygomatic arch, Angle of mandible, Head of mandible

OTHERS : Thyroid gland, Cervical lymph nodes, (Horizontal and vertical), Midlinestructures in the neck

c. HEAD FACE NECK

ORGANS : Parotid gland & duct Middle meningeal artery, facial artery Pterion, Bregma, Reid's base line, Suprameatal triangle Thyroid gland, Common carotid artery , External carotid artery , Internal carotid artery, Internal jugular vein, Trachea

d. BRAIN

Sites of Lateral sulcus, Cental sulcus, Median longitudinal fissure, Superior sagittal sinus, Sigmoid sinus, transverse sinus

Topics Anatomy with radiology and Imaging in integrated teaching:

Sr.no	Topic	Faculty	Hours	Session
1	Introduction to imaging modalities	Radiology	1	Theory
2	Introduction to cross sectional anatomy	Anatomy	1	Theory
3	Sectional anatomy of upper limb	Anatomy	1	Practical
4	Sectional anatomy of lower limb	Anatomy	1	Practical
5	Imaging of anatomy of extremities	Anatomy	1	Practical
6	Sectional anatomy of thorax, abdomen	Anatomy	1	Practical
7	Imaging modalities of thorax and abdomen	Radiology	1	Theory
8	Introduction to Sono anatomy	Radiology	1	Theory
9	Sectional anatomy of Brain	Anatomy	1	Practical
10	Sectional Anatomy of neck and face	Anatomy	1	Practical
11	Normal USG anatomy of abdomen and pelvis	Radiology	1	Practical

All these hours will be adjusted in existing teaching hours after rescheduling of lectures and practical sessions.

Details Syllabus for Human Biochemistry-IMBBS

(Structural formulae are not obligatory)

1. Basic Biochemistry- Competency no. 1.1

- Molecular and fuctional organization of cell and its subcellular components

2) Enzymes -Competency no. 2.1 to 2.7

- Biochemical nature of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors IUBMB enzyme classification
- Estimation of SGOT (AST)& SGPT (ALT) with its normal range and clinical significance.
- Mechanism of enzyme action, factors affecting enzyme activity, brief concept of enzyme kinetics with special reference to Vmax& km.
- Enzyme inhibition. Various inhibitors as drugs and poisons
- Diagnostic and therapeutic importance of various serum enzymes in various disorders
- Analytical uses of Enzymes in laboratory investigations (enzyme based assays)
- Interpret various serum enzymes of liver & biliary tract, Pancreas, cardiac & skeletal muscle in various disorders

3) Chemistry & Metabolism of Carbohydrates-Competency no.3.1 to 3.10

- Classification of carbohydrates with examples and functions of monosaccharides giving examples as energy fuel, glycosides and its therapeutic importance, disaccharides with examples and importance, polysaccharides with examples as storage form like glycogen, structural elements like glycosaminoglycans in the human body, Clinical importance of dextran. Resistant starch and dietary fibre
- Digestion & absorption, transport and storage of carbohydrates, Lactose intolerance; Pathway, energetics, regulation & clinical diseases / disorders of - Glycolysis including Rappaport Leubering cycle, Gluconeogenesis, Glycogenesis, Glycogenolysis , HMP pathway , Uronic acid pathway & Galactose metabolism
- TCA cycle Pathway, energetics, regulation & its concepts as amphibolic pathway;
- Common poisons that inhibit crucial enzymes of carbohydrate metabolism like: Iodoacetate, fluoride & arsenite as poisons that inhibit enzymes of glycolysis Fluoroacetate, arsenite & malonate as poisons that inhibit enzymes of TCA cycle
- Interpretation of the results of blood & urinary galactose levels in galactosemia;
- Interpretation of blood G6PD levels, Regulation of blood glucose in fed and fasting state in normal health & changes in diabetes mellitus.

4) Chemistry & Metabolism of Lipids-Competency no.4.1 to 4.7

- Definition & classification of lipids including classification of fatty acids, their nomenclature, numbering, functions & biological importance of various lipids like fatty acids, cholesterol ,

hormonal steroids, triglycerides, major phospholipids and sphingolipids

- Digestion, absorption and transport of lipids along with abnormalities like lipid malabsorption.
- Metabolism of fatty acids (β-oxidation of even and odd carbon fatty acids), regulation, energetics and disorders associated with oxidation of fatty acids, Formation & fate of ketone bodies, its significance, regulation and associated disorders like ketosis.In brief de novo fatty acid biosynthesis- site & organs, precursors, enzyme complex, product formed & regulatory steps.Biosynthesis of triacylglycerol and fate of triacylglycerol formed in liver & adipose tissue, its significance and regulation, Metabolic role of adipose tissue and disorders of lipid transport and storage like fatty liver.In brief Cholesterol biosynthesis- site & organs, precursors, key enzymes, product formed & regulatory step, metabolic fate & excretion
- Metabolism of various lipoproteins and hyperlipoproteinemia's, hypolipoproteinemias abetalipoproteinemias & Tangiers disease
- Classification structure and functions of lipoproteins- Metabolic interrelationship between various lipoproteins, Role of lipoproteins in transport of cholesterol and reverse cholesterol transport, atherosclerosis
- Various lipid profile tests with their biological reference intervals. Interpret lipid profile results in various disorders like hyper/hypolipoproteinemias, diabetes mellitus, nephritic syndrome, disorders of thyroid etc.
- Various eicosanoid classes (prostaglandins, leukotrienes & thromboxanes), their functions. Key features of synthesis of eicosanoids and inhibitors of eicosanoid synthesis, therapeutic uses of prostaglandins

5) Chemistry and Metabolism of Proteins- Competency no.5.1 to 5.5

- General nature of amino acid, classification and importance of amino acids with examples, peptide bond formation, biologically important peptides, different levels of protein structure including disulfide & weak bonds with examples and clinical Significance
- Definition, various classifications with examples and functions of proteins, plasma proteins, structure - function relationship of proteins like myoglobin, normal & abnormal hemoglobin
- Digestion, absorption and transport of dietary proteins with related disorders like Hartnup disease, cystinuria & glycinuria
- Role of transamination & deamination reactions in metabolism of amino acids in the formation of ammonia with their clinical significance. Transport of ammonia, pathway of urea cycle, its significance, regulation and metabolic disorders associated with urea cycle. Metabolic pathways for Glycine, Phenylalanine & Tyrosine, Sulphur containing amino acids (Methionine, Cysteine & Cystine) and branch chain amino acids (Valine, Isoleucine & Leucine), their role in biosynthesis of variety of specialized biomolecules,

associated metabolic disordersFor Tryptophan- Only important biomolecules formed & clinical significance

- Interpret laboratory results of protein metabolism for example: Levels of various metabolites in blood or urine in metabolic disorders like- urea cycle disorders, Phenylketonuria, Tyrosinemia, Alkaptonuria, Hartnups disease, MSUD, cystinuria & homocystinuria

6) Metabolism and Homeostasis - Competency no.6.1 to 6.15

- Integration of carbohydrate, protein and lipid metabolism at cellular and tissue or organ level with its significance, Metabolic processes with role of specific organs in fed, fasting and starvation states
- Important steps in de novo biosynthesis of purine and pyrimidine nucleotides and their regulation, enzymes of the nucleotide biosynthesis that are inhibited by anticancer drugs, salvage pathway for the synthesis of purine nucleotides with its significance, catabolism of purine and pyrimidine nucleotides
- Disorder of nucleotide metabolism like gout, Lesch-Nyhan syndrome, orotic aciduria, with diagnostic tests & biochemical mechanism of nutritional & drug therapy
- Lab results of analytes related with gout & Lesch-Nyhan syndrome. Levels of uric acid in blood & urine and presence of urate crystals in synovial fluid in gout, levels of uric acid in blood; Sources, biochemical functions, daily requirement and deficiency manifestations of fat soluble vitamins (Vitamin A, D, E & K). Sources, biochemical functions and deficiency manifestations of water soluble vitamins (Thiamine, Riboflavin, Niacin, Pantothenic acid, Pyridoxine, Biotin, Folic acid, Cobalamin and vitamin C)
- Electron transport chain, mechanism of oxidative phosphorylation (chemiosmotic theory), substrate level phosphorylation, Uncouplers & Inhibitors of electron transport chain , shuttle systems for transport of extra-mitochondrial NADH
- Acids, bases and buffers, mechanism of action of buffer, dietary sources of acids, bases, normal pH of body fluids. Role of blood buffers, respiratory system & kidney in regulation of blood pH. Disorders associated with blood pH (acidosis and alkalosis) & their compensatory mechanisms, anion gap & its clinical importance. Total body water and its compartmental distribution, various electrolytes- sodium, potassium and chloride, their distribution and clinical conditions related to their plasma level alterations, maintenance of normal water and electrolyte balance and disorders associated with water and electrolyte imbalance
- Interpretation of results of arterial blood gas (ABG) analysis in acidosis and alkalosis
- Dietary food sources, daily requirement, biochemical functions, metabolism and homeostasis of: Calcium, phosphorus & magnesium, trace elements (copper, fluoride, iodine, iron, manganese, selenium & zinc)
- Clinical conditions related to plasma level

alterations of: Calcium, phosphorus & magnesium Trace elements (copper, fluoride, iodine, iron, manganese, selenium & zinc)

- Structure and functions of hemoglobin, role of 2,3-bisphosphoglycerate (BPG) in oxygen binding and delivery, biosynthesis of heme (iron containing porphyrin), its regulation, functions in the body, disorders of heme biosynthesis (various types of porphyria's), catabolism of heme, various types of jaundice
- Types of normal human hemoglobin, types of normal & abnormal derivatives of hemoglobin, various hemoglobinopathies: Sickle cell anemia, Thalassemia
- Functions of liver, disorders& liver functiontests
- Functions of kidney, disorders& kidney function tests
- Functions of Thyroid, disorders& thyroid function tests
- Functions of Adrenals , disorders& Adrenal functiontests

7) Molecular Biology-Competency no.7.1 to 7.7

- Structure and functions of nucleotides, biologically important nucleotides and their importance, major types of synthetic analogs of nucleotides (antimetabolites) and their clinical significance, structure and functions of DNA and RNA, Phases of cell cycle
- Replication of DNA in Eukaryotes, inhibitors of DNA replication and different types of repair systems of DNATranscription in Eukaryotes and posttranscriptional modifications, inhibitors, reverse transcription & its significance Genetic code and wobble hypothesis, Translation in Eukaryotes, inhibitors, chaperons , protein folding and posttranslational modifications
- Causes and types of genetic mutations with examples. Regulation of Eukaryotic gene expression
- Recombinant DNA technology, restriction endonucleases, process of construction of recombinant DNA and its applications in medicine, DNA library, blot transfer techniques- southern blotting, northern blotting & western blotting, mechanism of polymerase chain reaction and its application in medical diagnosis and treatment of genetic diseases.
- Mechanisms of biotransformation of xenobiotics & associated diseases.
- Enzymatic and non-enzymatic antioxidant defense systems in the body.
- Free radical, biological sources of reactive oxygen species (ROS) and oxidative damage, oxidative stress, roll of oxidative stress in cancer, diabetes mellitus & atherosclerosis.

8) Nutrition -Competency no.8.1 to 8.5

- Importance of carbohydrates, lipids, proteins & vitamins, quality of proteins, various types of dietary fibers and their importance in the diet.
- Protein energy malnutrition, Kwashiorkor and Marasmus their causes and effects.
- Balanced diet in adult, in childhood and in pregnancy for optimal health, dietary advice in diabetes mellitus & coronary heart disease

- Causes, effects and health risk associated with overweight/ obesity
- Nutritional importance of commonly used items of food like cereals, pulses, eggs, meat, fish, fruits and vegetables and their normal dietary requirements

9) Extracellular Matrix -Competency no.9.1 to 9.3

- Types & functions of the extracellular matrix (ECM), Components and functions of proteoglycans, glycoproteins & major proteins of ECM
- Disorders associated with components of ECM like Osteogenesis imperfecta, Marfan's Syndrome , Mucopolysaccharidoses, Scurvy & Menkes Disease
- Types of protein targeting and sorting, disorders due to defects in mitochondrial targeting signals and defects in peroxisomal matrix protein import.

10) Oncogenesis and Immunity - Competency no.10.1 to 10.5

- Characteristics of cancer cell, molecular basis of cancer (carcinogenesis) ,various carcinogens and initiator, promoter of carcinogens, oncogenes and proto-oncogenes, tumor suppressor genes (retinoblastoma, RB and p53), mechanisms of apoptosis in physiologic and pathologic conditions .
- Biochemical tumor markers, biochemical basis of chemotherapy, radiotherapy, hormonal therapy, targeted drug therapy and immunotherapy. Cells of the Immune System, types of immune systems (Innate &adaptive), cellularand humoral components of innate and adaptive immune systems, B cell developmentand the formation of antibodies, types, structure and mechanism of action of antibodies (Immunoglobulins), primary and secondary response
- Innate and adaptive immune systems, immunological memory, T lymphocytes development, role of helper T cells (CD4+ T cells) and cytotoxic T cells/killer cells/CD8+ T cells in immune responses, Brief concept of MHC Disorders – Immunodeficiency, autoimmunity & hypersensitivity.
- Antigens, concept involved in vaccine development and their types.

11) Biochemical Laboratory Tests - Competency no.11.1 to 11.24

- Common lab equipments and apparatus like test tubes, pipettes & other glassware , auto pipettes, centrifuge, balances, oven, water bath good safe laboratory practice ,management of needle stick injury & latest guidelines of disposal of biomedical waste
- Preparation of buffer –acidic and alkaline. Measurement of pH paper and pH meter
- Chemical constituents of normal urine
- Physical characteristics and organic constituents of urine. Collection of random & 24 hour urine sample Urine Report: Physical characteristics and abnormal constituents, urine dipsticks Interpretation of Urine Abnormalities
- Urine: Screening of inborn errors. Paper chromatography for diagnosis of inborn errors
- Colorimeter- Principle, Beer and Lambert's law & applications. Principles of spectrophotometry.
- Estimation of serum creatinine, urine

creatinine and calculation of creatinine clearance and their clinical interpretation. Estimation of serum proteins, albumin and calculation of A/G ratio and their clinical interpretation. Estimation of plasma glucose, serum urea and their clinical interpretation.

- Estimation of serum total cholesterol and HDL cholesterol, their ratio and clinicalinterpretation.
- Estimation of serum triglycerides and their clinical interpretation.
- Estimation of serum calcium and phosphorus & their clinical interpretation.
- Estimation of serum bilirubin: Total, direct and indirect, their clinical interpretation.
- Estimation of SGOT (AST)/ SGPT(ALT) and their clinical interpretation.
- Estimation of serum ALP and their clinical interpretation.
- Physical characteristics and chemical composition of CSF
- Principle, application and working of following lab equipment's/techniques: pH meter, paper chromatography of amino acids, protein electrophoresis, TLC, PAGE, Electrolyte analysis by ISE, ABG analyzer, ELISA, immunodiffusion, auto analyzer, quality control, DNA isolation from blood/tissue
- Basis and rationale of biochemical tests required in the following Conditions:
- Diabetes mellitus-blood & urine glucose, microalbumin, ketone bodies andglycated hemoglobin –
- Dyslipidemia-lipid profile
- Myocardial infarction –CK, LDH, Troponin
- Renal failure & nephrotic syndrome, – BUN, Creatinine, urinary protein, cholesterol
- Gout- serum uric acid, synovial fluid analysis
- liver diseases & Jaundice- LFTs (Club with 6.1) Pancreatitis- serum amylase and lipase
- Disorder of acid base balance- ABG analysis for pH, pO2, O2 saturation pCO2, HCO3 and base excess (BE)
- Thyroid disorder – serum free and total T3 & T4 and serum TSH (Club with 6.1)
- Spectrophotometer –principle & use
- Instruments commonly used in Biochemistry laboratory & their applications.
- Energy contents of lipids, carbohydrates & proteins in common food items. Identify food items with high and low glycemic index and explain the importance of these in the diet.
- Advantages of unsaturated fats, disadvantages of saturated and trans fats in food

LIST OF PRACTICALS

1. Estimation of serum total proteins, albumin and A/G ratio
2. Estimation of glucose in blood
3. Estimation of urea in blood
4. Estimation of serum creatinine
5. Estimation of urinary creatinine
6. Estimation of serum calcium
7. Estimation of serum phosphorus

8. Estimation of serum total cholesterol
9. Estimation of serum HDL cholesterol
10. Estimation of serum triglycerides
11. Estimation of serum bilirubin
12. Assay of serum Alkaline phosphatase
13. Assay of serum Alanine aminotransferase and serum Aspartate aminotransferase
14. Urine analysis: Physical characteristics and Normal constituents
15. Urine analysis: Physical characteristics and Abnormal constituents

LIST OF LECTURE – CUM – DEMONSTRATIONS :

1. Good laboratory practices, laboratory hazards and waste management
2. Collection of specimen for biochemical analysis
3. Colorimetry and Spectrophotometry
4. Electrophoresis
5. Chromatography
6. Enzyme Linked Immunosorbent Assay(ELISA) and Immunodiffusion
7. Autoanalyzer
8. Electrolyte analysis by Ion Selective Electrode(ISE)
9. Preparation of buffers and pH meter
10. Arterial blood gas analyser
11. DNA isolation from blood/tissue
12. Composition of CSF
13. Quality control

Paper wise distribution of theory topics :

(Structural formulae are not obligatory.)

PAPER-I

Sr. No.	Topic	Competency nos. BI
1	Basic Biochemistry	1.1
2	Enzymes	2.1-2.7
3	Chemistry & metabolism of carbohydrates	3.1-3.10
4	Chemistry & metabolism of lipids	4.1-4.7
5	Biological oxidation	6.6
6	Nutrition	8.1-8.5
7	Extracellular matrix	9.1-9.3
8	Oncology , oncogenesis & immunity	10.1-10.5
9	Lecture cum demonstrations(1-6)	
10	AETCOM- 1.4	

PAPER-II

Sr. No.	Topic	Competency nos. BI
1	Chemistry & metabolism of proteins	5.1-5.5
2	Integration & starvation	6.1
3	Nucleic acid metabolism	6.2-6.4
4	Vitamins	6.5
5	Water electrolyte balance & acid base balance	6.7-6.8
6	Mineral metabolism	6.9-6.10
7	Haemoglobin chemistry and metabolism	6.11-6.12
8	Organ function test	6.13-6.15
9	Molecular biology	7.1-7.3
10	Lecture cum demonstrations(7-12)	

Detailed Syllabus of Human Physiology - IMBBS

1) GOAL

The broad goal of the teaching of undergraduate students in physiology aims at providing 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 diseases.

2) EDUCATIONAL OBJECTIVES:

2.1) At the end of the course, the student will be able to: describe the normal functions of all the organ systems, their regulatory mechanisms and interactions of the various systems for well-coordinated total body function.

2.2) Understand the relative contribution of each organ system in the maintenance of the milieu interior (homeostasis).

2.3) Explain the physiological aspects of normal growth and development. Analyse the physiological responses and adaptation to environmental stresses.

2.4) Comprehend the physiological principles underlying pathogenesis and treatment of disease.

2.5) Correlate knowledge of physiology of human reproductive system in relation to National Family Welfare Program.

3) SKILL:

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

3.1) Conduct experiments designed for study of physiological phenomena.

3.2) Interpret experimental/investigative data.

3.3) Distinguish between normal & abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

4) INTEGRATION:

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

5) COURSE CONTENT :

Theory ,List of topics.

5.1) GENERAL PHYSIOLOGY (5 hours)

- Introduction to Physiology
- Branches of Physiology
- Functional organization of human body.
- External and internal environment
- Homeostasis, Biofeedback mechanisms
- Cell Physiology
- Transport across cell membrane.
- Apoptosis

5.2) HEMATOLOGY: (15 hours)

- Composition and physical properties of blood.
- Functions of blood
- Plasma proteins: Types, concentration, functions.
- Erythrocytes: Morphology, advantages of biconcave shape, functions, normal count physiological variations in normal count & anaemia, polycythemia.
- Haemopoesis: general concepts
- Erythropoiesis: stages, sites, regulation, reticulocyte & its clinical significance.
- Haemoglobin: Functions, normal values,

physiological variations.

- Fate of erythrocytes: life span, Catabolism of Hb, bilirubin metabolism, jaundice.
- Physiological basis of anaemia, nutritional anaemia.
- Polycythemia: Primary & secondary.
- Leukocytes: types of W.B.C.s, normal & differential W.B.C. count, variations,properties, functions of W.B.C.s.
- Granulopoiesis – stages, regulation,
- Lymphopoiesis.
- Immunity: definition, concept of antigen & antibody, Antibody structure & types, typesof immunity-innate & acquired & their mechanism, cell mediated& humeral immunity, antigen – antibody reactions, primary & secondary response, basis of vaccination.
- Blood groups: Landsteiner's law.
- ABO System – type A & B antigen, ABO system & inheritance, relation to transfusion, cross matching (major & minor)
- Rh System – inheritance, Rh incompatibility & blood transfusion, Erythroblastosis foetalis
- M. N. system, other blood groups.
- Blood transfusion: indications, storage of blood & changes during storage, transfusion reactions.
- Monocyte - macrophage system: Classification, functions, functions of spleen.
- Hemostasis: definition, basic mechanisms of hemostasis,
- Platelets: structure, normal count & variations, functions, role in platelet plug formation, hemostasis & clot retraction. Thrombocytosis, thrombocytopenia purpura.
- Blood coagulation: Coagulation factors in plasma, basic mechanism of blood clotting, intrinsic & extrinsic pathways & difference between two pathways, role of calcium in coagulation, role of vitamin K, fate of clot.
- Blood coagulation tests.
- Classification of haemorrhagic diseases, D.I.C.
- Anticoagulants: commonly used & their mechanism of actions, blood coagulation tests – bleeding time, clotting time. Anticoagulants used in vivo and in vitro, Plasmin system. haemophilia.
- Body fluid compartments: role of water in body & its distributions, different body fluid compartments & composition of their fluid.
- Blood volume: normal value, physiological & pathological variations, blood volume regulation in detail (To be taken at end of lectures on C.V.S, kidney and endocrines)
- Physical properties of blood.
- Plasma proteins: Plasmapheresis, role of liver in plasma protein synthesis, relationship of diet & plasma protein synthesis.
- Bone marrow structure and cellular elements.
- Common Haemoglobinopathies (Hbs, Hbc, Thalassaemia)
- Method of determination of life span of R.B.Cs.

- Types of jaundice.
- Polycythemia, effects on haemodynamics.
- Measurement of: total body water, blood volume, plasma volume, I.C.F. volume.
- Blood component therapy.
- Effects of splenectomy.

5.3) NERVE (5 hours)

- Distinctive histological features relevant to functions of nerve fibers.
- Classification of nerve fibers: based on structure, diameter, functions.
- R.M.P. definition, production & maintenance, method of measurement & significance.
- Action potential: definition, Phases & its ionic basis.
- Production & propagation of A.P.
- Properties of A.P, significance.
- Experimental techniques to study the mechanism of production of R.M.P & A.P, patch clamp & voltage clamp technique
- Methods of recording of A.P.
- Properties of nerve fibers.
- Strength duration curve: chronaxie and factors affecting it.
- Factors affecting conduction in a nerve.

5.4) MUSCLE (7 hours)

- Classification of muscles
- Structure of skeletal muscle: Electronomicroscopic structure, muscle proteins – contractile, regulatory, structural & enzymatic.
- Sarcoplasmic tubular system: concept of sarcoplasmic triads & their functions.
- Neuromuscular transmission: Physiologic anatomy, events, N-M blocking & its clinical significance, applied aspect
- Excitation – contraction coupling.
- Molecular basis of skeletal muscle contraction: sliding filament theory, role of calcium.
- Energetics: fuel used by skeletal, muscle at rest & in exercise, metabolic pathways involved to yield A.T.P.
- Oxygen debt: definition, types (lactic, alactic), incurring of debt, repaying the debt, significance.
- Properties of skeletal muscle: excitability, refractory period (absolute, relative), conductivity, contractility – types (isometric, isotonic), effects of summations (multiple motor unit summation, frequency summation & tetanizibility), all or none law, extensibility & elasticity, fatiguability, factors affecting development of tension in the muscle:
- E.M.G. (in brief)
- Skeletal muscle circulation.
- Smooth muscle: structure, distribution, types molecular mechanism of contraction, properties, regulation, and disorders.
- Heat liberated during various phases of contraction, Fenn effect.
- Recording of muscle activity.

5.5) RESPIRATORY PHYSIOLOGY (15 hours)

- Physiologic anatomy
- Functions of respiratory system, non respiratory functions of lung
- Mechanics & mechanism of respiration:

- **Ventilation:** Inspiratory & expiratory muscles, intraplural pressure, lung & thoracic compliance, factors affecting compliance, work of breathing, surface tension forces & role of surfactant, airway resistance, elastic resistance.
- Lung volumes and capacities. Measurement, physiological & significance (tidal volume, vital capacity, forced vital capacity – details)
- Pulmonary ventilation, alveolar ventilation, alveolar dead space, - applied aspect,Maximum breathing capacity & breathing reserve.

Diffusion of Gases:

- Exchange of respiratory gases at alveolar– capillary membrane, factors affecting diffusion.

Gas Transport:

- Transport of oxygen, role of Haemoglobin, oxygen dissociation curve & factors affecting it.
- Transport of carbon dioxide

Control of Breathing :

Neural control – higher centers, reflexes.

Chemical control – central & peripheral chemoreceptors role of CO2, O2, H+

Pulmonary Circulation - Characteristics

- Ventilation perfusion ratio
- Respiratory adjustment in exercise.
- Hypoxia: types & high altitude hypoxia.
- Artificial respiration:
- Pulmonary function tests - principles
- Method of determination of dead space,residual volume, functional residual capacity.
- Oxygen therapy: indications, hazards of hyperbaric oxygen & use.
- Concept of P50
- Positive pressure breathing.

5.6) CARDIOVASCULAR PHYSIOLOGY (20 hours)

- Introduction, functions & importance of the system.
- General organization.
- Structure of heart, pericardium, myocardium, endocardium, nerve supply, Histology, details of cell junctions, syncytium, contractile & conducting fibers.
- Properties of cardiac muscle: excitability, conductivity, contractility, autorhythmicity, all or none law, long refractory period.
- Junctional tissues of heart, pacemaker potential, action potential of cardiac muscle.
- Generation & conduction of cardiac impulse.
- ECG: lead arrangement, normal waves & their significance with reference to lead II
- Cardiac cycle: pressure – volume changes, heart sounds & their clinical significance, correlation of pressure, volume, ECG, heart sounds in cardiac cycle.
- Heart rate & its regulation.
- Haemodynamics - def., blood flow, resistance
- Cardiac output: normal values, physiological variations, factors affecting cardiac output – details, regulation, measurement – principles.
- Blood pressure: Normal levels, measurement, determinants, short term & long term regulation - details.
- Capillary circulation, tissue fluid formation.
- Lymphatic system: Anatomy & structure, formation of lymph, composition of lymph ,

functions of lymphatic system, lymphflow & factors affecting it.

- Regional circulation: Physiologic anatomy, factors affecting, special features: coronary, cerebral , skin, portal
- Adaptation of cardiopulmonary system to various grades of exercise.
- Hemorrhagic shock – stages & compensatory mechanisms, effects on body, physiological basis of treatment in brief.
- Ion channel & receptors (physiological, pharmacological & clinical significance)
- E.C.G. – electrical axis of heart, heart blocks, arrhythmias, ischaemia, infarctions.
- Heart sounds: murmurs & their clinical significance.
- Experimental methods of studying cardiovascular physiology,
- Patho physiology of oedema

5.7) RENAL PHYSIOLOGY (10 hours)

- General introduction, structure & functions of kidney.
- Renal circulation: special features from functional point of view.
- Renal clearance tests & its significance
- Formation of urine – Glomerular filtration & tubular function (reabsorption & secretion)
- Concentration & dilution of urine.
- Physiology of micturition: basic reflex & control, cystometrogram, disorders.
- Artificial kidney: basic principles of dialysis.
- Role of kidney in acid – base balance.
- Experimental studies for renal functions.

5.8) BODY TEMPERATURE REGULATION: (2 hours)

- Homeothermia – Balance between heat gain & heat loss.
- Regulation of body temperature,
- Hyperthermia, Hypothermia.

5.9) ALIMENTARY SYSTEM: (12 hours)

- General introduction & organizational plan, innervations and blood supply.Salivary secretion: General principles, mechanism of secretion, composition, functions & regulation.
- Mastication and deglutition (Phases Mechanism & control)
- Gastric secretion: Functions of gastric juice, mechanism, composition, phases &regulation of gastric juice secretion.
- Gastric Motility: Electrical activity of stomach, pylorus, emptying of the stomach pyloric pump, regulation & factors promoting & inhibiting emptying.Pancreatic secretion: Structure, composition & mechanism of secretion of electrolytes& enzymes, regulation of secretion.
- Liver & gall bladder: Microscopic structure, functions of liver, composition of bile, cellular mechanism of bile formation, enterohepatic circulation of bile salts, control of secretion, concentration & storage of bile in gall bladder. Filling & evacuation of gall bladder functions of gall bladder
- Intestinal secretion: Structure, composition & mechanism of secretion of small intestinal juice, regulation of secretion.
- Secretion of large intestine
- Motility of small intestine: Structure &

innervation electrical activity of smooth muscle, resting membrane potential, slow waves, spike potentials, rhythmic segmenting contractions, peristalsis, control, functions of ileocecal valve.

- Motility of large intestine: Structure & innervation, mixing & mass movements, defecation reflex' and its control
- G.I. hormones: in brief &Gut brain axis.
- Digestion & absorption of carbohydrate, proteins, fats, absorption of water, electrolytes and vitamins.
- Gastric mucosal barrier, experiments to study regulation of gastric juice secretion, disorders of secretion, peptic ulcer., inhibitors of gastric secretion
- Effects of vagotomy, abnormal gastric motility vomiting.
- Barium meal studies, endoscopy, biopsy.
- Pathophysiology of small intestinal motility, paralytic ileus, diarrhea, obstruction.
- Pathophysiology of colonic motility, irritable bowel syndrome, drugs, constipation.
- Pancreatic function tests.
- Gall stone, effects of removal of gall bladder
- Disturbances of esophageal motility, spasm, achalasia, hiatus hernia.
- Methods for study of intestinal absorption.
- Effects of hepatectomy.

5.10) NUTRITION: (2 hours)

- Concept of balanced diet
- Factors affecting caloric requirements
- Requirements of various nutrients, sources, daily needs.
- Nutrition under special conditions (pregnancy, lactation, growing child).

5.11) ENDOCRINE SYSTEM (14 hours)

- Introduction
- Endocrine functions of Hypothalamus, releasing hormones, Mechanism of hormone action
- Anterior pituitary hormones: functions, regulation, disorders.
- Posterior pituitary hormones, ADH, Oxytocin functions, regulation, disorders.
- Thyroid hormone: synthesis, fate, functions, regulation, disorders.
- Parathyroid hormone: synthesis, functions, regulation, disorders – tetany.
- Adrenal (cortex & medulla) hormones: secretion, functions, regulation, disorders
- Pancreatic hormones: secretion, functions, regulation, disorders.
- Physiology of obesity & metabolic syndrome.
- Radioimmuno assays.
- Experimental studies.

5.12) REPRODUCTIVE PHYSIOLOGY: (8 hours)

- Sex chromosomes, sex determination, sex differentiation
- Functional anatomy of reproductive system.
- Puberty: changes in males & females and its control-delayed & precocious puberty.
- Spermatogenesis: stages & regulation Semen analysis.
- Testosterone: actions & regulation.
- Menstrual cycle & ovarian cycle: Phases & hormonal regulation.
- Menopause.
- Ovulation: indicators & importance
- Fertilization, implantation of ovum.

- Functions of placenta
- Physiology of pregnancy;
- Maternal changes during pregnancy
- Parturition: stages and mechanism (in brief)
- Lactation: initiation & maintenance and control. Advantages of breast-feeding.
- Contraception: to be taken as integrated topic.
- Physiology of infancy.

5.13) SPECIAL SENSES (8 hours)

- Eye: Functional anatomy of eye, optics, microscopic structure of retina with retinal circuitsPhotochemistry of vision (photopic & scotopic vision, dark & light adaptation)Pupillary reflexes, Accommodation reflex, errors of refraction and their correctionColour vision – physiological & neural basis, accepted theory of colour vision, classifications, basis of colour blindness and tests of colour blindness, significance. Visual pathway – processing of information at different levels in visual pathway, organisation of visual cortex. Effects of lesion at different levels in visual pathway,

  Movements of eyeballs: functions & control.
- Ear : Physics of sound, decibel system, Functions of external ear, Functional anatomy of middle ear, functions of middle ear in detail, assessment of functions of middle ear, Functional anatomy of cochlea, functions of inner ear, place principle, theories of hearing.
- Audiometry, Auditory pathway & important features, auditory cortex (role in hearing & speech development)
- Taste : Functional anatomy of taste buds, different taste modalities, pathway, factors affecting taste sensation.
- Smell: Functional anatomy of receptors, primary olfactory sensations, pathway, factors affecting smell sensation.

5.14) CENTRAL NERVOUS SYSTEM: (50 hours)

- Outline of nervous system, evolution of methods of study of CNS.
- Synapse: definition, physiological anatomy, sequence of events of synaptic transmission, properties, significance of synaptic transmission, applied aspect& neurotransmitters (in brief).
- Sensory receptors: definition, classification & properties.
- Sensations: different modalities, classification with examples and significance
- Sensation of touch, pain, proprioception: details of each
- Reflexes: definition, classification, reflex arc & properties.
- Stretch reflex: definition, muscle spindle, role of supra spinal control, functions of stretch reflex, inverse stretch reflex & polysynaptic reflexes.
- Ascending tracts: Basic plan of somato sensory pathway for conscioussensation, pathway from head, face region.
- Descending tracts: pyramidal tracts – details., extra pyramidal tracts, differences between UMN & LMN lesions.
- Sections at various levels in CNS:

  i) Spinal transection – spinal animal.

  Complete – 3 stages – spinal shock, stage of recovery, stage of reflex failure – details of each stage.

  Incomplete. Transection

  Hemisection

ii) Low midbrain section – decerebrate animal : Decerebrate rigidity.

(Classical & ischaemic with mechanisms, characteristics features, physiological significance)

Decorticate animal.

- Posture - & Equilibrium: Definition, classification of postural reflexes & regulation of posture (integrating centers at various levels of CNS) vestibular apparatus : Physiologic anatomy, functions, vestibulo occular & vestibulo spinal reflexes.
- Thalamus: Functional classification of Thalamic nuclei, with connections of different nuclear groups, functions of thalamus, thalamic syndrome.
- Hypothalamus: Classification of different hypothalamic nuclei, connections & functions in details.
- Limbic system: Parts of limbic system, connections& functions.
- Reticular formation: Introduction, anatomy in brief, functional divisions.

i) Ascending reticular activating system – details with connections & role in sleep wakeful cycle, applied aspect.

ii) Descending reticular system – role in regulation of muscle tone by pontine & medullary regions.

iii) Visceral centres.

- E. E. G.: Definition, different waves, characteristics & functional significance of each wave, physiological variation, clinical application in brief.
- Sleep & Wakefulness : Concept of alertness & wakefulness with their physiological basis, Definition of sleep, stages of sleep correlated with EEG, sleep cycle – types of sleep, salient features of NREM & REM sleep, physiological effects of sleep on different systems of the body, Neurophysiological mechanisms of sleep, functions of sleep.
- Cerebellum: Introduction, functional classification, intracortical circuit, deepCerebellar nuclei, connections of different lobes, functions of cerebellum, cerebellar function tests, effects of lesion in brief.
- Basal Ganglia: Introduction, classification of nuclei, connections, intracortical circuits, functions, lesions - Parkinsonism.
- Cerebral Cortex: Gross anatomy & divisions, concept of Broadmann's mappingwith diagram, parietal lobe – anatomical & functional divisions, details of each functional part as regards connections, topographic organisation, functions.Frontal lobe – excitomoter Cortex – anatomical & functional parts, details of each part as regards connections, topographic organisation, functions. Prefrontal Cortex – different areas, connections in brief, functions, effects of lobectomy.
- Speech: Afferent and efferent mechanisms and role of cortical centers in speech, concept of cerebral dominance, development of speech, vocalization.
- Memory: Definition, stages, types, physiological basis, factors affecting, applied – amnesias in brief.
- Learning: Definition, types with examples, stages, factors influencing, role of motivation (positive & negative reinforcement, reward & punishment), physiological basis – role of different parts of CNS, structural, biochemical changes.
- Conditioned reflexes: Definition, difference between unconditioned & conditioned

reflexes, development of conditioned reflexes, properties, significance.

- Autonomic nervous system: Organization and functions of Parasympathetic & Sympathetic and their control.
- CSF: Introduction, composition, normal CSF pressure, formation & circulation, functions, applied aspect – brief, blood brain barrier, blood CSF barrier.

5.15) SPORTS PHYSIOLOGY – (2 HOURS)

Muscle in Exercise, Strength, Power, Endurance, Athletic

Training/performance, Energetic & Nutrition, Respiration & CVS

Body Heat, Body fluids and salt, Drugs & Athletes, body fitness prolongs life

5.16)YOGA AND PRANAYAMA – (1 HOUR)

Introduction, Yoga Training programme, Yoga in daily life, Yogic Practices,

Physiological effects, Yoga in health & diseases, Aging

5.17) BIOETHICS- (2 HOURS)

i) Indian ethos & tradition

ii) Role of family & society in bioethics

5.18) AVIATION & SPACE PHYSIOLOGY – (2 HOURS)

I) Aviation:- Introduction, Environmental impact, Effect of acceleratory (Linear) forces on the body, Decelerative forcesduring parachute jumps

ii) Space:- Introduction, Measurement of acceleratory force- G, Effect of centrifugal acceleratory force on the body,

Protection against centrifugal acceleration, Artificial Climate in sealed spacecraft, Weightless in space –Microgravity, Cardiovascular, skeletal muscle and bone deconditioning during Prolonged exposure

6) Practicals

6.1)Haematology

Haemoglobin estimation, R. B. C., W. B. C., Differential Leucocyte count, Bleeding time Clotting time, Blood group typing (ABO & Rh system)

6.2) Clinical examination & Human experiments

Spirometry, Ergography, Perimetry, Tests for physical fitness & cardiovascularautonomic tests, Clinical examination of all systems.

6.3)Demonstrations

Reticulocyte count. Platelet count, P. C. V., E. S. R, fragility, bone marrow slides,S.D. curve, E.C.G. E.E.G., interpretation of audiogram, audiometry, pregnancy test, Family planning, body temperature, colour vision, PEFR, esophageal manometry & endoscopy. Visit to blood bank, wards to show common disorders or video tapes (list given in appendix I),

6.4) Animal experiments on frogs (Study & interpret the recorded graphs) by animal simulation software.

Skeletal muscle: effect of various strength of stimuli, simple muscle twitch , genesis of tetanus, effect of load on skeletal muscle fatigue, Velocity of nerve impulse effect of temperature.

Cardiac muscle: Normal cardiogram, effect of temperature, properties of cardiac muscle, effect of vagal stimulation and phenomenon of vagal escape. effect of drugs (Acetyl choline, Adrenaline, Nicotine). The journal should be scrutinized by the teacher concerned and presented during university examination.

APPENDIX I

List of common disorders to be shown during ward visits or using video tapes.

1. Generalised Oedema
2. Anaemia
3. Jaundice
4. Hepatomegaly
5. Splenomegaly
6. Ascites
7. Myxoedema
8. Cretinism
9. Hyperthyroidism
10. Dwarfism
11. Acromegaly
12. Facial nerve paralysis
13. Hemiplegia
14. Paraplegia
15. Parkinsonism
16. Cerebellar dysfunction.
17. Bronchial asthma
18. Valvular diseases
19. Hypertension

APPENDIX II

Topics to be asked as applied questions in theory.

A brief history and diagnosis to be provided.

1. Erythroblastosis foetalis
2. Haemophilia, purpura
3. Myasthenia gravis
4. Peptic ulcer
5. Oedema
6. Jaundice and anemia, mismatched transfusion
7. Myxoedema
8. Cretinism
9. Hyperthyroidism
10. Tetany
11. Acromegaly, Gigantism
12. Respiratory distress syndrome
13. Parkinsonism
14. Asthma
15. Hemiplegia
16. Spinal cord injury
17. Deafness
18. Hypovolemic shock
19. Cushing's syndrome
20. Dwarfism
21. Signs of cerebellar disease
22. Family planning

Paper wise distribution of Physiology theory topics :

There will be two Physiology theory papers (Paper I & Paper II) of 100 marks each. The pattern of both the question papers will be the same.

Paper wise distribution of Physiology theory topics.

Paper I	Paper II
▪ Cardiovascular system, Respiratory system, Gastrointestinal system ▪ Endocrinology ▪ Reproduction ▪ Environmental physiology: Acclimatization to hypoxia; Temperature regulation. ▪ Exercise physiology ▪ AETCOM	▪ **General Physiology** Cell membrane; Membrane potentials & Action potentials; Transport systems; Homeostasis ▪ **Nerve muscle physiology** Blood Excretory System CNS and Special senses

MENTORSHIP PROGRAMME

Mentors for I MBBS Students 2019-2020

Sr. No	Name of the Faculty	Department	Roll Nos.	Phone Nos
1	Dr. Manvikar P. R.	Anatomy	001 to 008	9545588313
2	Dr. PreetiSonje	Anatomy	009 to 016	8975781889
3	Dr. NeeleshKanasker	Anatomy	017 to 024	9970132913
4	Dr. Deepali R. Kate	Anatomy	025 to 032	9960273531
5	Dr. AmolShinde	Anatomy	033 to 040	9422242536
6	Dr. Dinesh Patel	Anatomy	041 to 048	9764038804
7	Dr. PreetiAwari	Anatomy	049 to 056	9689626105
8	Dr. MaitreyeeMutalik	Anatomy	057 to 064	8007480741
9	Dr. PallaviBajpayee	Anatomy	065 to 072	9860833756
10	Dr. Vilas G. Jaltade	Physiology	073 to 080	9422012764
11	Dr. Chaya A. Saraf	Physiology	081 to 088	9752157596
12	Dr. Mahesh Karandikar	Physiology	089 to 096	9049809994
13	Dr. Sood R.S.	Physiology	097 to 104	9822790697
14	Dr. NeelamBala Prasad	Physiology	105 to 112	9850559821
15	Dr. PrashantKhuje	Physiology	113 to 120	8390360859
16	Dr. JadhavSugata S.	Physiology	121 to 128	9371061417
17	Dr. SeemaMethre	Physiology	129 to 136	9763114929
18	Dr. SheetalSalvi	Physiology	137 to 144	9822069127
19	Dr. RamyaJayakumar	Physiology	145 to 152	8446428137
20	Dr. BageshreePande	Physiology	153 to 160	9850835269
21	Dr. NiveditaSirdesai	Physiology	161 to 168	7774097244
22	Dr. M. A. Tilak	Biochemistry	169 to 176	9226873355
23	Dr. R.D.Naoley	Biochemistry	177 to 184	9226073806
24	Dr. More U.K.	Biochemistry	185 to 192	9422314399
25	Dr. VaishaliDhat	Biochemistry	193 to 200	9922737501
26	Dr. SaritaShinde	Biochemistry	201 to 208	9766607402
27	Dr. Pradnya Jay Phalak	Biochemistry	209 to 216	9421779940
28	Dr. Anita Deshmukh	Biochemistry	217 to 224	9422987665
29	Dr. AbhijitPratap	Biochemistry	225 to 232	9657192022
30	Dr. Shilpa Joshi	Biochemistry	233 to 241	9975104725
31	Dr. SandeshThorat	Biochemistry	242 to 250	9860971019

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11	Mrs. S. Deshpande	Hostel(Girls)	8530208875	sangitadeshpande1234@gmail.com

DPU

UNDERTAKING FOR OBSERVING CODE OF CONDUCT

I have read, clarified and understood the regulations mentioned in the prospectus and information available on the website of www.dpu.edu.in I fully subscribe to the concerns, vision & mission of, and the processes at the institute. I shall abide by the rules & regulations of the institute and the Vidyapeeth.

I know that I have to take part in all other non-academic activities irrespective of my religious faith and beliefs. Having understood the importance of these, I promise that I shall do it to the best of my ability.

In solemn assurance and acceptance after clarification and explanation of the above, I hereby affix my signature jointly along with my parent / guardian understanding that this is my own code of conduct to have a fruitful and memorable association with the institute and the Dr. D. Y. Patil Vidyapeeth, Pune. I am aware of the consequences if I violate any of the rules of the institute. I will accept the decision of the institute in case of any indiscipline on my part including termination from institute.

Parent's / Guardian's Signature :_____ Candidate's Signature : _____

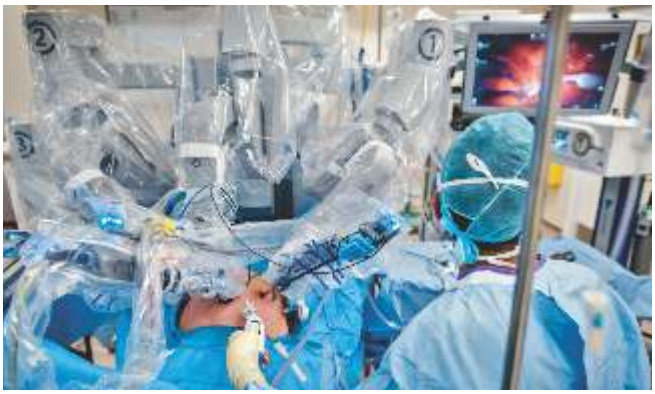
Parent's / Guardian's Name :_____ Candidate's Name : _____

Relation :_____

Date :_____

Place : _____


MRI Facility



ROBOTIC SURGERY

ROBOTIC SURGERY

ICU's

ICU's

Operation Theatres

Operation Theatres

Learning Resource Centre or Central Library

Learning Resource Centre or Central Library

DPU

Dr. D.Y. Patil Vidyapeeth, Pune

(Deemed to be University)

(Re-accredited by NAAC with a **CGPA of 3.62** on a four point scale at **'A' Grade)**
20th rank in **Medical Category and 46th rank** in **University Category** in India **(NIRF-2019)**
(Declared as **Category- I University** by UGC Under Grade Autonomy Regulation, 2018
(An ISO 9001 : 2015 Certified University)

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